SAR Test Report

of

Product Name & Model

AR5BXB6 802.11a/b/g PCI Express Module

Applied by:

Atheros Communications, Inc.
5480 Great America Parkway
Santa Clara, CA 95054
USA

Test Performed by:

International Standards Laboratory
No. 120, Lane 180, San Ho Tsuen, Hsin Ho Rd.
Lung-Tan Hsiang, Tao Yuan County 325
Taiwan, R.O.C.
Tel:(03)407-1718 Fax:(03)407-1738

Report Number: 06LR020SAR-F **Issue Date: 2006/09/07**
HC LAB:NVLAP:200234-0;VCCI: R-341,C-354; NEMKO:ELA 113A;BSMI:SL2-IN-E-0037;SL2-R1-E-0037;CNLA:1178; IC:IC4067
LT LAB: NVLAP:200234-0;VCCI: R-1435,C-1440;NEMKO:ELA 113B; BSMI:SL2-IN-E-0013;CNLA:0997; IC:IC4164-1
ISL-T10-R31-1

Contents of Report

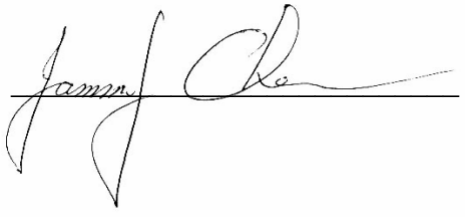
1. General

1.1 Certification of Accuracy of Test Data

Standards:	FCC OET65 Supplement C June 2001
Equipment Tested:	802.11a/b/g PCI module
Product Name & Model:	AR5BXB6 802.11a/b/g PCI Express Module
FCC ID	PPD-AR5BXB6
Built-In Tablet PC	Brand Name: Lenovo Model Name: 6363/ 6364/ 6365/ 6366/ 6367/ 6368 Project Name: ThinkPad X60 Tablet Series
Co-located RF Module A	Sierra, Wireless Karafuto (GSM, EGSM, UMTS) : FCCID N7NMC8765
Co-located RF Module B	Sierra Wireless Akita (GSM, EGSM) : FCCID N7NMC8755
Co-located RF Module C	Sierra Wireless Tosa (EV-DO) : FCCID N7N-MC5720
Co-located RF Module D	Bluetooth, Foxconn Callisto, FCCID MCLJ07H081
Applied by:	Atheros Communications, Inc.
Sample received Date:	2006/08/24
Final test Date :	2006/08/25 ~ 2006/09/05
Test Site:	SAR test site
Test Result Maximum SAR Measurement (1g)	Co-location WLAN+BT+WWAN: 802.11b: 0.572 W/kg, 802.11g: 0.554 W/kg 802.11a: 0.690 W/kg Only WWAN: Tosa:EVDO800:0.193 W/kg,EVDO1900:0.376W/kg, Karafuto:GSM850:0.505 W/kg,GSM1900:0.448 UMTS800:0.260,UMTS1900:0.206 Akita:GSM850:0.242 W/kg,GSM1900:0.178 W/kg,
Temperature	21.4 ~ 22.8 °C
Humidity:	43% ~ 52%
Test Engineer:	Frank Hsu

All the tests in this report have been performed and recorded in accordance with the standards described above and performed by an independent test lab, International Standards Laboratory.
The test results contained in this report accurately represent the measurements of the characteristics and the energy generated by sample equipment under test at the time of the test.
The sample equipment tested as described in this report is in compliance with the limits of above standards.

Approve & Signature



Jammy Chen/Senior Director

Test results given in this report apply only to the specific sample(s) tested under stated test conditions.
This report shall not be reproduced other than in full without the explicit written consent of ISL. This report totally contains 160 pages, including 1 cover page , 2 contents page, and 157 pages for the test description.
This report must not be use to claim product endorsement by NVLA P, NIST, any agency of the federal government.

2. Description of Equipment Under Test (EUT)

Product Name & Model No.	AR5BXB6 802.11a/b/g PCI Express Module
TX Frequency	2412MHz ~ 2462MHz (802.11b & 802.11g) 5150 MHz ~ 5350 MHz (802.11a) 5725 MHz ~ 5850MHz (802.11a)
Number of Channel	802.11b: 11, 802.11g: 11 802.11a: 10 (5150MHz ~ 5350MHz) 802.11a: 7 (5725MHz ~ 5850MHz)
Type of Modulation	802.11b: DBPSK, DQPSK, CCK 802.11g and 802.11a: OFDM
Max. Output Power (Conducted)	802.11b: 20.1dBm, 802.11g: 22.7dBm 802.11a: 16.0dBm (5150MHz~5350MHz) 802.11a: 21.3dBm (5725MHz~5850MHz)
Built-In Tablet PC	Brand Name: Lenovo Model Name: 6363/ 6364/ 6365/ 6366/ 6367/ 6368 Project Name: ThinkPad X60 Tablet Series
Co-located RF Module A	Sierra, Wireless Karafuto (GSM, EGSM, UMTS) : FCCID N7NMC8765
Co-located RF Module B	Sierra Wireless Akita (GSM, EGSM) : FCCID N7NMC8755
Co-located RF Module C	Sierra Wireless Tosa (EV-DO) : FCCID N7N-MC5720
Co-located RF Module D	Bluetooth, Foxconn Callisto, FCCID MCLJ07H081
Transmit Antenna Peak Gain	Main Antenna of WLAN: 2.4GHz : 0.9dBi, 5GHz: 1.92dBi Aux Antenna WLAN: 2.4GHz: 1.52dBi, 5GHz: 2.78dBi, Main Antenna of WWAN (Karafuto and TOSA): 850MHz : 1.76dBi, 1900MHz: 1.30dBi Main Antenna of WWAN (Akita): 850MHz : 1.74dBi, 1900MHz: 1.78dBi
Antenna Type	Internal, Dual Band Printed IFA
Transfer Rate	802.11b: 1~11Mbps 802.11g: 6~108Mbps 802.11a: 6~108Mbps
Power Type	5V DC from Notebook PC
Device Category	Portable
RF Exposure Environment	Uncontrolled

2.1 Test Environment (*Ambient conditions in the laboratory)*

Items	Required	Actual
Temperature (°C)	18 ~ 25	21.4 ~ 22.8 (8/25/2006 ~ 9/05/2006)
Humidity (%RH)	30 ~ 70	43 ~ 52 (8/25/2006 ~ 9/05/2006)

3. SAR Measurement System

3.1 ALSAS-10U System Description

ALSAS-10-U is fully compliant with the technical and scientific requirements of IEEE 1528, IEC 62209, CENELEC, ARIB, ACA, and the Federal Communications Commission. The system comprises of a six axes articulated robot which utilizes a dedicated controller.

ALSAS-10U uses the latest methodologies and FDTD odeling to provide aplatform which is repeatable with minimum uncertainty.

3.1.1 Applications

Predefined measurement procedures compliant with the guidelines of CENELEC, IEEE, IEC, FCC, etc are utilized during the assessment for the device. Automatic detection for all SAR maxima are embedded within the core architecture for the system, ensuring that peak locations used for centering the zoom scan are within a 1mm resolution and a 0.05mm repeatable position. System operation range currently available up-to 6 GHz in simulated tissue.

3.1.2 Area Scans

Area scans are defined prior to the measurement process being executed with a user defined variable spacing between each measurement point (integral) allowing low uncertainty measurements to be conducted. Scans defined for FCC applications utilize a 10mm^2 step integral, with 1mm interpolation used to locate the peak SAR area used for zoom scan assessments.

Where the system identifies multiple SAR peaks (which are within 25% of peak value) the system will provide the user with the option of assessing each peak location individually for zoom scan averaging.

3.1.3 Zoom Scan (Cube Scan Averaging)

The averaging zoom scan volume utilized in the ALSAS-10U software is in the shape of a cube and the side dimension of a 1 g or 10 g mass is dependent on the density of the liquid representing the simulated tissue. A density of 1000 kg/m³ is used to represent the head and body tissue density and not the phantom liquid density, in order to be consistent with the definition of the liquid dielectric properties, i.e. the side length of the 1 g cube is 10mm, with the side length of the 10 g cube 21,5mm.

When the cube intersects with the surface of the phantom, it is oriented so that 3 vertices touch the surface of the shell or the center of a face is tangent to the surface. The face of the cube closest to the surface is modified in order to conform to the tangent surface.

The zoom scan integer steps can be user defined so as to reduce uncertainty, but normal practice for typical test applications (including FCC) utilize a physical step of 5x5x8 (8mmx8mmx5mm) providing a volume of 32mm in the X & Y axis, and 35mm in the Z axis.

3.1.4 ALSAS-10U Interpolation and Extrapolation Uncertainty

The overall uncertainty for the methodology and algorithms the used during the SAR calculation was evaluated using the data from IEEE 1528 based on the example f3 algorithm:

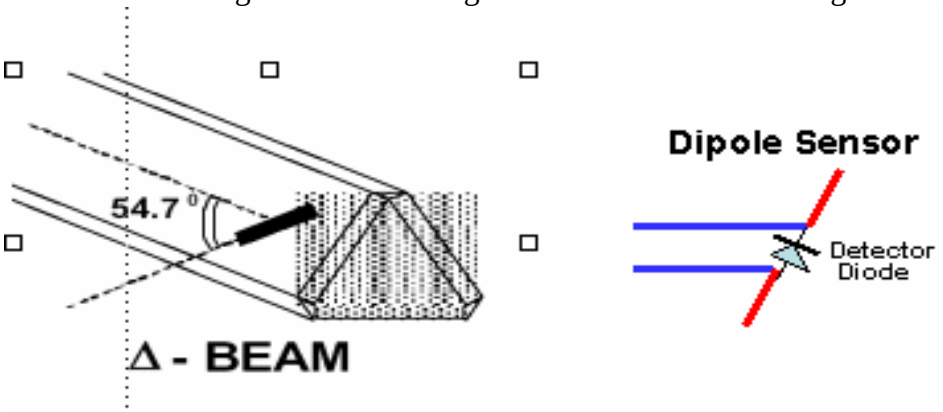
$$f_3(x,y,z) = A\frac{a^2}{\frac{a^2}{4} + x'^2 + y'^2}\cdot\left(e^{-\frac{2z}{a}} + \frac{a^2}{2(a+2z)^2}\right)$$

3.2 Isotropic E-Field Probe

The isotropic E-Field probe has been fully calibrated and assessed for isotropicity, and boundary effect within a controlled environment. Depending on the frequency for which the probe is calibrated the method utilized for calibration will change. A number of methods is used for calibrating probes, and these are outlined in the table below:

Calibration Frequency	Air Calibration	Tissue Calibration
835MHz	TEM Cell	Temperature
1900MHz	TEM Cell	Temperature
2450MHz	Waveguide	Temperature
5200MHz	Waveguide	Temperature
5800MHz	Waveguide	Temperature

The E-Field probe utilizes a triangular sensor arrangement as detailed in the diagram below:



SAR is assessed with a calibrated probe which moves at a default height of 5mm from the center of the diode, which is mounted to the sensor, to the phantom surface (in the Z Axis). The 5mm offset height has been selected so as to minimize any resultant boundary effect due to the probe being in close proximity to the phantom surface.

The following algorithm is an example of the function used by the system for linearization of the output from the probe when measuring complex modulation schemes.

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

3.2.1 Isotropic E-Field Probe Specification

Calibration in Air	Frequency Dependent Below 2GHz Calibration in air performed in a TEM Cell Above 2GHz Calibration in air performed in waveguide
Sensitivity	0.70 μV/(V/m)**2** to 0.85 μV/(V/m)**2**
Dynamic Range	0.0005 W/kg to 100W/kg
Isotropic Response	Better than 0.2dB
Diode Compression point (DCP)	Calibration for Specific Frequency
Probe Tip Radius	< 5mm
Sensor Offset	1.56 (+/- 0.02mm)
Probe Length	290mm
Video Bandwidth	@ 500 Hz: 1dB @1.02 KHz: 3dB
Boundary Effect	Less than 2% for distance greater than 2.4mm
Spatial Resolution	Diameter less than 5mm Compliant with Standards

3.3 Boundary Detection Unit and Probe Mounting Device

ALSAS-10U incorporates a boundary detection unit with a sensitivity of 0.05mm for detecting all types of surfaces. The robust design allows for detection during probe tilt (probe normalize) exercises, and utilizes a second stage emergency stop. The signal electronics are fed directly into the robot controller for high accuracy surface detection in lateral and axial detection modes (X, Y, & Z).

The probe is mounted directly onto the Boundary Detection unit for accurate tooling and displacement calculations controlled by the robot kinematics. The probe is connect to an isolated probe interconnect where the output stage of the probe is fed directly into the amplifier stage of the Daq-Paq

3.4 Daq-Paq (Analog to Digital Electronics)

ALSAS-10U incorporates a fully calibrated Daq-Paq (analog to digital conversion system) which has a 4 channel input stage, sent via a 2 stage auto-set amplifier module. The input signal is amplified accordingly so as to offer a dynamic range from 5µV to 800mV. Integration of the fields measured is carried out at board level utilizing a Co-Processor which then sends the measured fields down into the main computational module in digitized form via an RS232 communications port. Probe linearity and duty cycle compensation is carried out within the main Daq-Paq module.

ADC	12 Bit
Amplifier Range	20mV to 200mV and 150mV to 800mV
Field Integration	Local Co-Processor utilizing proprietary integration algorithms
Number of Input Channels	4 in total 3 dedicated and 1 spare
Communication	Packet data via RS232

3.5 Axis Articulated Robot

ALSAS-10U utilizes a six axis articulated robot, which is controlled using a Pentium based real-time movement controller. The movement kinematics engine utilizes proprietary (Thermo CRS) interpolation and extrapolation algorithms, which allow full freedom of movement for each of the six joints within the working envelope. Utilization of joint 6 allows for full probe rotation with a tolerance better than 0.05mm around the central axis.

Robot/Controller Manufacturer	Thermo CRS
Number of Axis	Six independently controlled axis
Positioning Repeatability	0.05mm
Controller Type	Single phase Pentium based C500C
Robot Reach	710mm
Communication	RS232 and LAN compatible

3.6 ALSAS Universal Workstation

ALSAS Universal workstation allows for repeatability and fast adaptability. It allows users to do calibration, testing and measurements using different types of phantoms with one set up, which significantly speeds up the measurement process.

3.7 Universal Device Positioner

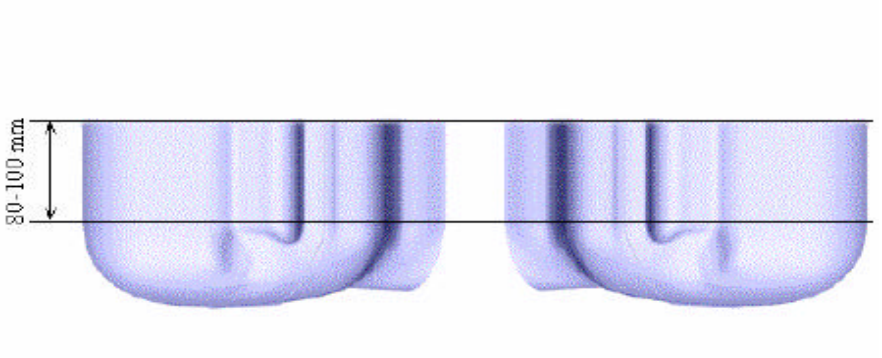
The universal device positioner allow complete freedom of movement of the EUT. Developed to hold a EUT in a free-space scenario any additional loading attributable to the material used in the construction of the positioner has been eliminated. Repeatability has been enhanced through the linear scales which form the design used to indicate positioning for any given test scenario in all major axes. A 15° tilt indicator is included for the of aid cheek to tilt movements for head SAR analysis. Overall uncertainty for measurements have been reduced due to the design of the Universal device positioner, which allows positioning of a device in as near to a free-space scenario as possible, and by providing the means for complete repeatability.

3.8 Phantom Types

The ALSAS-10U allows the integration of multiple phantom types. SAM Phantoms fully compliant with IEEE 1528, Universal Phantom, and Universal Flat.

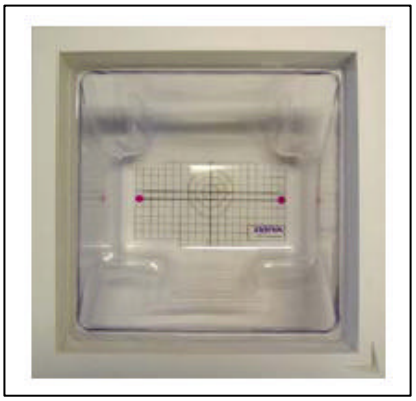
APREL SAM Phantoms

The SAM phantoms developed using the IEEE SAM CAD file. They are fully compliant with the requirements for both IEEE 1528 and FCC Supplement C. Both the left and right SAM phantoms are interchangeable, transparent and include the IEEE 1528 grid with visible NF and MB lines.



3.8.1 APREL Laboratories Universal Phantom

The Universal Phantom is used on the ALSAS-10U as a system validation phantom.The Universal Phantom has been fully validated both experimentally from 800MHz to 6GHz and numerically using XFDTD numerical software. The shell thickness is 2mm overall, with a 4mm spacer located at the NF/MB intersection providing an overall thickness of 6mm in line with the requirements of IEEE-1528. The design allows for fast and accurate measurements, of handsets, by allowing the conservative SAR to be evaluated at on frequency for both left and right head experiments in one measurement.



4. Tissue Simulating Liquid

4.1 The composition of the tissue simulating liquid

The SAR liquid is from Aprel Laboratories.

835 MHz Head Tissue: Part No.: ALS-TS-835-H,
835 MHz Body Tissue Part No. : ALS_TS-835-B,
1900 MHz Head Tissue: Part No.: ALS-TS-1900-H,
1900 MHz Body Tissue Part No. : ALS_TS-1900-B,
2450 MHz Head Tissue: Part No.: ALS-TS-2450-H,
2450 MHz Body Tissue Part No. : ALS_TS-2450-B,
5200 MHz Head Tissue: Part No.: ALS-TS-5200-H,
5200 MHz Body Tissue Part No. : ALS_TS-5200-B,
5800 MHz Head Tissue: Part No.: ALS-TS-5800-H,
5800 MHz Body Tissue Part No. : ALS_TS-5800-B,

The ingredient is as follows:

INGREDIENT (% Weight)	835MHz Head	835MHz Body	1900MHz -Head	1900MHz -Body
Water	40.45	52.40	54.90	67.82
Salt	1.45	0.90	0.18	0.25
Sugar	57.60	45.00	0.00	0.00
HEC	0.40	1.00	0.00	0.00
Preventol	0.10	0.10	0.00	0.00
DGBE	0.00	0.00	44.92	31.92
Triton X-100	0.00	0.00	0.00	0.00

INGREDIENT (% Weight)	2450MHz -Head	2450MHz -Body		
Water	46.7	73.2		
Salt	0.00	0.04		
Sugar	0.00	0.00		
HEC	0.00	0.00		
Preventol	0.00	0.00		
DGBE	53.3	26.7		
Triton X-100	0.00	0.00		

INGREDIENT (% Weight)	5200MHz Head	5200MHz Body	5800MHz -Head	5800MHz -Body
Water	66.30	76.23	66.30	76.23
Salt	0.00	0.00	0.00	0.00
Sugar	57.60	0.00	57.60	0.00
HEC	0.00	0.00	0.00	0.00
Preventol	0.00	0.00	0.00	0.00
DGBE	5.27	1.83	5.27	1.83
Triton X-100	28.42	21.94	28.42	21.94

Salt: 99+% Pure Sodium Chloride
Sugar: 98+% Pure Sucrose
Water: De-ionized, 16 MW+ resistivity
HEC: Hydroxyethyl Cellulose
DGBE: Diethylene Glycol Monobutyl Ether
Triton X-100 (ultra pure): Polyethylene glycol mono [4-(1,1, 3, 3-tetramethylbutyl)phenyl]ether

4.2 Tissue Calibration Result

The dielectric parameters of the liquids were verified prior to the SAR evaluation using Agilent Dielectric Probe Kit and Agilent E5071B Vector Network Analyzer.
The Epsilon and Sigma of tissue was calibrated every day before SAR testing.
Parts of calibrated data is listed below.

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
835MHz	Reference result ± 5% window	41.5 39.42 to 43.57	0.9 0.85 to 0.94	N/A
	30-Aug-2006	41.14	0.89	22.0

Body Tissue Simulant Measurement				
Frequency [MHz]	Description/ Calibration date	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
835MHz	Reference result ± 5% window	55.2 52.44 to 57.96	0.97 0.92 to 1.02	N/A
	30-Aug-2006	54.88	0..97	22.0

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
1900MHz	Reference result ± 5% window	40.0 38 to 42	1.4 1.33 to 1.47	N/A
	1-Sep-2006	40.53	1.38	22.4

Body Tissue Simulant Measurement				
Frequency [MHz]	Description/ Calibration date	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
1900MHz	Reference result ± 5% window	53.3 50.065 to 55.335	1.52 1.8525 to 2.0475	N/A
	1-Sep-2006	52.75	1.50	22.4

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
2450MHz	Reference result ± 5% window	39.2 37.24 to 41.16	1.8 1.71 to 1.89	N/A
	26-Aug-2006	39.94	1.75	22.6

Body Tissue Simulant Measurement				
Frequency [MHz]	Description/ Calibration date	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
2450MHz	Reference result ± 5% window	52.7 50.065 to 55.335	1.95 1.8525 to 2.0475	N/A
	26-Aug-2006	51.68	1.98	22.6

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
5200MHz	Reference result ± 5% window	36.0 34.2 to 37.8	4.7 4.465 to 4.935	N/A
	28-Aug-2006	37.33	4.91	22.2

Body Tissue Simulant Measurement				
Frequency [MHz]	Description/ Calibration date	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
5200MHz	Reference result ± 5% window	49.02 46.569 to 51.471	5.299 5.034 to 5.564	N/A
	28-Aug-2006	48.15	5.43	22.2

Head Tissue Simulant Measurement				
Frequency [MHz]	Description	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
5800MHz	Reference result ± 5% window	35.3 34.2 to 37.8	5.27 5.006 to 5.533	N/A
	29-Aug-2006	36.47	5.41	22.3

Body Tissue Simulant Measurement				
Frequency [MHz]	Description/ Calibration date	Dielectric Parameters		Tissue Temp. [°C]
		ε_r	σ [s/m]	
5800MHz	Reference result ± 5% window	48.2 45.79 to 50.61	6.0 5.7 to 6.3	N/A
	29-Aug-2006	47.13	6.18	22.3

4.3 Tissue Dielectric Parameters for Head and Body Phantoms

The head tissue dielectric parameters recommended by the IEEE SCC-34/SC-2 in P1528 have been incorporated in the following table. These head parameters are derived from planar layer models simulating the highest expected SAR for the dielectric properties and tissue thickness variations in a human head. Other head and body tissue parameters that have not been specified in P1528 are derived from the tissue dielectric parameters computed from the 4-Cole-Cole equations described in Reference [12] and extrapolated according to the head parameters specified in P1528.

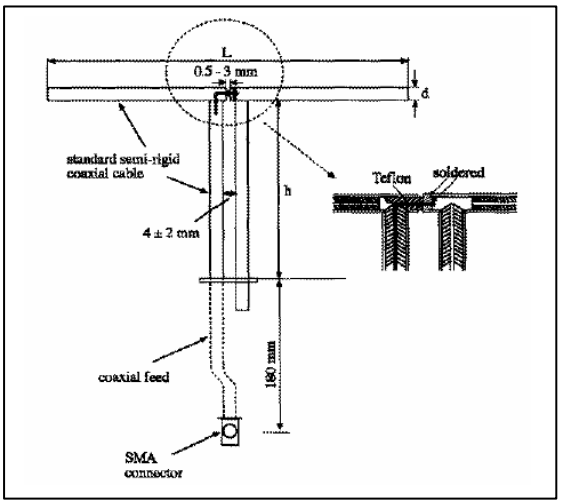
Target Frequency	Head		Body	
(MHz)	ε_r	σ (S/m)	ε_r	σ (S/m)
150	52.3	0.76	61.9	0.80
300	45.3	0.87	58.2	0.92
450	43.5	0.87	56.7	0.94
835	41.5	0.90	55.2	0.97
900	41.5	0.97	55.0	1.05
915	41.5	0.98	55.0	1.06
1450	40.5	1.20	54.0	1.30
1610	40.3	1.29	53.8	1.40
1800 – 2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7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

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

5. SAR Measurement Procedure

5.1 SAR System Validation

5.1.1 Validation Dipoles



The dipoles used is based on the IEEE-1528 standard, and is complied with mechanical and electrical specifications in line with the requirements of both IEEE and FCC Supplement C. the table below provides details for the mechanical and electrical specifications for the dipoles.

Frequency	L (mm)	h (mm)	d (mm)
2450MHz	53.5	30.4	3.6
5200MHz	23.6	14.0	3.6
5800MHz	21.6	12.6	3.6

5.1.2 Validation Result

System Performance Check at 835MHz **Validation Kit: ASL-D-835-S-2**				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
835 MHz	Reference result ± 10% window	9.5 8.55 to 10.45	6.2 5.58 to 6.84	N/A
	08/30/2006	9.384	5.701	22.0
Note: All SAR values are 1W forward power.				

System Performance Check at 1900MHz Validation Kit: ASL-D-1900-S-2				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
1900 MHz	Reference result ± 10% window	39.7 35.73 to 43.67	20.5 18.45 to 22.55	N/A
	09/01/2006	38.699	19.256	22.4
Note: All SAR values are 1W forward power.				

System Performance Check at 2450MHz Validation Kit: ASL-D-2450-S-2				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
2450 MHz	Reference result ± 10% window	52.4 47.16 to 57.64	24 21.6 to 26.4	N/A
	08/26/2006	55.957	25.595	22.6
Note: All SAR values are 1W forward power.				

System Performance Check at 5200MHz Validation Kit: ASL-D-5200-S-2				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
5200 MHz	Reference result ± 10% window	62.9 56.61 to 69.19	17.9 16.11 to 19.69	N/A
	08/28/2006	61.924	18.832	22.1
Note: All SAR values are 1W forward power.				

System Performance Check at 5800MHz Validation Kit: ASL-D-5800-S-2				
Frequency [MHz]	Description	SAR [w/kg] 1g	SAR [w/kg] 10g	Tissue Temp. [°C]
5800 MHz	Reference result ± 10% window	58.3 52.47 to 64.13	18 16.2 to 19.8	N/A
	08/29/2006	57.717	18.255	22.3
Note: All SAR values are 1W forward power.				

5.2 SAR Measurement Procedure

The ALSAS-10U calculates SAR using the following equation,

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

s : represents the simulated tissue conductivity
?: represents the tissue density

The EUT is set to transmit at the required power in line with product specification, at each frequency relating to the LOW, MID, and HIGH channel settings.

Pre-scans are made on the device to establish the location for the transmitting antenna, using a large area scan in either air or tissue simulation fluid.

The EUT is placed against the Universal Phantom where the maximum area scan dimensions are larger than the physical size of the resonating antenna. When the scan size is not large enough to cover the peak SAR distribution, it is modified by either extending the area scan size in both the X and Y directions, or the device is shifted within the predefined area.

The area scan is then run to establish the peak SAR location (interpolated resolution set at $1mm^2$)which is then used to orient the center of the zoom scan. The zoom scan is then executed and the 1g and 10g averages are derived from the zoom scan volume (interpolated resolution set at $1mm^3$).

6. SAR Exposure Limits

SAR assessments have been made in line with the requirements of IEEE-1528, FCC Supplement C, and comply with ANSI/IEEE C95.1-1992 "Uncontrolled Environments" limits. These limits apply to a location which is deemed as "Uncontrolled Environment" which can be described as a situation where the general public may be exposed to an RF source with no prior knowledge or control over their exposure.

Limits for General Population/Uncontrolled Exposure (W/kg)

Type Exposure	Uncontrolled Environment Limit
Spatial Peak SAR (1g cube tissue for brain or body)	**1.60 W/kg**
Spatial Average SAR (whole body)	**0.08 W/kg**
Spatial Peak SAR (10g for hands, feet, ankles and wrist)	**4.00 W/kg**

7. Test Equipment List

Instrument	Manufact-urer	Model No.	Serial No.	Last Calibration
Vector Network Analyzer	Agilent	E5071B	MY42402726	Jul. 2006
Dielectric Probe Kit	Aglient	85070E	MY44300124	N/A
Signal Generator	Anritsu	MG3692A	020311	Feb. 2006
Power Meter	Agilent	438A	3513U06187	Feb. 2006
Power Sensor	Agilent	84815A	3318A01828	Feb. 2006
Data Acquisition Package	Aprel	ALS-DAQ-PAQ-2	110-00203	Mar. 2006
Aprel Laboratories Probe	Aprel	ALS-E020	266	Mar. 2006
Aprel Reference Dipole 2450MHz	Aprel	ALS-D-2450-S-2	220-00753	Mar. 2005
Aprel Reference Dipole 5200MHz	Aprel	ALS-D-5200-S-2	230-00802	Mar. 2005
Aprel Reference Dipole 5800MHz	Aprel	ALS-D-5800-S-2	240-00852	Mar. 2005
Boundary Detection Sensor System	Aprel	ALS-PMDPS-2	120-00253	N/A
Universal Work Station	Aprel	ALS-UWS	100-00153	N/A
Device Holder 2.0	Aprel	ALS-H-E-SET-2	170-00503	N/A
Left Ear SAM Phantom	Aprel	ALS-P-SAM-L	130-00305	N/A
Right Ear SAM Phantom	Aprel	ALS-P-SAM-R	140-00355	N/A
Universal Phantom	Aprel	ALS-P-UP-1	150-00405	N/A
Aprel Dipole Spacer	Aprel	ALS-DS-U	250-00903	N/A
SAR Software	Aprel	ALSAS-10U Ver.2.2.0	B0D5F-112FE	N/A
CRS C500C Controller	Thermo	ALS-C500	RCF0440278	N/A
CRF F3 Robot	Thermo	ALS-F3	RAF0440252	N/A
Power Amplifier	Mini-Circuit	ZVE-8G	D030305	N/A
Vector Network Analyzer	Agilent	E5071B	MY42402726	Jul. 2006
Dielectric Probe Kit	Aglient	85070E	MY44300124	N/A
Signal Generator	Anritsu	MG3692A	020311	Feb. 2006
Power Meter	Agilent	438A	3513U06187	Feb. 2006
Power Sensor	Agilent	84815A	3318A01828	Feb. 2006

Note: All equipment upon which need to be calibrated are with calibration period of 1 year except Reference Dipole is to be calibrated every two years. .

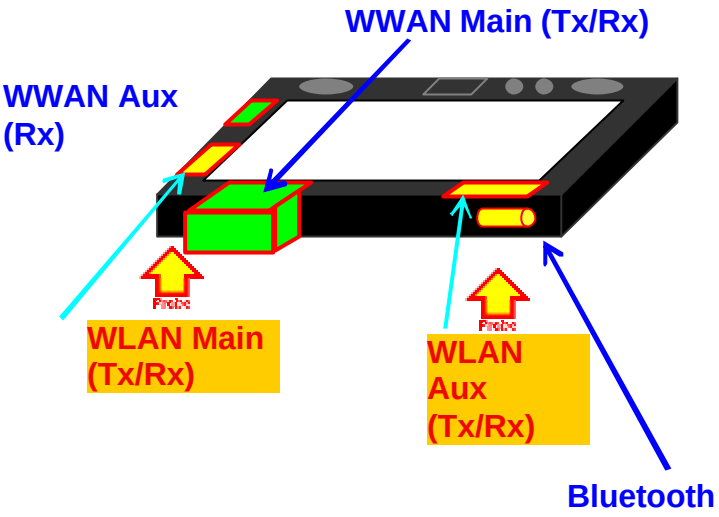
8. Measurement Uncertainty

Source of Uncertainty	Toler-ance Value	Probability Distribution	Divi-sor	c_i^1 (1g)	c_i^1 (10g)	Standard Uncertai-nty (1-g) %	Standard Uncertai-nty (10g) %
Measurement System							
Probe Calibration	3.5	normal	1	1	1	3.5	3.5
Axial Isotropy	3.7	rectangular	v3	$(1-cp)^{1/2}$	$(1-cp)^{1/2}$	1.5	1.5
Hemispherical Isotropy	10.9	rectangular	v3	vcp	vcp	4.4	4.4
Boundary Effect	1.0	rectangular	v3	1	1	0.6	0.6
Linearity	4.7	rectangular	v3	1	1	2.7	2.7
Detection Limit	1.0	rectangular	v3	1	1	0.6	0.6
Readout Electronics	1.0	normal	1	1	1	1.0	1.0
Response Time	0.8	rectangular	v3	1	1	0.5	0.5
Integration Time	1.7	rectangular	v3	1	1	1.0	1.0
RF Ambient Condition	3.0	rectangular	v3	1	1	1.7	1.7
Probe Positioner Mech.	0.4	rectangular	v3	1	1	0.2	0.2
Restriction							
Probe Positioning with respect to Phantom Shell	2.9	rectangular	v3	1	1	1.7	1.7
Extrapolation and Integration	3.7	rectangular	v3	1	1	2.1	2.1
Test Sample Positioning	4.0	normal	1	1	1	4.0	4.0
Device Holder Uncertainty	2.0	normal	1	1	1	2.0	2.0
Drift of Output Power	1.6	rectangular	v3	1	1	0.9	0.9
Phantom and Setup							
Phantom Uncertainty(shape & thickness tolerance)	3.4	rectangular	v3	1	1	2.0	2.0
Liquid Conductivity(target)	5.0	rectangular	v3	0.7	0.5	2.0	1.4
Liquid Conductivity(meas.)	4.6	normal	1	0.7	0.5	3.2	2.3
Liquid Permittivity(target)	5.0	rectangular	v3	0.6	0.5	1.7	1.4
Liquid Permittivity(meas.)	2.3	normal	1	0.6	0.5	1.4	1.1
Combined Uncertainty		RSS				9.9	9.5
Combined Uncertainty (coverage factor=2)		Normal(k=2)				19.8	18.9

9. Test Result Summary

9.1 EUT Test Position : Laptop

The EUT is put on the laptop of user. The TX Antennas WLAN_Main , WLAN_Aux and WWAN_Main are enable.



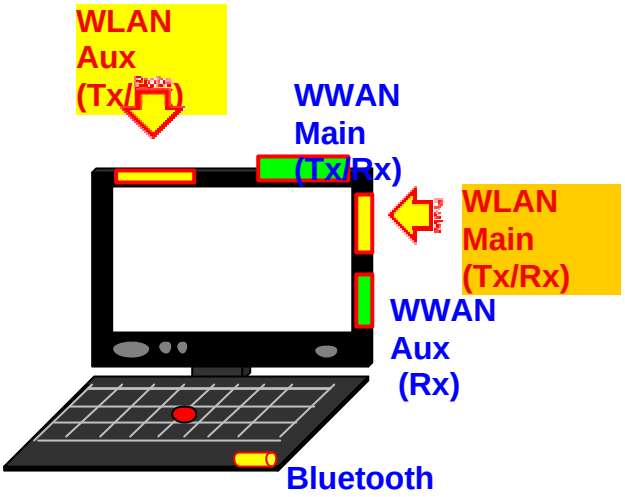
9.2 EUT Test Position: Tablet Mode

In order to meet SAR requirement, the TX antennas located in BODY SIDE will be disabled.

	Antenna	Notebook Mode	Primary Landscape (PL)	Primary Portrait (PP)	Secondary Landscape (SL)	Secondary Portrait (SP)	802.11 a/b/g	WWAN
WLAN	1 (Main)	Enable	Enable	Enable	Enable	Disable	**Tx/Rx**	NA
	2 (Aux)	Enable	Enable	Enable	Disable	Enable	**Tx/Rx**	NA
WWAN	Main	Enable	Enable	Enable	NA*1	Enable	NA	**Tx/Rx**
	Aux	Enable	Enable	Enable	NA*1	Enable	NA	**Rx**
Screen orientation vs. Body side								

*1: System does not function for the Secondary Landscape, when WWAN is enabled

9.3 EUT Test Position: Notebook PC Mode



In Notebook PC mode, the distance between user to TX antennas (WLAN_Main , WLAN_Aux and WWAN_Main) is much larger than the distance of Laptop mode and Tablet mode. It is not necessary to verify the SAR Value of this Notebook PC mode.

The Conducted Power output of EUT

802.11b (dBm)								
Freq. (MHz)	Bit rate 1 mbps	Bit rate 2 mbps	Bit rate 5.5	Bit rate 11				
2412	19.7	19.5	19.4	19.5				
2437	**20.1**	20.0	19.9	19.9				
2462	19.8	19.6	19.5	19.5				
802.11g (dBm)								
Freq. (MHz)	Bit rate 6 mbps	Bit rate 9 mbps	Bit rate 12	Bit rate 18	Bit rate 24 mbps	Bit rate 36 mbps	Bit rate 54	Bit rate 108
2412	22.6	22.4	22.4	22.3	22.3	22.2	22.3	22.4
2437	**22.7**	22.6	22.3	22.5	22.4	22.5	22.6	22.5
2462	22.5	22.2	22.2	22.3	22.4	22.1	22.3	22.3
802.11a (5150MHz ~ 5350 MHz) (dBm)								
Freq. (MHz)	Bit rate 6 mbps	Bit rate 9 mbps	Bit rate 12	Bit rate 18	Bit rate 24 mbps	Bit rate 36 mbps	Bit rate 54	Bit rate 108
5180	15.9	15.6	15.4	15.2	15.4	15.4	15.6	15.7
5260	**16.0**	15.8	15.7	15.4	15.6	15.4	15.8	15.8
5320	15.3	15.0	15.1	15.2.	15.2	15.3	15.0	15.1
802.11a (5725MHz ~ 5850 MHz) (dBm)								
Freq. (MHz)	Bit rate 6 mbps	Bit rate 9 mbps	Bit rate 12	Bit rate 18	Bit rate 24 mbps	Bit rate 36 mbps	Bit rate 54	Bit rate 108
5745	20.8	20.6	20.5	20.6	20.8	20.7	20.7	20.8
5785	**21.3**	21.1	21.0	20.9	21.2	20.8	21.1	21.1
5805	20.7	20.6	20.4	20.4	20.6	20.3	20.6	20.6

Note: The frequency and bit rate with highest output power was used to test SAR.

9.4 WLAN +Bluetooth SAR measurement Data

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg) (Note 2)	WWAN SAR 1g (W/Kg)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN (Note 1)			
802.11b mode						
Tablet, PL	WLAN: Main,	2437	-----	0.033	----	----
Tablet, PP	WLAN: Aux,	2437	-----	0.203	----	----
Tablet, SL	WLAN: Main	2437	-----	0.053	----	----
Tablet, SP	WLAN: Aux,	2437	-----	0.037	----	----
Laptop	WLAN: Main,	2437	-----	0.067	----	----
Laptop	WLAN: Aux,	2437	-----	0.033	----	----
802.11g mode						
Tablet, PL	WLAN: Main,	2437	-----	0.041	----	----
Tablet, PP	WLAN: Aux,	2437	-----	0.118	----	----
Tablet, SL	WLAN: Main	2437	-----	0.039	----	----
Tablet, SP	WLAN: Aux,	2437	-----	0.058	----	----
Laptop	WLAN: Main,	2437	-----	0.049	----	----
Laptop	WLAN: Aux,	2437	-----	0.023	----	----
802.11a mode (5150MHz ~ 5350MHz)						
Tablet, PL	WLAN: Main,	5260	-----	0.133	----	----
Tablet, PP	WLAN: Aux,	5260	-----	0.107	----	----
Tablet, SL	WLAN: Main	5260	-----	0.097	----	----
Tablet, SP	WLAN: Aux,	5260	-----	0.079	----	----
Laptop	WLAN: Main,	2437	-----	0.166	----	----
Laptop	WLAN: Aux,	2437	-----	0.081	----	----
802.11a mode (5725MHz ~ 5850MHz)						
Tablet, PL	WLAN: Main,	5785	-----	0.120	----	----
Tablet, PP	WLAN: Aux,	5785	-----	0.175	----	----
Tablet, SL	WLAN: Main	5785	-----	0.135	----	----
Tablet, SP	WLAN: Aux,	5785	-----	0.053	----	----
Laptop	WLAN: Main,	2437	-----	0.185	----	----
Laptop	WLAN: Aux,	2437	-----	0.171	----	----

Note 1: WWAN did not transmit for the test listed in this table.
Note 2: The 1g SAR measurement of WLAN + Bluetooth only.
Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR.
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9.5 WWAN only, TOSA (EV-DO): FCCID N7N-MC5720

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN (Note 1)	WWAN			
EV-DO 850MHz mode						
Tablet, PL	WWAN: Main,	-----	836	----	0.057	----
Tablet, PP	WWAN: Main,	-----	836	----	0.076	----
Tablet, SP	WWAN: Main,	-----	836	----	0.191	----
Laptop	WWAN: Main,	-----	836	----	0.193	----
EV-DO 1900MHz mode						
Tablet, PL	WWAN: Main,	-----	1880	----	0.029	----
Tablet, PP	WWAN: Main,	-----	1880	----	0.113	----
Tablet, SP	WWAN: Main,	-----	1880	----	0.376	----
Laptop	WWAN: Main,	-----	1880	----	0.363	----

Note 1: WLAN and Bluetooth did not transmit for the test listed in this table.
Note 2: The 1g SAR measurement of WWAN only.
Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR.

9.6 WWAN only, Karafuto : FCCID N7NMC8765

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN (Note 1)	WWAN			
GSM 850MHz mode						
Tablet, PL	WWAN: Main,	-----	836	----	0.087	----
Tablet, PP	WWAN: Main,	-----	836	----	0.096	----
Tablet, SP	WWAN: Main,	-----	836	----	0.314	----
Laptop	WWAN: Main,	-----	836	----	0.505	----
GSM 1900MHz mode						
Tablet, PL	WWAN: Main,	-----	1880	----	0.027	----
Tablet, PP	WWAN: Main,	-----	1880	----	0.111	----
Tablet, SP	WWAN: Main,	-----	1880	----	0.448	----
Laptop	WWAN: Main,	-----	1880	----	0.372	----
EGSM 850MHz mode						
Tablet, PL	WWAN: Main,	-----	836	----	0.028	----
Tablet, PP	WWAN: Main,	-----	836	----	0.044	----
Tablet, SP	WWAN: Main,	-----	836	----	0.108	----
Laptop	WWAN: Main,	-----	836	----	0.181	----
EGSM 1900MHz mode						
Tablet, PL	WWAN: Main,	-----	1880	----	0.037	----
Tablet, PP	WWAN: Main,	-----	1880	----	0.060	----
Tablet, SP	WWAN: Main,	-----	1880	----	0.207	----
Laptop	WWAN: Main,	-----	1880	----	0.183	----
UMTS 850MHz mode						
Tablet, PL	WWAN: Main,	-----	836	----	0.037	----
Tablet, PP	WWAN: Main,	-----	836	----	0.063	----
Tablet, SP	WWAN: Main,	-----	836	----	0.231	----
Laptop	WWAN: Main,	-----	836	----	0.260	----
UMTS 1900MHz mode						
Tablet, PL	WWAN: Main,	-----	1880	----	0.036	----
Tablet, PP	WWAN: Main,	-----	1880	----	0.066	----
Tablet, SP	WWAN: Main,	-----	1880	----	0.187	----
Laptop	WWAN: Main,	-----	1880	----	0.206	----

Note 1: WLAN and Bluetooth did not transmit for the test listed in this table.
Note 2: The 1g SAR measurement of WWAN only.
Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR.

9.7 WWAN only, Akita : FCCID N7NMC8755

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN (Note 1)	WWAN			
GSM 850MHz mode						
Tablet, PL	WWAN: Main,	-----	836	----	0.019	----
Tablet, PP	WWAN: Main,	-----	836	----	0.074	----
Tablet, SP	WWAN: Main,	-----	836	----	0.242	----
Laptop	WWAN: Main,	-----	836	----	0.132	----
GSM 1900MHz mode						
Tablet, PL	WWAN: Main,	-----	1880	----	0.044	----
Tablet, PP	WWAN: Main,	-----	1880	----	0.050	----
Tablet, SP	WWAN: Main,	-----	1880	----	0.178	----
Laptop	WWAN: Main,	-----	1880	----	0.168	----
EGSM 850MHz mode						
Tablet, PL	WWAN: Main,	-----	836	----	0.021	----
Tablet, PP	WWAN: Main,	-----	836	----	0.016	----
Tablet, SP	WWAN: Main,	-----	836	----	0.087	----
Laptop	WWAN: Main,	-----	836	----	0.146	----
	WWAN: Main,					
EGSM 1900MHz mode						
Tablet, PL	WWAN: Main,	-----	1880	----	0.034	----
Tablet, PP	WWAN: Main,	-----	1880	----	0.057	----
Tablet, SP	WWAN: Main,	-----	1880	----	0.101	----
Laptop	WWAN: Main,	-----	1880	----	0.110	----

Note 1: WLAN and Bluetooth did not transmit for the test listed in this table.
Note 2: The 1g SAR measurement of WWAN only.
Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR.

9.8 802.11b + WWAN Tosa (EV-DO) : FCCID N7N-MC5720 + Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Laptop	WLAN: Main, WWAN:Main	2437	1880 EV-DO	0.043	0.029	0.072
Laptop	WLAN: Aux, WWAN:Main	2437	1880 EV-DO	0.203	0.113	0.316
Tablet, PL	WLAN: Main, WWAN:Main	2437	1880 EV-DO	0.053	----	0.053
Tablet, PP	WLAN: Aux, WWAN:Main	2437	1880 EV-DO	0.037	0.376	0.413
Tablet, SL	WLAN: Main	2437	1880 EV-DO	0.067	0.363	0.430
Tablet, SP	WLAN: Aux, WWAN:Main	2437	1880 EV-DO	0.033	0.363	0.396
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 EV-DO	0.043	0.057	0.100
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 EV-DO	0.203	0.076	0.279
Tablet, SL	WLAN: Main	2437	836 EV-DO	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 EV-DO	0.037	0.191	0.228
Laptop	WLAN: Main, WWAN:Main	2437	836 EV-DO	0.067	0.193	0.260
Laptop	WLAN: Aux, WWAN:Main	2437	836 EV-DO	0.033	0.193	0.226

Note 1: Refer to paragraphs 9.1 and 9.2 for the detailed definition of EUT Position

Note 2: The 1g SAR measurement of WWAN only.

Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR

Note 4: Refer to Para 9.4 ~ 9.7 for WLAN+Bluetooth 1g SAR and WWAN 1g SAR Measurement data summary.

9.9 802.11b + Karafuto (GSM, EGSM, UMTS) : FCCID N7NMC8765 +Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 GSM	0.043	0.087	0.130
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.203	0.096	0.299
Tablet, SL	WLAN: Main	2437	836 GSM	0.053	-----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.037	0.314	0.351
Laptop	WLAN: Main, WWAN:Main	2437	836 GSM	0.067	0.505	0.572
Laptop	WLAN: Aux, WWAN:Main	2437	836 GSM	0.033	0.505	0.538
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 EGSM	0.043	0.028	0.073
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.203	0.044	0.247
Tablet, SL	WLAN: Main	2437	836 EGSM	0.053	----	
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.037	0.108	0.145
Laptop	WLAN: Main, WWAN:Main	2437	836 EGSM	0.067	0.181	0.248
Laptop	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.033	0.181	0.214
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 UMTS	0.043	0.037	0.080
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 UMTS	0.203	0.063	0.266
Tablet, SL	WLAN: Main	2437	836 UMTS	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 UMTS	0.037	0.231	0.268
Laptop	WLAN: Main, WWAN:Main	2437	836 UMTS	0.067	0.260	0.327
Laptop	WLAN: Aux, WWAN:Main	2437	836 UMTS	0.033	0.260	0.293
Tablet, PL	WLAN: Main, WWAN:Main	2437	1880 GSM	0.043	0.027	0.070
Tablet, PP	WLAN: Aux, WWAN:Main	2437	1880 GSM	0.203	0.111	0.304
Tablet, SL	WLAN: Main	2437	1880 GSM	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	1880 GSM	0.037	0.448	0.485
Laptop	WLAN: Main, WWAN:Main	2437	1880 GSM	0.067	0.372	0.439
Laptop	WLAN: Aux, WWAN:Main	2437	1880 GSM	0.033	0.372	0.405
Tablet, PL	WLAN: Main, WWAN:Main	2437	1880 EGSM	0.043	0.037	0.080
Tablet, PP	WLAN: Aux, WWAN:Main	2437	1880 EGSM	0.203	0.060	0.263
Tablet, SL	WLAN: Main	2437	1880 EGSM	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	1880 EGSM	0.037	0.207	0.240
Laptop	WLAN: Main, WWAN:Main	2437	1880 EGSM	0.067	0.183	0.250
Laptop	WLAN: Aux, WWAN:Main	2437	1880 EGSM	0.033	0.183	0.216
Tablet, PL	WLAN: Main, WWAN:Main	2437	1880 UMTS	0.043	0.036	0.079
Tablet, PP	WLAN: Aux, WWAN:Main	2437	1880 UMTS	0.203	0.066	0.269
Tablet, SL	WLAN: Main	2437	1880 UMTS	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	1880 UMTS	0.037	0.187	0.210
Laptop	WLAN: Main, WWAN:Main	2437	1880 UMTS	0.067	0.206	0.273
Laptop	WLAN: Aux, WWAN:Main	2437	1880 UMTS	0.033	0.206	0.239

9.10 802.11b + Akita (GSM, EGSM) : FCCID N7NMC8755 +Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 GSM	0.043	0.019	0.062
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.203	0.074	0.277
Tablet, SL	WLAN: Main	2437	836 GSM	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.037	0.242	0.279
Laptop	WLAN: Main, WWAN:Main	2437	836 GSM	0.067	0.123	0.190
Laptop	WLAN: Aux, WWAN:Main	2437	836 GSM	0.033	0.123	0.156
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 EGSM	0.043	0.021	0.064
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.203	0.016	0.219
Tablet, SL	WLAN: Main	2437	836 EGSM	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.037	0.087	0.124
Laptop	WLAN: Main, WWAN:Main	2437	836 EGSM	0.067	0.146	0.213
Laptop	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.033	0.146	0.179
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 GSM	0.043	0.044	0.087
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.203	0.050	0.253
Tablet, SL	WLAN: Main	2437	836 GSM	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.037	0.178	0.215
Laptop	WLAN: Main, WWAN:Main	2437	836 GSM	0.067	0.168	0.235
Laptop	WLAN: Aux, WWAN:Main	2437	836 GSM	0.033	0.168	0.201
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 EGSM	0.043	0.034	0.077
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.203	0.057	0.260
Tablet, SL	WLAN: Main	2437	836 EGSM	0.053	----	0.053
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.037	0.101	0.138
Laptop	WLAN: Main, WWAN:Main	2437	836 EGSM	0.067	0.110	0.177
Laptop	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.033	0.110	0.143

Note 1: Refer to paragraphs 9.1 and 9.2 for the detailed definition of EUT Position

Note 2: The 1g SAR measurement of WWAN only.

Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR

Note 4: Refer to Para 9.4 ~ 9.7 for WLAN+Bluetooth 1g SAR and WWAN 1g SAR Measurement data summary.

9.11 802.11g + WWAN Tosa (EV-DO) : FCCID N7N-MC5720 + Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Laptop	WLAN: Main, WWAN:Main	2437	1880 EV-DO	0.041	0.029	0.070
Laptop	WLAN: Aux, WWAN:Main	2437	1880 EV-DO	0.118	0.113	0.231
Tablet, PL	WLAN: Main, WWAN:Main	2437	1880 EV-DO	0.039	----	0.039
Tablet, PP	WLAN: Aux, WWAN:Main	2437	1880 EV-DO	0.058	0.376	0.434
Tablet, SL	WLAN: Main	2437	1880 EV-DO	0.049	0.363	0.412
Tablet, SP	WLAN: Aux, WWAN:Main	2437	1880 EV-DO	0.023	0.363	0.386
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 EV-DO	0.041	0.057	0.098
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 EV-DO	0.118	0.076	0.194
Tablet, SL	WLAN: Main	2437	836 EV-DO	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 EV-DO	0.058	0.191	0.249
Laptop	WLAN: Main, WWAN:Main	2437	836 EV-DO	0.049	0.193	0.242
Laptop	WLAN: Aux, WWAN:Main	2437	836 EV-DO	0.023	0.193	0.216

Note 1: Refer to paragraphs 9.1 and 9.2 for the detailed definition of EUT Position

Note 2: The 1g SAR measurement of WWAN only.

Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR

Note 4: Refer to Para 9.4 ~ 9.7 for WLAN+Bluetooth 1g SAR and WWAN 1g SAR Measurement data summary.

9.12 802.11g + Karafuto (GSM, EGSM, UMTS) : FCCID N7NMC8765 +Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 GSM	0.041	0.087	0.128
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.118	0.096	0.214
Tablet, SL	WLAN: Main	2437	836 GSM	0.039	-----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.058	0.314	0.372
Laptop	WLAN: Main, WWAN:Main	2437	836 GSM	0.049	0.505	**0.554**
Laptop	WLAN: Aux, WWAN:Main	2437	836 GSM	0.023	0.505	0.528
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 EGSM	0.041	0.028	0.069
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.118	0.044	0.162
Tablet, SL	WLAN: Main	2437	836 EGSM	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.058	0.108	0.166
Laptop	WLAN: Main, WWAN:Main	2437	836 EGSM	0.049	0.181	0.230
Laptop	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.023	0.181	0.204
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 UMTS	0.041	0.037	0.078
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 UMTS	0.118	0.063	0.181
Tablet, SL	WLAN: Main	2437	836 UMTS	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 UMTS	0.058	0.231	0.289
Laptop	WLAN: Main, WWAN:Main	2437	836 UMTS	0.049	0.260	0.309
Laptop	WLAN: Aux, WWAN:Main	2437	836 UMTS	0.023	0.260	0.283
Tablet, PL	WLAN: Main, WWAN:Main	2437	1880 GSM	0.041	0.027	0.068
Tablet, PP	WLAN: Aux, WWAN:Main	2437	1880 GSM	0.118	0.111	0.229
Tablet, SL	WLAN: Main	2437	1880 GSM	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	1880 GSM	0.058	0.448	0.516
Laptop	WLAN: Main, WWAN:Main	2437	1880 GSM	0.049	0.372	0.421
Laptop	WLAN: Aux, WWAN:Main	2437	1880 GSM	0.023	0.372	0.395
Tablet, PL	WLAN: Main, WWAN:Main	2437	1880 EGSM	0.041	0.037	0.078
Tablet, PP	WLAN: Aux, WWAN:Main	2437	1880 EGSM	0.118	0.060	0.178
Tablet, SL	WLAN: Main	2437	1880 EGSM	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	1880 EGSM	0.058	0.207	0.265
Laptop	WLAN: Main, WWAN:Main	2437	1880 EGSM	0.049	0.183	0.232
Laptop	WLAN: Aux, WWAN:Main	2437	1880 EGSM	0.023	0.183	0.206
Tablet, PL	WLAN: Main, WWAN:Main	2437	1880 UMTS	0.041	0.036	0.077
Tablet, PP	WLAN: Aux, WWAN:Main	2437	1880 UMTS	0.118	0.066	0.184
Tablet, SL	WLAN: Main	2437	1880 UMTS	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	1880 UMTS	0.058	0.187	0.245
Laptop	WLAN: Main, WWAN:Main	2437	1880 UMTS	0.049	0.206	0.255
Laptop	WLAN: Aux, WWAN:Main	2437	1880 UMTS	0.023	0.206	0.229

9.13 802.11g + Akita (GSM, EGSM) : FCCID N7NMC8755 +Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 GSM	0.041	0.019	0.060
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.118	0.074	0.192
Tablet, SL	WLAN: Main	2437	836 GSM	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.058	0.242	0.300
Laptop	WLAN: Main, WWAN:Main	2437	836 GSM	0.049	0.123	0.172
Laptop	WLAN: Aux, WWAN:Main	2437	836 GSM	0.023	0.123	0.146
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 EGSM	0.041	0.021	0.062
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.118	0.016	0.134
Tablet, SL	WLAN: Main	2437	836 EGSM	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.058	0.087	0.145
Laptop	WLAN: Main, WWAN:Main	2437	836 EGSM	0.049	0.146	0.195
Laptop	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.023	0.146	0.169
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 GSM	0.041	0.044	0.085
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.118	0.050	0.168
Tablet, SL	WLAN: Main	2437	836 GSM	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 GSM	0.058	0.178	0.236
Laptop	WLAN: Main, WWAN:Main	2437	836 GSM	0.049	0.168	0.217
Laptop	WLAN: Aux, WWAN:Main	2437	836 GSM	0.023	0.168	0.191
Tablet, PL	WLAN: Main, WWAN:Main	2437	836 EGSM	0.041	0.034	0.075
Tablet, PP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.118	0.057	0.175
Tablet, SL	WLAN: Main	2437	836 EGSM	0.039	----	0.039
Tablet, SP	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.058	0.101	0.159
Laptop	WLAN: Main, WWAN:Main	2437	836 EGSM	0.049	0.110	0.159
Laptop	WLAN: Aux, WWAN:Main	2437	836 EGSM	0.023	0.110	0.133

Note 1: Refer to paragraphs 9.1 and 9.2 for the detailed definition of EUT Position

Note 2: The 1g SAR measurement of WWAN only.

Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR

Note 4: Refer to Para 9.4 ~ 9.7 for WLAN+Bluetooth 1g SAR and WWAN 1g SAR Measurement data summary.

9.14 802.11a (5150MHz ~5350NHz) + WWAN Tosa (EV-DO) : FCCID N7N-MC5720 + Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Laptop	WLAN: Main, WWAN:Main	5260	1880 EV-DO	0.133	0.029	0.162
Laptop	WLAN: Aux, WWAN:Main	5260	1880 EV-DO	0.107	0.113	0.220
Tablet, PL	WLAN: Main, WWAN:Main	5260	1880 EV-DO	0.097	----	0.097
Tablet, PP	WLAN: Aux, WWAN:Main	5260	1880 EV-DO	0.079	0.376	0.455
Tablet, SL	WLAN: Main	5260	1880 EV-DO	0.166	0.363	0.529
Tablet, SP	WLAN: Aux, WWAN:Main	5260	1880 EV-DO	0.081	0.363	0.444
Tablet, PL	WLAN: Main, WWAN:Main	5260	836 EV-DO	0.133	0.057	0.190
Tablet, PP	WLAN: Aux, WWAN:Main	5260	836 EV-DO	0.107	0.076	0.183
Tablet, SL	WLAN: Main	5260	836 EV-DO	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	836 EV-DO	0.079	0.191	0.270
Laptop	WLAN: Main, WWAN:Main	5260	836 EV-DO	0.166	0.193	0.359
Laptop	WLAN: Aux, WWAN:Main	5260	836 EV-DO	0.081	0.193	0.274

Note 1: Refer to paragraphs 9.1 and 9.2 for the detailed definition of EUT Position

Note 2: The 1g SAR measurement of WWAN only.

Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR

Note 4: Refer to Para 9.4 ~ 9.7 for WLAN+Bluetooth 1g SAR and WWAN 1g SAR Measurement data summary.

9.15 802.11a (5150MHz ~5350NHz) + Karafuto (GSM, EGSM, UMTS) : FCCID N7NMC8765 +Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Tablet, PL	WLAN: Main, WWAN:Main	5260	836 GSM	0.133	0.087	0.220
Tablet, PP	WLAN: Aux, WWAN:Main	5260	836 GSM	0.107	0.096	0.203
Tablet, SL	WLAN: Main	5260	836 GSM	0.097	-----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	836 GSM	0.079	0.314	0.391
Laptop	WLAN: Main, WWAN:Main	5260	836 GSM	0.166	0.505	**0.671**
Laptop	WLAN: Aux, WWAN:Main	5260	836 GSM	0.081	0.505	0.586
Tablet, PL	WLAN: Main, WWAN:Main	5260	836 EGSM	0.133	0.028	0.161
Tablet, PP	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.107	0.044	0.151
Tablet, SL	WLAN: Main	5260	836 EGSM	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.079	0.108	0.187
Laptop	WLAN: Main, WWAN:Main	5260	836 EGSM	0.166	0.181	0.347
Laptop	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.081	0.181	0.362
Tablet, PL	WLAN: Main, WWAN:Main	5260	836 UMTS	0.133	0.037	0.170
Tablet, PP	WLAN: Aux, WWAN:Main	5260	836 UMTS	0.107	0.063	0.170
Tablet, SL	WLAN: Main	5260	836 UMTS	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	836 UMTS	0.079	0.231	0.310
Laptop	WLAN: Main, WWAN:Main	5260	836 UMTS	0.166	0.260	0.426
Laptop	WLAN: Aux, WWAN:Main	5260	836 UMTS	0.081	0.260	0.341
Tablet, PL	WLAN: Main, WWAN:Main	5260	1880 GSM	0.133	0.027	0.160
Tablet, PP	WLAN: Aux, WWAN:Main	5260	1880 GSM	0.107	0.111	0.218
Tablet, SL	WLAN: Main	5260	1880 GSM	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	1880 GSM	0.079	0.448	0.527
Laptop	WLAN: Main, WWAN:Main	5260	1880 GSM	0.166	0.372	0.538
Laptop	WLAN: Aux, WWAN:Main	5260	1880 GSM	0.081	0.372	0.453
Tablet, PL	WLAN: Main, WWAN:Main	5260	1880 EGSM	0.133	0.037	0.170
Tablet, PP	WLAN: Aux, WWAN:Main	5260	1880 EGSM	0.107	0.060	0.167
Tablet, SL	WLAN: Main	5260	1880 EGSM	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	1880 EGSM	0.079	0.207	0.286
Laptop	WLAN: Main, WWAN:Main	5260	1880 EGSM	0.166	0.183	0.349
Laptop	WLAN: Aux, WWAN:Main	5260	1880 EGSM	0.081	0.183	0.264
Tablet, PL	WLAN: Main, WWAN:Main	5260	1880 UMTS	0.133	0.036	0.169
Tablet, PP	WLAN: Aux, WWAN:Main	5260	1880 UMTS	0.107	0.066	0.173
Tablet, SL	WLAN: Main	5260	1880 UMTS	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	1880 UMTS	0.079	0.187	0.166
Laptop	WLAN: Main, WWAN:Main	5260	1880 UMTS	0.166	0.206	0.372
Laptop	WLAN: Aux, WWAN:Main	5260	1880 UMTS	0.081	0.206	0.287

9.16 802.11a (5150MHz ~5350NHz) + Akita (GSM, EGSM) : FCCID N7NMC8755 +Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Tablet, PL	WLAN: Main, WWAN:Main	5260	836 GSM	0.133	0.019	0.152
Tablet, PP	WLAN: Aux, WWAN:Main	5260	836 GSM	0.107	0.074	0.181
Tablet, SL	WLAN: Main	5260	836 GSM	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	836 GSM	0.079	0.242	0.321
Laptop	WLAN: Main, WWAN:Main	5260	836 GSM	0.166	0.123	0.289
Laptop	WLAN: Aux, WWAN:Main	5260	836 GSM	0.081	0.123	0.204
Tablet, PL	WLAN: Main, WWAN:Main	5260	836 EGSM	0.133	0.021	0.154
Tablet, PP	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.107	0.016	0.123
Tablet, SL	WLAN: Main	5260	836 EGSM	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.079	0.087	0.166
Laptop	WLAN: Main, WWAN:Main	5260	836 EGSM	0.166	0.146	0.312
Laptop	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.081	0.146	0.327
Tablet, PL	WLAN: Main, WWAN:Main	5260	836 GSM	0.133	0.044	0.177
Tablet, PP	WLAN: Aux, WWAN:Main	5260	836 GSM	0.107	0.050	0.157
Tablet, SL	WLAN: Main	5260	836 GSM	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	836 GSM	0.079	0.178	0.257
Laptop	WLAN: Main, WWAN:Main	5260	836 GSM	0.166	0.168	0.334
Laptop	WLAN: Aux, WWAN:Main	5260	836 GSM	0.081	0.168	0.249
Tablet, PL	WLAN: Main, WWAN:Main	5260	836 EGSM	0.133	0.034	0.167
Tablet, PP	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.107	0.057	0.157
Tablet, SL	WLAN: Main	5260	836 EGSM	0.097	----	0.097
Tablet, SP	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.079	0.101	0.180
Laptop	WLAN: Main, WWAN:Main	5260	836 EGSM	0.166	0.110	0.276
Laptop	WLAN: Aux, WWAN:Main	5260	836 EGSM	0.081	0.110	0.191

Note 1: Refer to paragraphs 9.1 and 9.2 for the detailed definition of EUT Position

Note 2: The 1g SAR measurement of WWAN only.

Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR

Note 4: Refer to Para 9.4 ~ 9.7 for WLAN+Bluetooth 1g SAR and WWAN 1g SAR Measurement data summary.

9.17 802.11a (5725MHz ~5850NHz) + WWAN Tosa (EV-DO) : FCCID N7N-MC5720 + Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Laptop	WLAN: Main, WWAN:Main	5785	1880 EV-DO	0.113	0.029	0.142
Laptop	WLAN: Aux, WWAN:Main	5785	1880 EV-DO	0.175	0.113	0.288
Tablet, PL	WLAN: Main, WWAN:Main	5785	1880 EV-DO	0.135	----	0.135
Tablet, PP	WLAN: Aux, WWAN:Main	5785	1880 EV-DO	0.079	0.376	0.456
Tablet, SL	WLAN: Main	5785	1880 EV-DO	0.185	0.363	0.548
Tablet, SP	WLAN: Aux, WWAN:Main	5785	1880 EV-DO	0.171	0.363	0.534
Tablet, PL	WLAN: Main, WWAN:Main	5785	836 EV-DO	0.113	0.057	0.170
Tablet, PP	WLAN: Aux, WWAN:Main	5785	836 EV-DO	0.175	0.076	0.251
Tablet, SL	WLAN: Main	5785	836 EV-DO	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	836 EV-DO	0.079	0.191	0.270
Laptop	WLAN: Main, WWAN:Main	5785	836 EV-DO	0.185	0.193	0.378
Laptop	WLAN: Aux, WWAN:Main	5785	836 EV-DO	0.171	0.193	0.364

Note 1: Refer to paragraphs 9.1 and 9.2 for the detailed definition of EUT Position

Note 2: The 1g SAR measurement of WWAN only.

Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR

Note 4: Refer to Para 9.4 ~ 9.7 for WLAN+Bluetooth 1g SAR and WWAN 1g SAR Measurement data summary.

9.18 802.11a (5725MHz ~5850NHz) + Karafuto (GSM, EGSM, UMTS) : FCCID N7NMC8765 +Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Tablet, PL	WLAN: Main, WWAN:Main	5785	836 GSM	0.113	0.087	0.200
Tablet, PP	WLAN: Aux, WWAN:Main	5785	836 GSM	0.175	0.096	0.271
Tablet, SL	WLAN: Main	5785	836 GSM	0.135	-----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	836 GSM	0.079	0.314	0.391
Laptop	WLAN: Main, WWAN:Main	5785	836 GSM	0.185	0.505	**0.690**
Laptop	WLAN: Aux, WWAN:Main	5785	836 GSM	0.171	0.505	0.676
Tablet, PL	WLAN: Main, WWAN:Main	5785	836 EGSM	0.113	0.028	0.141
Tablet, PP	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.175	0.044	0.219
Tablet, SL	WLAN: Main	5785	836 EGSM	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.079	0.108	0.187
Laptop	WLAN: Main, WWAN:Main	5785	836 EGSM	0.185	0.181	0.366
Laptop	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.171	0.181	0.352
Tablet, PL	WLAN: Main, WWAN:Main	5785	836 UMTS	0.113	0.037	0.150
Tablet, PP	WLAN: Aux, WWAN:Main	5785	836 UMTS	0.175	0.063	0.238
Tablet, SL	WLAN: Main	5785	836 UMTS	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	836 UMTS	0.079	0.231	0.310
Laptop	WLAN: Main, WWAN:Main	5785	836 UMTS	0.185	0.260	0.345
Laptop	WLAN: Aux, WWAN:Main	5785	836 UMTS	0.171	0.260	0.431
Tablet, PL	WLAN: Main, WWAN:Main	5785	1880 GSM	0.113	0.027	0.140
Tablet, PP	WLAN: Aux, WWAN:Main	5785	1880 GSM	0.175	0.111	0.286
Tablet, SL	WLAN: Main	5785	1880 GSM	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	1880 GSM	0.079	0.448	0.527
Laptop	WLAN: Main, WWAN:Main	5785	1880 GSM	0.185	0.372	0.557
Laptop	WLAN: Aux, WWAN:Main	5785	1880 GSM	0.171	0.372	0.543
Tablet, PL	WLAN: Main, WWAN:Main	5785	1880 EGSM	0.113	0.037	0.150
Tablet, PP	WLAN: Aux, WWAN:Main	5785	1880 EGSM	0.175	0.060	0.235
Tablet, SL	WLAN: Main	5785	1880 EGSM	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	1880 EGSM	0.079	0.207	0.286
Laptop	WLAN: Main, WWAN:Main	5785	1880 EGSM	0.185	0.183	0.368
Laptop	WLAN: Aux, WWAN:Main	5785	1880 EGSM	0.171	0.183	0.354
Tablet, PL	WLAN: Main, WWAN:Main	5785	1880 UMTS	0.113	0.036	0.149
Tablet, PP	WLAN: Aux, WWAN:Main	5785	1880 UMTS	0.175	0.066	0.241
Tablet, SL	WLAN: Main	5785	1880 UMTS	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	1880 UMTS	0.079	0.187	0.276
Laptop	WLAN: Main, WWAN:Main	5785	1880 UMTS	0.185	0.206	0.391
Laptop	WLAN: Aux, WWAN:Main	5785	1880 UMTS	0.171	0.206	0.377

9.19 802.11a (5725MHz ~5850NHz) + Akita (GSM, EGSM) : FCCID N7NMC8755 +Bluetooth

SAR Measurement						
Ambient Temperature (°C) : 22 ±1				Relative Humidity (%): 44 ~ 50		
Liquid Temperature (°C) : 21.5±1				Depth of Liquid (cm):>15		
EUT Position (See Note 1)	Transmitting Antenna (Bluetooth always on)	Frequency (MHz)		WLAN SAR 1g (W/Kg)	WWAN SAR 1g (W/Kg) (Note 2)	SUM SAR 1g (W/Kg) (Note 3)
		WLAN	WWAN			
Tablet, PL	WLAN: Main, WWAN:Main	5785	836 GSM	0.113	0.019	0.132
Tablet, PP	WLAN: Aux, WWAN:Main	5785	836 GSM	0.175	0.074	0.249
Tablet, SL	WLAN: Main	5785	836 GSM	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	836 GSM	0.079	0.242	0.321
Laptop	WLAN: Main, WWAN:Main	5785	836 GSM	0.185	0.123	0.308
Laptop	WLAN: Aux, WWAN:Main	5785	836 GSM	0.171	0.123	0.294
Tablet, PL	WLAN: Main, WWAN:Main	5785	836 EGSM	0.113	0.021	0.134
Tablet, PP	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.175	0.016	0.191
Tablet, SL	WLAN: Main	5785	836 EGSM	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.079	0.087	0.166
Laptop	WLAN: Main, WWAN:Main	5785	836 EGSM	0.185	0.146	0.331
Laptop	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.171	0.146	0.317
Tablet, PL	WLAN: Main, WWAN:Main	5785	836 GSM	0.113	0.044	0.157
Tablet, PP	WLAN: Aux, WWAN:Main	5785	836 GSM	0.175	0.050	0.225
Tablet, SL	WLAN: Main	5785	836 GSM	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	836 GSM	0.079	0.178	0.257
Laptop	WLAN: Main, WWAN:Main	5785	836 GSM	0.185	0.168	0.353
Laptop	WLAN: Aux, WWAN:Main	5785	836 GSM	0.171	0.168	0.339
Tablet, PL	WLAN: Main, WWAN:Main	5785	836 EGSM	0.113	0.034	0.147
Tablet, PP	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.175	0.057	0.232
Tablet, SL	WLAN: Main	5785	836 EGSM	0.135	----	0.135
Tablet, SP	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.079	0.101	0.180
Laptop	WLAN: Main, WWAN:Main	5785	836 EGSM	0.185	0.110	0.295
Laptop	WLAN: Aux, WWAN:Main	5785	836 EGSM	0.171	0.110	0.281

Note 1: Refer to paragraphs 9.1 and 9.2 for the detailed definition of EUT Position

Note 2: The 1g SAR measurement of WWAN only.

Note 3: SUM 1g SAR = WLAN+Bluetooth 1g SAR + WWAN 1g SAR

Note 4: Refer to Para 9.4 ~ 9.7 for WLAN+Bluetooth 1g SAR and WWAN 1g SAR Measurement data summary.

10. SAR System Validation Data

10.1 835 MHz System Validation Data

Measurement Date : 28-Aug-2006

Product Data
Device Name : Dipole-835
Serial No. : Validation
Type : Dipole
Model : Standard
Frequency : 835.00 MHz
Max. Transmit Pwr : 1 W
Drift Time : 0 min(s)
Length : 161 mm
Width : 3.6 mm
Depth : 89.8 mm
Antenna Type : Internal
Orientation : Touch
Power Drift-Start : 10.371 W/kg
Power Drift-Finish: 10.225 W/kg
Power Drift (%) : -1.404

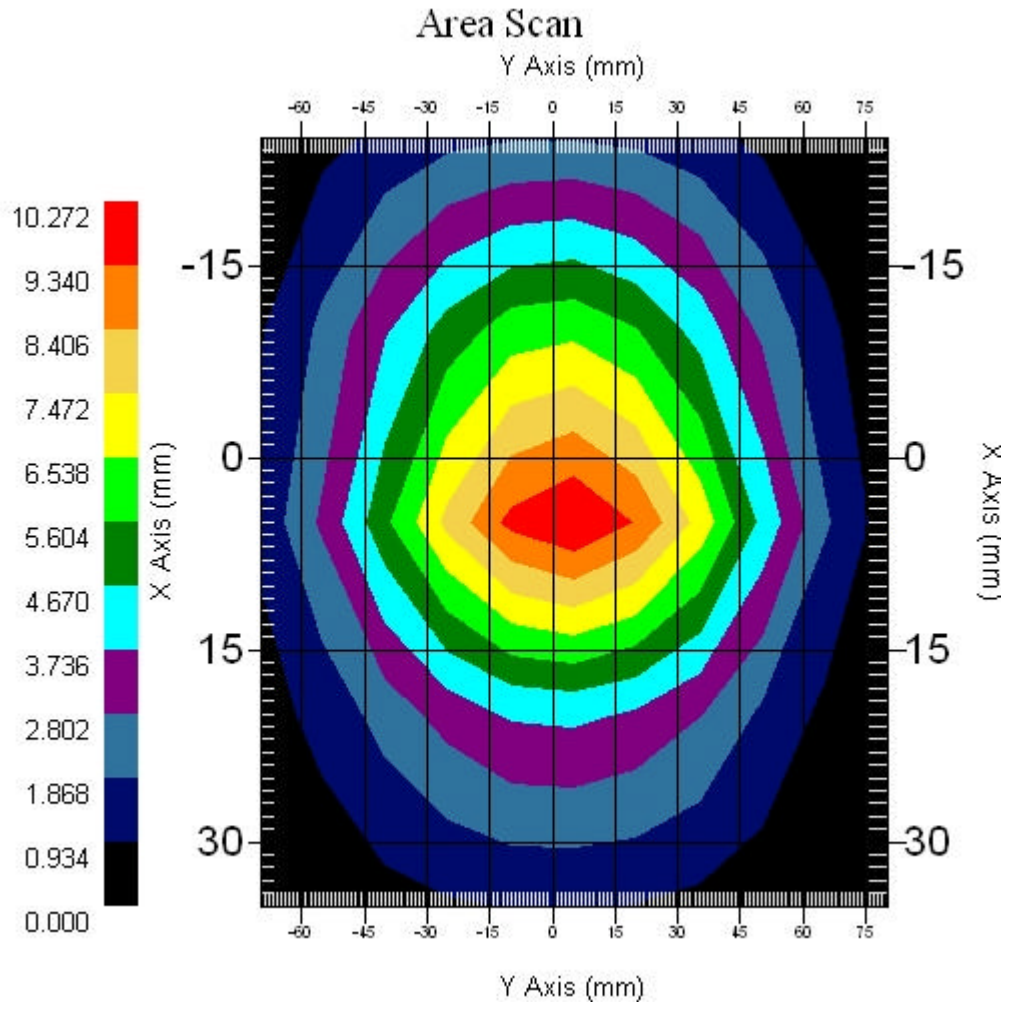
Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : uni_1

Tissue Data
Type : HEAD
Serial No. : 835HEAD
Frequency : 835.00 MHz
Last Calib. Date : 30-Aug-2006
Temperature : 22.00 °C
Ambient Temp. : 22.50 °C
Humidity : 48.00 RH%
Epsilon : 41.14 F/m
Sigma : 0.89 S/m
Density : 1000.00 kg/cu. m

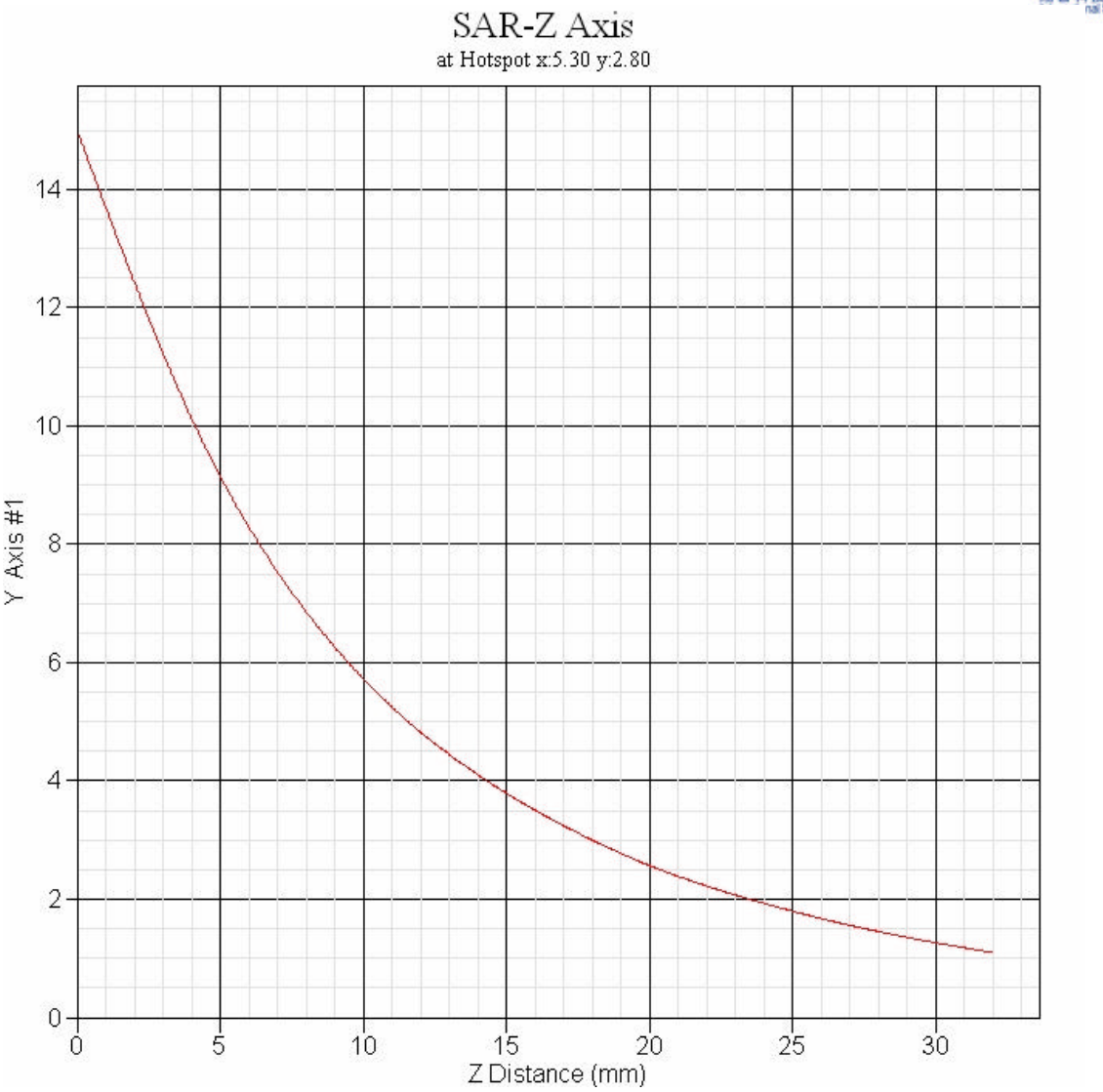
Probe Data
Name : E-field Probe
Model : ALS-E-020
Type : E-Field Triangle
Serial No. : 266
Last Calib. Date : 22-Jun-2006
Frequency : 835.00 MHz
Duty Cycle Factor: 1
Conversion Factor: 6.6
Probe Sensitivity: 1.20 1.20 1.20 $\mu V/(V/m)^2$
Compression Point: 95.00 mV
Offset : 1.56 mm

Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 5x11x1 : Measurement x=15mm, y=15mm, z=4mm
Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data
DUT Position : Touch
Separation : 0
Channel : Mid - 835MHz



1 gram SAR value : 9.384 W/kg
10 gram SAR value : 5.701 W/kg
Area Scan Peak SAR : 10.272 W/kg
Zoom Scan Peak SAR : 15.013 W/kg

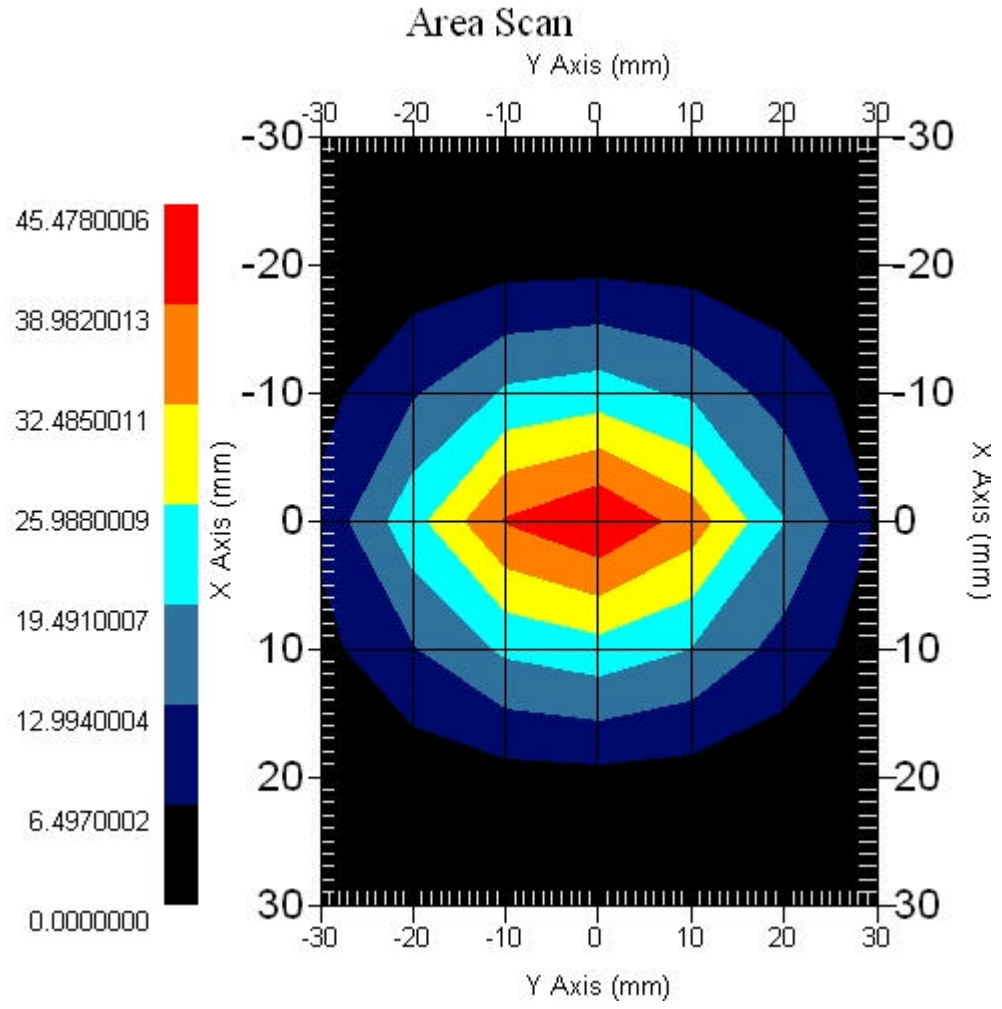

SAR-Z Axis
at Hotspot x:5.30 y:2.80
Y Axis #1
Z Distance (mm)
0
2
4
6
8
10
12
14
0
5
10
15
20
25
30

10.2 *1900 MHz System Validation Data*

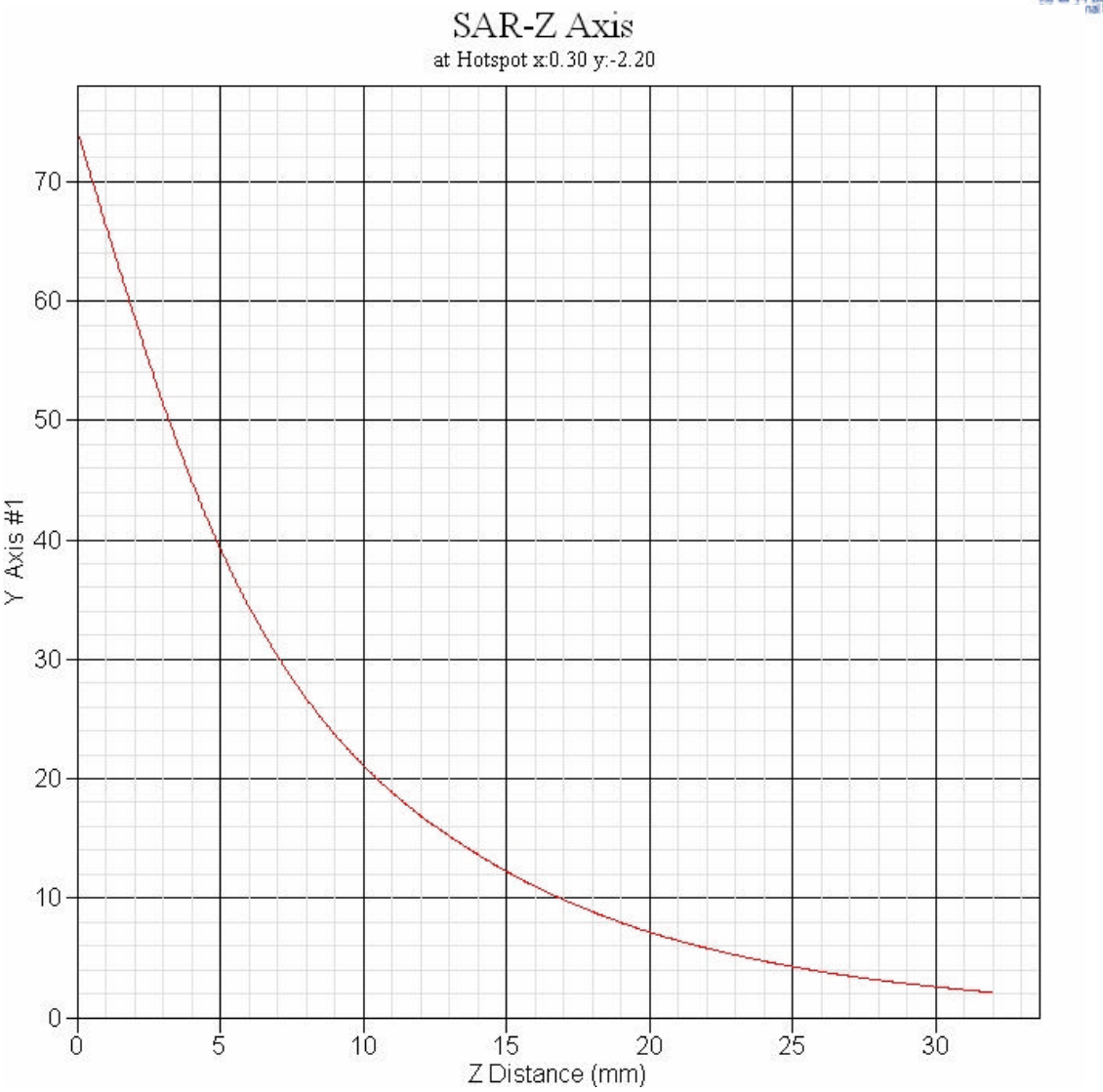
```
Measurement Date  : 01-Sep-2006

Product Data
Device Name       : Dipole-1900
Serial No.        : Validation
Type              : Dipole
Model             : Standard
Frequency         : 1900.00 MHz
Max. Transmit Pwr : 1 W
Drift Time        : 0 min(s)
Length            : 68 mm
Width             : 3.6 mm
Depth             : 39.5 mm
Antenna Type      : Internal
Orientation       : Touch
Power Drift-Start : 45.471 W/kg
Power Drift-Finish: 44.438 W/kg
Power Drift (%)   : -2.272
Picture           :

Phantom Data
Name              : APREL-Uni
Type              : Uni-Phantom
Size (mm)         : 280 x 280 x 200
Serial No.        : System Default
Location          : Center
Description       : uni_1

Tissue Data
Type              : HEAD
Serial No.        : 1900HEAD
Frequency         : 1900.00 MHz
Last Calib. Date  : 01-Sep-2006
Temperature       : 22.40 °C
Ambient Temp.     : 22.80 °C
Humidity          : 46.00 RH%
Epsilon           : 40.53 F/m
Sigma             : 1.38 S/m
Density           : 1000.00 kg/cu. m

Probe Data
Name              : E-field Probe
Model             : ALS-E-020
Type              : E-Field Triangle
Serial No.        : 266
Last Calib. Date  : 22-Jun-2006
Frequency         : 1900.00 MHz
Duty Cycle Factor: 1
Conversion Factor: 5.22
Probe Sensitivity: 1.20  1.20  1.20   μV/(V/m)²
Compression Point: 95.00 mV
Offset            : 1.56 mm
```

Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 7x7x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm

Other Data
DUT Position : Touch
Separation : 0
Channel : Mid - 1900MHz



1 gram SAR value : 38.699 W/kg
10 gram SAR value : 19.256 W/kg
Area Scan Peak SAR : 45.478 W/kg
Zoom Scan Peak SAR : 74.365 W/kg

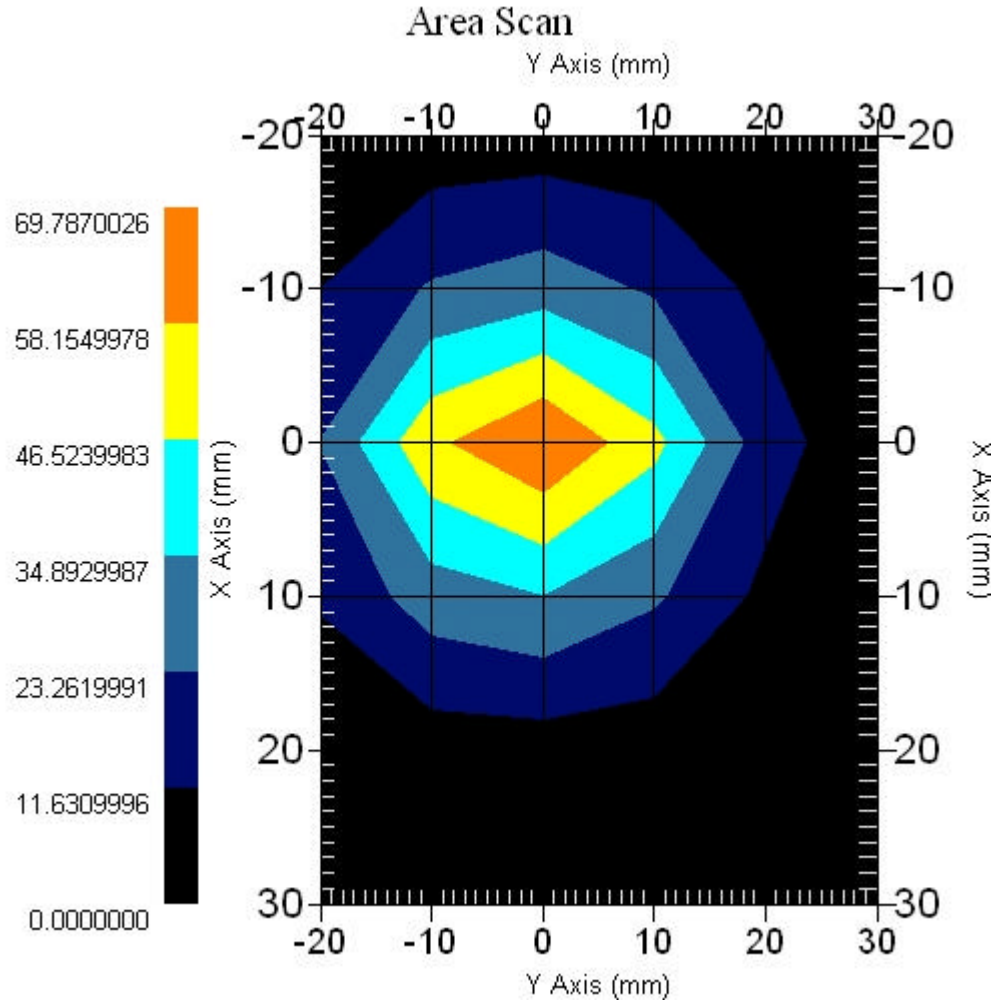

SAR-Z Axis
at Hotspot x:0.30 y:-2.20
Y Axis #1
Z Distance (mm)
0
10
20
30
40
50
60
70
0
5
10
15
20
25
30

10.3 2450 MHz System Validation Data

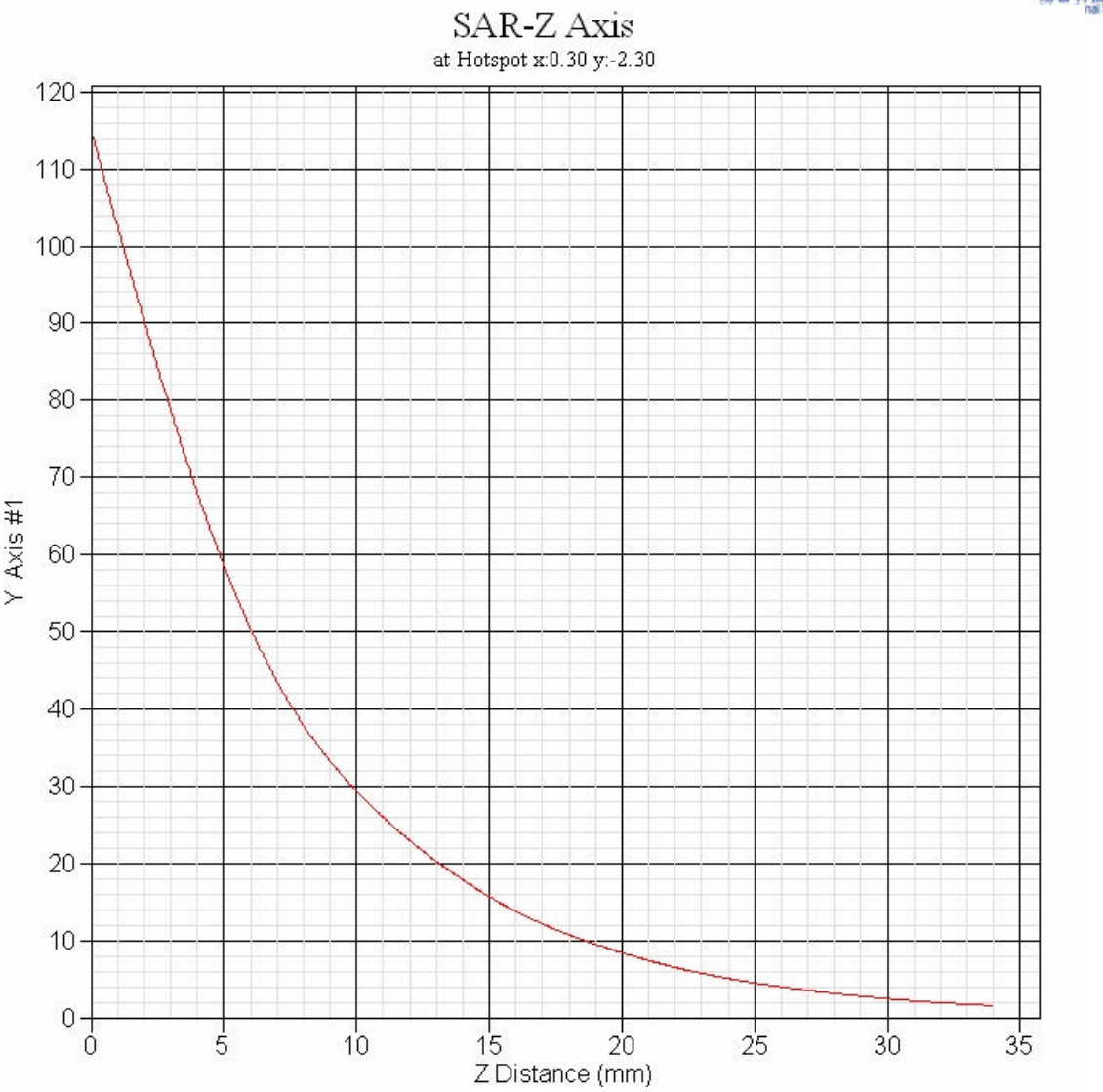
```
Measurement Date  : 26-Aug-2006

Product Data
Device Name       : Dipole-2450
Serial No.        : Validation
Type              : Dipole
Model             : Standard
Frequency         : 2450.00 MHz
Max. Transmit Pwr : 1 W
Drift Time        : 0 min(s)
Length            : 51.5 mm
Width             : 3.6 mm
Depth             : 30.4 mm
Antenna Type      : Internal
Orientation       : Touch
Power Drift-Start : 70.028 W/kg
Power Drift-Finish: 67.707 W/kg
Power Drift (%)   : -3.314
Picture           :

Phantom Data
Name             : APREL-Uni
Type             : Uni-Phantom
Size (mm)        : 280 x 280 x 200
Serial No.       : System Default
Location         : Center
Description      : uni_1

Tissue Data
Type             : HEAD
Serial No.       : 2450HEAD
Frequency        : 2450.00 MHz
Last Calib. Date : 26-Aug-2006
Temperature      : 22.60 °C
Ambient Temp.    : 22.90 °C
Humidity         : 50.00 RH%
Epsilon          : 39.94 F/m
Sigma            : 1.75 S/m
Density          : 1000.00 kg/cu. m

Probe Data
Name             : E-field Probe
Model            : ALS-E-020
Type             : E-Field Triangle
Serial No.       : 266
Last Calib. Date : 22-Jun-2006
Frequency        : 2450.00 MHz
Duty Cycle Factor: 1
Conversion Factor: 4.9
Probe Sensitivity: 1.20  1.20  1.20   μV/(V/m)²
Compression Point: 95.00 mV
Offset           : 1.56 mm
```

Measurement Data
Crest Factor : 1
Area Scan : 6x6x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 5x5x11 : Measurement x=8mm, y=8mm, z=3mm

Other Data
DUT Position : Touch
Separation : 0
Channel : Mid - 2450MHz



1 gram SAR value : 55.957 W/kg
10 gram SAR value : 25.595 W/kg
Area Scan Peak SAR : 69.787 W/kg
Zoom Scan Peak SAR : 115.101 W/kg

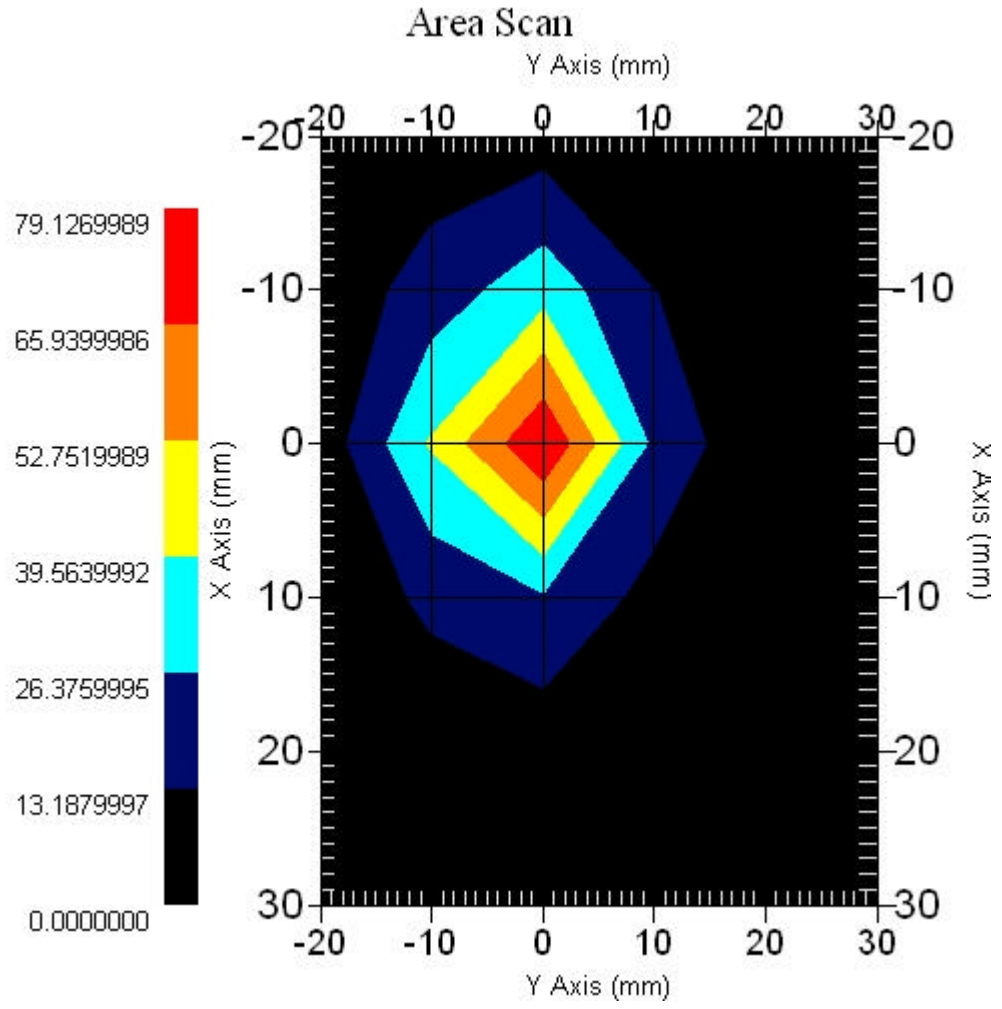

SAR-Z Axis
at Hotspot x:0.30 y:-2.30
Y Axis #1
Z Distance (mm)
0
10
20
30
40
50
60
70
80
90
100
110
120
0
5
10
15
20
25
30
35

10.4 5200 MHz System Validation Data

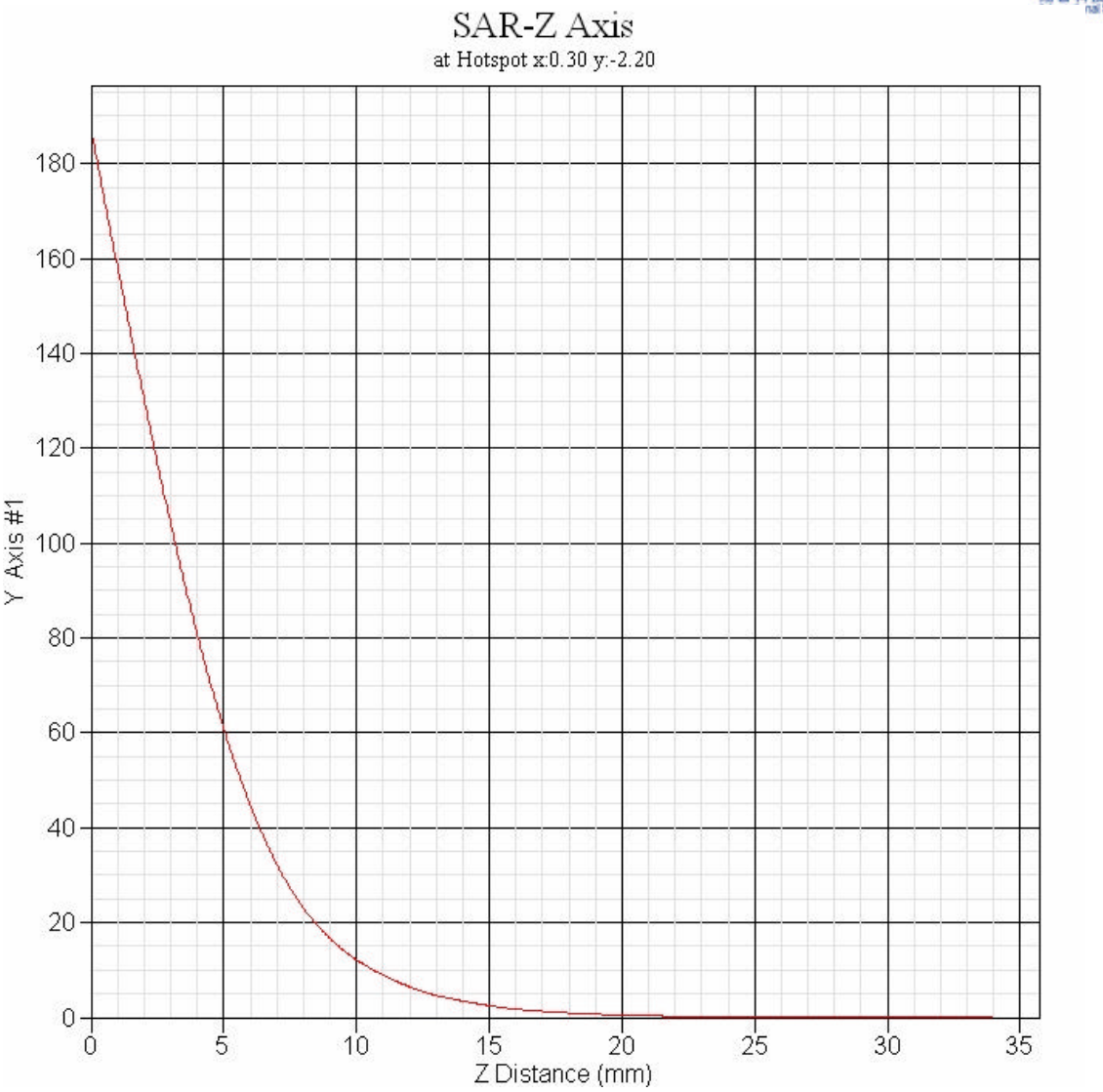
```
Measurement Date  : 28-Aug-2006

Product Data
Device Name       : Dipole-5200
Serial No.        : 230-00802
Type              : Dipole
Model             : ALS-D-5200-S-2
Frequency         : 5200.00 MHz
Max. Transmit Pwr : 1 W
Drift Time        : 0 min(s)
Length            : 23.4 mm
Width             : 3.6 mm
Depth             : 15.4 mm
Antenna Type      : Internal
Orientation       : Touch
Power Drift-Start : 78.465 W/kg
Power Drift-Finish: 79.927 W/kg
Power Drift (%)   : 1.863
Picture           :

Phantom Data
Name             : APREL-Uni
Type             : Uni-Phantom
Size (mm)        : 280 x 280 x 200
Serial No.       : System Default
Location         : Center
Description      : uni_1

Tissue Data
Type             : HEAD
Serial No.       : 5200-H-AU-18
Frequency        : 5200.00 MHz
Last Calib. Date : 28-Aug-2005
Temperature      : 22.20 °C
Ambient Temp.    : 22.60 °C
Humidity         : 55.00 RH%
Epsilon          : 37.33 F/m
Sigma            : 4.91 S/m
Density          : 1000.00 kg/cu. m

Probe Data
Name             : E-field Probe
Model            : ALS-E-020
Type             : E-Field Triangle
Serial No.       : 266
Last Calib. Date : 22-Jun-2006
Frequency        : 5200.00 MHz
Duty Cycle Factor: 1
Conversion Factor: 3.82
Probe Sensitivity: 1.20  1.20  1.20   μV/(V/m)²
Compression Point: 95.00 mV
Offset           : 1.56 mm
```

Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 6x6x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 9x9x13 : Measurement x=4mm, y=4mm, z=2.5mm

Other Data
DUT Position : Touch
Separation : 0
Channel : Mid - 5200MHz



1 gram SAR value : 61.924 W/kg
10 gram SAR value : 18.832 W/kg
Area Scan Peak SAR : 79.127 W/kg
Zoom Scan Peak SAR : 187.154 W/kg

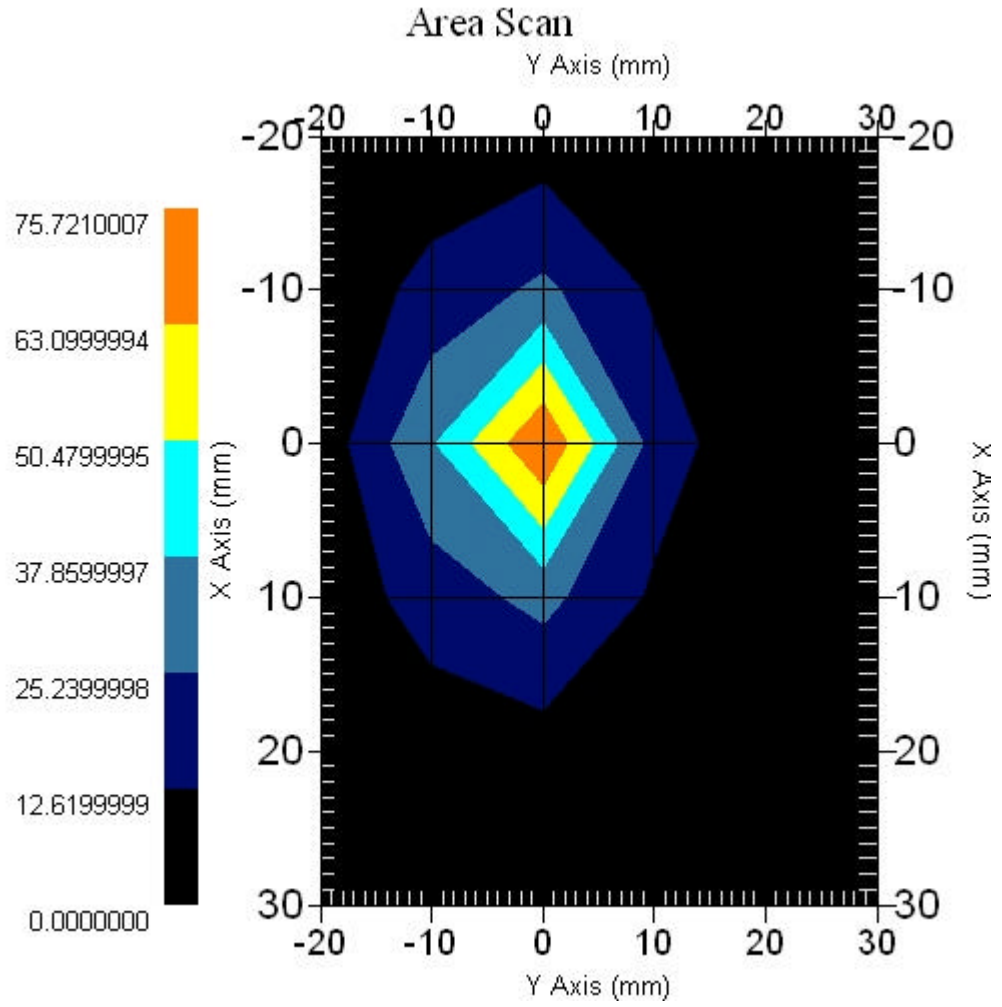

SAR-Z Axis
at Hotspot x:0.30 y:-2.20
Y Axis #1
Z Distance (mm)
0
20
40
60
80
100
120
140
160
180
0
5
10
15
20
25
30
35

10.5 5800 MHz System Validation Data

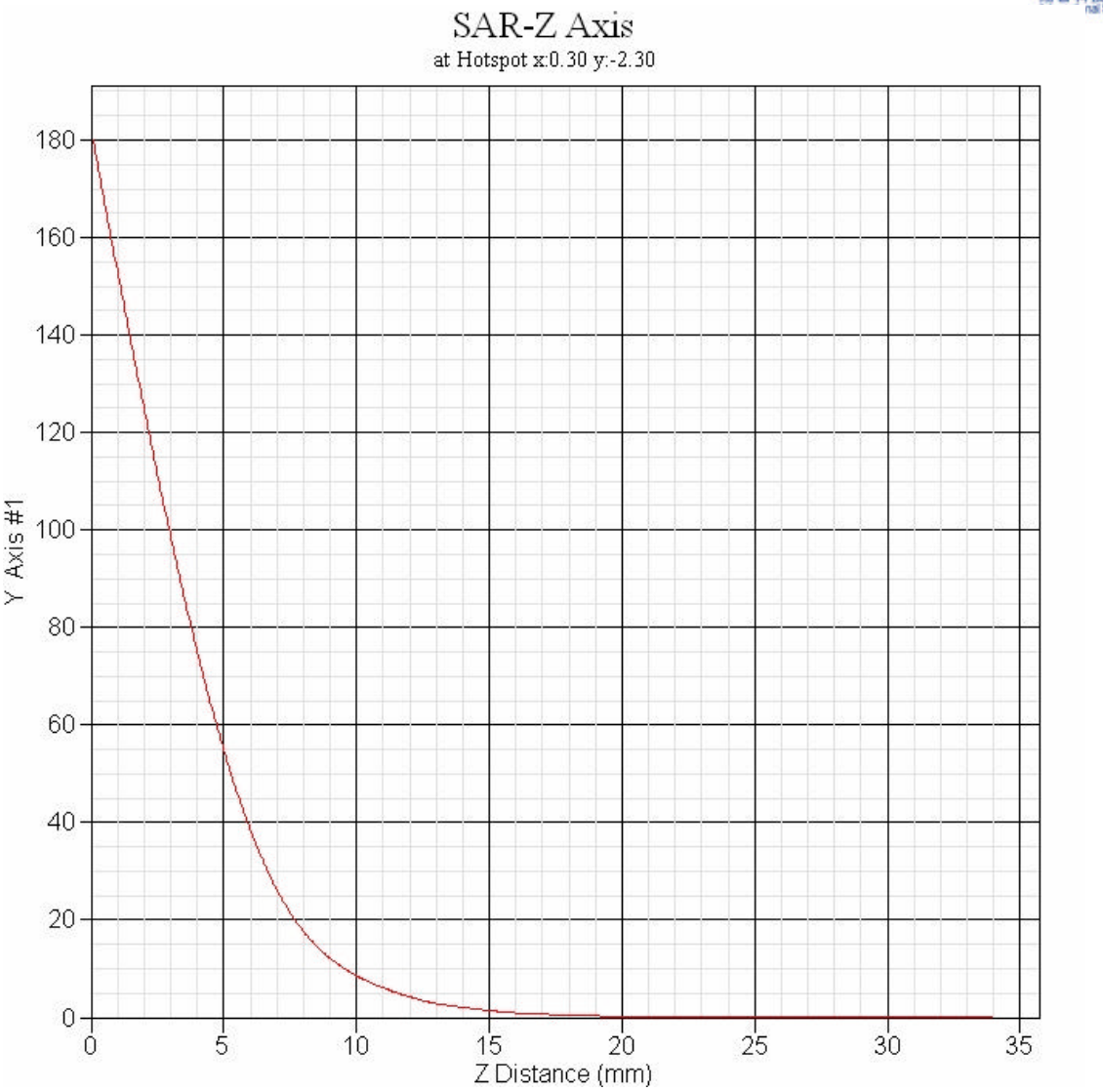
```
Measurement Date  : 29-Aug-2006

Product Data
Device Name       : Dipole-5800
Serial No.        : 240-00852
Type              : Dipole
Model             : ALS-D-5800-S-2
Frequency         : 5800.00 MHz
Max. Transmit Pwr : 1 W
Drift Time        : 0 min(s)
Length            : 21.4 mm
Width             : 3.6 mm
Depth             : 89.8 mm
Antenna Type      : Internal
Orientation       : Touch
Power Drift-Start : 70.882 W/kg
Power Drift-Finish: 69.931 W/kg
Power Drift (%)   : -1.341
Picture           :

Phantom Data
Name             : APREL-Uni
Type             : Uni-Phantom
Size (mm)        : 280 x 280 x 200
Serial No.       : System Default
Location         : Center
Description      : uni_1

Tissue Data
Type             : HEAD
Serial No.       : 5800-H-AU-19
Frequency        : 5800.00 MHz
Last Calib. Date : 29-Aug-2005
Temperature      : 22.30 °C
Ambient Temp.    : 22.80 °C
Humidity         : 51.00 RH%
Epsilon          : 36.47 F/m
Sigma            : 5.41 S/m
Density          : 1000.00 kg/cu. m

Probe Data
Name             : E-field Probe
Model            : ALS-E-020
Type             : E-Field Triangle
Serial No.       : 266
Last Calib. Date : 22-Jun-2006
Frequency        : 5800.00 MHz
Duty Cycle Factor: 1
Conversion Factor: 3.72
Probe Sensitivity: 1.20  1.20  1.20   μV/(V/m)²
Compression Point: 95.00 mV
Offset           : 1.56 mm
```

Measurement Data
Crest Factor : 1
Scan Type : Complete
Area Scan : 6x6x1 : Measurement x=10mm, y=10mm, z=4mm
Zoom Scan : 9x9x13 : Measurement x=4mm, y=4mm, z=2.5mm

Other Data
DUT Position : Touch
Separation : 0
Channel : Mid - 5800MHz



1 gram SAR value : 57.717 W/kg
10 gram SAR value : 18.255 W/kg
Area Scan Peak SAR : 75.721 W/kg
Zoom Scan Peak SAR : 182.148 W/kg


SAR-Z Axis
at Hotspot x:0.30 y:-2.30
Y Axis #1
Z Distance (mm)
0
20
40
60
80
100
120
140
160
180
0
5
10
15
20
25
30
35

11. WLAN + Bluetooth SAR measurement Data

2450MHz Measurement

Measurement Date : 26-Aug-2006

Product Data
Device Name : Atheros
Serial No. :
Type : Other
Model : 1
Frequency : 2437.00 MHz
Max. Transmit Pwr : 0.102 W
Drift Time : 0 min(s)
Length : 274 mm
Width : 32 mm
Depth : 10 mm
Antenna Type : Internal
Orientation : Touch

Phantom Data
Name : APREL-Uni
Type : Uni-Phantom
Size (mm) : 280 x 280 x 200
Serial No. : System Default
Location : Center
Description : uni_1

Tissue Data
Type : BODY
Serial No. : 2450BODY
Frequency : 2450.00 MHz
Last Calib. Date : 26-Aug-2006
Temperature : 22.20 °C
Ambient Temp. : 22.50 °C
Humidity : 49.00 RH%
Epsilon : 51.68 F/m
Sigma : 1.98 S/m
Density : 1000.00 kg/cu. m

Probe Data
Name : E-field Probe
Model : ALS-E-020
Type : E-Field Triangle
Serial No. : 266
Last Calib. Date : 22-Jun-2006
Frequency : 2450.00 MHz
Duty Cycle Factor: 1
Conversion Factor: 5.02
Probe Sensitivity: 1.20 1.20 1.20 $\mu V/(V/m)^2$
Compression Point: 95.00 mV
Offset : 2.44 mm