SAR EVALUATION REPORT

Report No. : 24HE0082-HO-10

Applicant	:	**Sony Corporation**
Type of Equipment	:	**Wireless LAN Module**
Model No.	:	**IRF303U**
FCC ID	:	**AK8IRF303U**
Test standard	:	**FCC47CFR 2.1093** **FCC OET Bulletin 65, Supplement C**
Test Result	:	**Complied**
Max SAR Measured	:	**EA5800 Antenna 1.31W/kg(Body, 5320MHz)** **HFT18 Antenna 1.25W/kg(Body, 2462MHz)**

1. This test report shall not be reproduced except full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the SAR profile.
4. The test results in this test report are traceable to the national or international standards.

Date of test : June 16,17,19,20,22,24,30 and July 01 ,2004

Tested by :

Hironobu Shimoji	Miyo Ikuta
Group Reader of Head Office	EMC Lab.Head Office

Approved by :

Tetsuo Maeno
Site Manager of Head Office EMC Lab.

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SECTION 1 : Client information

Company Name	:	Sony Corporation
Brand Name	:	SONY
Address	:	Gate City Osaki West Tower Osaki East Tec. 1-11-1 Osaki Shinagawa-ku, Tokyo141-0032, Japan
Telephone Number	:	81-3-5435-3977
Facsimile Number	:	81-3-5435-3963
Contact Person	:	Masaki Nishimura

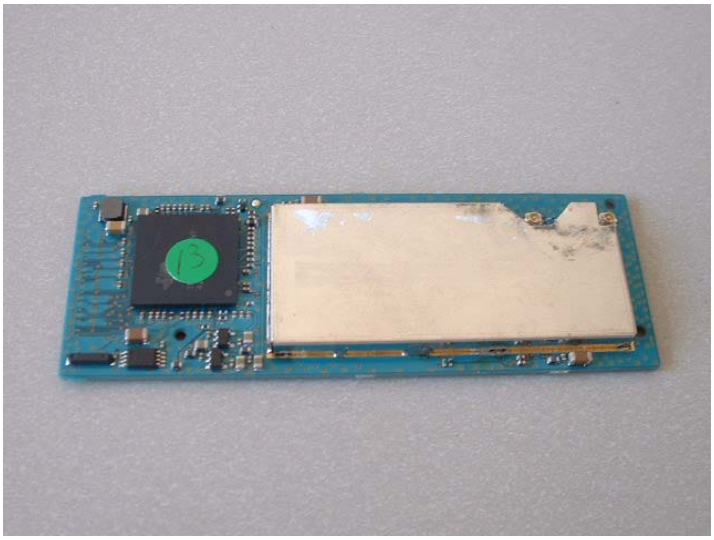
SECTION 2 : Equipment under test

2.1 Identification of EUT

APPLICANT	:	Sony Corporation
Type of Equipment	:	Wireless LAN Module
Model No.	:	IRF303U
Serial No.	:	13
Country of Manufacture	:	Japan
Receipt Date of Sample	:	May 31, 2004
Condition of EUT	:	Engineering prototype (Not for sale: This sample is equivalent to mass-produced items.)
Category Identified	:	Portable device

2.2 Product description of EUT (Module)

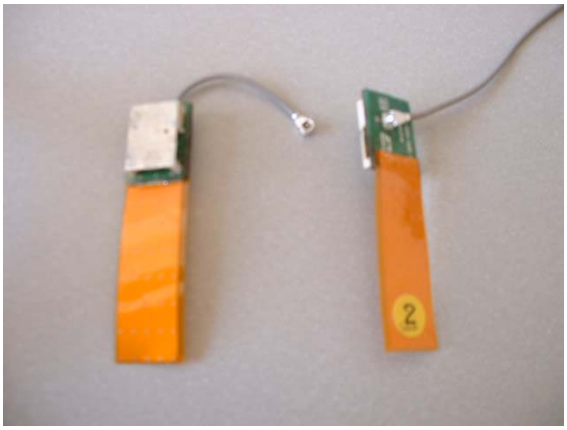
Tx Frequency	:	2412-2462MHz(802.11b/g) 5180-5320MHz(802.11a UNII-Lower & Middle) 5745-5805MHz(802.11a UNII-Upper)
Modulation	:	DSSS,OFDM
Rating	:	DC3.3V
Max.Output Power Tested	:	21.11 dBm Peak Conducted



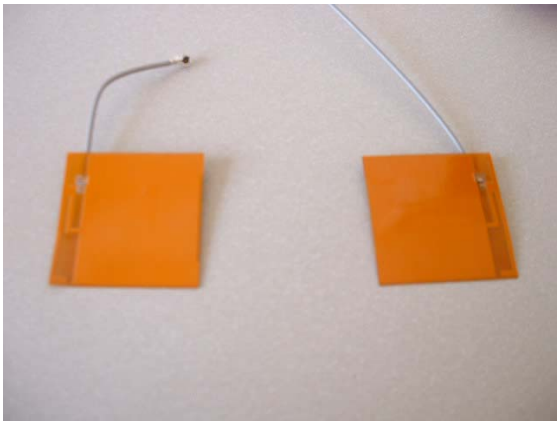
2.3 Product description of EUT (Antenna)

This EUT has two kinds of antennas. The details of antennas are shown below.

1. Model name EA5800
Antenna Type: Chip Antenna



2. Model name HFT18
Antenna Type: Film Antenna



SECTION 3 : Requirements for compliance testing defined by the FCC

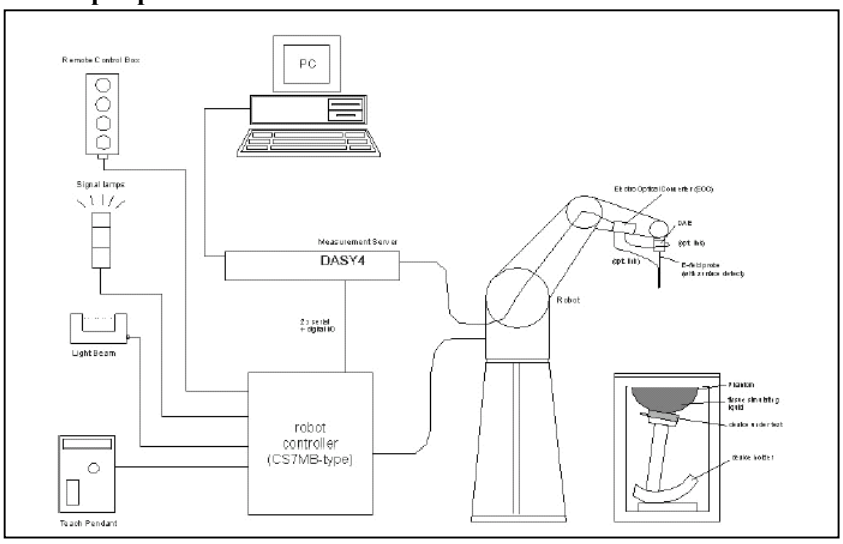
The US Federal Communications Commission has released the report and order “Guidelines for Evaluating the Environmental Effects of RF Radiation", ET Docket No. 93-62 in August 1996. The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable 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. 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.

1 Specific Absorption Rate (SAR) is a measure of the rate of energy absorption due to exposure to an RF transmitting source (wireless portable device).
2 IEEE/ANSI Std. C95.1-1992 limits are used to determine compliance with FCC ET Docket 93-62.

SECTION 4 : Dosimetry assessment setup

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 dosimetry probe ET3DV6, SN: 1685 / EX3DV3, SN:3507 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the procedure described in [2] with accuracy of better than +/-10%. The spherical isotropy was evaluated with the procedure described in [3] 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 CENELEC EN50361.

4.1 Configuration and peripherals



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

1. A standard high precision 6-axis robot (Stäubli RX family) with controller and software.
   An arm extension for accommodating the data acquisition electronics (DAE).

2. 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.

3. A data acquisition electronic (DAE), which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

4. The Electro-optical converter (EOC) performs the conversion between optical and electrical of the signals for the digital communication to the DAE and for the analog signal from the optical surface detection.
   The EOC is connected to the measurement server.

5. 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.

6. A probe alignment unit which improves the (absolute) accuracy of the probe positioning.

7. A computer operating Windows 2000.

8. DASY4 software.

9. Remote control with teaches pendant and additional circuitry for robot safety such as warning lamps, etc.

10. The SAM twin phantom enabling testing left-hand and right-hand usage.

11. The device holder for handheld mobile phones.

12. Tissue simulating liquid mixed according to the given recipes.

13. Validation dipole kits allowing to validate the proper functioning of the system.

4.2 System components

4.2.1 ET3DV6 Probe Specification

Construction:
Symmetrical design with triangular core
Built-in optical fiber for surface detection System
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g., glycol ether)

Calibration:
Basic Broad Band calibration in air from 10 MHz to 2.5 GHz
In brain and muscle simulating tissue at
Frequencies of 450 MHz, 900 MHz, 1.8 GHz and 2.45GHz (accuracy +/-8%)

Frequency:
10 MHz to 3GHz; Linearity: +/-0.2 dB

Directivity:
+/-0.2 dB in brain tissue (rotation around probe axis)
+/-0.4 dB in brain tissue (rotation normal probe axis)

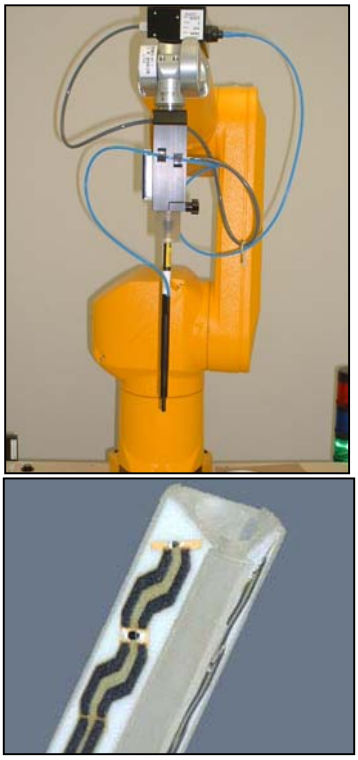
Dynamic Range:
5 mW/g to > 100 mW/g;Linearity: +/-0.2 dB

Optical Surface Detection:
+/-0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces.

Dimensions:
Overall length: 330 mm (Tip: 16 mm)
Tip length: 16 mm
Body diameter: 12 mm (Body: 12 mm)

Tip diameter: 6.8 mm
Distance from probe tip to dipole centers: 2.7 mm

Application:
General dosimetric up to 3 GHz
Compliance tests of mobile phones
Fast automatic scanning in arbitrary phantoms



ET3DV6 E-field Probe

4.2.2 EX3DV3 Probe Specification

Construction:
Symmetrical design with triangular core
Built-in shielding against static charges
PEEK enclosure material (resistant to organic solvents, e.g., glycol ether)
Calibration:
Basic Broad Band calibration in air : 10-3000 MHz
Conversion Factors (CF) for HSL900 and HSL 1800
Additional CF for other liquids and frequencies upon request

Frequency:
10 MHz to > 6GHz; Linearity: +/-0.2 dB

Directivity:
+/-0.3 dB in HSL (rotation around probe axis)
+/-0.5 dB in tissue material (rotation normal probe axis)

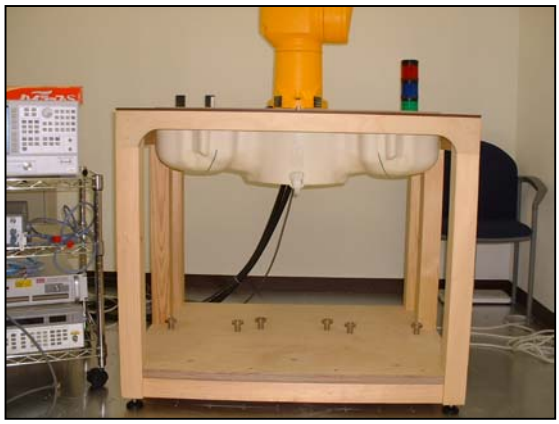
Dynamic Range:
10uW/g to > 100 mW/g;Linearity: +/-0.2 dB(noise: typically < 1uW/g)

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

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

EX3DV3 E-field Probe

4.2.3 SAM Phantom



SAM Phantom

Construction:
The shell corresponds to the specifications of the Specific Anthropomorphic Mannequin (SAM) phantom defined in IEEE 1528-200X, CENELEC EN 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:
(H x L x W): 810 x 1000 x 500 mm

4.2.4 Device Holder for Transmitters

Device Holder

In combination with the SAM Twin Phantom V4.0, the Mounting Device enables the rotation of the mounted transmitter
in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeatedly positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head,flat phantom).
* Note: A simulating human hand is not used due to the complex anatomical and geometrical structure of the hand that may produced infinite number of configurations.
To produce the worst-case condition (the hand absorbs antenna output power), the hand is omitted during the tests.

Device holder couldn't be used at this SAR measurement.

SECTION 5 : Test system specifications

Robot RX60L

Number of Axes	:	6
Payload	:	1.6 kg
Reach	:	800mm
Repeatability	:	+/-0.025mm
Control Unit	:	CS7M
Programming Language	:	V+
Manuafacture	:	Stäubli Unimation Corp. Robot Model: RX60

DASY4 Measurement sever

Features	:	166MHz low power Pentium MMX 32MB chipdisk and 64MB RAM Serial link to DAE (with watchdog supervision) 16 Bit A/D converter for surface detection system Two serial links to robot (one for real-time communication which is supervised by watchdog) Ethernet link to PC (with watchdog supervision) Emergency stop relay for robot safety chainTwo expansion slots for future applications
Manufacture	:	Schimid & Partner Engineering AG

Data Acquisition Electronic (DAE)

Features	:	Signal amplifier, multiplexer, A/D converter and control logic Serial optical link for communication with DASY4 embedded system (fully remote controlled) 2 step probe touch detector for mechanical surface detection and emergency robot stop (not in -R version)
Measurement Range	:	1 μV to > 200 mV (16 bit resolution and two range settings: 4mV, 400mV)
Input Offset voltage	:	< 1 μV (with auto zero)
Input Resistance	:	200 MΩ
Battery Power	:	> 10 h of operation (with two 9 V battery)
Dimension	:	60 x 60 x 68 mm
Manufacture	:	Schimid & Partner Engineering AG

Software

Item	:	Dosimetric Assesment System DASY4
Type No.	:	SD 000 401A, SD 000 402A
Software version No.	:	4.1
Manufacture / Origin	:	Schimid & Partner Engineering AG

E-Field Probe

Used probe in measurement of 802.11b / 11g mode (2.4GHz)

Model	:	ET3DV6
Serial No.	:	1685
Construction	:	Triangular core fiber optic detection system
Frequency	:	10 MHz to 3 GHz
Linearity	:	+/-0.2 dB
Manufacture	:	Schimid & Partner Engineering AG

Used probe in measurement of 802.11a mode (5GHz)

Model	:	EX3DV3
Serial No.	:	3507
Construction	:	Symmetrical design with triangular core
Frequency	:	10 MHz to 6 GHz
Linearity	:	+/-0.2 dB
Manufacture	:	Schimid & Partner Engineering AG

Phantom

Type	:	SAM Twin Phantom V4.0
Shell Material	:	Fiberglass
Thickness	:	2.0 +/-0.2 mm
Volume	:	Approx. 25 liters
Manufacture	:	Schimid & Partner Engineering AG

SECTION 6 : Measurement outline

We tested the air board with which this EUT was inserted.
The operation of the EUT was controlled by the PC. Therefore, we performed the test with connecting the PC to the air board which inserted the EUT.

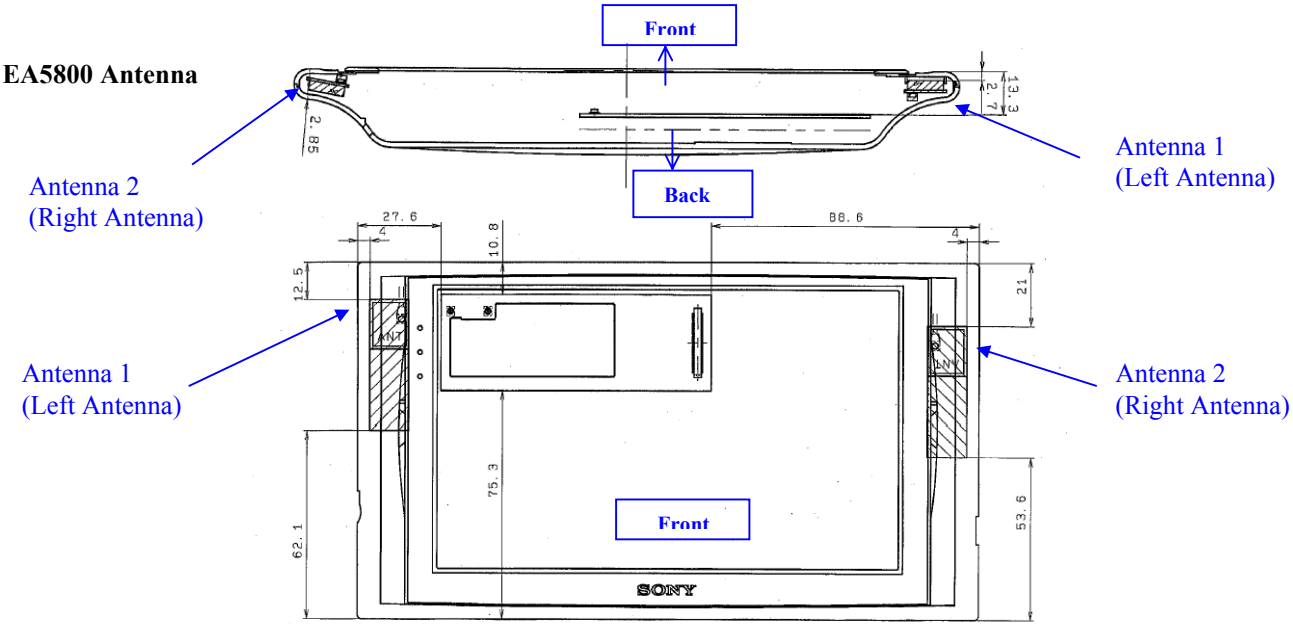
The details of the air board that we used for SAR testing are showing in the following.
The shortest distance between the surface of this air board and EA5800 antenna was 2.7 mm.
The shortest distance between the surface of this air board and HFT18 antenna was 1.5 mm.

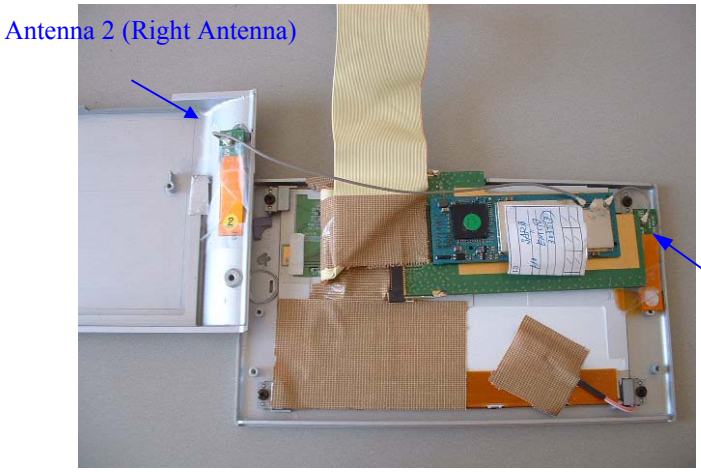
6.1 Information of model

Type of Equipment : Air board

Manufacture : SONY

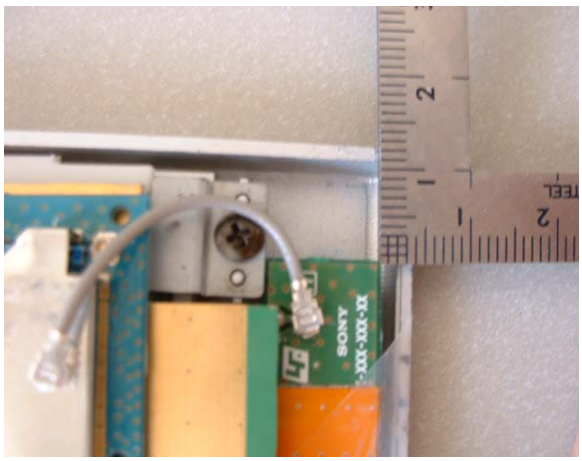
EA5800 Antenna



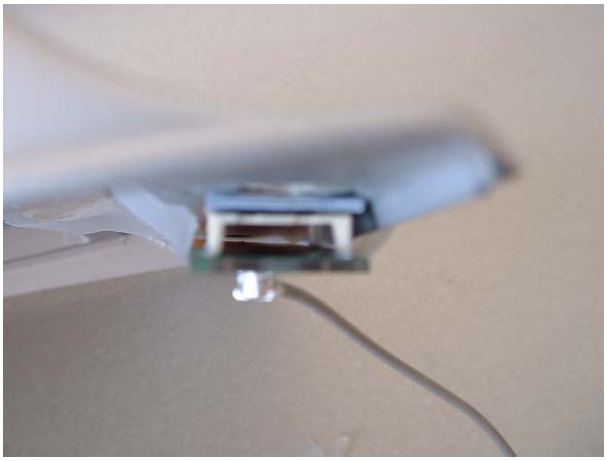


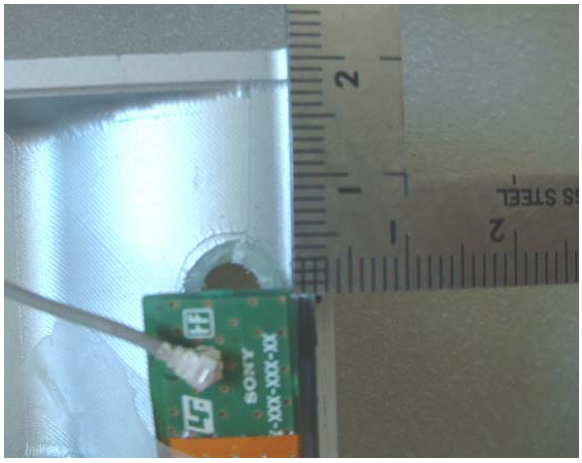
Antenna 1 was fixed to the back of display.
Antenna 2 was fixed to the back cabinet.

Anttenna 1 (Left Antenna)

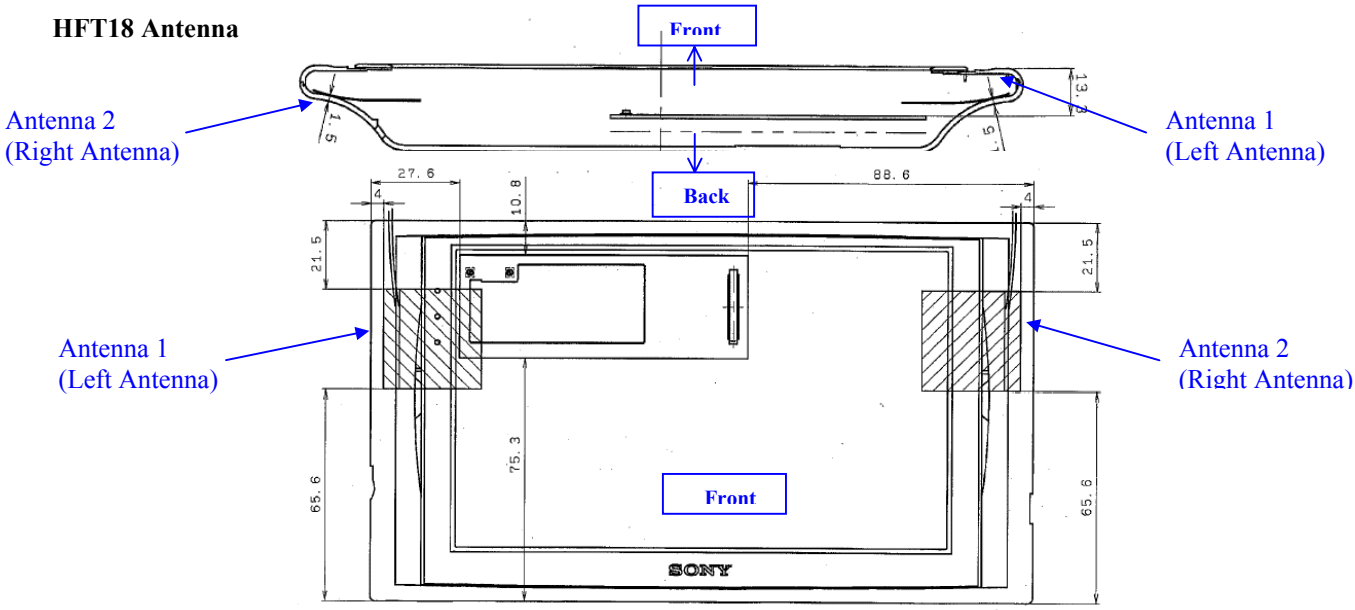


Anttenna 2 (Right Antenna)

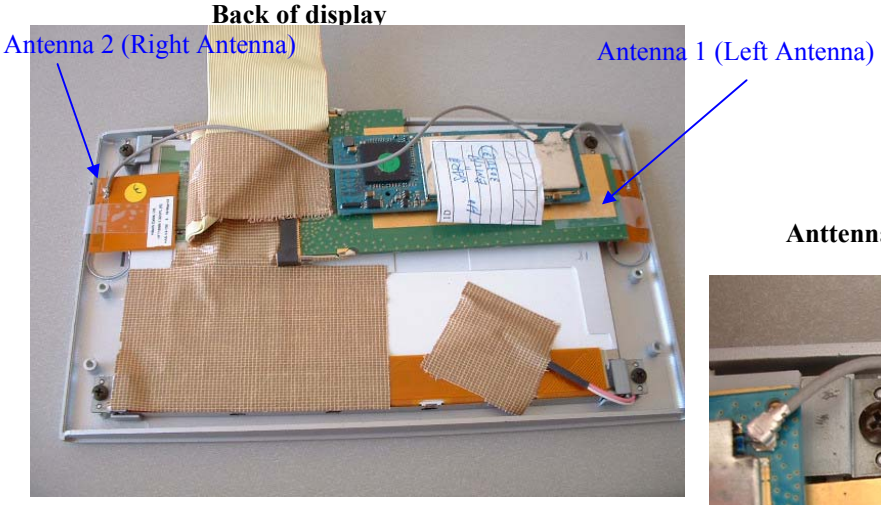




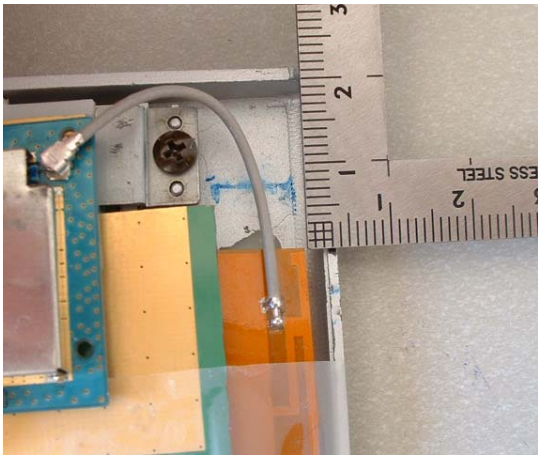
HFT18 Antenna



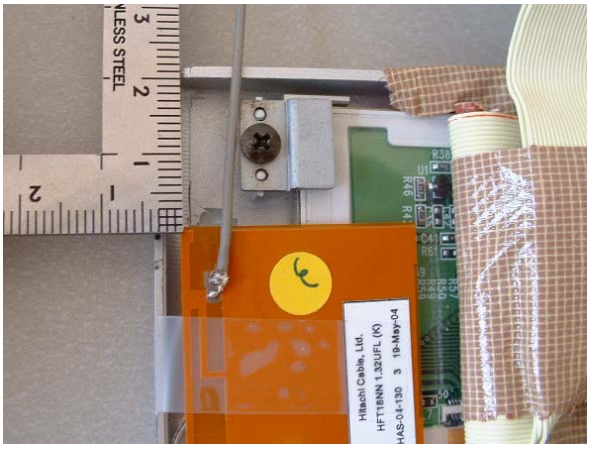
Back of display



Anttenna 1 (Left Antenna)



Antenna 2 (Right Antenna)



SECTION 7 : Test setup of EUT

7.1 Photographs of test setup

This EUT was inserted into the Air board.
When users operate or carry the Air board, it could be considered to touch or get close to their bodies. In order to assume this situation, we performed the test at the following positions. Please refer to "APPENDIX 1" for more details.

1.Left Front : The test was performed in touch with left front surface (ANT1) of the air board to the flat section.

2.Right Front : The test was performed in touch with right front surface (ANT2) of the air board to the flat section.

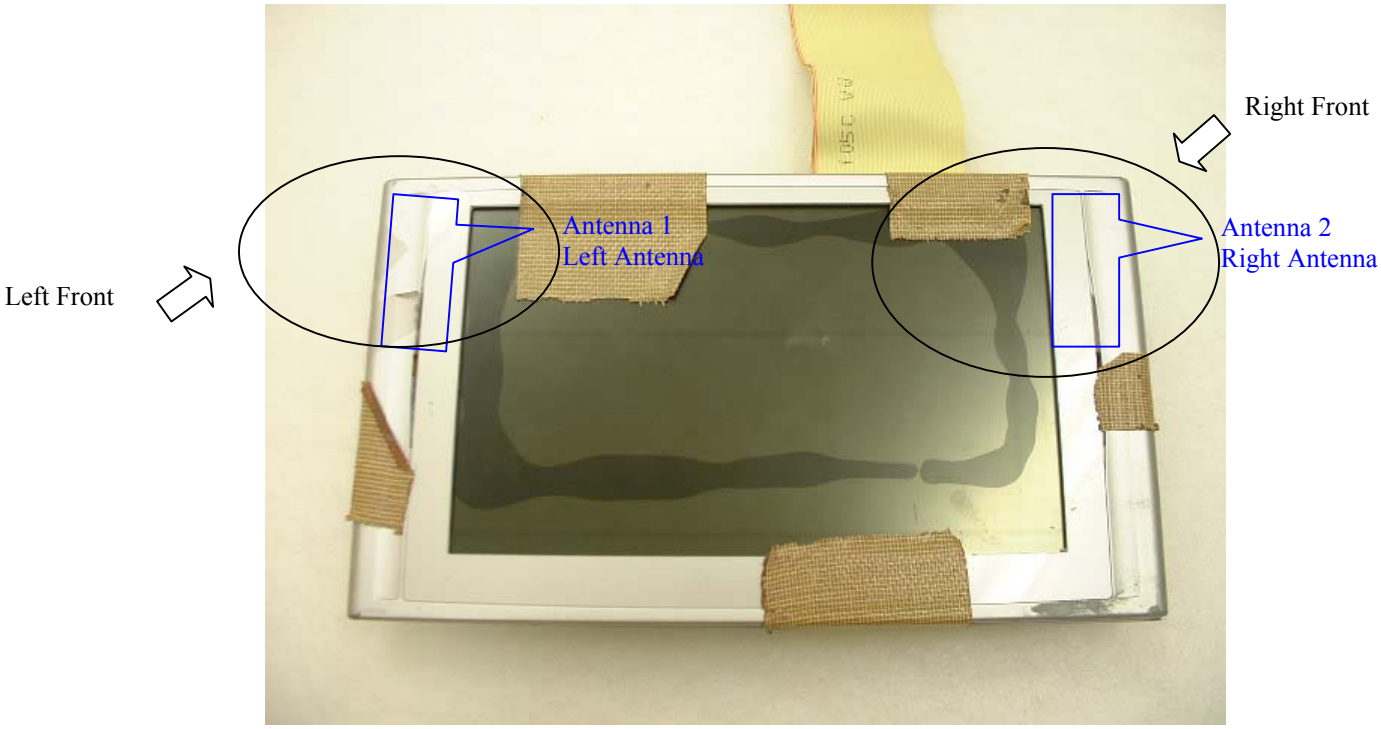
3.Left Back : The test was performed in touch with left back surface (ANT1)of the air board to the flat section.

4.Right Back : The test was performed in touch with right back surface (ANT2) of the air board to the flat section.

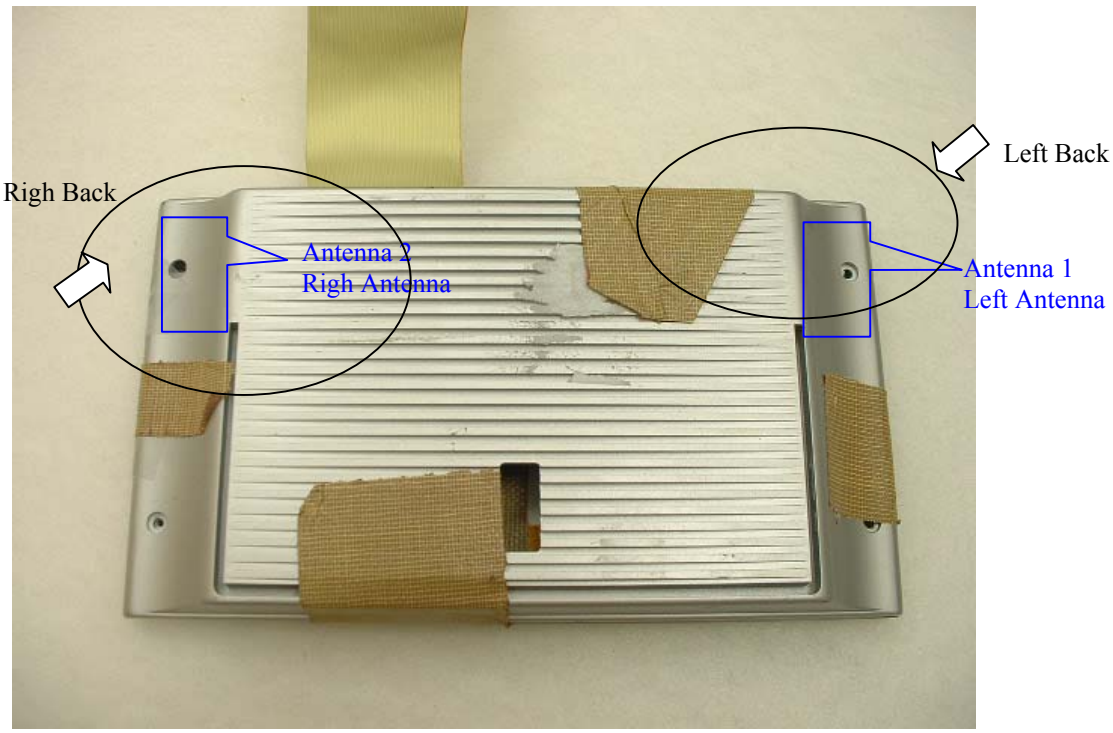
5.Left Side : The test was performed in touch with left side (ANT1) of the air board to the flat section.

6.Right Side : The test was performed in touch with right side (ANT2) of the air board to the flat section.

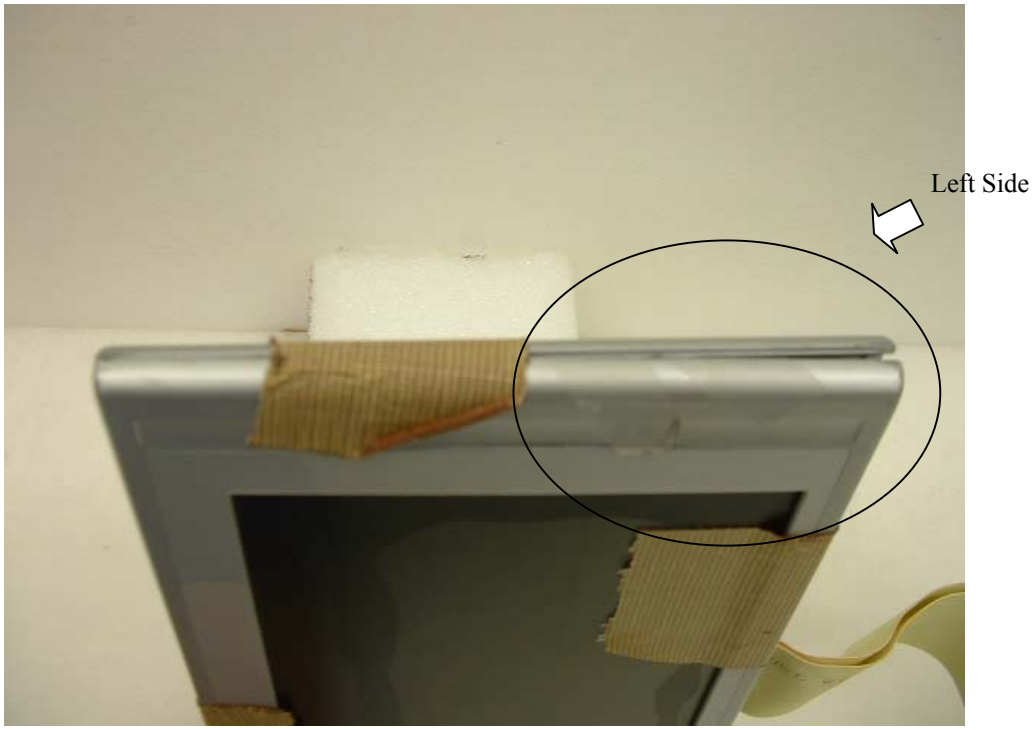
1. Front



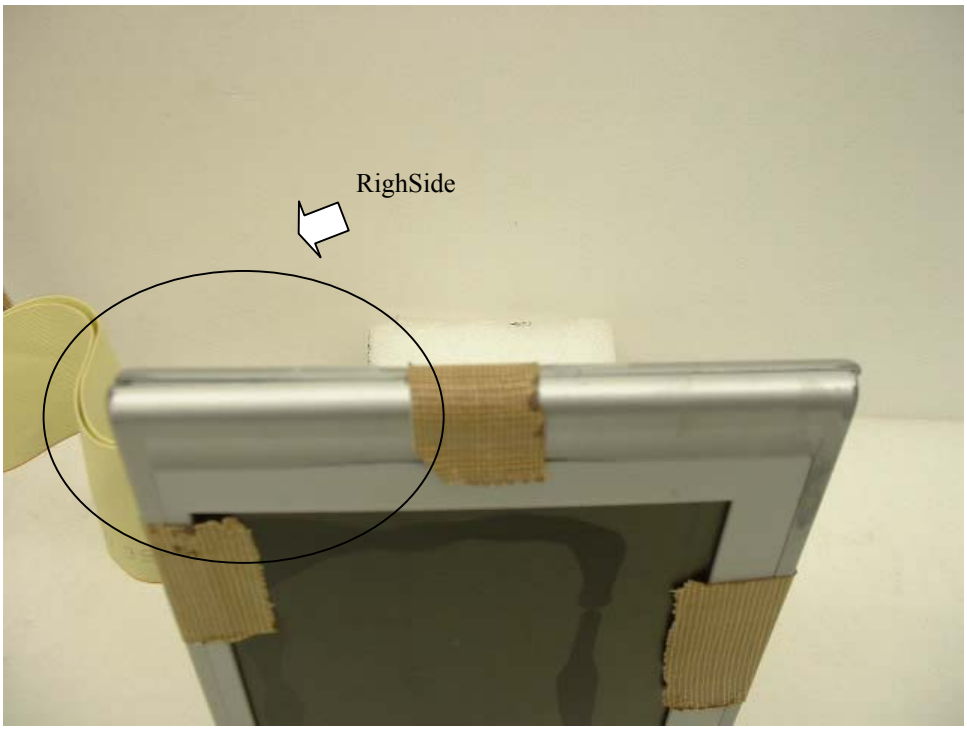
2. Back



3. Left Side



4. Right Side



7.2 EUT Tune-up procedure

This EUT (Wireless LAN module) has IEEE.802.11a/11b/11g modes.
The frequency range and the modulation were used in the testing of each mode are shown as a following.

The testing was performed in Low, Middle and High channels of the frequency band.

1. IEEE 802.11b mode

Frequency band : 2412-2462MHz
Channel : 1ch(2412MHz),6ch(2437MHz),11ch(2462MHz)
Modulation : DSSS(CCK)
Crest factor : 1

2. IEEE 802.11g mode

Frequency band : 2412-2462MHz
Channel : 1ch(2412MHz),6ch(2437MHz),11ch(2462MHz)
Modulation : OFDM(64QAM & QPSK)
Crest factor : 1

3. IEEE 802.11a mode

Frequency band : 5.15-5.35GHz
Channel : 36ch(5180MHz), 52ch(5260MHz), 64ch(5320MHz)
Modulation : OFDM(64QAM & QPSK)
Crest factor : 1

Frequency band : 5.725-5.825GHz
Channel number : 149ch(5745MHz), 153ch(5765MHz),161ch(5805MHz)
Modulation : OFDM(64QAM & QPSK)
Crest factor : 1

7.3 Methode of measurement

Step1. We performed the tests in middle channels by each three frequency bands (2.4G, 5.2G and 5.8G).

Step2. We performed the test in low and high channels at the position of SAR value within 3dB of the SAR limit value (1.6W/kg) in the Step1.

Step3. We performed the test in low and high channels at the position of the highest SAR value in the both ANT 1(Left Antenna) and ANT 2(Right Antenna) antennas

Step4 We performed the test of a distance 0mm (touch) in from Step 1 to Step3. However the distance 0mm may not have the worst value. Therefore we performed the test of the distance 5mm,10mm and 15mm at the max SAR measured position. As a result, the distance 0mm had the worst value.

SECTION 8 : Measurement uncertainty

8.1 Uncertainty of 802.11b/g modes testing

The uncertainty budget has been determined for the DASY4 measurement system according to the NIS81 [13] and the NIST1297 [6] documents and is given in the following Table.

Error Description	Uncertainty value ± %	Probability distribution	divisor	(ci)1 1g	Standard Uncertainty (1g)	vi or veff
Measurement System						
Probe calibration	±4.8	Normal	1	1	±4.8	∞
Axial isotropy of the probe	±4.7	Rectangular	√3	$(1-c_p)^{1/2}$	±1.9	∞
Spherical isotropy of the probe	±9.6	Rectangular	√3	$(c_p)^{1/2}$	±3.9	∞
Boundary effects	±1.0	Rectangular	√3	1	±0.6	∞
Probe linearity	±4.7	Rectangular	√3	1	±2.7	∞
Detection limit	±1.0	Rectangular	√3	1	±0.6	∞
Readout electronics	±1.0	Normal	1	1	±1.0	∞
Response time	±0.8	Rectangular	√3	1	±0.5	∞
Integration time	±2.6	Rectangular	√3	1	±1.5	∞
RF ambient conditions	±3.0	Rectangular	√3	1	±1.7	∞
Mech. constraints of robot	±0.4	Rectangular	√3	1	±0.2	∞
Probe positioning	±2.9	Rectangular	√3	1	±1.7	∞
Extrap. and integration	±1.0	Rectangular	√3	1	±0.6	∞
Test Sample Related						
Device positioning	±2.9	Rectangular	√3	1	±2.9	6
Device holder uncertainty	±3.6	Rectangular	√3	1	±3.6	4
Power drift	±10.0	Rectangular	√3	1	±2.9	∞
Phantom and Setup						
Phantom uncertainty	±4.0	Rectangular	√3	1	±2.3	∞
Liquid conductivity (target)	±5.0	Rectangular	√3	0.64	±1.8	∞
Liquid conductivity (meas.)	±5.0	Rectangular	√3	0.64	±1.8	∞
Liquid permittivity (target)	±5.0	Rectangular	√3	0.6	±1.7	∞
Liquid permittivity (meas.)	±5.0	Rectangular	√3	0.6	±1.7	∞
Combined Standard Uncertainty					**±11.514**	
Expanded Uncertainty (k=2)					**±23.0**	

The result of some test showed that the power drift has exceeded 5%. Therefor, the uncertainty of power drift expanded to 10%. However, the extended uncertainty (k= 2) of a test is less than 30%.

*The probe was used model name ET3DV6

8.2 Uncertainty of 802.11a mode testing

The uncertainty budget has been determined for the DASY4 measurement system according to the NIS81 [13] and the NIST1297 [6] documents and is given in the following Table.

Error Description	Uncertainty value ± %	Probability distribution	divisor	(ci)1 1g	Standard Uncertainty (1g)	vi or veff
Measurement System						
Probe calibration	±6.8	Normal	1	1	±6.8	∞
Axial isotropy of the probe	±4.7	Rectangular	√3	0.7	±1.9	∞
Spherical isotropy of the probe	±9.6	Rectangular	√3	0.7	±3.9	∞
Boundary effects	±2.0	Rectangular	√3	1	±1.2	∞
Probe linearity	±4.7	Rectangular	√3	1	±2.7	∞
Detection limit	±1.0	Rectangular	√3	1	±0.6	∞
Readout electronics	±1.0	Normal	1	1	±1.0	∞
Response time	±0.8	Rectangular	√3	1	±0.5	∞
Integration time	±2.6	Rectangular	√3	1	±1.5	∞
RF ambient conditions	±3.0	Rectangular	√3	1	±1.7	∞
Mech. constraints of robot	±0.8	Rectangular	√3	1	±0.5	∞
Probe positioning	±5.7	Rectangular	√3	1	±5.7	∞
Extrap. and integration	±4.0	Rectangular	1	1	±2.3	∞
Test Sample Related						
Device positioning	±2.9	Rectangular	√3	1	±2.9	6
Device holder uncertainty	±3.6	Rectangular	√3	1	±3.6	4
Power drift	±10.0	Rectangular	√3	1	±2.9	∞
Phantom and Setup						
Phantom uncertainty	±4.0	Rectangular	√3	1	±2.3	∞
Liquid conductivity (target)	±5.0	Rectangular	√3	0.64	±1.8	∞
Liquid conductivity (meas.)	±5.0	Rectangular	√3	0.64	±1.8	∞
Liquid permittivity (target)	±5.0	Rectangular	√3	0.6	±1.7	∞
Liquid permittivity (meas.)	±5.0	Rectangular	√3	0.6	±1.7	∞
Combined Standard Uncertainty					**±13.038**	
Expanded Uncertainty (k=2)					**±26.1**	

The result of some test showed that the power drift has exceeded 5%. Therefor, the uncertainty of power drift expanded to 10%. However, the extended uncertainty (k= 2) of a test is less than 30%.

*The probe was used model name EX3DV3

SECTION 9 : Simulated tissue liquid parameter

9.1 Simulated Tissue Liquid Parameter confirmation

The dielectric parameters were checked prior to assessment using the HP85070D dielectric probe kit.
The dielectric parameters measurement are reported in each correspondent section.

9.2 Head 2450 MHz

Type of liquid : **Head 2450 MHz**
Ambient temperature (deg.c.) : **24.5(June 16), 24.3(June 17),24.8 (June 30 and July 1)**
Relative Humidity (%) : **53(June 16), 51(June 17), 56 (June 30),58 (July 1)**
Lquid depth (cm) : **15.2**

DIELECTRIC PARAMETERS MEASUREMENT RESULTS								
Date	Frequency	Liquid Temp [deg.c]		Parameters	Target Value	Measured	Deviation [%]	Limit [%]
		Before	After					
June 16	2450	23.6	23.6	Relative Permittivity εr	39.2	37.3	-4.8	+/-5
				Coductivity σ [mho/m]	1.80	1.84	2.2	+/-5
June 17	2450	23.4	23.4	Relative Permittivity εr	39.2	37.3	-4.8	+/-5
				Coductivity σ [mho/m]	1.80	1.87	3.9	+/-5
June 30	2450	23.5	23.5	Relative Permittivity εr	39.2	37.4	-4.6	+/-5
				Coductivity σ [mho/m]	1.80	1.86	3.3	+/-5
July 01	2450	23.6	23.6	Relative Permittivity εr	39.2	37.5	-4.3	+/-5
				Coductivity σ [mho/m]	1.80	1.83	1.7	+/-5

9.3 Muscle 2450 MHz

Type of liquid : **Muscle 2450 MHz**
Ambient temperature (deg.c.) : **23.5(June 16), 23.6(June 17), 24.8(June 30), 24.6(July 01),**
Relative Humidity (%) : **53(June 16), 51(June 17), 48(June 30), 46July 01),**
Liquid depth (cm) : **15.2**

DIELECTRIC PARAMETERS MEASUREMENT RESULTS								
Date	Frequency	Liquid Temp [deg.c]		Parameters	Target Value	Measured	Deviation [%]	Limit [%]
		Before	After					
June 16	2450	23.3	23.3	Relative Permittivity εr	52.7	50.2	-4.7	+/-5
				Coductivity σ [mho/m]	1.95	1.96	0.5	+/-5
June 17	2450	23.5	23.5	Relative Permittivity εr	52.7	50.2	-4.7	+/-5
				Coductivity σ [mho/m]	1.95	1.98	1.5	+/-5
June 30	2450	23.6	23.6	Relative Permittivity εr	52.7	50.5	-4.2	+/-5
				Coductivity σ [mho/m]	1.95	1.99	2.1	+/-5
July 01	2450	23.5	23.5	Relative Permittivity εr	52.7	50.1	-4.9	+/-5
				Coductivity σ [mho/m]	1.95	1.98	1.5	+/-5

9.4 Simulated Tissues Composition of 2450MHz

Ingredient	**MiXTURE(%)**	
	Head 2450MHz	**Muscle 2450MHz**
Water	45.0	69.83
DGMBE	55.0	30.17

Note:DGMBE(Diethylenglycol-monobuthyl ether)

9.5 Muscle 5800 MHz

Type of liquid : **Muscle 5800 MHz**
Ambient temperature (deg.c.) : **24.5(June19 and 20), 24.8(June 22and 24)**
Relative Humidity (%) : **66(June19), 64(June 20), 65(June 22), 63(June 24)**
Liquid depth (cm) : **15.2**

DIELECTRIC PARAMETERS MEASUREMENT RESULTS								
Date	Frequency	Liquid Temp [deg.c]		Parameters	Target Value	Measured	Deviation [%]	Limit [%]
		Before	After					
June 19	5200	24.5	24.5	Relative Permittivity εr	49.0	48.9	-0.2	+/-5
				Coductivity σ [mho/m]	5.30	5.5	3.8	+/-5
June 19	5260	24.5	24.5	Relative Permittivity εr	49.0	48.8	-0.4	+/-5
				Coductivity σ [mho/m]	5.30	5.5	3.8	+/-5
June 22	5200	24.8	24.8	Relative Permittivity εr	49.0	46.8	-4.5	+/-5
				Coductivity σ [mho/m]	5.30	5.5	3.8	+/-5
June 22	5260	24.8	24.8	Relative Permittivity εr	49.0	46.7	-4.7	+/-5
				Coductivity σ [mho/m]	5.30	5.5	3.8	+/-5
June 20	5800	24.4	24.4	Relative Permittivity εr	48.2	46.1	-4.4	+/-5
				Coductivity σ [mho/m]	6.00	6.3	5.0	+/-5
June 20	5765	24.4	24.4	Relative Permittivity εr	48.2	46.2	-4.1	+/-5
				Coductivity σ [mho/m]	6.00	6.3	5.0	+/-5
June 24	5800	24.8	24.8	Relative Permittivity εr	48.2	46.0	-4.6	+/-5
				Coductivity σ [mho/m]	6.00	6.3	5.0	+/-5
June 24	5765	24.8	24.8	Relative Permittivity εr	48.2	46.1	-4.4	+/-5
				Coductivity σ [mho/m]	6.00	6.2	3.3	+/-5

9.6 Simulated Tissues Composition of 5800MHz

Ingredient	MiXTURE(%)	
	Head 5800MHz	Muscle 5800MHz
Water	64.0	78.0
Mineral Oil	18.0	11.0
Emulsifiers	15.0	9.0
Additives and salt	3.0	2.0

9.7 Decision on Simulated Tissues of 5.2GHz

In the current standards (e.g., IEEE P1528, OET 65 Supplement C), the dielectric parameters suggested for head and body tissue simulating liquid are given 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.
Therefore the dielectric parameters of 5.2GHz was decided as following.
(5.2GHz Body Tissue/ Relative Permittivity εr: **49.0**, Conductivity σ : **5.30**)

f (GHz)	Head Tissue		Body Tissue		Reference
	ε r	σ [mho/m]	ε r	σ [mho/m]	
3.0	38.5	2.40	52.0	2.73	Standard
5.8	35.3	5.27	48.2	6.00	Standard
5.0	36.2	4.45	49.3	5.07	Interpolated
5.1	36.1	4.55	49.1	5.18	Interpolated
5.2	36.0	4.66	49.0	5.30	Interpolated
5.3	35.9	4.76	48.9	5.42	Interpolated
5.4	35.8	4.86	48.7	5.53	Interpolated
5.5	35.6	4.96	48.6	5.65	Interpolated
5.6	35.5	5.07	48.5	5.77	Interpolated
5.7	35.4	5.17	48.3	5.88	Interpolated

Standard and interpolated dielectric parameters for head and body tissue simulating liquidin the frequency range 3 to 5.8 GHz.

SECTION 10 : System validation data

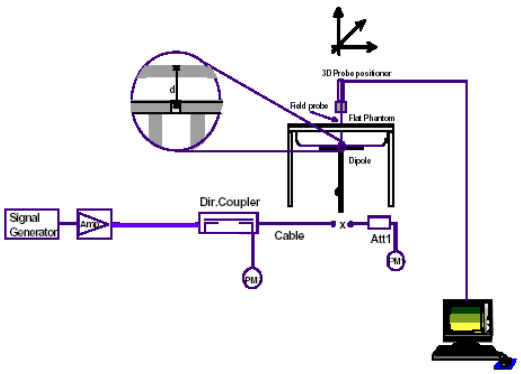
Prior to the assessment, the system validation kit was used to test whether the system was operating within its specifications of +/-10%.

10.1 System validation of 2450MHz

Type of liquid	:	**HEAD 2450MHz**
Frequency	:	**2450MHz**
Ambient temperature (deg.c.)	:	**24.5(June 16), 24.3(June 17),24.8 (June 30 and July 1)**
Relative Humidity (%)	:	**53(June 16), 51(June 17), 56 (June 30),58 (July 1)**
Dipole	:	**D2450V2 SN:713**
Power	:	**250mW**

SYSTEM PERFORMANCE CHECK										
Date	Liquid (HEAD 2450MHz)						System dipole validation target & measured			
	Liquid Temp [deg.c.]		Relative Permittivity εr		Conductivity σ [mho/m]		SAR 1g [W/kg]		Deviation [%]	Limit [%]
	Before	After	Target	Measured	Target	Measured	Target	Measured		
June 16	23.6	23.6	39.2	37.3	1.80	1.84	13.1	13.5	3.1	+/-10
June 17	23.4	23.4	39.2	37.3	1.80	1.87	13.1	13.5	3.1	+/-10
June 30	23.5	23.5	39.2	37.4	1.80	1.86	13.1	13.7	4.6	+/-10
July 01	23.6	23.6	39.2	37.5	1.80	1.83	13.1	13	-0.8	+/-10

Note: Please refer to Attachment for the result representation in plot format



2450MHz System performance check setup

Test system for the system performance check setup diagram

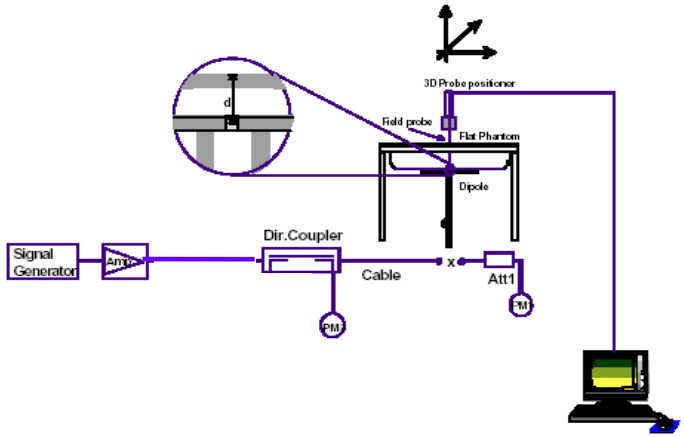
10.2 System validation of 5 GHz band

The target values of 5GHz were not defied by IEEE 1528. So, the target values were made into the calibration values of SPEAG. And each of the validation results of 5.2GHz and 5.8GHz checked (Evaluation of muscle) that it was within +/-10% as compared with the calibration values of SPEAG.(Please refer to APPENDIX 10) The validation results are tabulated below.

Type of liquid	:	**Muscle 5800MHz**
Frequency	:	**5200MHz, 5800MHz**
Ambient temperature (deg.c.)	:	**24.5(June19), 24.8(June 20), 24.8(June 22), 24.8(June 24)**
Relative Humidity (%)	:	**66(June19), 64(June 20), 65(June 22), 63(June 24)**
Dipole	:	**D5GHzV2**
Power	:	**250mW**

SYSTEM PERFORMANCE CHECK											
Liquid (Muscle 5100-5800 MHz)								System dipole validation target & measured			
		Liquid Temp [deg.c.]		Relative Permittivity εr		Conductivity σ [mho/m]		SAR 1g [W/kg]		Deviation [%]	Limit [%]
Frequency	Date	Before	After	Target	Measured	Target	Measured	Target	Measured		
5200	June 19	24.5	24.5	49.0	48.9	5.30	5.5	20.5	21.9	6.8	+/-10
5800	June 20	24.4	24.4	48.2	46.1	6.00	6.3	19.6	20.6	5.1	+/-10
5200	June 22	24.8	24.8	49.0	46.8	5.30	5.5	20.5	22.4	9.3	+/-10
5800	June 24	24.8	24.8	48.2	46.0	6.00	6.3	19.6	20.5	4.6	+/-10

Note: The target value is the calibration value of SPEAG.
Please refer to Attachment for the result representation in plot format



Test system for the system performance check setup diagram

5100-5800MHz
Systemperformance check setup

SECTION 11 : Evaluation procedure

The evaluation was performed with the following procedure:

The portions of **[***]** is for a procedure of IEEE 802.11a testing. (Used EX3DV3 probe)

Step 1: Measurement of the E-field at a fixed location above the ear point or central position of flat phantom was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of head or body position was measured at a distance of each device from the inner surface of the shell. The area covered the entire dimension of the antenna of EUT and the horizontal grid spacing was 20 mm x 20 mm **[10mm x 10mm]**. Based on these data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Around this point found in the Step 2 (area scan) , a volume of 32 mm x 32 mm x 30 mm **[30mm x 30mm x 21mm]** was assessed by measuring 5 x 5 x 7 **[7 x 7 x 8]** points. And for any secondary peaks found in the Step2 which are within 2dB of maximum peak and not with this Step3 (Zoom scan) is repeated. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

1. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm **[1 mm]** away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm [4]. A polynomial of the fourth order was calculated through the points in z-axes.
This polynomial was then used to evaluate the points between the surface and the probe tip.

2. The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by the 3D-Spline interpolation algorithm. The 3D-Spline is composed of three one-dimensional splines with the “Not a knot"-condition (in x, y and z-directions) [4], [5]. The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

3. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement of the E-field at the same location as in Step 1.

SECTION 12 : Exposure limit

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

Spatial Average (averaged over the whole body)	Spatial Peak (averaged over any 1g of tissue)	Spatial Peak (hands/wrists/feet/ankles averaged over 10g)
0.4	8.0	20.0

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

Spatial Average (averaged over the whole body	Spatial Peak (averaged over any 1g of tissue)	Spatial Peak (hands/wrists/feet/ankles averaged over 10g)
0.08	1.6	4.0

Occupational/Controlled Environments: are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

General Population/Uncontrolled Environments: are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

NOTE:GENERAL POPULATION/UNCONTROLLED EXPOSURE
SPATIAL PEAK(averaged over any 1g of tissue) LIMIT
1.6 W/kg

SECTION 13 : SAR Measurement results of EA5800 Antenna (IEEE 802.11b / g : 2.4GHz)

13.1 Conducted power measurement results

13.1.1 Antenna 1(Left Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
Frequency [MHz]	Modulation	Before					After					Deviation [%]	Limit [%]
		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]		
2412	DSSS (CCK)	8.02	0.21	10.00	18.23	66.5	7.93	0.21	10.00	18.14	65.2	-2.1	+/-5
2437		10.78	0.21	10.00	20.99	125.6	10.66	0.21	10.00	20.87	122.2	-2.7	+/-5
2462		10.90	0.21	10.00	21.11	129.1	10.81	0.21	10.00	21.02	126.5	-2.1	+/-5
2412	OFDM (64QAM)	8.30	0.21	10.00	18.51	71.0	8.26	0.21	10.00	18.47	70.3	-0.9	+/-5
2437		9.42	0.21	10.00	19.63	91.8	9.23	0.21	10.00	19.44	87.9	-4.3	+/-5
2462		9.09	0.21	10.00	19.30	85.1	9.12	0.21	10.00	19.33	85.7	0.7	+/-5
2412	OFDM (QPSK)	7.59	0.21	10.00	17.80	60.3	7.42	0.21	10.00	17.63	57.9	-3.8	+/-5
2437		8.62	0.21	10.00	18.83	76.4	8.58	0.21	10.00	18.79	75.7	-0.9	+/-5
2462		8.51	0.21	10.00	18.72	74.5	8.31	0.21	10.00	18.52	71.1	-4.5	+/-5

13.1.2 Antenna 2(Right Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
Frequency [MHz]	Modulation	Before					After					Deviation [%]	Limit [%]
		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]		
2412	DSSS (CCK)	7.90	0.21	10.00	18.11	64.7	7.81	0.21	10.00	18.02	63.4	-2.1	+/-5
2437		10.77	0.21	10.00	20.98	125.3	10.54	0.21	10.00	20.75	118.9	-5.2	+/-5
2462		10.85	0.21	10.00	21.06	127.6	10.78	0.21	10.00	20.99	125.6	-1.6	+/-5
2412	OFDM (64QAM)	8.17	0.21	10.00	18.38	68.9	8.09	0.21	10.00	18.30	67.6	-1.8	+/-5
2437		9.16	0.21	10.00	19.37	86.5	9.21	0.21	10.00	19.42	87.5	1.2	+/-5
2462		9.34	0.21	10.00	19.55	90.2	9.19	0.21	10.00	19.40	87.1	-3.4	+/-5
2412	OFDM (QPSK)	7.50	0.21	10.00	17.71	59.0	7.41	0.21	10.00	17.62	57.8	-2.1	+/-5
2437		8.53	0.21	10.00	18.74	74.8	8.50	0.21	10.00	18.71	74.3	-0.7	+/-5
2462		8.75	0.21	10.00	18.96	78.7	8.69	0.21	10.00	18.90	77.6	-1.4	+/-5

13.2 Body 2450MHz SAR

Liquid Depth (cm)	:	**15.2**	Model	:	**IRF303U**
Parameters	:	ε_r **=50.5**, σ **=1.99 (June 30)**			
		ε_r **=50.1**, σ **=1.98 (July 01)**			
Ambient Temperature[deg.c.]	:	**24.8(June 30)/ 24.6(July 01)**	Serial No.	:	**13**
Relative Humidity (%)	:	**48(June 30), 46(July 01)**	Modulation	:	**DSSS, OFDM**
			Crest factor	:	**1**

Date : June 30 and July 01, 2004

BODY SAR MEASUREMENT RESULTS OF EA5800 ANTENNA(2.4G DSSS)									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Mid	2437	DSSS(CCK)	Flat	ANT1	Left Front	0	23.6	23.6	**0.0927**
Mid	2437	DSSS(CCK)	Flat	ANT1	Left Back	0	23.5	23.5	**0.0268**
Mid	2437	DSSS(CCK)	Flat	ANT1	Left Side	0	23.5	23.5	**0.102**
Mid	2437	DSSS(CCK)	Flat	ANT2	Right Front	0	23.6	23.6	**0.67**
Mid	2437	DSSS(CCK)	Flat	ANT2	Right Back	0	23.5	23.5	**0.157**
Mid	2437	DSSS(CCK)	Flat	ANT2	Right Side	0	23.4	23.4	**0.719**
Low	2412	DSSS(CCK)	Flat	ANT2	Right Side	0	23.5	23.5	**1**
High	2462	DSSS(CCK)	Flat	ANT2	Right Side	0	23.6	23.7	**0.77**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

BODY SAR MEASUREMENT RESULTS OF EA5800 ANTENNA (2.4G OFDM)									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Mid	2437	OFDM(64QAM)	Flat	ANT1	Left Front	0	23.6	23.6	**0.111**
Mid	2437	OFDM(64QAM)	Flat	ANT1	Left Back	0	23.5	23.5	**0.0199**
Mid	2437	OFDM(64QAM)	Flat	ANT1	Left Side	0	23.5	23.5	**0.0908**
Mid	2437	OFDM(64QAM)	Flat	ANT2	Right Front	0	23.6	23.6	**0.217**
Mid	2437	OFDM(64QAM)	Flat	ANT2	Right Back	0	23.5	23.5	**0.0814**
Mid	2437	OFDM(64QAM)	Flat	ANT2	Right Side	0	23.4	23.4	**0.369**
Low	2412	OFDM(64QAM)	Flat	ANT2	Right Side	0	23.8	23.8	**0.456**
High	2462	OFDM(64QAM)	Flat	ANT2	Right Side	0	23.8	23.8	**0.296**
Mid	2437	OFDM(QPSK)	Flat	ANT1	Left Front	0	23.6	23.6	**0.136**
Mid	2437	OFDM(QPSK)	Flat	ANT1	Left Back	0	23.5	23.5	**0..0141**
Mid	2437	OFDM(QPSK)	Flat	ANT1	Left Side	0	23.5	23.5	**0.0894**
Mid	2437	OFDM(QPSK)	Flat	ANT2	Right Front	0	23.6	23.6	**0.359**
Mid	2437	OFDM(QPSK)	Flat	ANT2	Right Back	0	23.5	23.5	**0.0952**
Mid	2437	OFDM(QPSK)	Flat	ANT2	Right Side	0	23.4	23.5	**0.393**
Low	2412	OFDM(QPSK)	Flat	ANT2	Right Side	0	23.8	23.8	**0.522**
High	2462	OFDM(QPSK)	Flat	ANT2	Right Side	0	23.5	23.5	**0.35**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

SECTION 14 : SAR Measurement results of EA5800 Antenna (IEEE 802.11a : 5.15-5.35GHz)

14.1 Conducted power measurement results

14.1.1 Antenna 1(Left Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
	Modulation	Before					After							
Frequency [MHz]		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Deviation [%]	Limit [%]
5180	OFDM (64QAM)	2.16	0.21	10.0	12.37	17.3	2.09	0.21	10.0	12.30	17.0	-1.6	+/-5
5260		6.12	0.21	10.0	16.33	43.0	6.10	0.21	10.0	16.31	42.8	-0.5	+/-5
5320		6.46	0.21	10.0	16.67	46.5	6.49	0.21	10.0	16.70	46.8	0.7	+/-5
5180	OFDM (QPSK)	1.80	0.21	10.0	12.01	15.9	1.66	0.21	10.0	11.87	15.4	-3.2	+/-5
5260		6.21	0.21	10.0	16.42	43.9	6.12	0.21	10.0	16.33	43.0	-2.1	+/-5
5320		6.23	0.21	10.0	16.44	44.1	6.29	0.21	10.0	16.50	44.7	1.4	+/-5

14.1.2 Antenna 2(Right Antenna)

CONDUCTED POWER MEASUREMENT RESULTS													
	Modulation	Before					After						
Frequency [MHz]		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Deviation [%]	Limit [%]
5180	OFDM (64QAM)	2.10	0.21	10.0	12.31	17.0	2.11	0.21	10.0	12.32	17.1	0.2	+/-5
5260		6.23	0.21	10.0	16.44	44.1	6.19	0.21	10.0	16.40	43.7	-0.9	+/-5
5320		6.61	0.21	10.0	16.82	48.1	6.54	0.21	10.0	16.75	47.3	-1.6	+/-5
5180	OFDM (QPSK)	2.18	0.21	10.0	12.39	17.3	2.10	0.21	10.0	12.31	17.0	-1.8	+/-5
5260		6.11	0.21	10.0	16.32	42.9	6.06	0.21	10.0	16.27	42.4	-1.1	+/-5
5320		6.50	0.21	10.0	16.71	46.9	6.49	0.21	10.0	16.70	46.8	-0.2	+/-5

14.2 Body 5.15-5.35GHz SAR

Liquid Depth (cm)	:	**15.2**	Model	:	**IRF303U**
Parameters	:	ε_r =**46.7**, σ =**5.5**			
Ambient Temperature[deg.c.]	:	**24.8**	Serial No.	:	**13**
Relative Humidity (%)	:	**65**	Modulation	:	**OFDM**
			Crest factor	:	**1**

Date : June 22, 2004

BODY SAR MEASUREMENT RESULTS OF EA5800 ANTENNA (5.15-5.35G)									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Mid	5260	OFDM (64QAM)	Flat	ANT1	Left Front	0	24.8	24.8	**0.996**
Mid	5260	OFDM(64QAM)	Flat	ANT1	Left Back	0	24.8	24.8	**0.0467**
Mid	5260	OFDM(64QAM)	Flat	ANT1	Left Side	0	24.8	24.8	**0.384**
Mid	5260	OFDM(64QAM)	Flat	ANT2	Right Front	0	24.8	24.7	**0.384**
Mid	5260	OFDM(64QAM)	Flat	ANT2	Right Back	0	24.8	24.8	**0.148**
Mid	5260	OFDM(64QAM)	Flat	ANT2	Right Side	0	24.6	24.6	**0.516**
Low	5180	OFDM(64QAM)	Flat	ANT1	Left Front	0	24.6	24.7	**0.365**
High	5320	OFDM(64QAM)	Flat	ANT1	Left Front	0	24.7	24.7	**1.06**
Mid	5260	OFDM(OPSK)	Flat	ANT1	Left Front	0	24.8	24.8	**1.03**
Mid	5260	OFDM(QPSK)	Flat	ANT1	Left Back	0	24.8	24.8	**0.0637**
Mid	5260	OFDM(QPSK)	Flat	ANT1	Left Side	0	24.8	24.8	**0.41**
Mid	5260	OFDM(QPSK)	Flat	ANT2	Right Front	0	24.8	24.8	**0.705**
Mid	5260	OFDM(QPSK)	Flat	ANT2	Right Back	0	24.8	24.8	**0.211**
Mid	5260	OFDM(QPSK)	Flat	ANT2	Right Side	0	24.7	24.7	**0.845**
Low	5180	OFDM(QPSK)	Flat	ANT1	Left Front	0	24.8	24.8	**0.213**
High	5320	OFDM(QPSK)	Flat	ANT1	Left Front	0	24.8	24.8	**1.31**
Low	5180	OFDM(QPSK)	Flat	ANT2	Right Side	0	24.8	24.8	**0.323**
High	5320	OFDM(QPSK)	Flat	ANT2	Right Side	0	24.8	24.8	**0.483**
Measurement of the distance									
Mid	5260	OFDM(OPSK)	Flat	ANT1	Left Front	5	24.7	24.7	**0.351**
Mid	5260	OFDM(QPSK)	Flat	ANT1	Left Front	10	24.8	24.8	**0.143**
Mid	5260	OFDM(QPSK)	Flat	ANT1	Left Front	15	24.8	24.8	**0.105**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

SECTION 15 : SAR Measurement results of EA5800 Antenna(IEEE 802.11a : 5.725-5.825GHz)

15.1 Conducted power measurement results

15.1.1 Antenna 1(Left Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
	Modulation	Before					After					Deviation	Limit
Frequency [MHz]		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	[%]	[%]
5745	OFDM (64QAM)	5.41	0.22	10.0	17.82	60.5	5.30	0.21	10.0	15.51	35.6	-41.3	+/-5
5765		5.38	0.22	10.0	17.22	52.7	5.25	0.21	10.0	15.46	35.2	-33.3	+/-5
5805		4.84	0.22	10.0	16.75	47.3	4.91	0.21	10.0	15.12	32.5	-31.3	+/-5
5745	OFDM (QPSK)	4.98	0.22	10.0	15.20	33.1	4.97	0.21	10.0	15.18	33.0	-0.5	+/-5
5765		5.01	0.22	10.0	15.23	33.3	4.91	0.21	10.0	15.12	32.5	-2.5	+/-5
5805		4.74	0.22	10.0	14.96	31.3	4.68	0.21	10.0	14.89	30.8	-1.6	+/-5

15.1.2 Antenna 2(Right Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
	Modulation	Before					After					Deviation	Limit
Frequency [MHz]		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	[%]	[%]
5745	OFDM (64QAM)	5.31	0.22	10.0	15.53	35.7	5.24	0.21	10.0	15.45	35.1	-1.8	+/-5
5765		5.30	0.22	10.0	15.52	35.6	5.26	0.21	10.0	15.47	35.2	-1.1	+/-5
5805		5.15	0.22	10.0	15.37	34.4	5.12	0.21	10.0	15.33	34.1	-0.9	+/-5
5745	OFDM (QPSK)	5.31	0.22	10.0	15.53	35.7	5.24	0.21	10.0	15.45	35.1	-1.8	+/-5
5765		5.18	0.22	10.0	15.40	34.7	5.21	0.21	10.0	15.42	34.8	0.5	+/-5
5805		5.18	0.22	10.0	15.40	34.7	5.24	0.21	10.0	15.45	35.1	1.2	+/-5

15.2 Body 5.725-5.825GHz SAR

Liquid Depth (cm)	:	**15.2**	Model	:	**IRF303U**
Parameters	:	**ε_r = 46.1 , σ = 6.2**	Serial No.	:	**13**
Ambient Temperature[deg.c.]	:	**24.8**			
Relative Humidity (%)	:	**63**	Modulation	:	**OFDM**
			Crest factor	:	**1**

Date : June 24, 2004

BODY SAR MEASUREMENT RESULTS OF EA5800 ANTENNA(5.725-5.825GHz)

Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Mid	5765	OFDM(64QAM)	Flat	ANT1	Left Front	0	24.6	24.6	**0.567**
Mid	5765	OFDM(64QAM)	Flat	ANT1	Left Back	0	24.6	24.6	**0.0403**
Mid	5765	OFDM(64QAM)	Flat	ANT1	Left Side	0	24.7	24.7	**0.197**
Mid	5765	OFDM(64QAM)	Flat	ANT2	Right Front	0	24.8	24.8	**0.212**
Mid	5765	OFDM(64QAM)	Flat	ANT2	Right Back	0	24.8	24.8	**0.0719**
Mid	5765	OFDM(64QAM)	Flat	ANT2	Right Side	0	24.8	24.8	**0.34**
Low	5745	OFDM(64QAM)	Flat	ANT1	Left Front	0	24.8	24.8	**0.479**
High	5805	OFDM(64QAM)	Flat	ANT1	Left Front	0	24.8	24.8	**0.375**
Mid	5765	OFDM(OPSK)	Flat	ANT1	Left Front	0	24.5	24.5	**0.467**
Mid	5765	OFDM(OPSK)	Flat	ANT1	Left Back	0	24.5	24.5	**0.0413**
Mid	5765	OFDM(OPSK)	Flat	ANT1	Left Side	0	24.5	24.5	**0.2**
Mid	5765	OFDM(OPSK)	Flat	ANT2	Right Front	0	24.7	24.7	**0.209**
Mid	5765	OFDM(OPSK)	Flat	ANT2	Right Back	0	24.7	24.7	**0.0751**
Mid	5765	OFDM(OPSK)	Flat	ANT2	Right Side	0	24.7	24.7	**0.236**
Low	5745	OFDM(OPSK)	Flat	ANT1	Left Front	0	24.8	24.8	**0.443**
High	5805	OFDM(OPSK)	Flat	ANT1	Left Front	0	24.8	24.8	**0.405**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

SECTION 16 : SAR Measurement results of HFT18 Antenna (IEEE 802.11b / g : 2.4GHz)

16.1 Conducted power measurement results

16.1.1 Antenna 1(Left Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
Frequency [MHz]	Modulation	Before					After					Deviation [%]	Limit [%]
		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]		
2412	DSSS (CCK)	7.98	0.21	10.00	18.19	65.9	8.13	0.21	10.00	18.34	68.2	3.5	+/-5
2437		10.71	0.21	10.00	20.92	123.6	10.69	0.21	10.00	20.90	123.0	-0.5	+/-5
2462		10.89	0.21	10.00	21.10	128.8	10.84	0.21	10.00	21.05	127.4	-1.1	+/-5
2412	OFDM (64QAM)	8.40	0.21	10.00	18.61	72.6	8.29	0.21	10.00	18.50	70.8	-2.5	+/-5
2437		9.35	0.21	10.00	19.56	90.4	9.29	0.21	10.00	19.50	89.1	-1.4	+/-5
2462		9.09	0.21	10.00	19.30	85.1	9.15	0.21	10.00	19.36	86.3	1.4	+/-5
2412	OFDM (QPSK)	7.63	0.21	10.00	17.84	60.8	7.59	0.21	10.00	17.80	60.3	-0.9	+/-5
2437		8.81	0.21	10.00	19.02	79.8	8.90	0.21	10.00	19.11	81.5	2.1	+/-5
2462		8.79	0.21	10.00	19.00	79.4	8.59	0.21	10.00	18.80	75.9	-4.5	+/-5

16.1.2 Antenna 2(Right Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
Frequency [MHz]	Modulation	Before					After					Deviation [%]	Limit [%]
		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]		
2412	DSSS (CCK)	7.92	0.21	10.00	18.13	65.0	7.90	0.21	10.00	18.11	64.7	-0.5	+/-5
2437		10.80	0.21	10.00	21.01	126.2	10.75	0.21	10.00	20.96	124.7	-1.1	+/-5
2462		10.91	0.21	10.00	21.12	129.4	10.83	0.21	10.00	21.04	127.1	-1.8	+/-5
2412	OFDM (64QAM)	8.21	0.21	10.00	18.42	69.5	8.19	0.21	10.00	18.40	69.2	-0.5	+/-5
2437		9.24	0.21	10.00	19.45	88.1	9.21	0.21	10.00	19.42	87.5	-0.7	+/-5
2462		9.44	0.21	10.00	19.65	92.3	9.31	0.21	10.00	19.52	89.5	-2.9	+/-5
2412	OFDM (QPSK)	7.61	0.21	10.00	17.82	60.5	7.50	0.21	10.00	17.71	59.0	-2.5	+/-5
2437		8.59	0.21	10.00	18.80	75.9	8.49	0.21	10.00	18.70	74.1	-2.3	+/-5
2462		8.81	0.21	10.00	19.02	79.8	8.68	0.21	10.00	18.89	77.4	-2.9	+/-5

16.2 Body 2450MHz SAR

Liquid Depth (cm)	:	**15.2**	Model	:	**IRF303U**
Parameters	:	ε_r =**50.2**, σ =**1.96 (June 16)**			
		ε_r =**50.2**, σ =**1.98 (June 17)**			
Ambient Temperature[deg.c.]	:	**23.5(June 16)/ 23.6(June 17)**	Serial No.	:	**13**
Relative Humidity (%)	:	**53(June 16), 51(June 17)**	Modulation	:	**DSSS,OFDM**
			Crest factor	:	**1**

Date : June 16and 17, 2004

BODY SAR MEASUREMENT RESULTS OF HFT18 ANTENNA (2.4G DSSS)									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Mid	2437	DSSS(CCK)	Flat	ANT1	Left Front	0	23.2	23.2	**0.672**
Mid	2437	DSSS(CCK)	Flat	ANT1	Left Back	0	23.0	23.0	**0.0726**
Mid	2437	DSSS(CCK)	Flat	ANT1	Left Side	0	23.2	23.2	**0.176**
Mid	2437	DSSS(CCK)	Flat	ANT2	Right Front	0	23.2	23.2	**0.575**
Mid	2437	DSSS(CCK)	Flat	ANT2	Right Back	0	23.3	23.3	**0.0985**
Mid	2437	DSSS(CCK)	Flat	ANT2	Right Side	0	23.4	23.4	**0.382**
Low	2412	DSSS(CCK)	Flat	ANT1	Left Front	0	23.1	23.1	**0.3**
High	2462	DSSS(CCK)	Flat	ANT1	Left Front	0	23.1	23.1	**1.25**
Measurement of the distance									
High	2462	DSSS(CCK)	Flat	ANT1	Left Front	5	23.4	23.4	**0.242**
High	2462	DSSS(CCK)	Flat	ANT1	Left Front	10	23.3	23.3	**0.0635**
High	2462	DSSS(CCK)	Flat	ANT1	Left Front	15	23.3	23.3	**0.0493**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

BODY SAR MEASUREMENT RESULTS OF HFT18 ANTENNA (2.4G OFDM)									
Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Mid	2437	OFDM(64QAM)	Flat	ANT1	Left Front	0	23.3	23.3	**0.276**
Mid	2437	OFDM(64QAM)	Flat	ANT1	Left Back	0	23.0	23.0	**0.0594**
Mid	2437	OFDM(64QAM)	Flat	ANT1	Left Side	0	23.2	23.2	**0.165**
Mid	2437	OFDM(64QAM)	Flat	ANT2	Right Front	0	23.3	23.3	**0.478**
Mid	2437	OFDM(64QAM)	Flat	ANT2	Right Back	0	23.3	23.3	**0.0877**
Mid	2437	OFDM(64QAM)	Flat	ANT2	Right Side	0	23.3	23.3	**0.307**
Low	2412	OFDM(64QAM)	Flat	ANT2	Right Front	0	23.2	23.3	**0.323**
High	2462	OFDM(64QAM)	Flat	ANT2	Right Front	0	23.4	23.4	**0.625**
Mid	2437	OFDM(QPSK)	Flat	ANT1	Left Front	0	23.3	23.3	**0.277**
Mid	2437	OFDM(QPSK)	Flat	ANT1	Left Back	0	23.2	23.2	**0.0735**
Mid	2437	OFDM(QPSK)	Flat	ANT1	Left Side	0	23.2	23.2	**0.167**
Mid	2437	OFDM(QPSK)	Flat	ANT2	Right Front	0	23.2	23.2	**0.56**
Mid	2437	OFDM(QPSK)	Flat	ANT2	Right Back	0	23.3	23.3	**0.0906**
Mid	2437	OFDM(QPSK)	Flat	ANT2	Right Side	0	23.2	23.2	**0.325**
Low	2412	OFDM(QPSK)	Flat	ANT2	Right Front	0	23.2	23.2	**0.345**
High	2462	OFDM(QPSK)	Flat	ANT2	Right Front	0	23.2	23.2	**0.664**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

SECTION 17 : SAR Measurement results of HFT18 Antenna (IEEE 802.11a : 5.15-5.35GHz)

17.1 Conducted power measurement results

17.1.1 Antenna 1(Left Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
	Modulation	Before					After					Deviation	Limit
Frequency [MHz]		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	[%]	[%]
5180	OFDM (64QAM)	2.05	0.21	10.0	12.26	16.8	2.05	0.21	10.0	12.26	16.8	0.0	+/-5
5260		6.21	0.21	10.0	16.42	43.9	6.10	0.21	10.0	16.31	42.8	-2.5	+/-5
5320		6.53	0.21	10.0	16.74	47.2	6.49	0.21	10.0	16.70	46.8	-0.9	+/-5
5180	OFDM (QPSK)	1.68	0.21	10.0	11.89	15.5	1.65	0.21	10.0	11.86	15.3	-0.7	+/-5
5260		6.11	0.21	10.0	16.32	42.9	6.08	0.21	10.0	16.29	42.6	-0.7	+/-5
5320		6.40	0.21	10.0	16.61	45.8	6.29	0.21	10.0	16.50	44.7	-2.5	+/-5

14.1.2 Antenna 2(Right Antenna)

CONDUCTED POWER MEASUREMENT RESULTS													
	Modulation	Before					After					Deviation	Limit
Frequency [MHz]		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	[%]	[%]
5180	OFDM (64QAM)	2.02	0.21	10.0	12.23	16.7	2.03	0.21	10.0	12.24	16.7	0.2	+/-5
5260		6.00	0.21	10.0	16.21	41.8	6.12	0.21	10.0	16.33	43.0	2.8	+/-5
5320		6.40	0.21	10.0	16.61	45.8	6.53	0.21	10.0	16.74	47.2	3.0	+/-5
5180	OFDM (QPSK)	2.00	0.21	10.0	12.21	16.6	1.89	0.21	10.0	12.10	16.2	-2.5	+/-5
5260		6.05	0.21	10.0	16.26	42.3	5.91	0.21	10.0	16.12	40.9	-3.2	+/-5
5320		6.46	0.21	10.0	16.67	46.5	6.26	0.21	10.0	16.47	44.4	-4.5	+/-5

17.2 Body 5.15-5.35GHz SAR (HFT18)

Liquid Depth (cm)	:	**15.2**	Model	:	**IRF303U**
Parameters	:	ε_r =**48.8**, σ =**5.5**			
Ambient Temperature[deg.c.]	:	**24.5**	Serial No.	:	**13**
Relative Humidity (%)	:	**66**	Modulation	:	**OFDM**
			Crest factor	:	**1**

Date : June 19 , 2004

BODY SAR MEASUREMENT RESULTS OF HFT18 ANTENNA (5.15-5.35GHz)

Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Mid	5260	OFDM(64QAM)	Flat	ANT1	Left Front	0	24.5	24.5	**0.168**
Mid	5260	OFDM(64QAM)	Flat	ANT1	Left Back	0	24.5	24.5	**0.106**
Mid	5260	OFDM(64QAM)	Flat	ANT1	Left Side	0	24.5	24.5	**0.402**
Mid	5260	OFDM(64QAM)	Flat	ANT2	Right Front	0	24.2	24.2	**0.678**
Mid	5260	OFDM(64QAM)	Flat	ANT2	Right Back	0	24.5	24.5	**0.12**
Mid	5260	OFDM(64QAM)	Flat	ANT2	Right Side	0	24.2	24.2	**0.582**
Low	5180	OFDM(64QAM)	Flat	ANT2	Right Front	0	24.3	24.3	**0.0998**
High	5320	OFDM(64QAM)	Flat	ANT2	Right Front	0	24.5	24.5	**0.46**
Mid	5260	OFDM(OPSK)	Flat	ANT1	Left Front	0	24.5	24.5	**0.449**
Mid	5260	OFDM(OPSK)	Flat	ANT1	Left Back	0	24.5	24.5	**0.18**
Mid	5260	OFDM(OPSK)	Flat	ANT1	Left Side	0	24.4	24.4	**0.691**
Mid	5260	OFDM(OPSK)	Flat	ANT2	Right Front	0	24.6	24.6	**0.66**
Mid	5260	OFDM(OPSK)	Flat	ANT2	Right Back	0	24.5	24.5	**0.133**
Mid	5260	OFDM(OPSK)	Flat	ANT2	Right Side	0	24.2	24.2	**0.589**
Low	5180	OFDM(OPSK)	Flat	ANT1	Left Side	0	24.3	24.3	**0.273**
High	5320	OFDM(OPSK)	Flat	ANT1	Left Side	0	24.6	24.6	**0.764**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

SECTION 18 : SAR Measurement results of HFT18 Antenna(IEEE 802.11a : 5.725-5.825GHz)

18.1 Conducted power measurement results

18.1.1 Antenna 1(Left Antenna)

CONDUCTED POWER MEASUREMENT RESULTS														
	Modulation	Before					After					Deviation	Limit
Frequency [MHz]		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	[%]	[%]
5745	OFDM (64QAM)	5.31	0.22	10.0	15.53	35.7	5.28	0.22	10.0	15.50	35.5	-0.7	+/-5
5765		5.39	0.22	10.0	15.61	36.4	5.26	0.22	10.0	15.48	35.3	-2.9	+/-5
5805		4.90	0.22	10.0	15.12	32.5	4.89	0.22	10.0	15.11	32.4	-0.2	+/-5
5745	OFDM (QPSK)	4.97	0.22	10.0	15.19	33.0	4.86	0.22	10.0	15.08	32.2	-2.5	+/-5
5765		4.88	0.22	10.0	15.10	32.4	4.69	0.22	10.0	14.91	31.0	-4.3	+/-5
5805		4.54	0.22	10.0	14.76	29.9	4.41	0.22	10.0	14.63	29.0	-2.9	+/-5

18.1.2 Antenna 2(Right Antenna)

CONDUCTED POWER MEASUREMENT RESULTS													
	Modulation	Before					After					Deviation	Limit
Frequency [MHz]		Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	Reading [dBm]	Cable loss [dB]	Att. [dB]	Result [dBm]	Convert [mW]	[%]	[%]
5745	OFDM (64QAM)	5.21	0.22	10.0	15.43	34.9	5.11	0.22	10.0	15.33	34.1	-2.3	+/-5
5765		5.20	0.22	10.0	15.42	34.8	5.17	0.22	10.0	15.39	34.6	-0.7	+/-5
5805		5.10	0.22	10.0	15.32	34.0	4.98	0.22	10.0	15.20	33.1	-2.7	+/-5
5745	OFDM (QPSK)	5.23	0.22	10.0	15.45	35.1	5.18	0.22	10.0	15.40	34.7	-1.1	+/-5
5765		5.10	0.22	10.0	15.32	34.0	5.01	0.22	10.0	15.23	33.3	-2.1	+/-5
5805		5.11	0.22	10.0	15.33	34.1	5.07	0.22	10.0	15.29	33.8	-0.9	+/-5

18.2 Body 5.725-5.825GHz SAR(HFT18)

Liquid Depth (cm)	:	**15.2**	Model	:	**IRF303U**
Parameters	:	ε_r = **46.2**, σ = **6.3**	Serial No.	:	**13**
Ambient Temperature[deg.c.]	:	**24.5**			
Relative Humidity (%)	:	**64**	Modulation	:	**OFDM**
			Crest factor	:	**1**

Date : June 20, 2004

BODY SAR MEASUREMENT RESULTS OF HFT18 ANTENNA (5.725-5.825GHz)

Frequency		Modulation	Phantom Section	EUT Set-up Conditions			Liquid Temp.[deg.c]		SAR(1g) [W/kg]
Channel	[MHz]			Antenna	Position	Separation [mm]	Before	After	Maximum value of multi-peak
Mid	5765	OFDM(64QAM)	Flat	ANT1	Left Front	0	24.2	24.2	**0.24**
Mid	5765	OFDM(64QAM)	Flat	ANT1	Left Back	0	24.5	24.5	**0.108**
Mid	5765	OFDM(64QAM)	Flat	ANT1	Left Side	0	24.4	24.4	**0.45**
Mid	5765	OFDM(64QAM)	Flat	ANT2	Right Front	0	24.5	24.5	**0.279**
Mid	5765	OFDM(64QAM)	Flat	ANT2	Right Back	0	24.5	24.5	**0.12**
Mid	5765	OFDM(64QAM)	Flat	ANT2	Right Side	0	24.5	24.5	**0.417**
Low	5745	OFDM(64QAM)	Flat	ANT1	Left Side	0	24.5	24.5	**0.464**
High	5805	OFDM(64QAM)	Flat	ANT1	Left Side	0	24.5	24.5	**0.418**
Mid	5765	OFDM(OPSK)	Flat	ANT1	Left Front	0	24.2	24.2	**0.223**
Mid	5765	OFDM(QPSK)	Flat	ANT1	Left Back	0	24.5	24.5	**0.11**
Mid	5765	OFDM(QPSK)	Flat	ANT1	Left Side	0	24.4	24.4	**0.491**
Mid	5765	OFDM(OPSK)	Flat	ANT2	Right Front	0	24.6	24.6	**0.271**
Mid	5765	OFDM(QPSK)	Flat	ANT2	Right Back	0	24.5	24.5	**0.116**
Mid	5765	OFDM(QPSK)	Flat	ANT2	Right Side	0	24.5	24.5	**0.412**
Low	5745	OFDM(QPSK)	Flat	ANT1	Left Side	0	24.5	24.5	**0.466**
High	5805	OFDM(QPSK)	Flat	ANT1	Left Side	0	24.5	24.5	**0.448**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure / General Population							**Body SAR: 1.6 W/kg (averaged over 1 gram)**		

SECTION 19 : Equipment & calibration information

Name of Equipment	Manufacture	Model number	Serial number	Calibration	
				Last Cal	due date
Power Meter	Agilent	E4417A	GB41290639	2003/11/12	2004/11/11
Power Sensor	Agilent	E9300B	US40010300	2003/11/17	2004/11/16
Power Sensor	Agilent	E9327A	US40440576	2003/11/13	2004/11/12
S-Parameter Network Analyzer	Agilent	E8358A	US41080381	2003/8/13	2004/8/12
Signal Generator	Rohde&Schwarz	SML40	100023	2003/11/26	2004/11/25
RF Amplifier	OPHIR	5056F	1005	2004/2/17	2005/2/16
RF Amplifier	TSJ	CBP02063033	-	2004/2/24	2005/2/23
Dosimetric E-Field Probe	Schmid&Partner Engineering AG	ET3DV6	1685	2003/10/10	2004/10/9
Dosimetric E-Field Probe	Schmid&Partner Engineering AG	EX3DV3	3507	2004/2/20	2005/2/19
Data Acquisition Electronics	Schmid&Partner Engineering AG	DAE3 V1	509	2004/4/22	2005/4/21
Robot,SAM Phantom	Schmid&Partner Engineering AG	DASY4	I021834	N/A	N/A
Attenuator	Agilent	US40010300	08498-60012	2003/12/16	2004/12/15
Attenuator	Orient Microwave	BX10-0476-00	-	2004/3/30	2005/3/29
Spectrum Analyzer	Advantest	R3273	110101630	2004/2/18	2005/2/17
2450MHz System Validation Dipole	Schmid&Partner Engineering AG	D2450V2	713	2002/11/15	2004/11/14
5GHz System Validation Dipole	Schmid&Partner Engineering AG	D5GHzV2	1020	2004/2/23	2005/2/22
Dual Directional Coupler	N/A	Narda	3702	N/A	N/A
Head 2450MHz	N/A	N/A	N/A	N/A	N/A
Body 2450MHz	N/A	N/A	N/A	N/A	N/A
Body 5800MHz	N/A	N/A	N/A	N/A	N/A

SECTION 20 : References

[1]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.

[2] Katja Pokovic, Thomas Schmid, and Niels Kuster, "Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies", in ICECOM '97, Dubrovnik, October 15-17, 1997, pp. 120-124.

[3] Katja Pokovic, Thomas Schmid, and Niels Kuster, "E-_field probe with improved isotropy in brain simulating liquids", in Proceedings of the ELMAR, Zadar, Croatia, 23-25 June, 1996, pp.172-175.

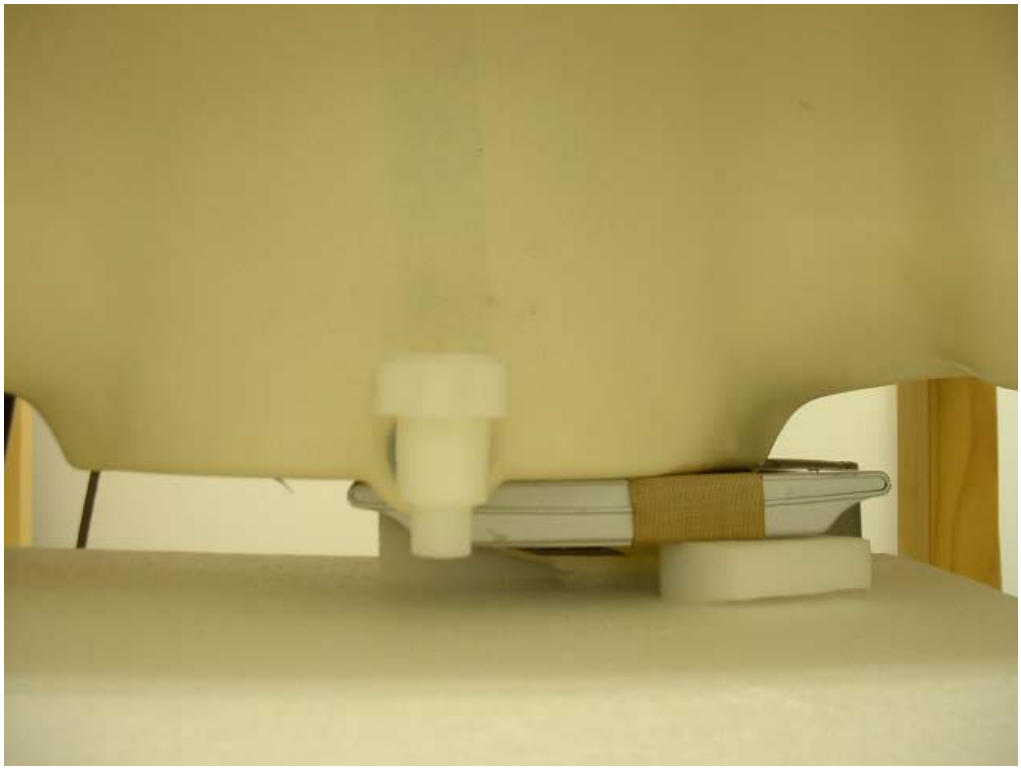
[4] W. Gander, Computermathematik, Birkhaeuser, Basel, 1992.

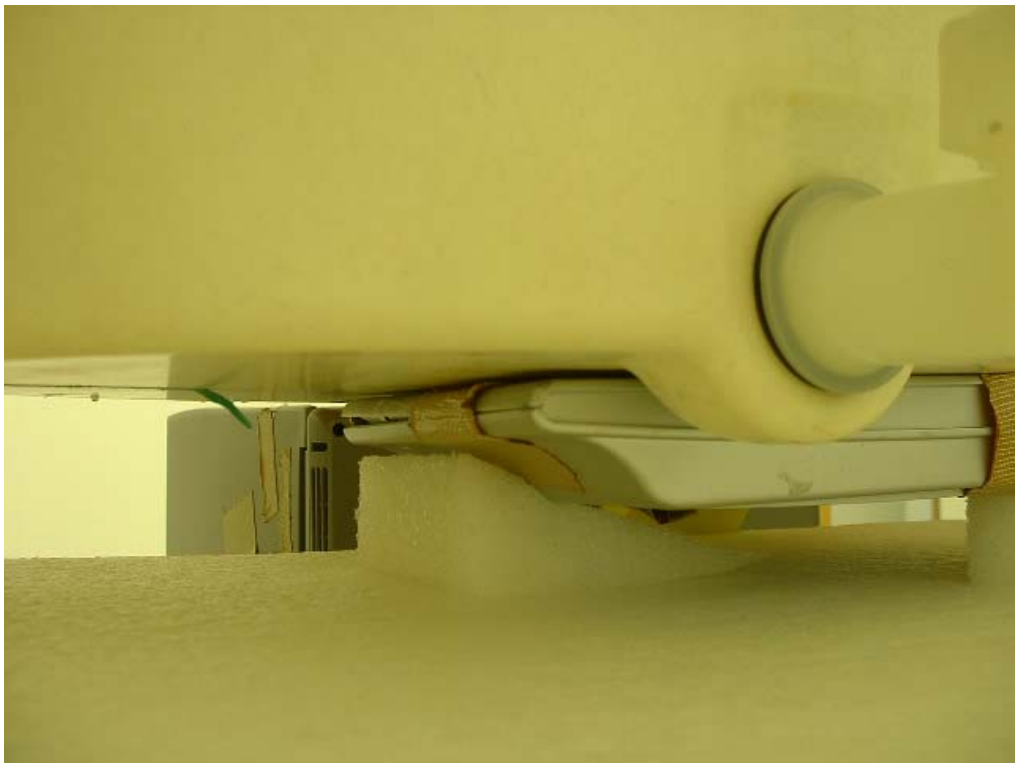
[5] W. H. Press, S. A. Teukolsky,W. T. Vetterling, and B. P. Flannery, Numerical Recepies in C, The Art of Scientific Computing, Second Edition, Cambridge University Press, 1992.

[6] Barry N. Taylor and Christ E. Kuyatt, "Guidelines for evaluating and expressing the uncertainty of NIST measurement results", Tech. Rep., National Institute of Standards and Technology,1994.

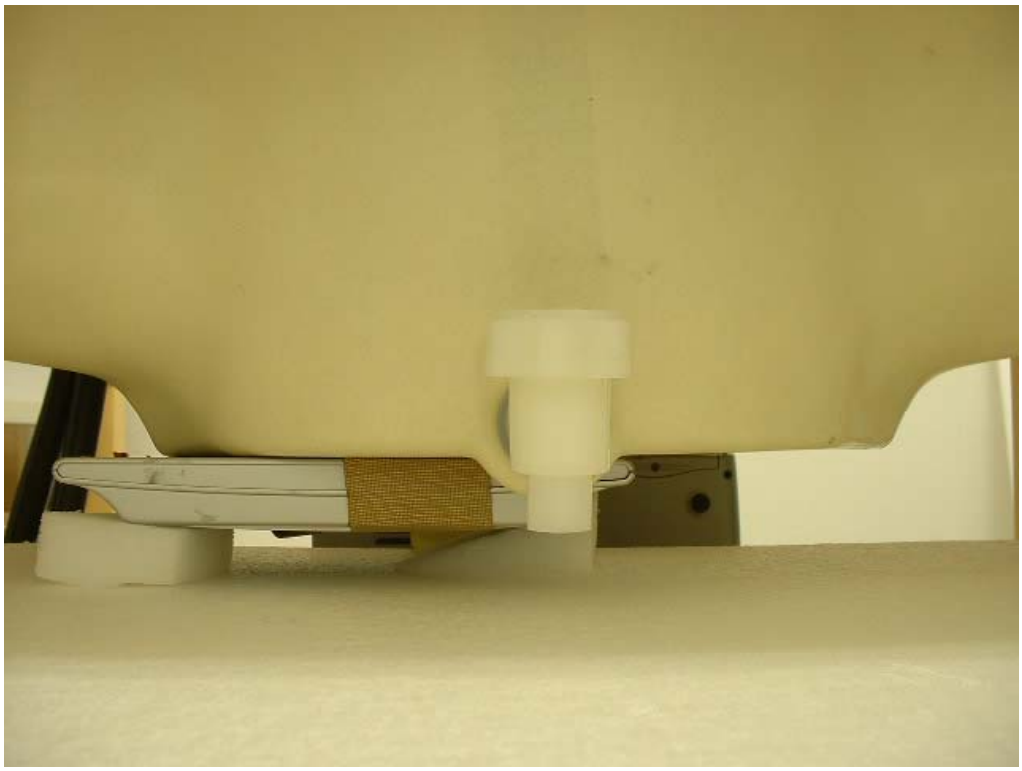
APPENDIX 1 : Photographs of test setup

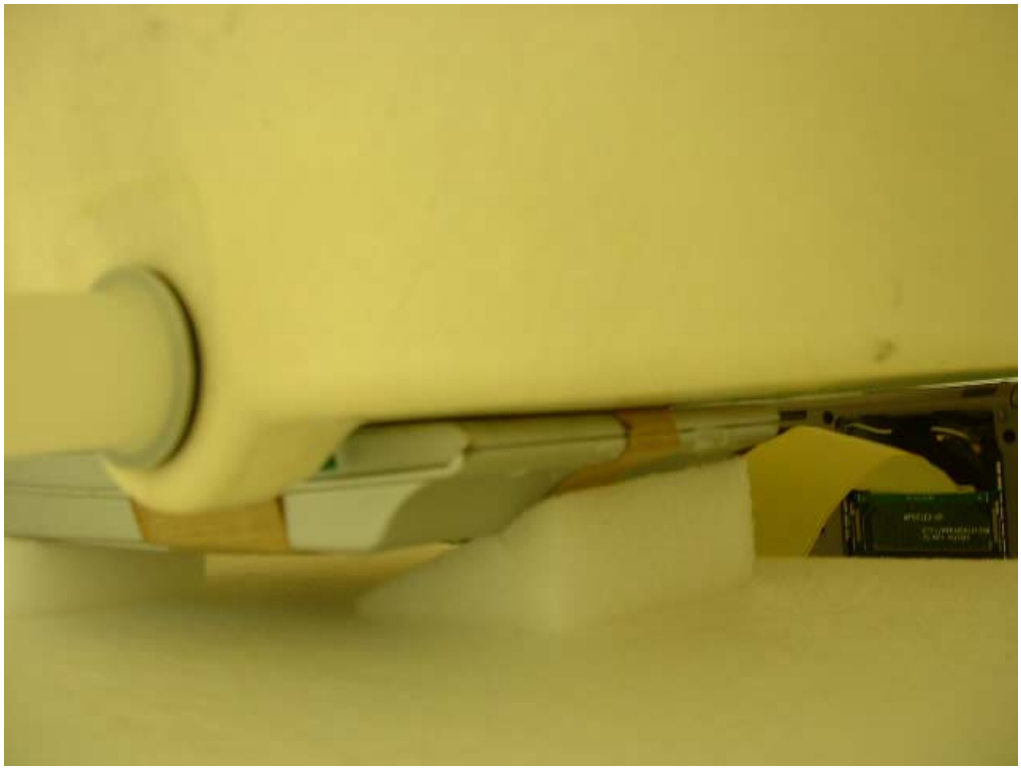
Left Front



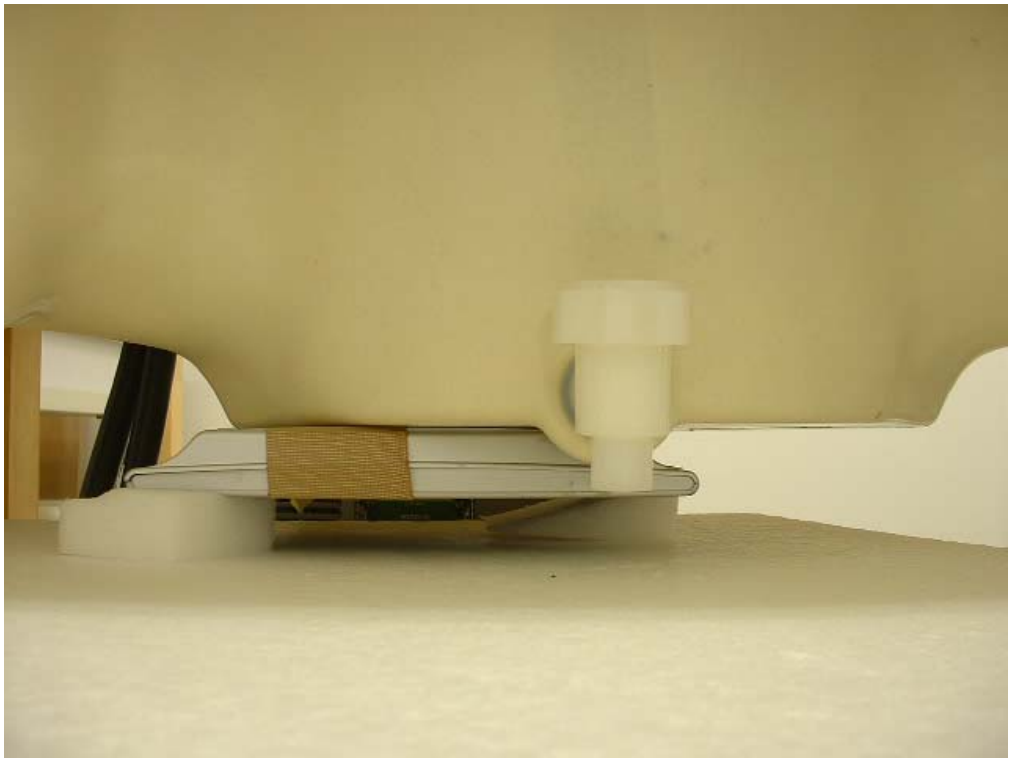


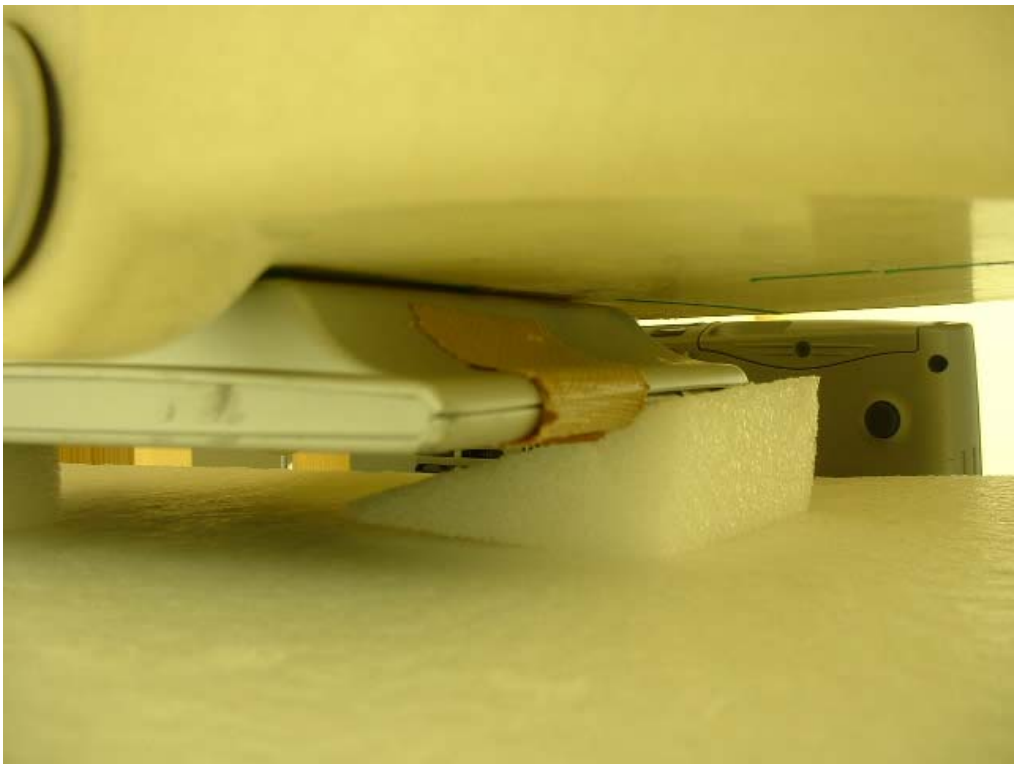
Right Front



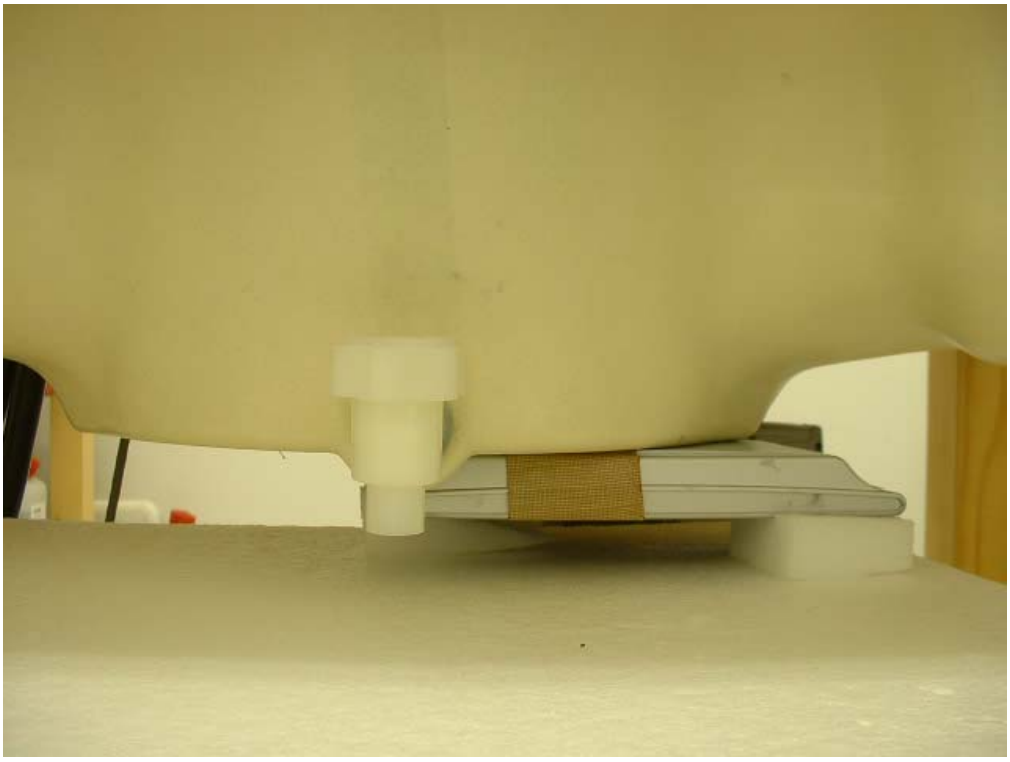


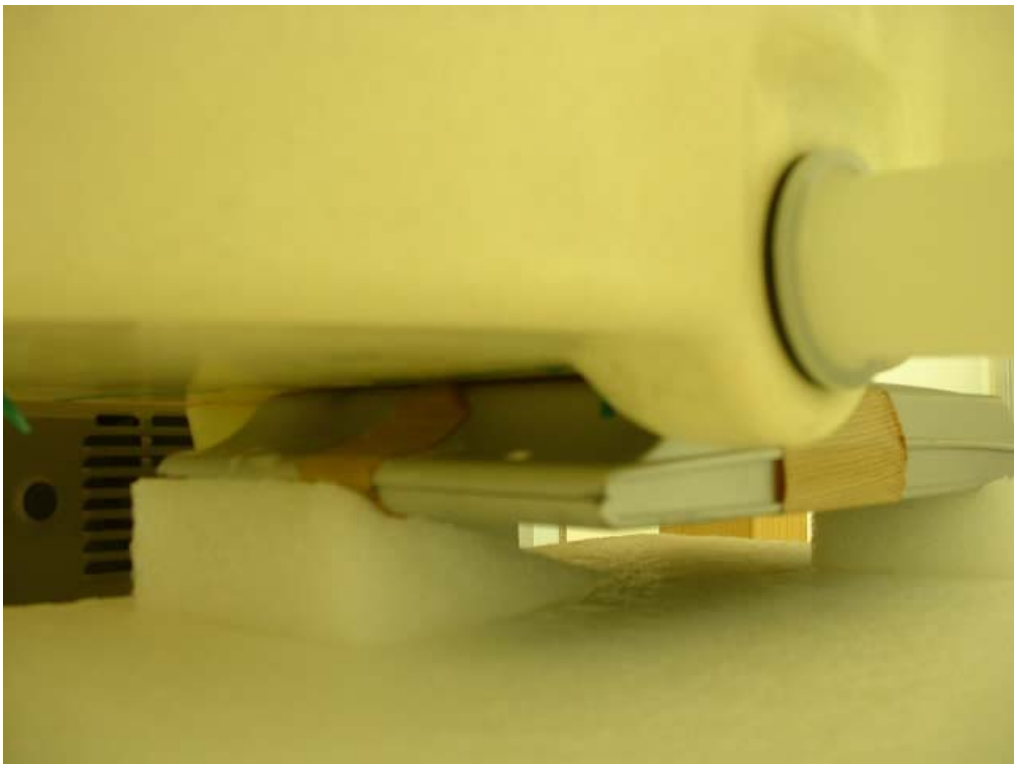
Left Back



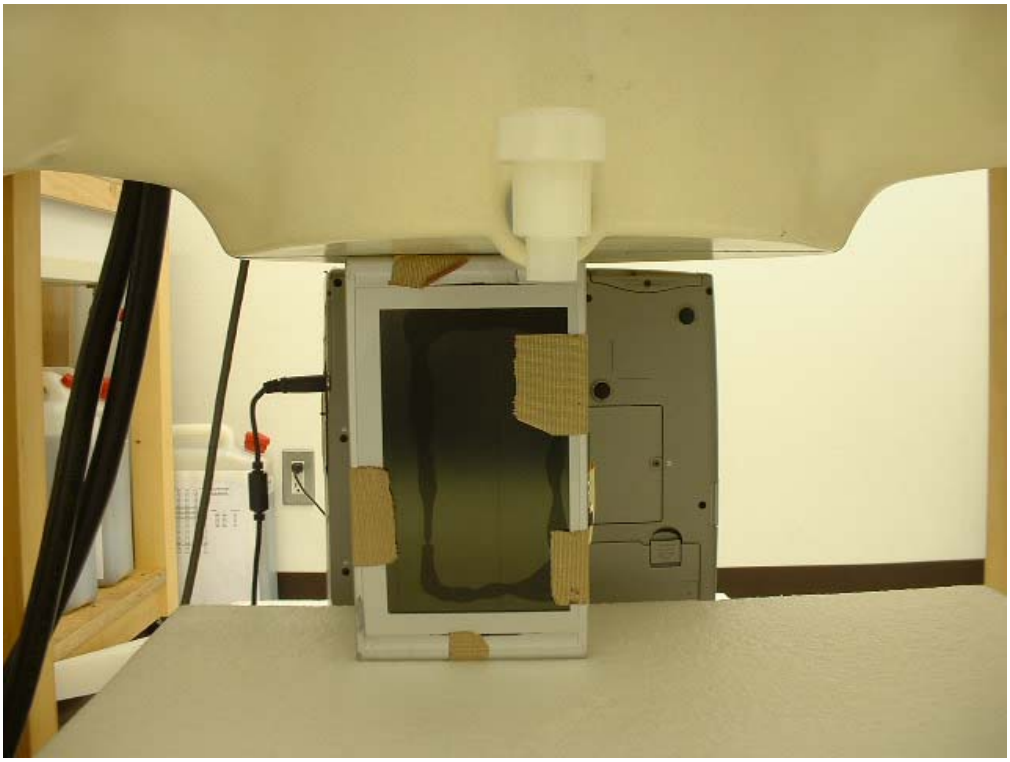


Right Back

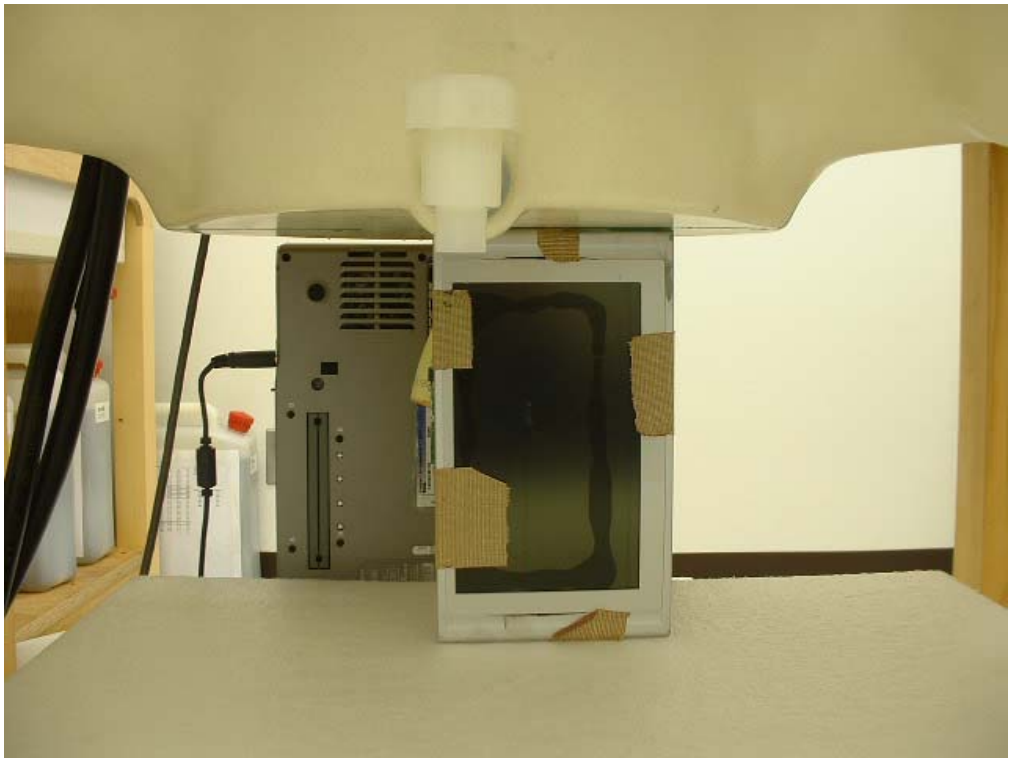


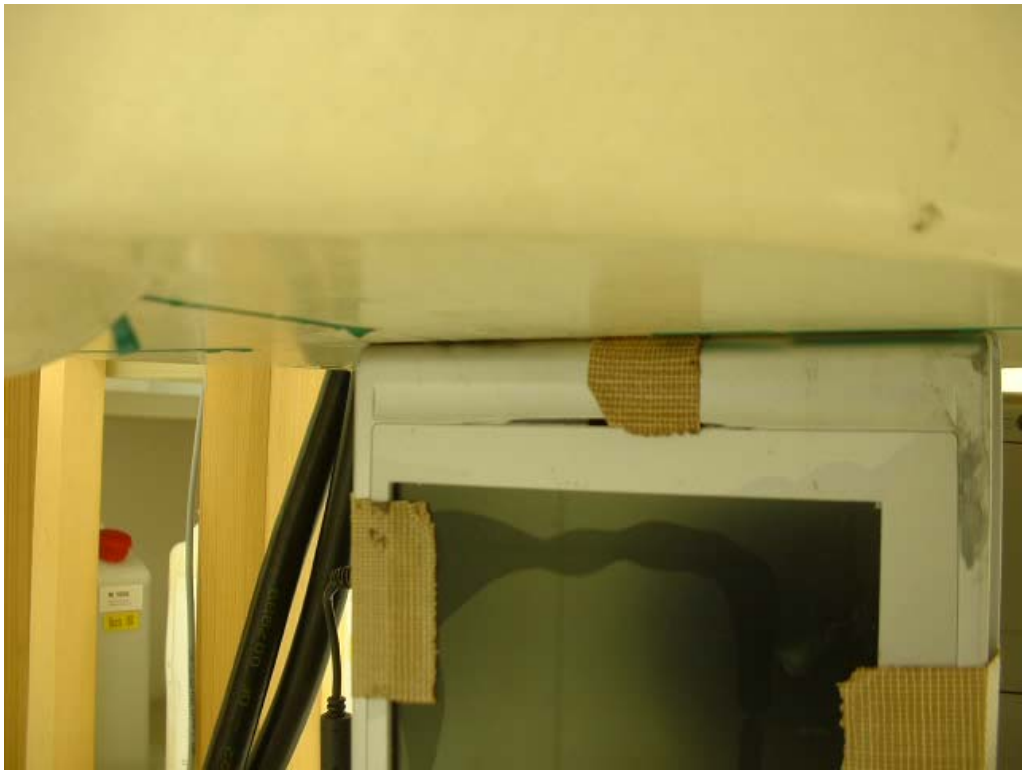


Left Side

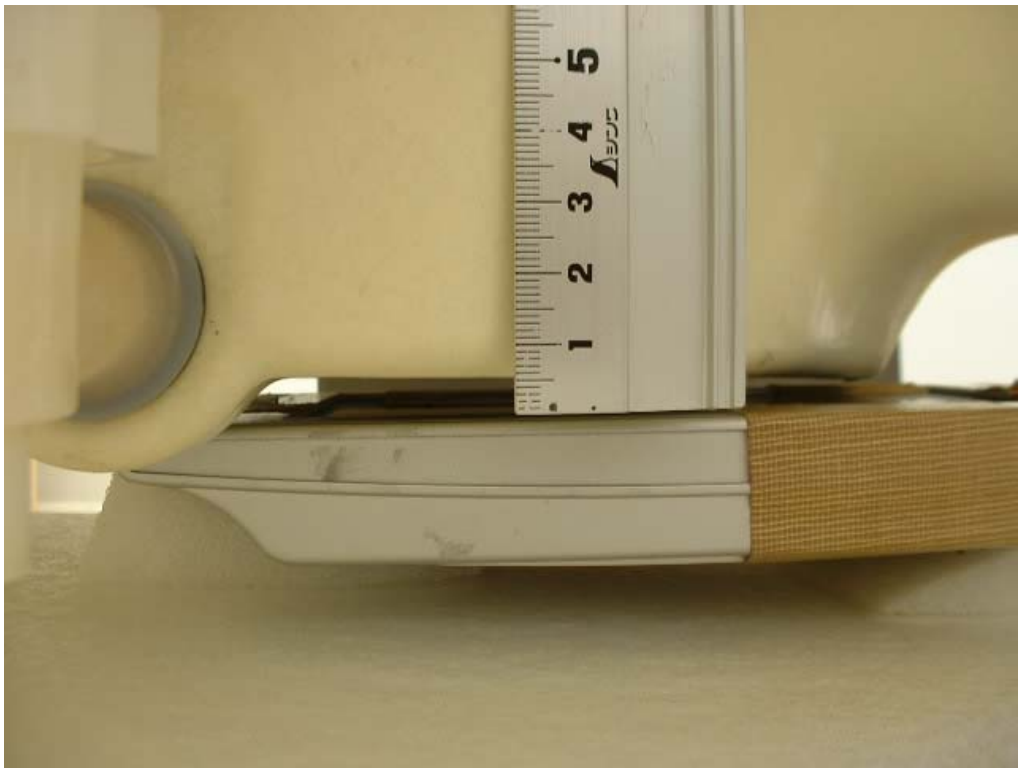


Right Side

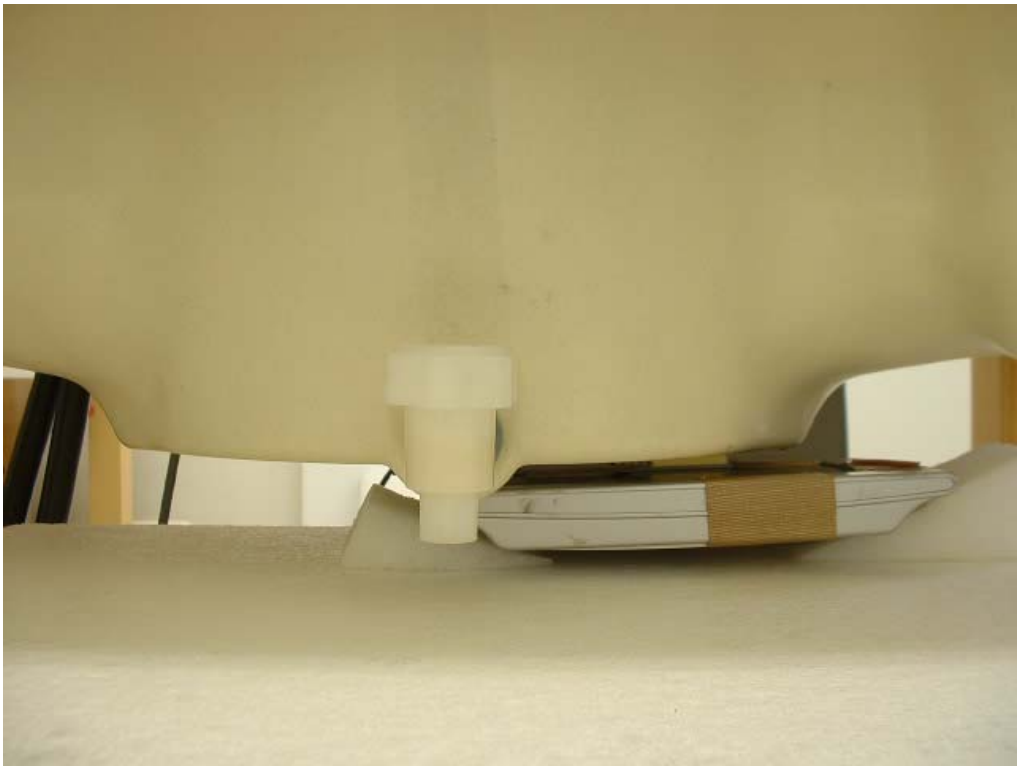


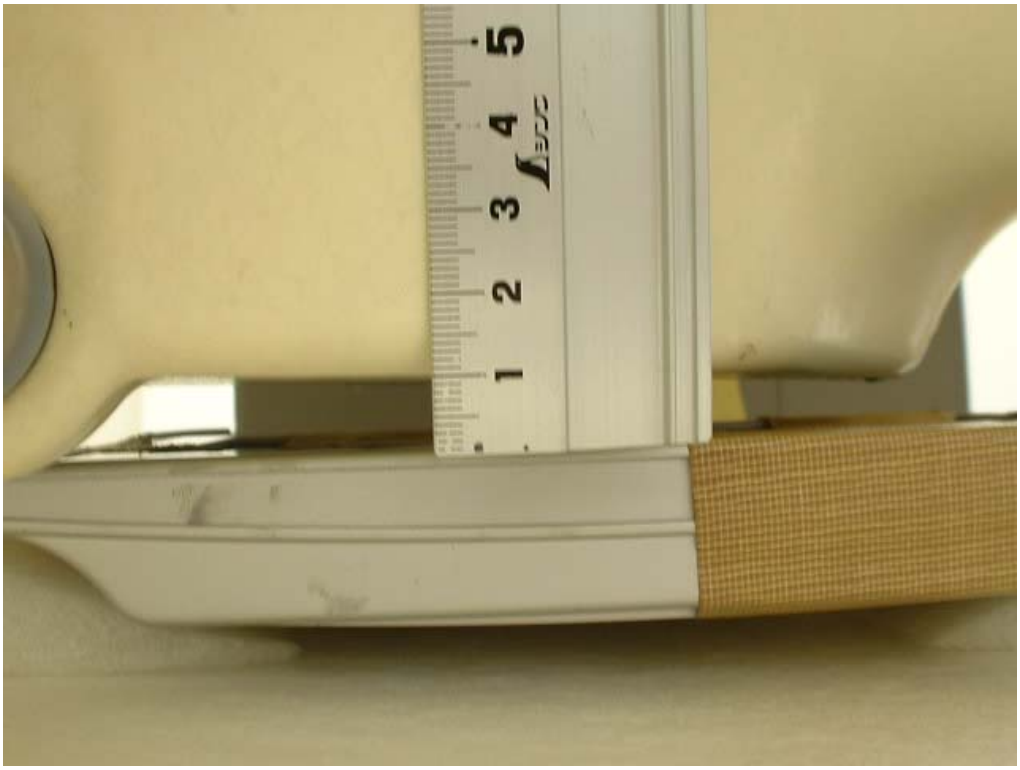


Left Front 5mm



Left Front 10mm





Left Front 15mm