SAR Evaluation Report

in accordance with the requirements of
FCC Report and Order: ET Docket 93-62, and OET Bulletin 65 Supplement C

for

802.11a/b/g True Mimo CardBus Card

Model: AGN1023PC

FCC ID: SA3-AGN1023PC0000

September 22, 2004

REPORT NO: 04U2911-14 (5GHz)

Prepared for

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Palo Alto, CA 94304, United States

Prepared by

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CERTIFICATE OF COMPLIANCE (SAR EVALUATION)

Dates of Tests: August 4-6, 2004 and September 22, 2004

APPLICANT:	Airgo Networks Inc. 900 Arastradero Road Palo Alto, CA. 94304, United States
MODEL:	AGN1023PC
FCC ID:	SA3-AGN1023PC0000
DEVICE CATEGORY:	PORTABLE DEVICE
EXPOSURE CATEGORY:	GENERAL POPULATION/UNCONTROLLED EXPOSURE

Test Sample is a:	Production unit
Modulation type:	Orthogonal Frequency Division Multiplexing (OFDM)
Tx Frequency:	5150 to 5350 MHz for 5.2GHz band 5725 to 5805 MHz for 5.8GHz band
Max. SAR (1g):	0.290 mW/g (5.2 GHz band); 0.383 mW/g (5.8 GHz band) for Host # 1 0.108 mW/g (5.2 GHz band); 0.103 mW/g (5.8 GHz band) for Host # 2 0.163 mW/g (5.2 GHz band); 0.236 mW/g (5.8 GHz band) for Host # 3
Host Device:	Host #1: Sony, model PCG-5312 Host #2: Sony, model PCG-6B1L Host #3: Sony, model PCG-9D1R
FCC Rule Part(s):	15E

Note: The 5.2 & 5.8 GHz bands are applicable to this report; other band of operation (2.4GHz) is documented in a separate report.

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE Std. C95.1-1992 and had been tested in accordance with the measurement procedures specified in FCC OET 65 Supplement C (released on 6/29/2001 see Test Report).

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

Approved & Released For CCS By:

Hsin-Fu Shih (Sunny Shih)
Senior Engineer

Tested By:

John Dorsey
EMC Engineer

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1. EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT is an 802.11abg transceiver “True Mimo” CardBus Card, installed in Sony laptop PCs; models PCG-5312, -6B1L, -9D1R, including co-location with a Bluetooth radio card.

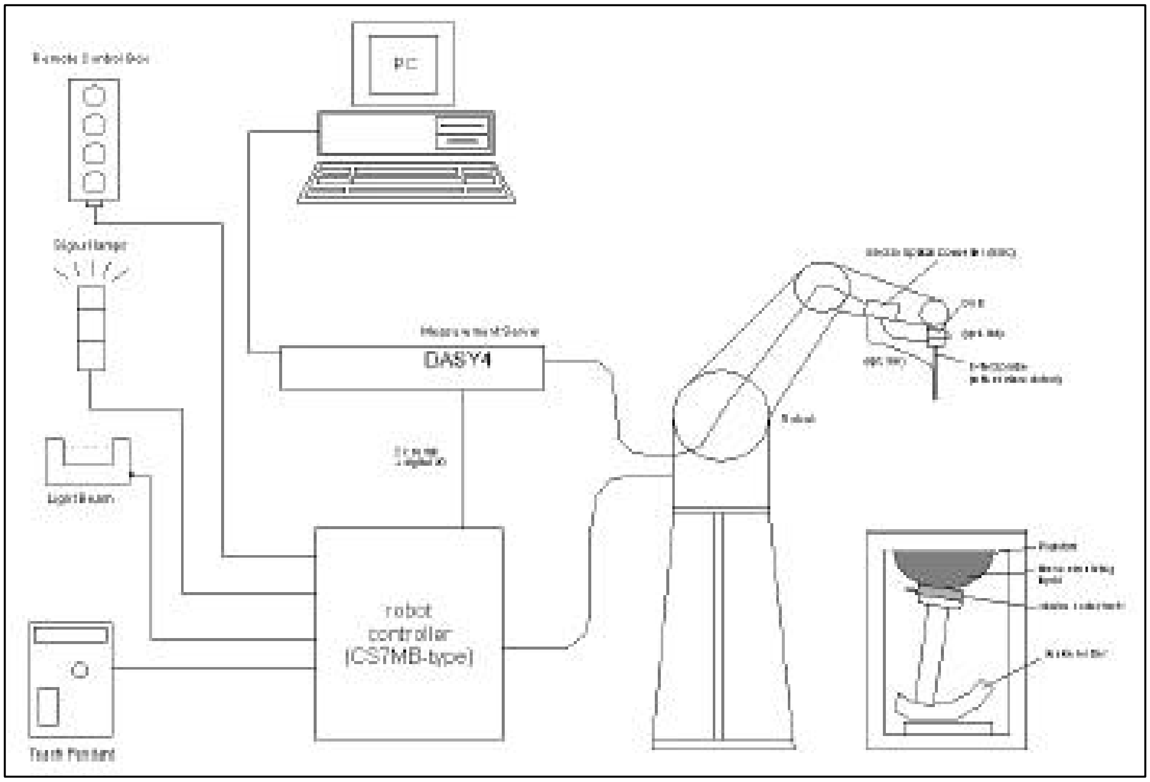
2. REQUIREMENTS FOR COMPLIANCE TESTING DEFINED BY THE FCC

The US Federal Communications Commission has released the report and order “Guidelines for Evaluating the Environmental Effects of RF Radiation", ET Docket No. 93-62 in August 1996 [1]. The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g for an uncontrolled environment and 8.0 mW/g for an occupational/controlled environment as recommended by the ANSI/IEEE standard C95.1-1992 [6]. According to the Supplement C of OET Bulletin 65 “Evaluating Compliance with FCC Guide-lines for Human Exposure to Radio frequency Electromagnetic Fields", released on Jun 29, 2001 by the FCC, the device should be evaluated at maximum output power (radiated from the antenna) under “worst-case” conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling.

3. DOSIMETRIC ASSESSMENT SYSTEM

These measurements were performed with the automated near-field scanning system DASY4 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9 m) which positions the probes with a positional repeatability of better than ± 0.02 mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines to the data acquisition unit. The SAR measurements were conducted with the dosimetric probe EX3DV3-SN: 3531 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the procedure with accuracy of better than ±10%. The spherical isotropy was evaluated with the procedure and found to be better than ±0.25 dB. The phantom used was the SAM Twin Phantom as described in FCC supplement C, IEEE P1528 and EN50361.

3.1. MEASUREMENT SYSTEM DIAGRAM



The DASY4 system for performing compliance tests consists of the following items:

- A standard high precision 6-axis robot (Staubli RX family) with controller, teach pendant and software. An arm extension 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) module 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 Electro-optical converter (EOC) performs the conversion between optical and electrical signals for the digital communication to the DAE and for the analog signal from the optical surface detection. The EOC is connected to the measurement server.
- The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.
- A probe alignment unit which improves the (absolute) accuracy of the probe positioning.
- A computer operating Windows 2000 or Windows XP.
- DASY4 software.
- Remote control with teach pendant and additional circuitry for robot safety such as warning lamps, etc.
- The SAM twin phantom enabling testing left-hand and right-hand usage.
- The device holder for handheld mobile phones.
- Tissue simulating liquid mixed according to the given recipes.
- Validation dipole kits allowing validating the proper functioning of the system.

3.2. SYSTEM COMPONENTS

DASY4 MEASUREMENT SERVER

The DASY4 measurement server is based on a PC/104 CPU board with a 166MHz low-power Pentium, 32MB chip disk and 64MB RAM. The necessary circuits for communication with either the DAE3 electronic box as well as the 16-bit AD-converter system for optical detection and digital I/O interface are contained on the DASY4 I/O-board, which is directly connected to the PC/104 bus of the CPU board.
The measurement server performs all real-time data evaluation for field measurements and surface detection, controls robot movements and handles safety operation. The PC-operating system cannot interfere with these time critical processes. All connections are supervised by a watchdog, and disconnection of any of the cables to the measurement server will automatically disarm the robot and disable all program-controlled robot movements. Furthermore, the measurement server is equipped with two expansion slots which are reserved for future applications. Please note that the expansion slots do not have a standardized pinout and therefore only the expansion cards provided by SPEAG can be inserted. Expansion cards from any other supplier could seriously damage the measurement server. Calibration: No calibration required.

DATA ACQUISITION ELECTRONICS (DAE)

The data acquisition electronics (DAE3) consists of a highly sensitive electrometer grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD converter and a command decoder and control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information as well as an optical uplink for commands and the clock. The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

EX3DV3 ISOTROPIC E-FIELD PROBE FOR DOSIMETRIC MEASUREMENTS

Construction: Symmetrical design with triangular core Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g., DGBE)

Calibration: Basic Broad Band Calibration in air: 10-2500 MHz.
Conversion Factors (CF) for HSL 900 and HSL 1800 CF-Calibration for other liquids and frequencies upon request.

Frequency: 10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)

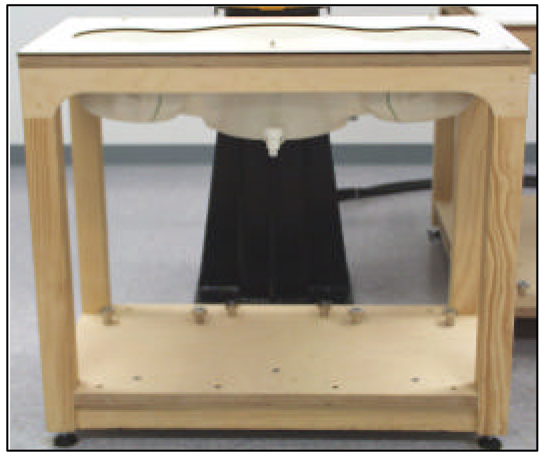
Directivity: ± 0.3 dB in HSL (rotation around probe axis);
± 0.5 dB in tissue material (rotation normal to probe axis)

Dynamic Range: 10 µW/g to > 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 µW/g)

Dimensions: Overall length: 330 mm (Tip: 20 mm)
Tip diameter: 2.5 mm (Body: 12 mm)
Typical distance from probe tip to dipole centers: 1 mm

Application: High precision dosimetric measurements in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6 GHz with precision of better than 30%.

SAM PHANTOM (V4.0)



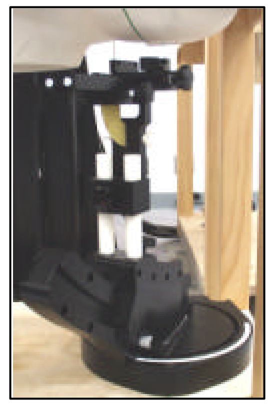
Construction: The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-200X, CENELEC 50361 and IEC 62209. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents evaporation of the liquid. Reference markings on the phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points with the robot.

Shell Thickness: 2 ±0.2 mm

Filling Volume: Approx. 25 liters

Dimensions: Height: 810mm; Length: 1000mm; Width: 500mm

DEVICE HOLDER FOR SAM TWIN PHANTOM



Construction: In combination with the Twin SAM Phantom V4.0 or Twin SAM, the Mounting Device (made from POM) enables the rotation of the mounted transmitter in spherical coordinates, whereby the rotation point is the ear opening. The devices can be easily and accurately positioned according to IEC, IEEE, CENELEC, FCC or other specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

SYSTEM VALIDATION KITS

Construction: Symmetrical dipole with l/4 balun Enables measurement of feedpoint impedance with NWA Matched for use near flat phantoms filled with brain simulating solutions Includes distance holder and tripod adaptor.

Frequency: 450, 900, 1800, 2450, 5800 MHz

Return loss: > 20 dB at specified validation position

Power capability: > 100 W (f < 1GHz); > 40 W (f > 1GHz)

Dimensions: 450V2: dipole length: 270 mm; overall height: 330 mm
D900V2: dipole length: 149 mm; overall height: 330 mm
D1800V2: dipole length: 72 mm; overall height: 300 mm
D2450V2: dipole length: 51.5 mm; overall height: 300 mm
D5GHzV2: dipole length: 25.5 mm; overall height: 290 mm

4. EVALUATION PROCEDURES

DATA EVALUATION

The DASY4 post processing software (SEMCAD) automatically executes the following procedures to calculate the field units from the microvolt readings at the probe connector. The parameters used in the evaluation are stored in the configuration modules of the software:

Probe parameters:	- Sensitivity	$Norm_i$, a_{i0}, a_{i1}, a_{i2}
	- Conversion factor	$ConvF_i$
	- Diode compression point	dcp_i
Device parameters:	- Frequency	f
	- Crest factor	cf
Media parameters:	- Conductivity	σ
	- Density	r

These parameters must be set correctly in the software. They can be found in the component documents or be imported into the software from the configuration files issued for the DASY components. In the direct measuring mode of the multi-meter option, the parameters of the actual system setup are used. In the scan visualization and export modes, the parameters stored in the corresponding document files are used.

The first step of the evaluation is a linearization of the filtered input signal to account for the compression characteristics of the detector diode. The compensation depends on the input signal, the diode type and the DC-transmission factor from the diode to the evaluation electronics. If the exciting field is pulsed, the crest factor of the signal must be known to correctly compensate for peak power. The formula for each channel can be given as:

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

with
- V_i = Compensated signal of channel i (i = x, y, z)
- U_i = Input signal of channel i (i = x, y, z)
- cf = Crest factor of exciting field (DASY parameter)
- dcp_i = Diode compression point (DASY parameter)

From the compensated input signals the primary field data for each channel can be evaluated:

E-field probes:

$$E_i = \sqrt{\frac{V_i}{Norm_i \bullet ConvF}}$$

H-field probes:

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

with
- V_i = Compensated signal of channel i (i = x, y, z)
- $Norm_i$ = Sensor sensitivity of channel i (i = x, y, z) $\mu V/(V/m)^2$ for E0field Probes
- $ConvF$ = Sensitivity enhancement in solution
- aij = Sensor sensitivity factors for H-field probes
- f = Carrier frequency (GHz)
- Ei = Electric field strength of channel i in V/m
- Hi = Magnetic field strength of channel i in A/m

The RSS value of the field components gives the total field strength (Hermitian magnitude):

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The primary field data are used to calculate the derived field units.

$$SAR = E_{tot}^2 \cdot \frac{s}{r \cdot 1000}$$

with SAR = local specific absorption rate in mW/g

E_{tot} = total field strength in V/m

σ = conductivity in [mho/m] or [Siemens/m]

r = equivalent tissue density in g/cm^3

Note that the density is normally set to 1 (or 1.06), to account for actual brain density rather than the density of the simulation liquid.

The power flow density is calculated assuming the excitation field as a free space field.

$$P_{pwe} = \frac{E_{tot}^2}{3770} \quad \text{or} \quad P_{pwe} = H_{tot}^2 \cdot 37.7$$

with P_{pwe} = Equivalent power density of a plane wave in mW/cm^2

E_{tot} = total electric field strength in V/m

H_{tot} = total magnetic field strength in A/m

SAR SYSTEM MEASUREMENT PROCEDURES

The procedure for assessing the peak spatial-average SAR value consists of the following steps:

- **Power Reference Measurement**

The reference and drift jobs are useful jobs for monitoring the power drift of the device under test in the batch process. Both jobs measure the field at a specified reference position, at a selectable distance from the phantom surface. The reference position can be either the selected section's grid reference point or a user point in this section. The reference job projects the selected point onto the phantom surface, orients the probe perpendicularly to the surface, and approaches the surface using the selected detection method.

- **Area Scan**

The area scan is used as a fast scan in two dimensions to find the area of high field values, before doing a finer measurement around the hot spot. The sophisticated interpolation routines implemented in DASY4 software can find the maximum locations even in relatively coarse grids. This grid is anchored at the grid reference point of the selected section in the phantom. When the area scan's property sheet is brought-up, grid settings can be edited by a user. When an area scan has measured all reachable points, it computes the field maximum found in the scanned area, within a range of the global maximum. If only one Zoom Scan follows the Area Scan, then only the absolute maximum will be taken as reference. For cases where multiple maximums are detected, the number of Zoom Scans has to be increased accordingly.

- **Zoom Scan**

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The default zoom scan measures 7 x 7 x 8 points within a cube whose base faces are centered around the maximum found in a preceding area scan job within the same procedure. If the preceding Area Scan job indicates more then one maximum, the number of Zoom Scans has to be enlarged accordingly. For dosimetric application, it is necessary to assess the peak spatial SAR value averaged over a volume. For this purpose, fine resolution volume scans need to be performed at the peak SAR location(s) determined during the Area Scan.

- **Power Drift measurement**

The drift job measures the field at the same location as the most recent reference job within the same procedure, and with the same settings. The drift measurement gives the field difference in dB from the reading conducted within the last reference measurement. Several drift measurements are possible for one reference measurement. This allows a user to monitor the power drift of the device under test within a batch process. In the properties of the Drift job, the user can specify a limit for the drift and have DASY4 software stop the measurements if this limit is exceeded.

- **Z-Scan**

The Z Scan job measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. A user can anchor the grid to the current probe location. As with any other grids, the local Z-axis of the anchor location establishes the Z-axis of the grid.

SPATIAL PEAK SAR EVALUATION

The procedure for spatial peak SAR evaluation has been implemented according to the IEEE1529 standard. It can be conducted for 1 g and 10 g.

The DASY4 system allows evaluations that combine measured data and robot positions, such as:

- maximum search
- extrapolation
- boundary correction
- peak search for averaged SAR

During a maximum search, global and local maximum searches are automatically performed in 2-D after each Area Scan measurement with at least 6 measurement points. It is based on the evaluation of the local SAR gradient calculated by the Quadratic Shepard's method. The algorithm will find the global maximum and all local maxima within -2 dB of the global maxima for all SAR distributions.

Extrapolation

Extrapolation routines are used to obtain SAR values between the lowest measurement points and the inner phantom surface. The extrapolation distance is determined by the surface detection distance and the probe sensor offset. Several measurements at different distances are necessary for the extrapolation.

Extrapolation routines require at least 10 measurement points in 3-D space. They are used in the Cube Scan to obtain SAR values between the lowest measurement points and the inner phantom surface. The routine uses the modified Quadratic Shepard's method for extrapolation. For a grid using 5x5x7 measurement points with 5mm resolution amounting to 343 measurement points, the uncertainty of the extrapolation routines is less than 1% for 1 g and 10 g cubes.

Boundary effect

For measurements in the immediate vicinity of a phantom surface, the field coupling effects between the probe and the boundary influence the probe characteristics. Boundary effect errors of different dosimetric probe types have been analyzed by measurements and using a numerical probe model. As expected, both methods showed an enhanced sensitivity in the immediate vicinity of the boundary. The effect strongly depends on the probe dimensions and disappears with increasing distance from the boundary. The sensitivity can be approximately given as:

$$S \tilde{} S_o + S_b exp(-\frac{z}{a}) \cos(p \frac{z}{l})$$

Since the decay of the boundary effect dominates for small probes (a<<λ), the cos-term can be omitted. Factors *Sb* (parameter Alpha in the DASY4 software) and *a* (parameter Delta in the DASY4 software) are assessed during probe calibration and used for numerical compensation of the boundary effect. Several simulations and measurements have confirmed that the compensation is valid for different field and boundary configurations.

This simple compensation procedure can largely reduce the probe uncertainty near boundaries. It works well as long as:

- the boundary curvature is small
- the probe axis is angled less than 30_ to the boundary normal
- the distance between probe and boundary is larger than 25% of the probe diameter
- the probe is symmetric (all sensors have the same offset from the probe tip)

Since all of these requirements are fulfilled in a DASY4 system, the correction of the probe boundary effect in the vicinity of the phantom surface is performed in a fully automated manner via the measurement data extraction during postprocessing.

5. MEASUREMENT UNCERTAINTY

UNCERTAINTY BUDGE ACCORDING TO IEEE P1528									
Uncertainty Component	Sec.	Tol. (± %)	Prob.Dist.	Div.	ci (1g)	ci (10g)	ui (1g)	ui (10g)	vi
Measurement System									
Probe Calibration (k=1)	E.2.1	4.8	N	1.0000	1.0000	1.0000	4.8	4.8	
Axial Isotropy	E.2.2	4.7	R	1.7321	0.7071	0.7071	1.9	1.9	
Hemispherical Isotropy	E.2.2	9.6	R	1.7321	0.7071	0.7071	3.9	3.9	
Boundary Effect	E.2.3	1	R	1.7321	1.0000	1.0000	4.8	4.8	
Linearity	E.2.4	4.7	R	1.7321	1.0000	1.0000	2.7	2.7	
System Detection Limits	E.2.5	1	R	1.7321	1.0000	1.0000	0.6	0.6	
Readout Electronics	E.2.6	1	N	1.0000	1.0000	1.0000	1	1	
Response Time	E.2.7	0.8	R	1.7321	1.0000	1.0000	0.5	0.5	
Integration Time	E.2.8	2.6	R	1.7321	1.0000	1.0000	0.8	0.8	
RF Ambient Conditions – Noise	E.6.1	3	R	1.7321	1.0000	1.0000	1.7	1.7	
RF Ambient Conditions – Reflections	E.6.1	3	R	1.7321	1.0000	1.0000	1.7	1.7	
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.7321	1.0000	1.0000	0.2	0.2	
Probe Positioning with respect to Phantom	E.6.3	2.9	R	1.7321	1.0000	1.0000	1.7	1.7	
Extrapolation, interpolation and Integration	E.5	3.9	R	1.7321	1.0000	1.0000	2.3	2.3	
Test sample Related									
Test Sample Positioning	E.4.2	1.1	N	1.0000	1.0000	1.0000	6	6	19
Device Holder Uncertainty	E.4.1	3.6	N	1.0000	1.0000	1.0000	5	5	7
Output Power Variation - SAR drift	6.6.2	5	R	1.7321	1.0000	1.0000	2.9	2.9	
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness)	E.3.1	4	R	1.7321	1.0000	1.0000	2.3	2.3	
Liquid Conductivity - deviation from target	E.3.2	5	R	1.7321	0.6400	0.4300	1.8	1.2	
Liquid Conductivity - measurement	E.3.3	2.5	N	1.0000	0.6400	0.4300	3.5	2.4	5
Liquid Permittivity - deviation from target	E.3.2	5	R	1.7321	0.6000	0.4900	1.7	1.4	
Liquid Permittivity - measurement uncertainty	E.3.3	2.5	N	1.0000	0.6000	0.4900	1.7	1.4	5
DEGREE OF FREEDONE									208.955
Combined Standard Uncertainty							13.580	13.201	
Expanded Uncertainty			k=2				27.160	26.402	

The budge is valid for the frequency range 300 MHz to 6 GHz and represents a worst-case analysis.

6. EXPOSURE LIMIT

(A) Limits for Occupational/Controlled Exposure (W/kg)

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.4	8.0	20.0

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

Whole-Body	Partial-Body	Hands, Wrists, Feet and Ankles
0.08	1.6	4.0

NOTE 1: See Section 1 for discussion of exposure categories.

NOTE 2: Whole-Body SAR is averaged over the entire body, partial-body SAR is averaged over any 1 gram of tissue defined as a tissue volume in the shape of a cube. SAR for hands, wrists, feet and ankles is averaged over any 10 grams of tissue defined as a tissue volume in the shape of a cube.

NOTE 3: At frequencies above 6.0 GHz, SAR limits are not applicable and MPE limits for power density should be applied at 5 cm or more from the transmitting device.

NOTE 4: The time averaging criteria for field strength and power density do not apply to general population SAR limit of 47 CFR §2.1093

NOTE
GENERAL POPULATION/UNCONTROLLED EXPOSURE
PARTIAL BODY LIMIT
1.6 mW/g

7. PROCEDURES USED TO ESTABLISH TEST SIGNALS

The following procedures were used to prepare the EUT for SAR testing.

- The client supplied a special driving program to program the EUT to continually transmit the specified maximum power. And also to change the channel frequency.
- Power levels were set to maximum power prior to SAR measurement.

  Conducted power measurement results:

802.11a Mode

Channel	Frequency (MHz)	Average Power (dBm)	Data rate (Mbps)
Low	5180	13.70	6
Middle	5260	16.93	6
High	5320	18.68	6
Low	5745	17.53	6
Middle	5785	17.71	6
High	5825	17.33	6

8. MEASUREMENT RESULTS

8.1. SIMULATING LIQUIDS PARAMETER 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. The relative permittivity and conductivity of the tissue material should be within ± 5% of the values given in the table below. 5% may not be easily achieved at certain frequencies. Under such circumstances, 10% tolerance may be used until more precise tissue recipes are available.

TISSUE SIMULATING LIQUIDS

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 emulgators. Dielectric parameters of these liquids were measured using an 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)	Head Tissue		Body Tissue		Reference
	rel. permitivity	conductivity	rel. permitivity	conductivity	
3000	38.5	2.40	52.0	2.73	Standard
5800	35.3	5.27	48.2	6.00	Standard
5000	36.2	1.45	49.3	5.07	Interpolated
5100	36.1	4.55	49.1	5.18	Interpolated
5200	36.0	4.66	49.0	5.30	Interpolated
5300	35.9	4.76	48.9	5.42	Interpolated
5400	35.8	4.86	48.7	5.53	Interpolated
5500	35.6	4.96	48.6	5.65	Interpolated
5600	35.5	5.07	48.5	5.77	Interpolated
5700	35.4	5.17	48.3	5.88	Interpolated

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

SIMULATING LIQUID PARAMETER CHECK RESULT

@ Muscle 5200 & 5800 MHz

Date: August 4, 2004

Ambient Temperature = 25°C; Relative humidity = 45%

Measured by: John Dorsey

Simulating Liquid			Parameters		Target	Measured	Deviation (%)	Limit (%)
f (MHz)	Temp. (°C)	Depth (cm)						
5200	23	15	?"	Relative Permittivity ($?_r$):	49.0	49.0204	0.04	± 5
			18.5723	Conductivity (s):	5.30	5.373	1.37	± 5
5800	23	15	?"	Relative Permittivity ($?_r$):	48.2	47.9195	-0.58	± 5
			19.2545	Conductivity (s):	6.00	6.213	3.54	± 5

Note: Interpolated medium parameters used for SAR evaluation.

The conductivity (s) can be given as:

$$s = ?e_0 e? = 2 p f e_0 e?$$

where $f = target\ f * 10^6$

$e_0 = 8.854 * 10^{-12}$

Simulating Liquid Parameter Check Results @ 4600-5800 MHz

Ambient temperature = 25 deg. C; Liquid temperature = 23 deg.C

August 04, 2004 11:42 AM

Frequency	e'	e"
4.600000000 GHz	50.1617	17.6935
4.650000000 GHz	50.0950	17.7923
4.700000000 GHz	49.9925	17.8761
4.750000000 GHz	49.8831	17.9530
4.800000000 GHz	49.8465	18.0429
4.850000000 GHz	49.6948	18.0995
4.900000000 GHz	49.6497	18.2146
4.950000000 GHz	49.5097	18.2508
5.000000000 GHz	49.4247	18.3670
5.050000000 GHz	49.3700	18.4172
5.100000000 GHz	49.2138	18.4735
5.150000000 GHz	49.1455	18.5747
5.200000000 GHz	49.0204	18.5723
5.250000000 GHz	48.9508	18.7031
5.300000000 GHz	48.8681	18.7256
5.350000000 GHz	48.7276	18.7881
5.400000000 GHz	48.6852	18.8573
5.450000000 GHz	48.5355	18.8942
5.500000000 GHz	48.4764	18.9832
5.550000000 GHz	48.3922	19.0010
5.600000000 GHz	48.2666	19.0491
5.650000000 GHz	48.2141	19.1311
5.700000000 GHz	48.0857	19.1369
5.750000000 GHz	48.0022	19.2390
5.800000000 GHz	47.9195	19.2545
5.850000000 GHz	47.8063	19.3304
5.900000000 GHz	47.7470	19.3807
5.950000000 GHz	47.6206	19.4389
6.000000000 GHz	47.5408	19.5049

SIMULATING LIQUID PARAMETER CHECK RESULT

@ Muscle 5200 & 5800 MHz Date: August 5, 2004

Ambient Temperature = 25°C; Relative humidity = 44% Measured by: John Dorsey

Simulating Liquid f (MHz)	Temp. (°C)	Depth (cm)	Parameters		Target	Measured	Deviation (%)	Limit (%)
5200	23	15	?"	Relative Permittivity (?r):	49.0	48.5001	-1.02	± 5
			18.6860	Conductivity (s):	5.30	5.406	1.99	± 5
5800	23	15	?"	Relative Permittivity (?r):	48.2	47.5527	-1.34	± 5
			19.3408	Conductivity (s):	6.00	6.241	4.01	± 5

Note: Interpolated medium parameters used for SAR evaluation.

The conductivity (s) can be given as:

$$s = ?e_0 e? = 2 p f e_0 e?$$

where $f = target\ f * 10^6$

$e_0 = 8.854 * 10^{-12}$

Simulating Liquid Parameter Check Results @ 4600-5800 MHz

Ambient temperature = 25 deg. C; Liquid temperature = 23 deg.C

August 05, 2004 09:14 AM

Frequency	e'	e"
4.600000000 GHz	49.8155	17.6690
4.650000000 GHz	49.7818	17.8983
4.700000000 GHz	49.6553	17.8449
4.750000000 GHz	49.4755	18.0633
4.800000000 GHz	49.5253	18.0606
4.850000000 GHz	49.2464	18.1629
4.900000000 GHz	49.2511	18.2214
4.950000000 GHz	49.0804	18.2477
5.000000000 GHz	48.9727	18.4371
5.050000000 GHz	48.9335	18.3957
5.100000000 GHz	48.7274	18.5804
5.150000000 GHz	48.7411	18.5800
5.200000000 GHz	48.5001	18.6860
5.250000000 GHz	48.5049	18.7284
5.300000000 GHz	48.3564	18.7931
5.350000000 GHz	48.2596	18.8591
5.400000000 GHz	48.1821	18.8554
5.450000000 GHz	48.0411	18.9621
5.500000000 GHz	48.0126	18.9774
5.550000000 GHz	47.9396	19.1558
5.600000000 GHz	47.8129	19.0980
5.650000000 GHz	47.6974	19.2919
5.700000000 GHz	47.6879	19.1601
5.750000000 GHz	47.4565	19.3341
5.800000000 GHz	47.5527	19.3408
5.850000000 GHz	47.1677	19.3532
5.900000000 GHz	47.2504	19.5189
5.950000000 GHz	47.0301	19.4075
6.000000000 GHz	46.9908	19.6449

SIMULATING LIQUID PARAMETER CHECK RESULT

@ Muscle 5200 & 5800 MHz Date: August 6, 2004

Ambient Temperature = 25°C; Relative humidity = 43% Measured by: John Dorsey

Simulating Liquid f (MHz)	Temp. (°C)	Depth (cm)	Parameters		Target	Measured	Deviation (%)	Limit (%)
5200	23	15	?"	Relative Permittivity ($?_r$):	49.0	48.3028	-1.42	± 5
			18.6250	Conductivity (s):	5.30	5.388	1.66	± 5
5800	23	15	?"	Relative Permittivity ($?_r$):	48.2	47.4260	-1.61	± 5
			19.2642	Conductivity (s):	6.00	6.216	3.60	± 5

Note: Interpolated medium parameters used for SAR evaluation.

The conductivity (s) can be given as:

$$s = ? e_0 e? = 2 p f e_0 e?$$

where $f = \text{target } f * 10^6$

$$e_0 = 8.854 * 10^{-12}$$

Simulating Liquid Parameter Check Results @ 4600-5800 MHz

Ambient temperature = 25 deg. C; Liquid temperature = 23 deg.C
August 06, 2004 09:04 AM

Frequency	e'	e"
4.600000000 GHz	49.6664	17.5738
4.650000000 GHz	49.6670	17.8617
4.700000000 GHz	49.5086	17.7303
4.750000000 GHz	49.2884	18.0456
4.800000000 GHz	49.4096	17.9908
4.850000000 GHz	49.0362	18.0838
4.900000000 GHz	49.1217	18.1632
4.950000000 GHz	48.8901	18.1618
5.000000000 GHz	48.7910	18.3969
5.050000000 GHz	48.7811	18.2851
5.100000000 GHz	48.5155	18.5457
5.150000000 GHz	48.6172	18.5016
5.200000000 GHz	48.3028	18.6250
5.250000000 GHz	48.3319	18.6766
5.300000000 GHz	48.1722	18.7250
5.350000000 GHz	48.0764	18.7963
5.400000000 GHz	48.0293	18.7781
5.450000000 GHz	47.8362	18.8892
5.500000000 GHz	47.8687	18.8913
5.550000000 GHz	47.7932	19.1167
5.600000000 GHz	47.6521	19.0289
5.650000000 GHz	47.5258	19.2506
5.700000000 GHz	47.5601	19.0648
5.750000000 GHz	47.2881	19.2813
5.800000000 GHz	47.4260	19.2642
5.850000000 GHz	46.9187	19.2550
5.900000000 GHz	47.0807	19.4628
5.950000000 GHz	46.7967	19.2679
6.000000000 GHz	46.7953	19.5919

SIMULATING LIQUID PARAMETER CHECK RESULT @ Muscle 5200 & 5800 MHz

Ambient Temperature = 25 °C; Relative humidity = 40% Measured by: Sunny Shih

Simulating Liquid f (MHz)	Temp. (°C)	Depth (cm)	Parameters		Target	Measured	Deviation (%)	Limit (%)
5200	24	15	?"	Relative Permittivity (?r):	49.0	49.2631	0.54	± 5
			18.6774	Conductivity (s):	5.30	5.403	1.94	± 5
5800	24	15	?"	Relative Permittivity (?r):	48.2	48.1385	-0.13	± 5
			19.4342	Conductivity (s):	6.00	6.271	4.51	± 5

Note: Interpolated medium parameters used for SAR evaluation.

The conductivity (s) can be given as:

$$s = ?e_0 e? = 2 p f e_0 e?$$

where $f = target\ f * 10^6$

$e_0 = 8.854 * 10^{-12}$

Simulating Liquid Dielectric Parameters Check @ 4.6 - 6GHz
Room ambient temperature: 25.0 deg. C; Liquid temperature: 24.0 deg. C
September 22, 2004 02:48 PM

Frequency	e'	e"
4600000000.	50.4335	17.7834
4650000000.	50.3343	17.8937
4700000000.	50.2622	17.9620
4750000000.	50.1490	18.0501
4800000000.	50.0603	18.1152
4850000000.	49.9510	18.1848
4900000000.	49.8738	18.2730
4950000000.	49.7124	18.3198
5000000000.	49.6492	18.4162
5050000000.	49.5665	18.4918
5100000000.	49.4667	18.5603
5150000000.	49.3499	18.6332
5200000000.	49.2631	18.6774
5250000000.	49.1636	18.7562
5300000000.	49.0628	18.8199
5350000000.	48.9644	18.8892
5400000000.	48.8564	18.9335
5450000000.	48.7739	18.9955
5500000000.	48.6833	19.0532
5550000000.	48.5833	19.1381
5600000000.	48.4868	19.1726
5650000000.	48.3947	19.2545
5700000000.	48.3269	19.2971
5750000000.	48.2062	19.3704
5800000000.	48.1385	19.4342
5850000000.	48.0186	19.4907
5900000000.	47.9504	19.5557
5950000000.	47.8382	19.6169
6000000000.	47.7553	19.6801

8.2. SYSTEM PERFORMANCE CHECK

The system performance check is performed prior to any usage of the system in order to guarantee reproducible results. The system performance check verifies that the system operates within its specifications. The system performance check results are tabulated below. And also the corresponding SAR plot is attached as well in the SAR plots files.

SYSTEM PERFORMANCE CHECK MEASUREMENT CONDITIONS

- The measurements were performed in the flat section of the SAM twin phantom filled with Body simulating liquid of the following parameters.
- The DASY4 system with an Isotropic E-Field Probe EX3DV3-SN: 3531 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) from dipole center to the simulating liquid surface.
- The coarse grid with a grid spacing of 10 mm was aligned with the dipole.
- Special 7 x 7 x 8 fine cube was chosen for cube integration (dx=dy= 4.3 mm, dz= 3 mm).
- Distance between probe sensors and phantom surface was set to 3.0 mm.
- The dipole input power (forward power) was 250 mW±3%.
- The results are normalized to 1 W input power.

REFERENCE SAR VALUES

The reference SAR values were calculated using finite-difference time-domain FDTD method (feed point-impedance set to 50 ohms) and the mechanical dimensions of the D5GHzV2 dipole (manufactured by SPEAG).

f (MHz)	Head Tissue		Body Tissue		
	SAR_{1g}	SAR_{10g}	SAR_{1g}	SAR_{10g}	SAR_{Peak}
5000	72.9	20.7	68.1	19.2	260.3
5100	74.6	21.1	78.8	19.6	272.3
5200	76.5	21.6	71.8	20.1	284.7
5800	78.0	21.9	74.1	20.5	324.7

SYSTEM PERFORMANCE CHECK RESULTS

@ SYSTEM VALIDATION DIPOLE: D5GHzV2 SN 1003 Date: August 4, 2004

Ambient Temperature =25 °C; Relative humidity = 45% Measured by: John Dorsey

Body Simulating Liquid			Measured		$Target_{1g}$	Deviation[%]	Limit[%]
f (MHz)	Temp. [°C]	Depth [cm]	1g	Normalized to 1 W			
5200	23	15	18.2	72.8	71.8	1.39	± 10

SYSTEM PERFORMANCE CHECK RESULTS

@ **SYSTEM VALIDATION DIPOLE:** D5GHzV2 SN 1003 Date: August 5, 2004

Ambient Temperature =25 °C; Relative humidity = 44% Measured by: John Dorsey

Body Simulating Liquid			Measured		Target_1g	Deviation[%]	Limit[%]
f (MHz)	Temp. [°C]	Depth [cm]	1g	Normalized to 1 W			
5200	23	15	17.8	71.2	71.8	-0.84	± 10

@ **SYSTEM VALIDATION DIPOLE:** D5GHzV2 SN 1003 Date: August 5, 2004

Ambient Temperature =25 °C; Relative humidity = 45% Measured by: John Dorsey

Body Simulating Liquid			Measured		Target_1g	Deviation[%]	Limit[%]
f (MHz)	Temp. [°C]	Depth [cm]	1g	Normalized to 1 W			
5800	23	15	18.2	72.8	74.1	-1.75	± 10

SYSTEM PERFORMANCE CHECK RESULTS

@ **SYSTEM VALIDATION DIPOLE:** D5GHzV2 SN 1003 Date: August 6, 2004

Ambient Temperature =25 °C; Relative humidity = 43% Measured by: John Dorsey

Body Simulating Liquid			Measured		Target_1g	Deviation[%]	Limit[%]
f (MHz)	Temp. [°C]	Depth [cm]	1g	Normalized to 1 W			
5200	23	15	17.8	71.2	71.8	-0.84	± 10

@ **SYSTEM VALIDATION DIPOLE:** D5GHzV2 SN 1003 Date: August 6, 2004

Ambient Temperature = 25°C; Relative humidity = 43% Measured by: John Dorsey

Body Simulating Liquid			Measured		Target_1g	Deviation[%]	Limit[%]
f (MHz)	Temp. [°C]	Depth [cm]	1g	Normalized to 1 W			
5800	23	15	16.7	66.8	74.1	-9.85	± 10

@ **SYSTEM VALIDATION DIPOLE:** D5GHzV2 SN 1003 Date: September 22, 2004

Ambient Temperature = 25 °C; Relative humidity = 40% Measured by: Sunny Shih

Body Simulating Liquid			Measured		Target_1g	Deviation[%]	Limit [%]
f (MHz)	Temp. [°C]	Depth [cm]	1g	Normalized to 1 W			
5200	24	15	18	72	71.8	0.28	± 10

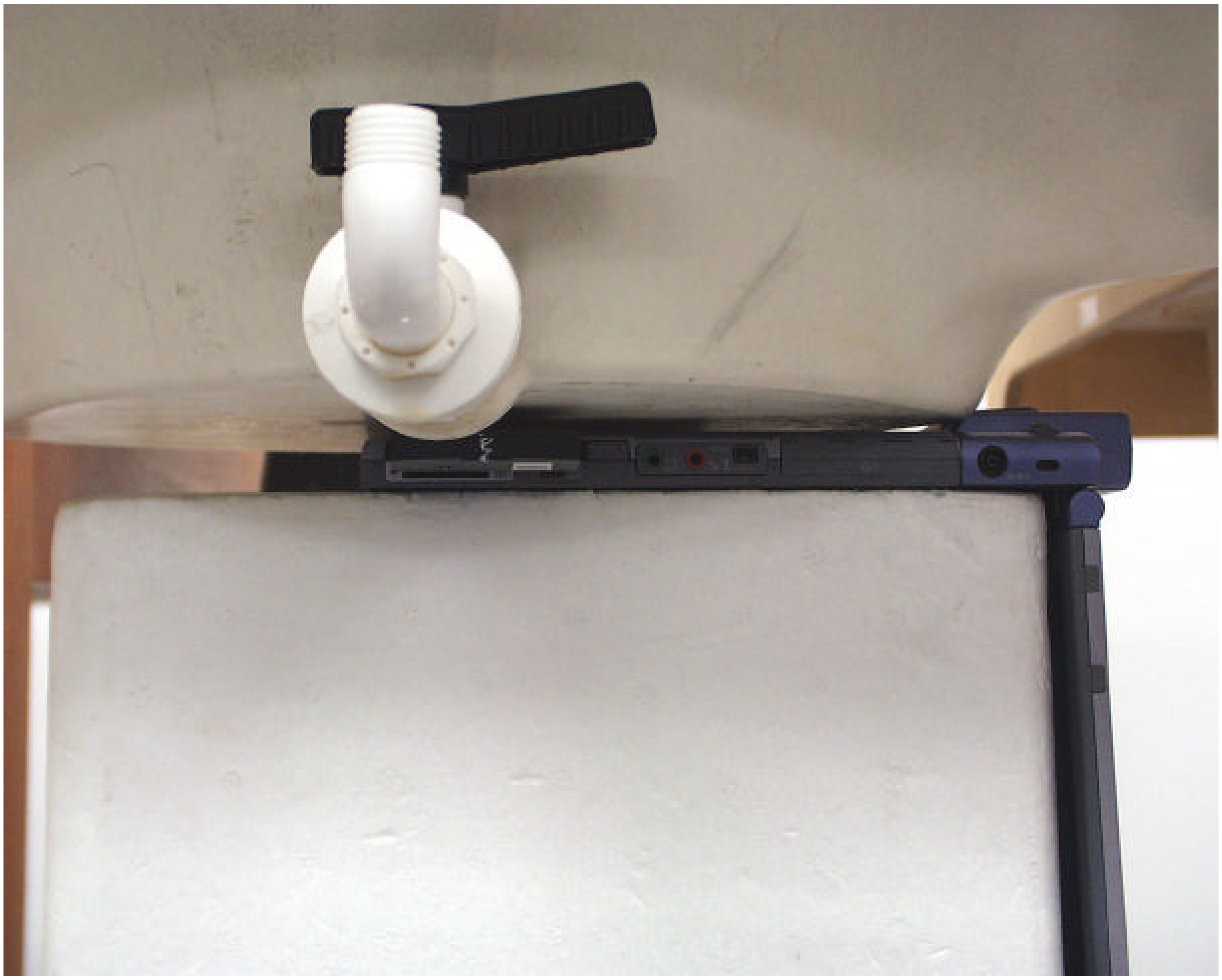
@ **SYSTEM VALIDATION DIPOLE:** D5GHzV2 SN 1003 Date: September 22, 2004

Ambient Temperature = 25°C; Relative humidity = 40% Measured by: Sunny Shih

Body Simulating Liquid			Measured		Target_1g	Deviation[%]	Limit[%]
f (MHz)	Temp. [°C]	Depth [cm]	1g	Normalized to 1 W			
5800	24	15	17.1	68.4	74.1	-7.69	± 10

8.3. SAR MEASUREMENTS RESULTS

8.3.1. 1_Host # 1 (Sony, PCG-5312)



5.2 GHz band - Duty cycle: 91.8%; Crest factor: 1.089 Depth of liquid: 15 cm

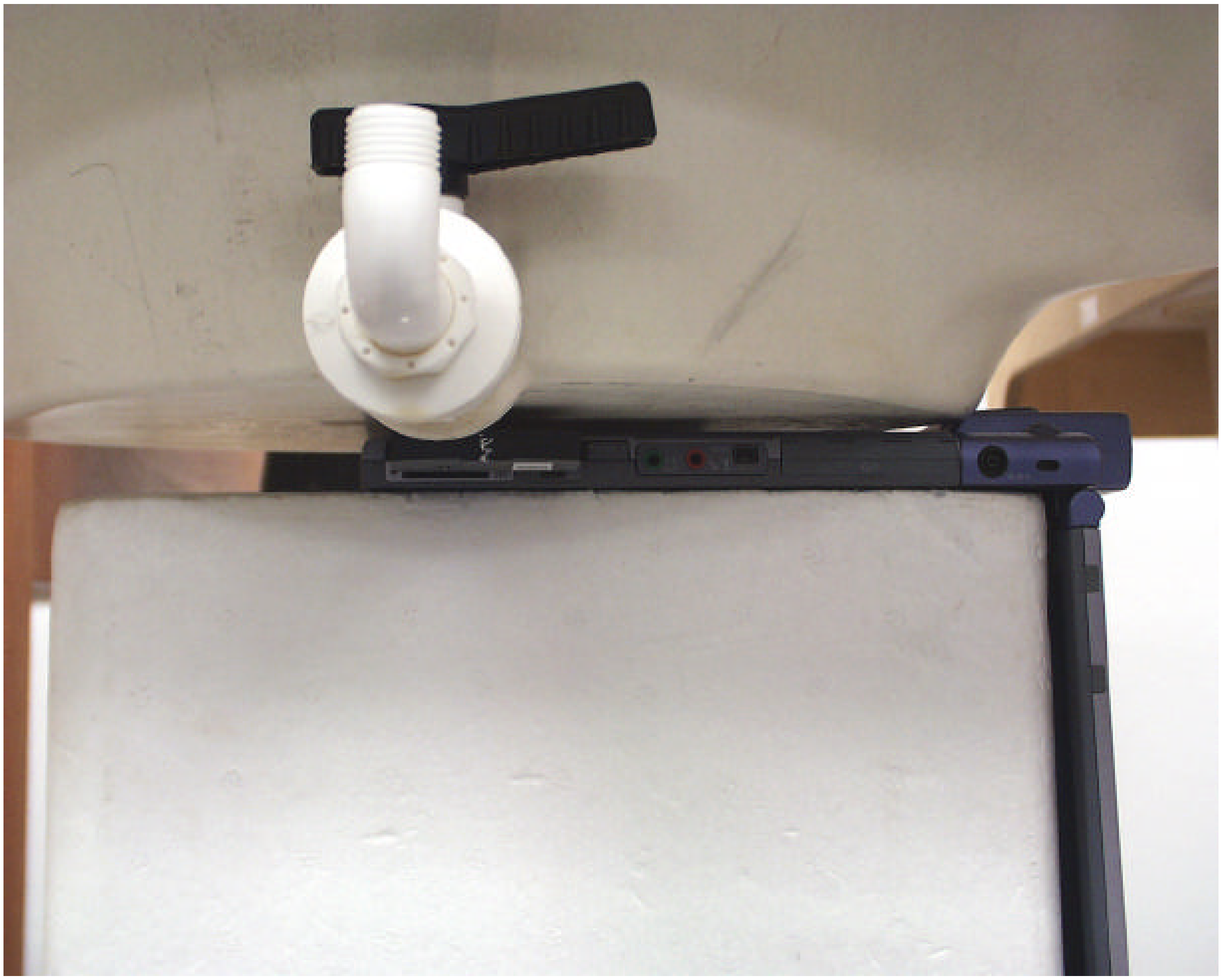
Sep. dist. [mm]	Antenna	Ch. #	f [MHz]	*Power Reference [V/m]		SAR_1g [mW/g]	
				Before	After	Measured	Limit
7	Fixed	36	5180	4.31	4.41	0.103	1.6
7	Fixed	52	5260	6.36	6.18	0.234	1.6
7	Fixed	64	5320	6.25	6.12	0.290	1.6

5.8 GHz band - Duty cycle: 91.8%; Crest factor: 1.089

Sep. dist. [mm]	Antenna	Ch. #	f [MHz]	*Power Reference [V/m]		SAR_1g [mW/g]	
				Before	After	Measured	Limit
7	Fixed	149	5745	6.38	6.51	0.383	1.6
7	Fixed	157	5785	5.42	5.60	0.341	1.6
7	Fixed	161	5805	5.32	5.18	0.300	1.6

Notes:
1. *: Power reference values were taken from the DASY4 System measurement job “Power reference measurement”.
2. The host device was tested in a lap-held position with the bottom of the computer in direct contact with a flat phantom.
3. Please see attachments for the detailed measurement data and plots showing the maximum SAR location(s) of the EUT.

8.3.2. 1-2_Host # 1 (Sony, PCG-5312)

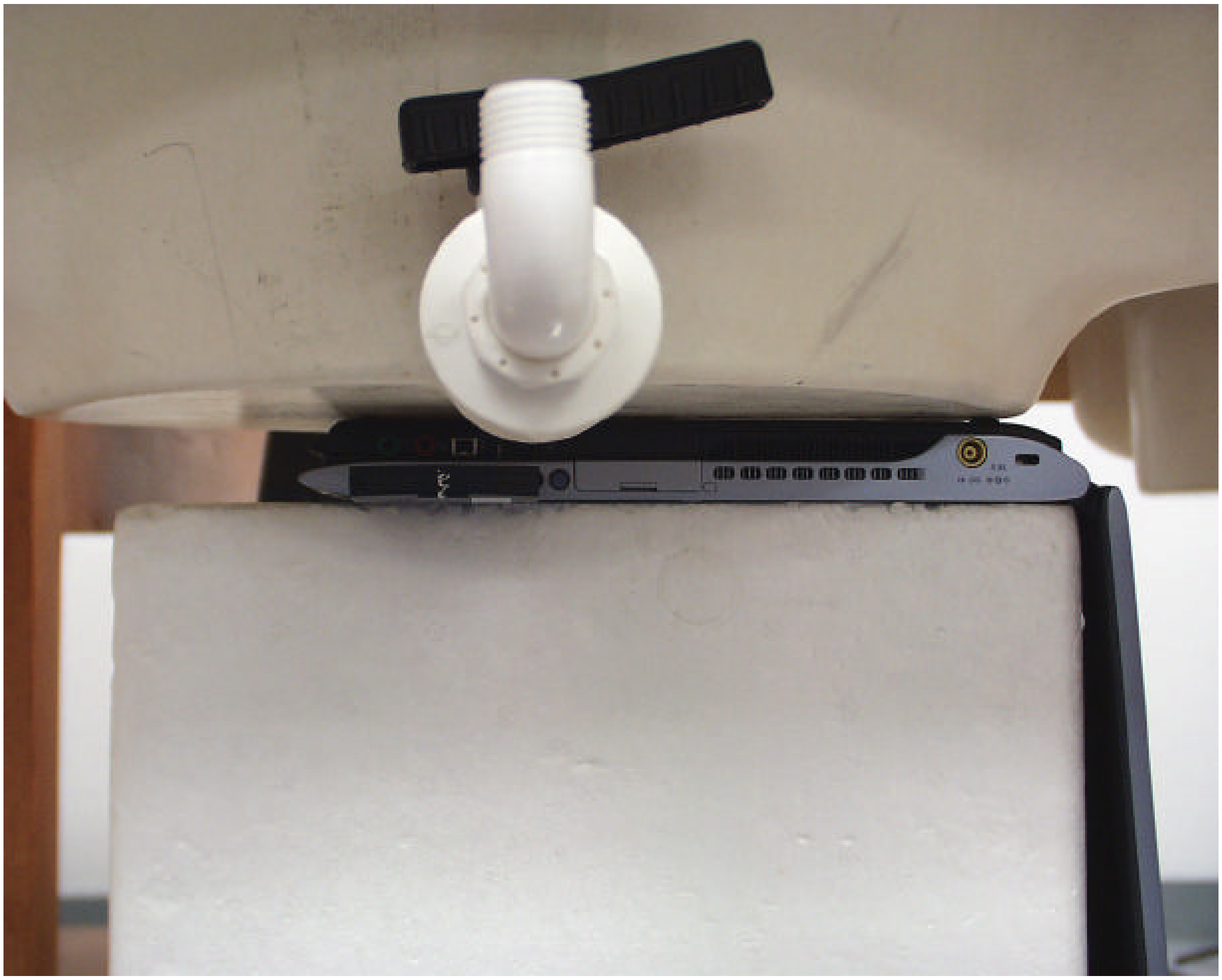


5.2 GHz band - Data rate:36, duty cycle: 87%; Crest factor: 1.15 Depth of liquid: 15 cm

Sep. dist. [mm]	Antenna	Ch. #	f [MHz]	*Power Reference [V/m]		SAR_1g [mW/g]	
				Before	After	Measured	Limit
7	Fixed	64	5320	5.25	5.30	0.150	1.6
5.2 GHz band - Data rate:108, duty cycle: 87%; Crest factor: 1.15							
7	Fixed	64	5320	2.10	2.00	**	1.6
5.8 GHz band - Data rate:36, duty cycle: 87%; Crest factor: 1.15							
Sep. dist. [mm]	Antenna	Ch. #	f [MHz]	*Power Reference [V/m]		SAR_1g [mW/g]	
				Before	After	Measured	Limit
7	Fixed	149	5745	2.91	2.90	0.092	1.6
5.8 GHz band - Data rate:108, duty cycle: 87%; Crest factor: 1.15							
7	Fixed	149	5745	2.20	2.10	**	1.6

Notes:
1. *: Power reference values were taken from the DASY4 System measurement job “Power reference measurement”.
2. **: SAR measured result is out off detected of SAR measurement system.
3. The host device was tested in a lap-held position with the bottom of the computer in direct contact with a flat phantom.
4. Please see attachments for the detailed measurement data and plots showing the maximum SAR location(s) of the EUT.

8.3.3. 2_Host # 2 (Sony, PCG-6B1L)



5.2 GHz Band - Duty cycle: 91.8%; Crest factor: 1.089 Depth of liquid: 15 cm

Sep. dist. [mm]	Antenna	Ch. #	f [MHz]	*Power Reference[V/m]		SAR_1g [mW/g]	
				Before	After	Measured	Limit
17.5	Fixed	36	5180			**	1.6
17.5	Fixed	52	5260			**	1.6
17.5	Fixed	64	5320	4.04	3.68	0.108	1.6

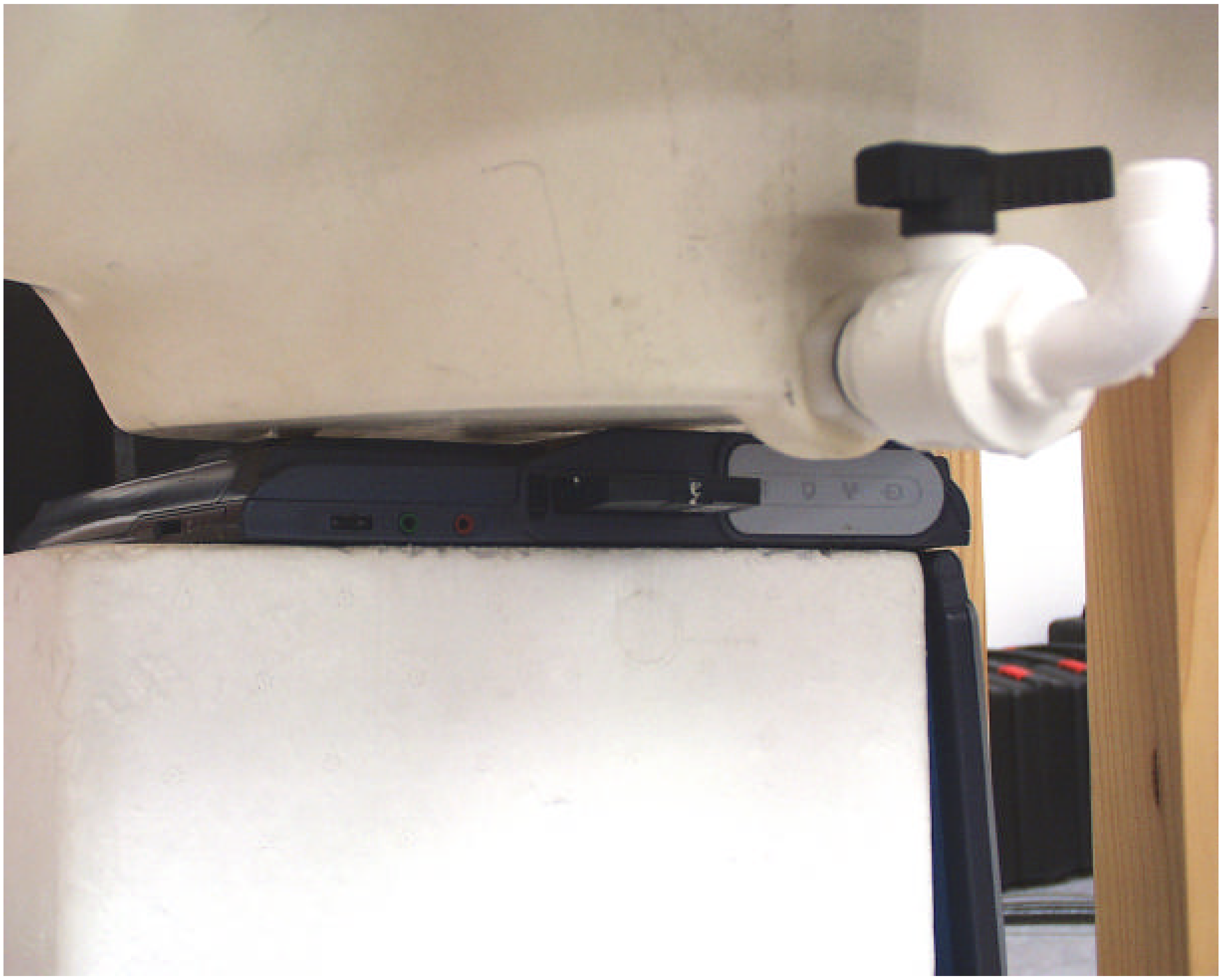
5.8 GHz Band - Duty cycle: 91.8%; Crest factor: 1.089

Sep. dist. [mm]	Antenna	Ch. #	f [MHz]	*Power Reference[V/m]		SAR_1g [mW/g]	
				Before	After	Measured	Limit
17.5	Fixed	149	5745	4.61	4.44	0.103	1.6
17.5	Fixed	157	5785			**	1.6
17.5	Fixed	161	5805			**	1.6

Notes:

1. *: Power reference values were taken from the DASY4 System measurement job "Power reference measurement".
2. **: The SAR measurements were performed on the worst-case channels. SAR levels on these channels were at least 3 dB lower than the SAR limit, therefore, testing of these channels was not required.
3. The host device was tested in a lap-held position with the bottom of the computer in direct contact with a flat phantom.
4. Please see attachments for the detailed measurement data and plots showing the maximum SAR location(s) of the EUT.

8.3.4. 3_Host # 3 (Sony, PCG-9D1R)



5.2 GHz Band - Duty cycle:91.8%; Crest factor: 1.089 Depth of liquid: 15 cm

Sep. dist. [mm]	Antenna	Ch. #	f [MHz]	*Power Reference[V/m]		SAR_1g [mW/g]	
				Before	After	Measured	Limit
16.5	Fixed	36	5180			**	1.6
16.5	Fixed	52	5260			**	1.6
16.5	Fixed	64	5320	4.72	3.73	0.163	1.6

5.8 GHz Band - Duty cycle: 91.8%; Crest factor: 1.089

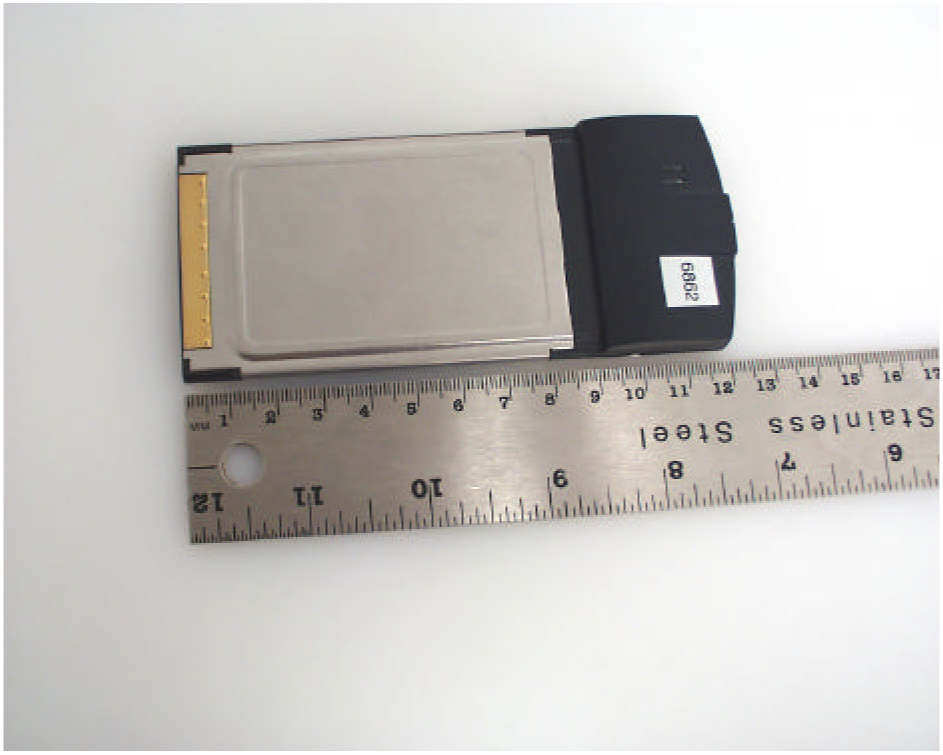
Sep. dist. [mm]	Antenna	Ch. #	f [MHz]	*Power Reference[V/m]		SAR_1g [mW/g]	
				Before	After	Measured	Limit
16.5	Fixed	149	5745	2.69	3.40	0.236	1.6
16.5	Fixed	157	5785			**	1.6
16.5	Fixed	161	5805			**	1.6

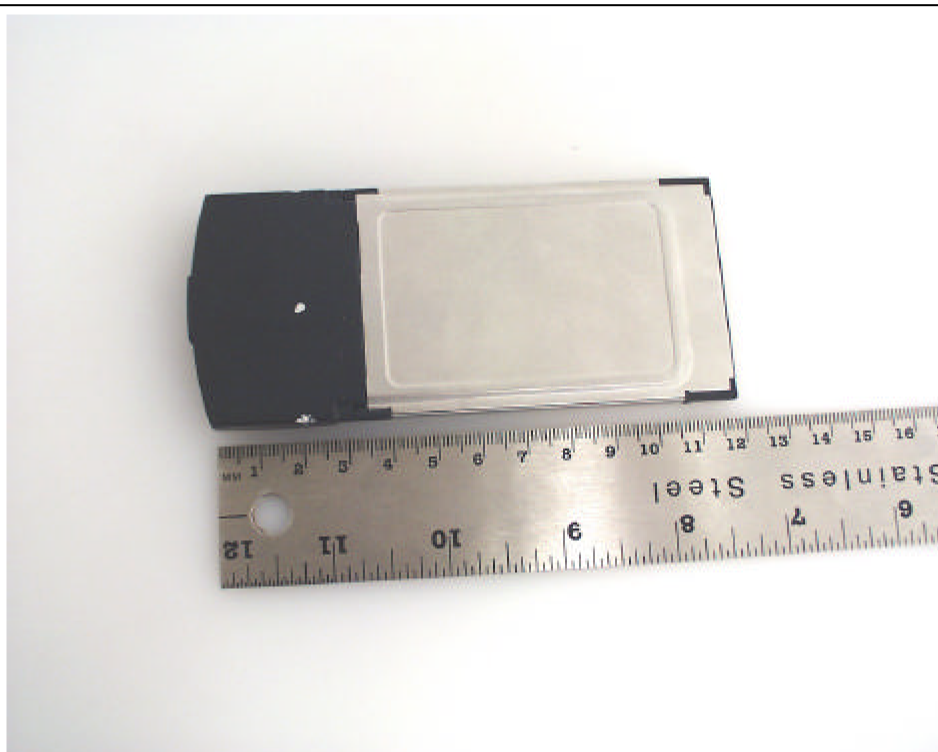
Notes:

1. *: Power reference values were taken from the DASY4 System measurement job “Power reference measurement”.
2. **: The SAR measurements were performed on the worst-case channels. SAR levels on these channels were at least 3 dB lower than the SAR limit, therefore, testing of these channels was not required.
3. The host device was tested in a lap-held position with the bottom of the computer in direct contact with a flat phantom.
4. Please see attachments for the detailed measurement data and plots showing the maximum SAR location(s) of the EUT.

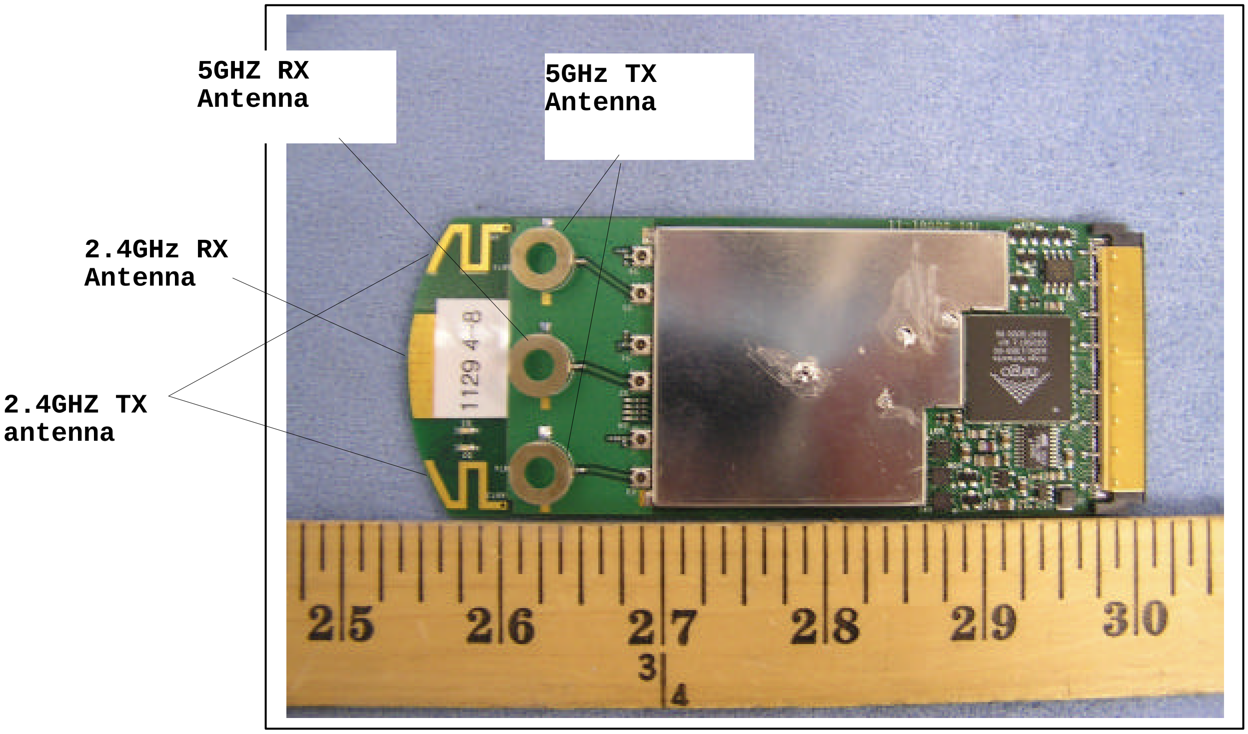
9. PHOTOS

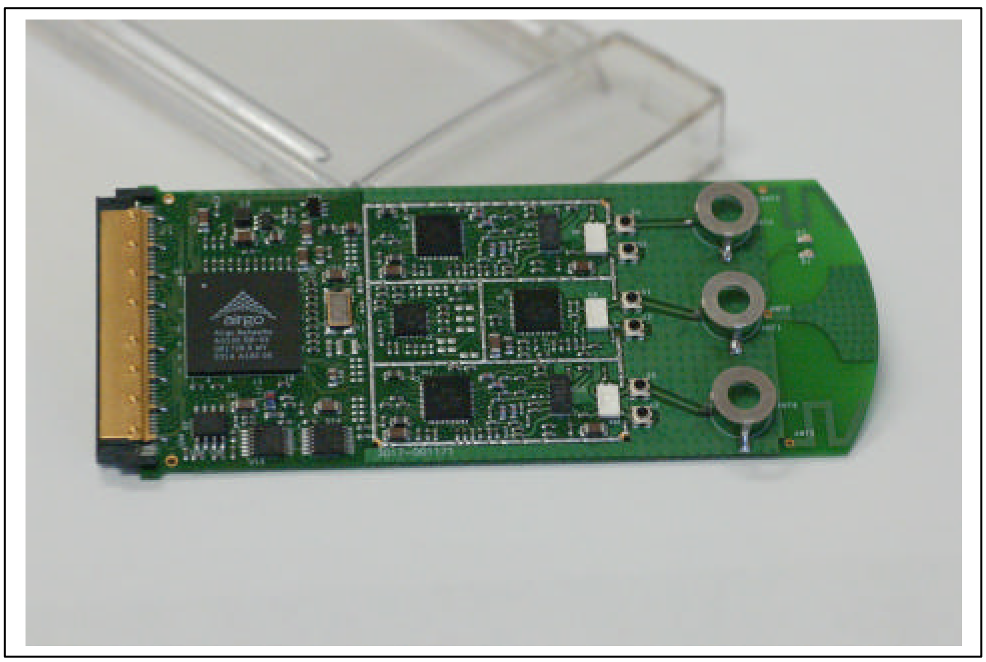
EUT PHOTOS (1/1)



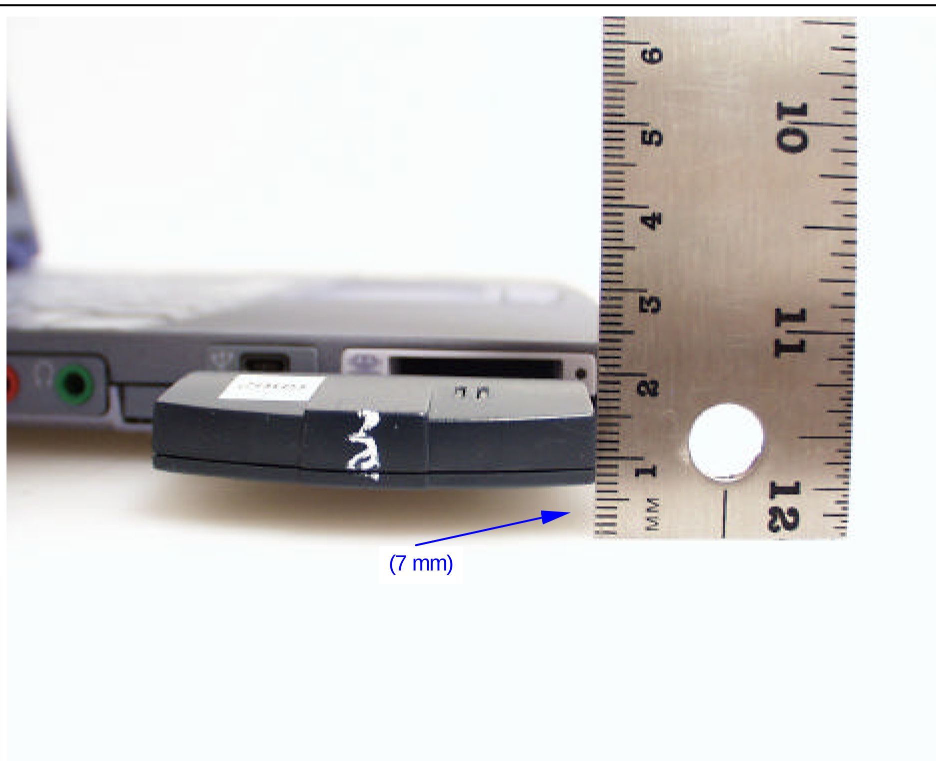


EUT PHOTOS (1/2)

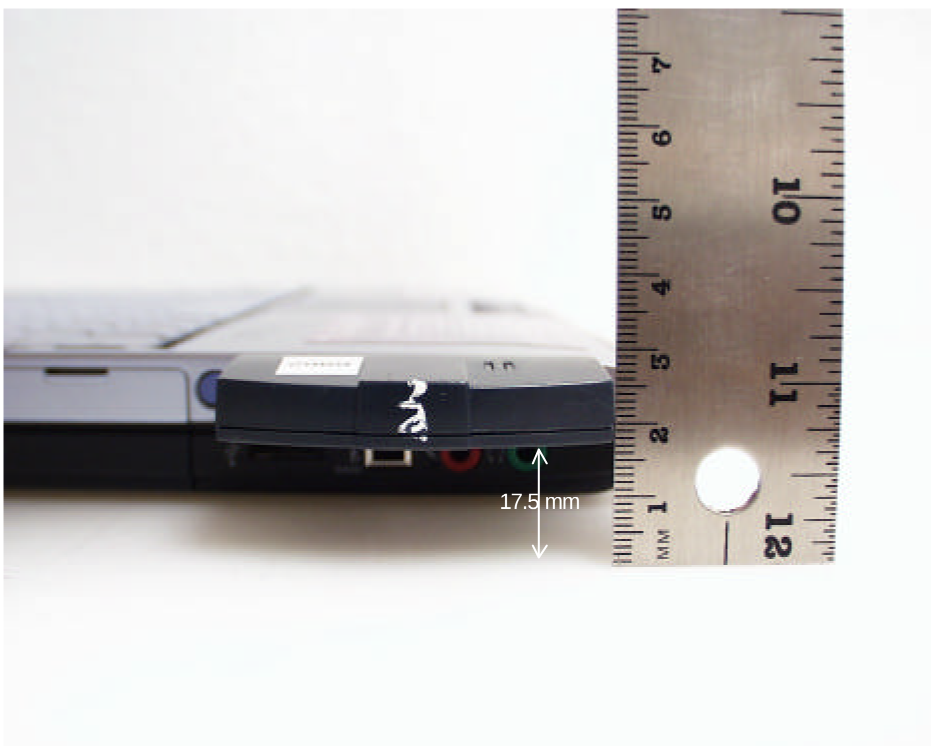




HOST #1 (PCG-5312)



HOST #2 (PCG-6B1L)



HOST # 3 (PCG-9D1R)

10. EQUIPMENT LIST & CALIBRATION STATUS

Name of Equipment	Manufacturer	Type/Model	Serial Number	Cal. Due date
S-Parameter Network Analyzer	Agilent	8753ES-6	US39173569	8/19/04
Electronic Probe kit	Hewlett Packard	85070C	N/A	N/A
Signal General	R&H	SMP 04	DE34210	5/5/05
Power Meter	Giga-tronics	8651A	8651404	9/16/05
Power Sensor	Giga-tronics	80701A	1834588	9/16/05
Amplifier	Mini-Circuits	ZVE-8G	0360	N/A
Amplifier	Mini-Circuits	ZHL-42W	D072701-5	N/A
Radio Communication Tester	Rohde & Schwarz	CMU 200	838114/032	11/1/04
Data Acquisition Electronics (DAE)	SPEAG	DAE3 V1	500	12/23/04
Dosimetric E-Field Probe	SPEAG	EX3DV3	3531	7/18/05
System Validation Dipole	SPEAG	D5GHzV2	1003	10/5/05
Probe Alignment Unit	SPEAG	LB (V2)	261	N/A
Robot	Staubli	RX90B L	F00/5H31A1/A/01	N/A
SAM Twin Phantom	SPEAG	TP-1785	QD 000 P40 CA	N/A
SAM Twin Phantom	SPEAG	TP-1015	N/A	N/A
Simulating Liquids	SPEAG	MSL5800	N/A	Within 24 hrs of first test

11. REFERENCES

[1] Federal Communications Commission, \Report and order: Guidelines for evaluating the environmental effects of radiofrequency radiation", Tech. Rep. FCC 96-326, FCC, Washington, D.C. 20554, 1996.

[2] David L. Means Kwok Chan, Robert F. Cleveland, \Evaluating compliance with FCC guidelines for human exposure to radiofrequency electromagnetic fields", Tech. Rep., Federal Communication Commision, O_ce of Engineering & Technology, Washington, DC, 1997.

[3] Thomas Schmid, Oliver Egger, and Niels Kuster, \Automated E-_eld scanning system for dosimetric assessments", IEEE Transactions on Microwave Theory and Techniques, vol. 44, pp. 105{113, Jan. 1996.

[4] Niels Kuster, Ralph K.astle, and Thomas Schmid, \Dosimetric evaluation of mobile communications equipment with known precision", IEICE Transactions on Communications, vol. E80-B, no. 5, pp. 645{652, May 1997.

[5] CENELEC, \Considerations for evaluating of human exposure to electromagnetic fields (EMFs) from mobile telecommunication equipment (MTE) in the frequency range 30MHz - 6GHz", Tech. Rep., CENELEC, European Committee for Electrotechnical Standardization, Brussels, 1997.

[6] ANSI, ANSI/IEEE C95.1-1992: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz, The Institute of Electrical and Electronics Engineers, Inc., New York, NY 10017, 1992.

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12. ATTACHMENTS

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