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## SAR Permissive Change Test Report

Report Number: M070313\_Cert\_AR5BXB6\_SAR\_5.6GHz

Test Sample: Portable Tablet Computer Wireless LAN  
Model Number: AR5BXB6  
Tested For: Fujitsu Australia Pty Ltd  
FCC ID: EJE-WB0039  
IC: 337J- WB0039  
Date of Issue: 27<sup>th</sup> March 2007

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## 1.0 GENERAL INFORMATION

**Test Sample:** Portable Tablet Computer Wireless LAN and Bluetooth Module  
**Interface Type:** Mini-PCI Module  
**Device Category:** Portable Transmitter  
**Test Device:** Production Unit  
**Model Number:** AR5BXB6 (Atheros)  
**FCC ID:** EJE-WB0039  
**IC:** 337J- WB0039  
**RF exposure Category:** General Population/Uncontrolled

**Manufacturer:** Fujitsu Limited

**Test Standard/s:**

1. Evaluating Compliance with FCC Guidelines For Human Exposure to Radiofrequency Electromagnetic Fields Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01)
2. Evaluation Procedure for Mobile and Portable Radio Transmitters with respect to Health Canada's Safety Code 6 for Exposure of Humans to Radio Frequency Fields. RSS-102 Issue 1 (Provisional) September 25, 1999

**Statement Of Compliance:** The Fujitsu Portable Tablet Computer Wireless LAN model AR5BXB6 complied with the FCC General public/uncontrolled RF exposure limits of 1.6mW/g per requirements of 47CFR2.1093(d). It also complied with IC RSS-102 requirements.

**Test Date:** 20<sup>th</sup> March 2007

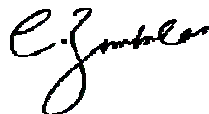
**Tested for:** Fujitsu Australia Pty Ltd  
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**Phone:** +61 3 9265 0210  
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**Test Officer:**



**Peter Jakubiec**

**Authorised Signature:**



**Chris Zombolas**  
Technical Director



## Description of Device

The test sample is a Fujitsu LifeBook incorporating a Mini-PCI wireless LAN (WLAN). The test sample shall be referred to as the Device Under Test (DUT) in this report.

The AR5BxB6 WLAN and EYTF3CSFT Bluetooth modules have been certified by Fujitsu Australia Ltd under the FCC ID: EJE-WB0039 (IC: 337J-WB0039). The additional frequency band: 5500 – 5700 MHz was not approved under the same FCC ID. The intention of this application is to add host models (Fujitsu Notebooks) and re-certify the AR5BxB6 WLAN and EYTF3CSFT Bluetooth modules installed in host, model: T4220 with an additional band: 5500 – 5700 MHz as a **Class II Permissive Change**.

Please refer to M060247\_CERT\_AR5BxB6\_SAR\_2.5 and M060247\_CERT\_AR5BxB6\_SAR\_5.2 for the DUT (Device Under Test) details and test results for the 2.5GHz frequency band and 5.2GHz frequency band respectively. **This report summarise the SAR test results for the 5.6GHz band which was not initially tested.**

## Test sample Accessories

### Battery Types

One type of Fujitsu battery is used to power the DUT. SAR measurements were performed with the supplied battery as shown below.

### Standard Battery

Type	Lithium Ion
Model	FPCBP 155
V/mAh	10.8V/5200mAh

## Test Signal, Frequency and Output Power

For the SAR measurements the DUT was operating in continuous transmit mode using programming codes supplied by Fujitsu. The fixed frequency channels used in the testing are shown in table below.

At the beginning and at the completion of the SAR tests, the conducted power of the device was measured after temporary modification of antenna connector inside the device's TX/ RX compartment. Measurements were performed with a calibrated RF Power Meter. The results of these measurements are listed in the following table.

**Table: Frequency and Conducted Power Results WLAN**

Channel	Channel Frequency MHz	Modulation	Maximum Conducted Output Power – Peak Measured (dBm)
Channel 100	5500	OFDM	17.2
Channel 120	5600	OFDM	17.1
Channel 140	5700	OFDM	17.5

**Table: Frequency and Conducted Power Results Bluetooth**

Channel	Channel Frequency MHz	Modulation	Antenna Port	*Data Rate (Mbps)	Maximum Conducted Output Power Measured (dBm)
Channel 40	2441	FHSS	D	N/A	3.5



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**Environmental Factors**

The temperature in the SAR laboratory was controlled to within  $20 \pm 1^\circ\text{C}$ , the humidity was 63%.

**Validation Results @ 5.5GHz**

The forward power into the reference dipole for SAR validation was adjusted to 250 mW.

**Table: Validation Results (Dipole: SPEAG D5GHzV2 SN: 1008)**

1. Validation Date	2. $\epsilon_r$ (measured)	3. $\sigma$ (mho/m) (measured)	4. Measured SAR 1g (mW/g)	5. Measured SAR 10g (mW/g)
20 <sup>th</sup> March 07	34.4	5.08	22.4	6.37

**Deviation from reference validation values in 5.6 GHz band.**

Frequency and Date	Measured SAR 1g (mW/g)	Measured SAR 1g (Normalized to 1W)	SPEAG Calibration reference SAR Value 1g (mW/g)	Deviation From SPEAG Reference	
				mW/g	%
5500MHz	22.4	89.6	86.8	3.23	3.22

NOTE: All reference validation values are normalised for 1W input power.

**Table: Measured Body Simulating Liquid Dielectric Values for 5600MHz range**

Frequency Band	$\epsilon_r$ (measured range)	$\epsilon_r$ (target)	$\sigma$ (mho/m) (measured range)	$\sigma$ (target)	$\rho$ kg/m <sup>3</sup>
5500 MHz Muscle	44.4	$48.6 \pm 10\%$ (43.7 to 53.4)	5.50	$5.6 \pm 10\%$ (5.04 to 6.16)	1000
5600 MHz Muscle	44.1	$48.5 \pm 10\%$ (43.8 to 53.5)	5.70	$5.77 \pm 10\%$ (5.20 to 6.34)	1000
5700 MHz Muscle	43.8	$48.4 \pm 10\%$ (43.6 to 53.2)	5.90	$5.9 \pm 10\%$ (5.31 to 6.49)	1000

**Temperature and Humidity recorded**

Date	Ambient Temperature ( $^\circ\text{C}$ )	Liquid Temperature ( $^\circ\text{C}$ )	Humidity (%)
20 <sup>th</sup> March 2007	20.5	20.0	63



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**Uncertainty Budget for DASY4 Version V4.7 Build 53 – EUT SAR test 5GHz**

a	b	c	d	e= f(d,k)	f	g	h=cxf/e	i=cxg/e	k
Uncertainty Component	Sec.	Tol. (%)	Prob. Dist.	Div.	C <sub>i</sub> (1g)	C <sub>i</sub> (10g)	1g u <sub>i</sub> (%)	10g u <sub>i</sub> (%)	v <sub>i</sub>
<b>Measurement System</b>									
Probe Calibration (k=1) (numerical calibration)	E.2.1	6.8	N	1	1	1	6.8	6.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	2	R	1.73	1	1	1.2	1.2	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1	N	1	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	R	1.73	1	1	1.5	1.5	∞
RF Ambient Conditions	E.6.1	0.075	R	1.73	1	1	0.0	0.0	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.8	R	1.73	1	1	0.5	0.5	∞
Probe Positioning with respect to Phantom Shell	E.6.3	5.7	R	1.73	1	1	3.3	3.3	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	4	R	1.73	1	1	2.3	2.3	∞
<b>Test Sample Related</b>									
Test Sample Positioning	E.4.2	2.9	N	1	1	1	2.9	2.9	11
Device Holder Uncertainty	E.4.1	3.6	N	1	1	1	3.6	3.6	7
Output Power Variation – SAR Drift Measurement	6.6.2	10.1	R	1.73	1	1	5.8	5.8	∞
<b>Phantom and Tissue Parameters</b>									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity – Deviation from target values	E.3.2	10	R	1.73	0.64	0.43	3.7	2.5	∞
Liquid Conductivity – Measurement uncertainty	E.3.3	2.5	N	1	0.64	0.43	1.6	1.1	5
Liquid Permittivity – Deviation from target values	E.3.2	10	R	1.73	0.6	0.49	3.5	2.8	∞
Liquid Permittivity – Measurement uncertainty	E.3.3	2.5	N	1	0.6	0.49	1.5	1.2	5
Combined standard Uncertainty			RSS				<b>13.6</b>	<b>13.1</b>	154
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				27.2	26.21	

Estimated total measurement uncertainty for the DASY4 measurement system was  $\pm 13.6\%$ . The extended uncertainty ( $K = 2$ ) was assessed to be  $\pm 27.2\%$  based on 95% confidence level. The uncertainty is not added to the measurement result.



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**Uncertainty Budget for DASY4 Version V4.7 Build 53 – Validation 5GHz**

a	b	c	d	e= f(d,k)	f	g	h=cxf/e	i=cxg/e	k
Uncertainty Component	Sec.	Tol. (%)	Prob. Dist.	Div.	C <sub>i</sub> (1g)	C <sub>i</sub> (10g)	1g u <sub>i</sub> (%)	10g u <sub>i</sub> (%)	v <sub>i</sub>
<b>Measurement System</b>									
Probe Calibration (k=1) (standard calibration)	E.2.1	6.6	N	1	1	1	6.6	6.6	∞
Axial Isotropy	E.2.2	4.7	R	1.73	1	1	2.7	2.7	∞
Hemispherical Isotropy	E.2.2	0	R	1.73	1	1	0.0	0.0	∞
Boundary Effect	E.2.3	2	R	1.73	1	1	1.2	1.2	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1	N	1	1	1	1.0	1.0	∞
Response Time	E.2.7	0	R	1.73	1	1	0.0	0.0	∞
Integration Time	E.2.8	0	R	1.73	1	1	0.0	0.0	∞
RF Ambient Conditions	E.6.1	0.075	R	1.73	1	1	0.0	0.0	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.8	R	1.73	1	1	0.5	0.5	∞
Probe Positioning with respect to Phantom Shell	E.6.3	5.7	R	1.73	1	1	3.3	3.3	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	4	R	1.73	1	1	2.3	2.3	∞
<b>Test Sample Related</b>									
Dipole Axis to Liquid distance	E.4.2	2	N	1	1	1	2.0	2.0	11
Output Power Variation – SAR Drift Measurement	6.6.2	4.7	R	1.73	1	1	2.7	2.7	∞
<b>Phantom and Tissue Parameters</b>									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity – Deviation from target values	E.3.2	5	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity – Measurement uncertainty	E.3.3	2.5	N	1	0.64	0.43	1.6	1.1	5
Liquid Permittivity – Deviation from target values	E.3.2	5	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity – Measurement uncertainty	E.3.3	2.5	N	1	0.6	0.49	1.5	1.2	5
Combined standard Uncertainty			RSS				10.3	10.0	154
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				20.5	20.02	

Estimated total measurement uncertainty for the DASY4 measurement system was  $\pm 10.3\%$ . The extended uncertainty ( $K = 2$ ) was assessed to be  $\pm 20.5\%$  based on 95% confidence level. The uncertainty is not added to the measurement result.



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**Equipment List and Calibration Details**

Equipment Type	Manufacturer	Model Number	Serial Number	Calibration Due	Used For this Test?
Robot - Six Axes	Staubli	RX90BL	N/A	Not applicable	Yes
Robot Remote Control	SPEAG	CS7MB	RX90B	Not applicable	Yes
SAM Phantom	SPEAG	N/A	1260	Not applicable	Yes
SAM Phantom	SPEAG	N/A	1060	Not applicable	No
Flat Phantom	AndreT	10.1	P 10.1	Not Applicable	Yes
Flat Phantom	AndreT	9.1	P 9.1	Not Applicable	No
Flat Phantom	SPEAG	PO1A 6mm	1003	Not Applicable	No
Data Acquisition Electronics	SPEAG	DAE3 V1	359	12-July-2007	No
Data Acquisition Electronics	SPEAG	DAE3 V1	442	13-Aug-2007	Yes
Probe E-Field - Dummy	SPEAG	DP1	N/A	Not applicable	No
Probe E-Field	SPEAG	ET3DV6	1380	12-Dec-2007	No
Probe E-Field	SPEAG	ET3DV6	1377	14-July-2007	No
Probe E-Field	SPEAG	ES3DV6	3029	Non Compliance	No
Probe E-Field	SPEAG	EX3DV4	3563	14-July-2007	Yes
Antenna Dipole 300 MHz	SPEAG	D300V2	1005	26-Oct-2007	No
Antenna Dipole 450 MHz	SPEAG	D450V2	1009	14-Dec-2008	No
Antenna Dipole 900 MHz	SPEAG	D900V2	047	6-July-2008	No
Antenna Dipole 1640 MHz	SPEAG	D1640V2	314	30-June-2008	No
Antenna Dipole 1800 MHz	SPEAG	D1800V2	242	3-July-2008	No
Antenna Dipole 2450 MHz	SPEAG	D2450V2	724	13-Dec-2008	No
Antenna Dipole 3500 MHz	SPEAG	D3500V2	1002	1-July-2007	No
Antenna Dipole 5600 MHz	SPEAG	D5GHzV2	1008	27-Oct-2007	Yes
RF Amplifier	EIN	603L	N/A	*In test	No
RF Amplifier	Mini-Circuits	ZHL-42	N/A	*In test	No
RF Amplifier	Mini-Circuits	ZVE-8G	N/A	*In test	Yes
Synthesized signal generator	Hewlett Packard	ESG-D3000A	GB37420238	*In test	No
RF Power Meter Dual	Hewlett Packard	437B	3125012786	30-May-2007	Yes
RF Power Sensor 0.01 - 18 GHz	Hewlett Packard	8481H	1545A01634	30-May-2007	Yes
RF Power Meter Dual	Gigatronics	8542B	1830125	18-April-2007	Yes
RF Power Sensor	Gigatronics	80301A	1828805	18-April-2007	Yes
RF Power Meter Dual	Hewlett Packard	435A	1733A05847	*In test	Yes
RF Power Sensor	Hewlett Packard	8482A	2349A10114	*In test	Yes
Network Analyser	Hewlett Packard	8714B	GB3510035	31-Aug-2007	No
Network Analyser	Hewlett Packard	8753ES	JP39240130	30-Sept-2007	Yes
Dual Directional Coupler	Hewlett Packard	778D	1144 04700	*In test	No
Dual Directional Coupler	NARDA	3022	75453	*In test	Yes

\* Calibrated during the test for the relevant parameters.



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## OET BULLETIN 65 – SUPPLEMENT C TEST METHOD

The SAR measurements were performed with the back of the Tablet facing the flat section of the AndreT Flat phantom (P 10.1) and again with the antenna edge facing the flat section of the AndreT Flat phantom.

### “Tablet” Position Definition (0mm spacing)

The DUT was tested in the 2.00 mm flat section of the AndreT Flat phantom P 10.1 for the “Tablet” position. The Transceiver was placed at the bottom of the phantom and suspended in such way that the back of the device was touching the phantom. This device orientation simulates the PC's normal use – being held on the lap of the user. A spacing of 0mm ensures that the SAR results are conservative and represent a worst-case position.

### “Edge On” Position

The DUT was tested in the (2.00 mm) flat section of the AndreT phantom for the “Edge On” position. The Antenna edge of the Transceiver was placed underneath the flat section of the phantom and suspended until the edge touched the phantom. *Refer to Appendix A for photos of measurement positions.*



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## SAR MEASUREMENT RESULTS

The SAR values averaged over 1g tissue masses were determined for the sample device for each test configurations.

**Sar Measurement Results Middle Band – OFDM Mode**

1. Test Position	2. Plot No.	3. Antenna	4. Test Channel	5. Test Freq (MHz)	6. Measured 1g SAR Results (mW/g)	7. Measured Drift (dB)
*Tablet	1	B	120	5600	Pre-scan Only	-
Edge On	2	B	100	5500	0.797	-0.417
	3	B	120	5600	0.911	-0.395
	4	B	140	5700	0.994	0.390
	5	A	100	5500	0.946	-0.189
	6	A	120	5600	1.25	-0.326
	7	A	140	5700	0.848	-0.100
Edge On with Bluetooth On	8	A	120	2441	1.25	-0.289

NOTE: The measurement uncertainty of 27.2% for 5GHz testing is not added to the result.

\*This plot was used for identifying the “hotspot” only.

The Pre-scan in Tablet configuration showed that the SAR levels at the back of the device are at the noise floor level, close to the measurement system sensitivity.

The highest SAR level recorded in the 5.6 GHz band was 1.25 mW/g as evaluated in a 1g cube of averaging mass. This value was obtained in “Edge On” position in OFDM mode, utilizing channel 120 (5600MHz) and antenna A with Bluetooth off

There was no significant rise in the recorded SAR level when the Bluetooth transmitter was switched on.



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## COMPLIANCE STATEMENT

The model AR5BXB6, FCC ID: EJE-WB0039, IC: 337J- WB0039 Portable Tablet Computer Wireless LAN was found to comply with the FCC and RSS-102 SAR requirements when tested in the frequency band 5500 MHz to 5700 MHz with the Bluetooth transmitter enabled.

The highest SAR level recorded was 1.25 mW/g for a 1g cube. This value was measured at 5600 MHz (channel 120) in the "Edge On" position in OFDM modulation mode at the antenna A. The collocated Bluetooth transmitter was ON at a frequency of 2441 MHz. The SAR level was below the limit of 1.6 mW/g, even taking into account the measurement uncertainty of 27.2 %.



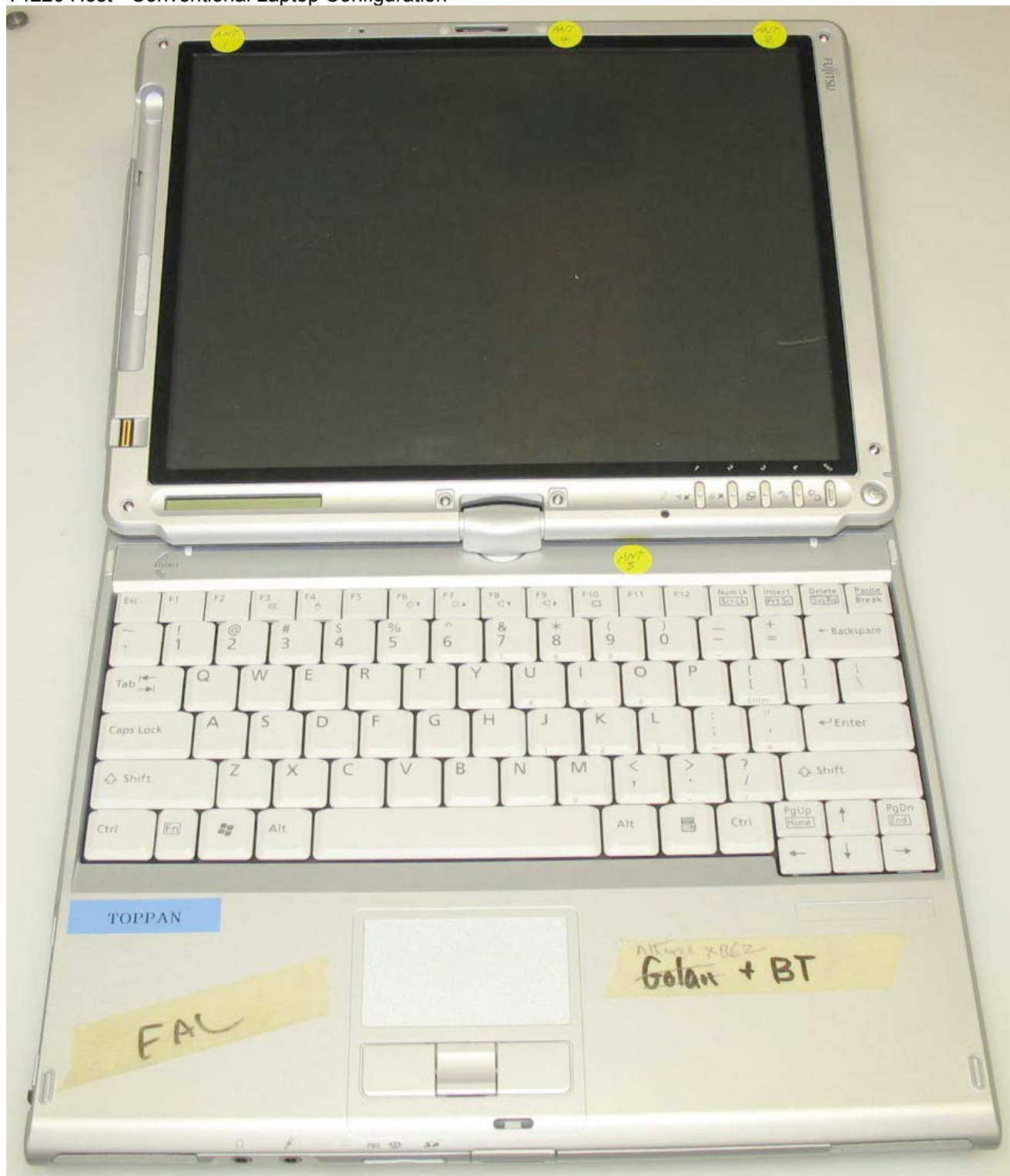
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## TEST SAMPLE PHOTOGRAPHS

T4220 Host - Conventional Laptop Configuration



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#### T4220 Host - Tablet Configuration



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Model: AR5BxB6 – WLAN Module  
Front



Back



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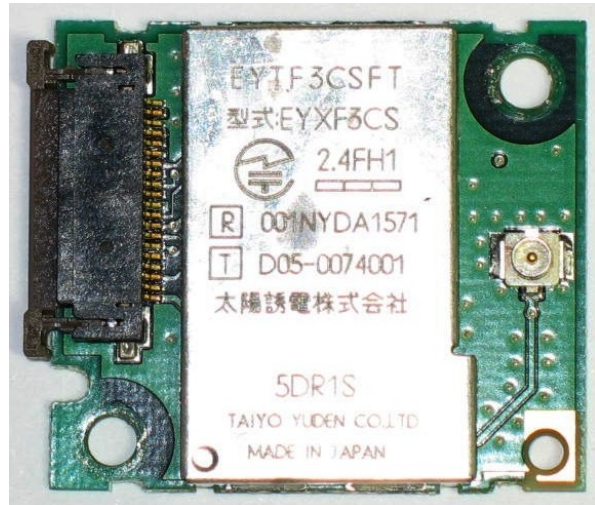
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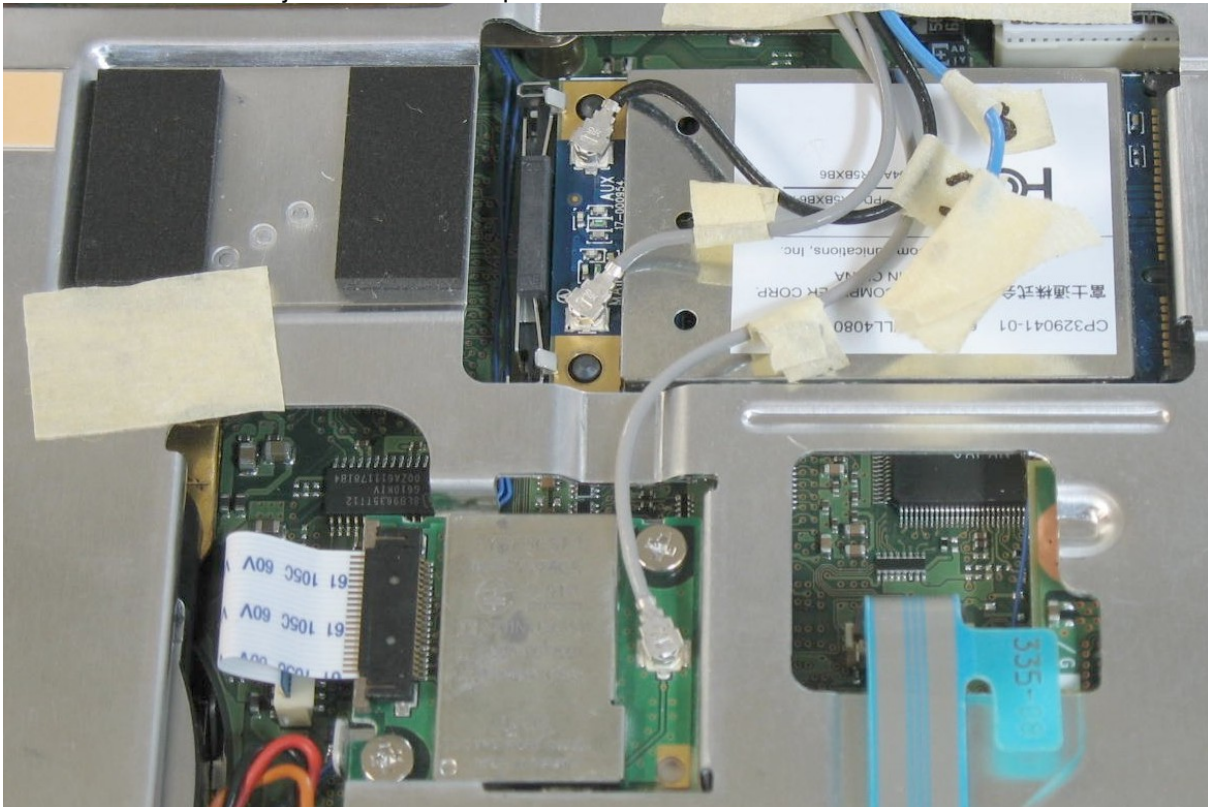
Battery



Bluetooth



AR5BxB6 inside the Fujitsu TABLET Computer





## TEST SETUP PHOTOGRAPHS

Tablet Position



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Edge On Position



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**Measurement Plot Numbers**

1. Test Position	2. Plot No.	3. Antenna	4. Test Channel
*Tablet	1	B	120
Edge On	2	B	100
	3	B	120
	4	B	140
Z-Axis graphs for Plots 2 to 4			
	5	A	100
	6	A	120
	7	A	140
Z-Axis graphs for Plots 5 to 7			
Edge On with Bluetooth On	8	A	120
Z-Axis graphs for Plot 8			

**Validation Plots**

Plot 9	Validation 5500 MHz 20 <sup>th</sup> March 2006
Z-Axis graphs for plot 9	



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Test Date: 20 March 2007

File Name: Tablet OFDM 5.6 Saratoga Antenna A Bluetooth On Prescan 20-03-07.da4

**DUT: Fujitsu Tablet Saratoga with Athertos 11abg and Bluetooth; Type: XB62; Serial: ZX6X50909**

\* Communication System: OFDM 5770 MHz EU; Frequency: 5600 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.70335$  mho/m,  $\epsilon_r = 44.1497$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(3.63, 3.63, 3.63)

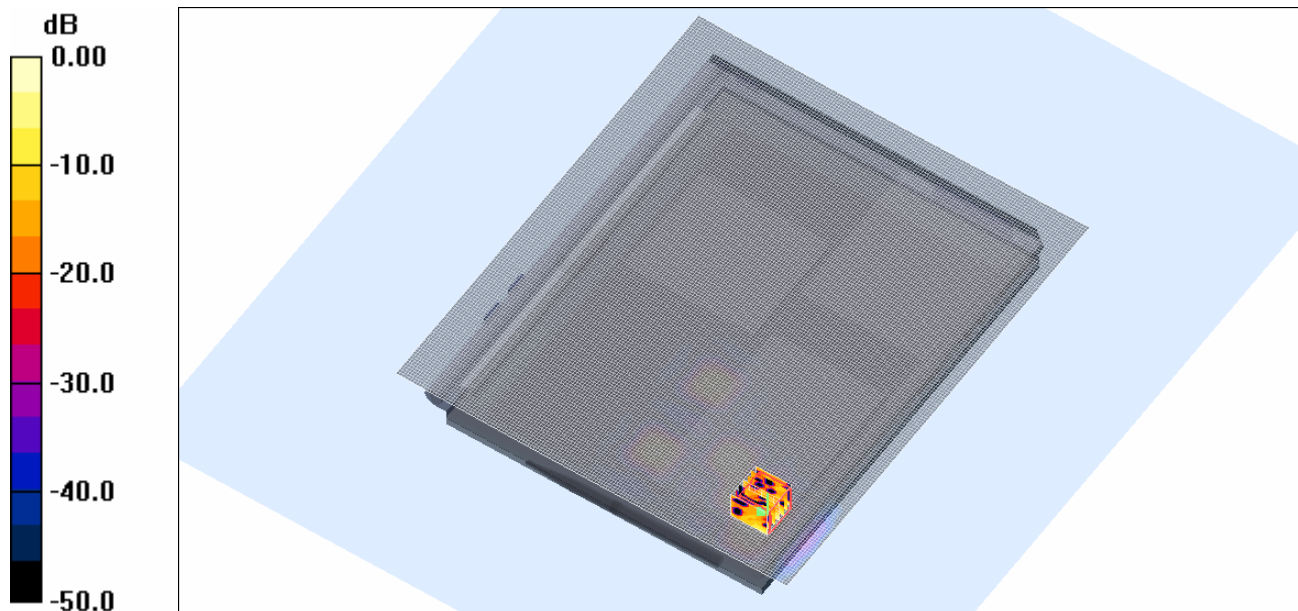
- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

### Channel 120 Bluetooth at 2441 MHz Test/Area Scan (141x161x1): Measurement

grid: dx=20mm, dy=20mm

Maximum value of SAR (interpolated) = 0.175 mW/g

Maximum value of SAR (measured) = 0.134 mW/g



0 dB = 0.134mW/g

**SAR MEASUREMENT PLOT 1**

Ambient Temperature  
Liquid Temperature  
Humidity

20.5 Degrees Celsius  
20.0 Degrees Celsius  
63.0 %



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**Test Date: 20 March 2007**

File Name: Edge On OFDM 5.6 GHz Saratoga Antenna B Bluetooth Off 20-03-07.da4

**DUT: Fujitsu Tablet Saratoga with Athertos 11abg and Bluetooth; Type: XB62; Serial: ZX6X50909**

\* Communication System: OFDM 5770 MHz EU; Frequency: 5500 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.50496$  mho/m,  $\epsilon_r = 44.4009$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(3.63, 3.63, 3.63)

- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

**Channel 100 Test/Area Scan (81x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.25 mW/g

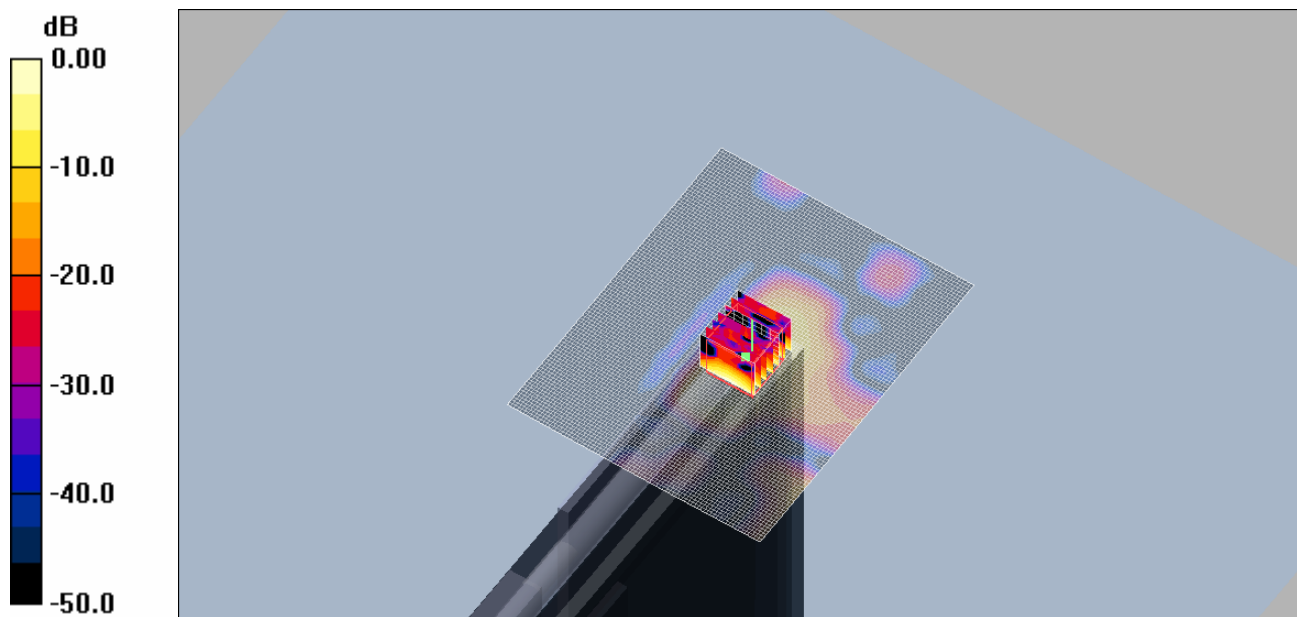
**Channel 100 Test/Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 18.0 V/m; Power Drift = -0.417 dB

Peak SAR (extrapolated) = 2.99 W/kg

**SAR(1 g) = 0.797 mW/g; SAR(10 g) = 0.245 mW/g**

Maximum value of SAR (measured) = 1.64 mW/g



0 dB = 1.64mW/g

**SAR MEASUREMENT PLOT 2**

**Ambient Temperature**

**20.5 Degrees Celsius**

**Liquid Temperature**

**20.0 Degrees Celsius**

**Humidity**

**63.0 %**



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Test Date: 20 March 2007

File Name: Edge On OFDM 5.6 GHz Saratoga Antenna B Bluetooth Off 20-03-07.da4

**DUT: Fujitsu Tablet Saratoga with Athertos 11abg and Bluetooth; Type: XB62; Serial: ZX6X50909**

\* Communication System: OFDM 5770 MHz EU; Frequency: 5600 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.70335$  mho/m,  $\epsilon_r = 44.1497$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(3.63, 3.63, 3.63)

- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

**Channel 120 Test/Area Scan (81x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.81 mW/g

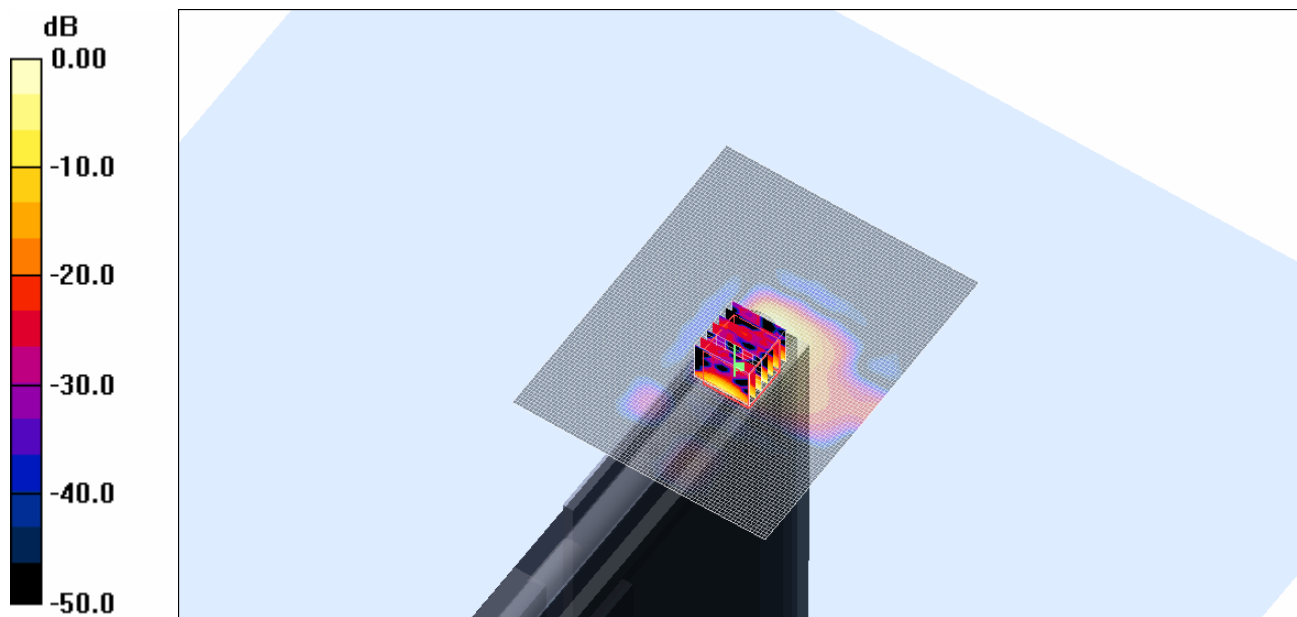
**Channel 120 Test/Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 9.20 V/m; Power Drift = -0.395 dB

Peak SAR (extrapolated) = 3.86 W/kg

**SAR(1 g) = 0.911 mW/g; SAR(10 g) = 0.251 mW/g**

Maximum value of SAR (measured) = 1.95 mW/g



0 dB = 1.95mW/g

**SAR MEASUREMENT PLOT 3**

Ambient Temperature

20.5 Degrees Celsius

Liquid Temperature

20.0 Degrees Celsius

Humidity

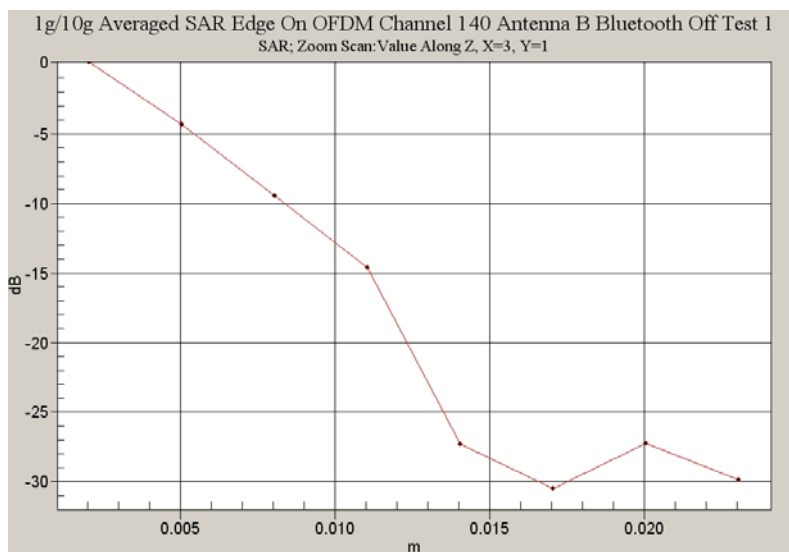
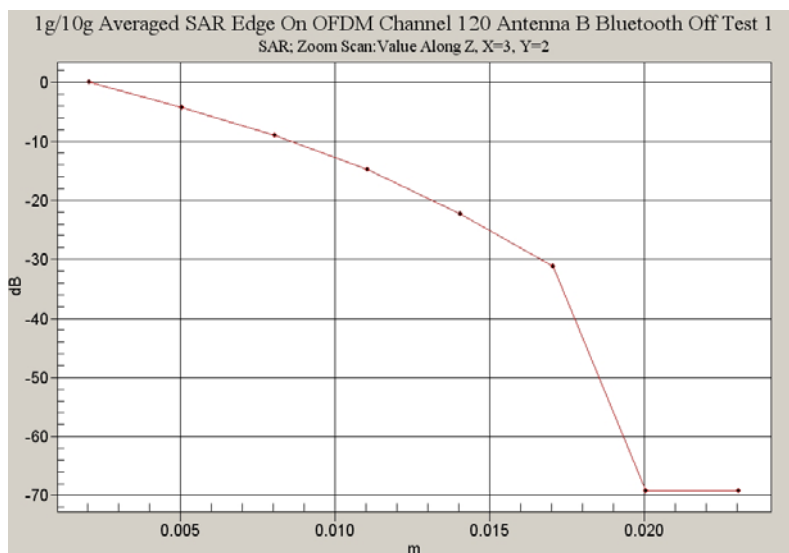
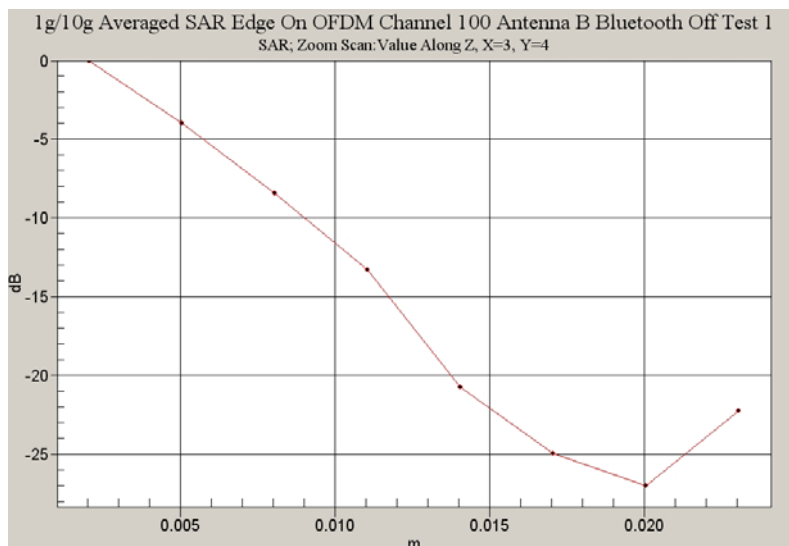
63.0 %



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Test Date: 20 March 2007

File Name: Edge On OFDM 5.6 GHz Saratoga Antenna B Bluetooth Off 20-03-07.da4

**DUT: Fujitsu Tablet Saratoga with Athertos 11abg and Bluetooth; Type: XB62; Serial: ZX6X50909**

\* Communication System: OFDM 5770 MHz EU; Frequency: 5700 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.90213$  mho/m,  $\epsilon_r = 43.8429$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(3.63, 3.63, 3.63)

- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

**Channel 140 Test/Area Scan (81x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.14 mW/g

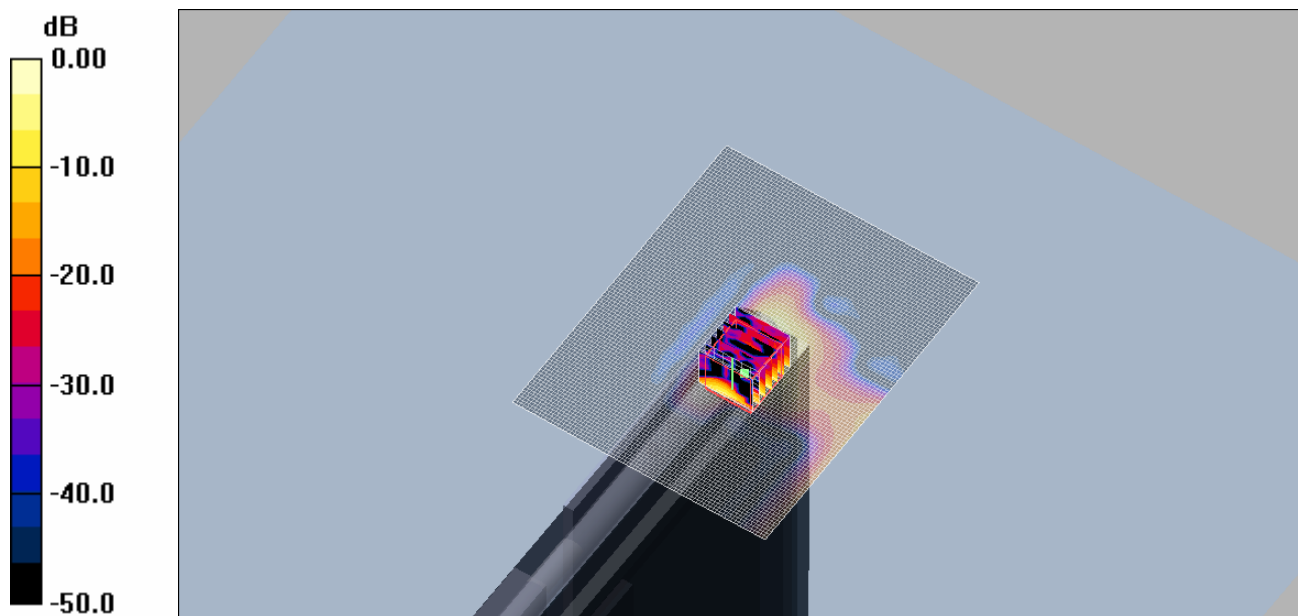
**Channel 140 Test/Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 10.4 V/m; Power Drift = 0.390 dB

Peak SAR (extrapolated) = 4.43 W/kg

**SAR(1 g) = 0.994 mW/g; SAR(10 g) = 0.259 mW/g**

Maximum value of SAR (measured) = 2.23 mW/g



0 dB = 2.23mW/g

**SAR MEASUREMENT PLOT 4**

Ambient Temperature  
Liquid Temperature  
Humidity

20.5 Degrees Celsius  
20.0 Degrees Celsius  
63.0 %



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Test Date: 20 March 2007

File Name: Edge On OFDM 5.6 GHz Saratoga Antenna A Bluetooth Off 20-03-07.da4

**DUT: Fujitsu Tablet Saratoga with Athertos 11abg and Bluetooth; Type: XB62; Serial: ZX6X50909**

\* Communication System: OFDM 5770 MHz EU; Frequency: 5500 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.50496$  mho/m,  $\epsilon_r = 44.4009$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(3.63, 3.63, 3.63)

- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

**Channel 100 Test/Area Scan (81x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.07 mW/g

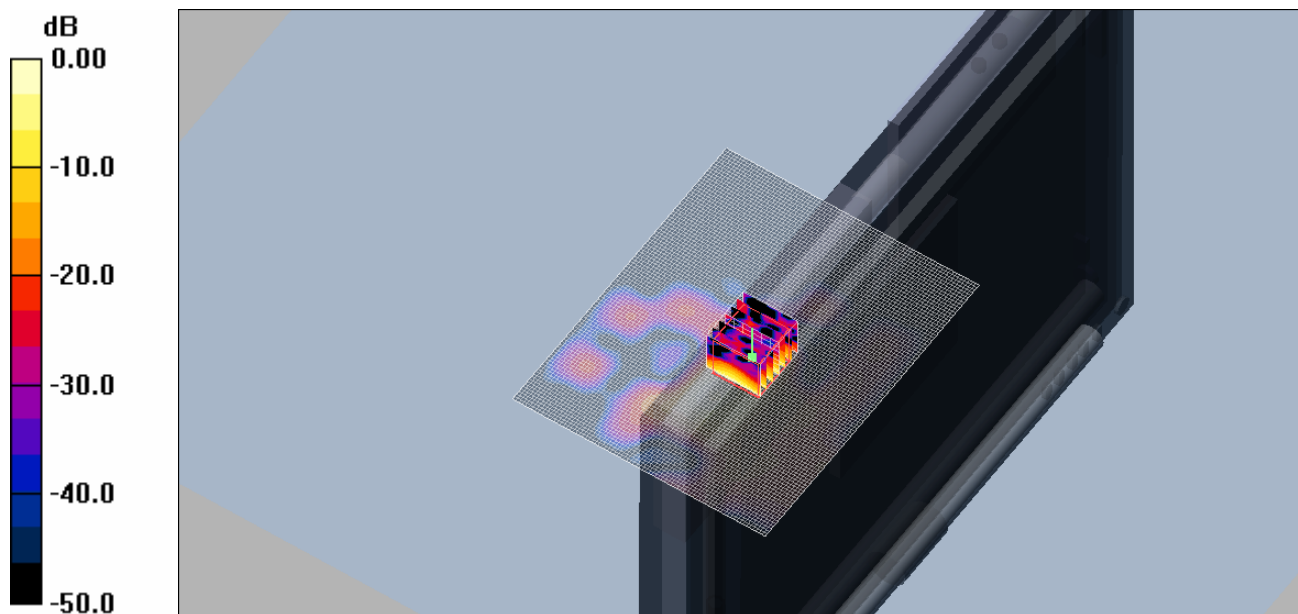
**Channel 100 Test/Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 11.0 V/m; Power Drift = -0.189 dB

Peak SAR (extrapolated) = 4.04 W/kg

**SAR(1 g) = 0.946 mW/g; SAR(10 g) = 0.255 mW/g**

Maximum value of SAR (measured) = 2.03 mW/g



0 dB = 2.03mW/g

**SAR MEASUREMENT PLOT 5**

Ambient Temperature  
Liquid Temperature  
Humidity

20.5 Degrees Celsius  
20.0 Degrees Celsius  
63.0 %



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Test Date: 20 March 2007

File Name: Edge On OFDM 5.6 GHz Saratoga Antenna A Bluetooth Off 20-03-07.da4

**DUT: Fujitsu Tablet Saratoga with Athertos 11abg and Bluetooth; Type: XB62; Serial: ZX6X50909**

\* Communication System: OFDM 5770 MHz EU; Frequency: 5600 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.70335$  mho/m,  $\epsilon_r = 44.1497$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(3.63, 3.63, 3.63)

- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

**Channel 120 Test/Area Scan (81x101x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 1.51 mW/g

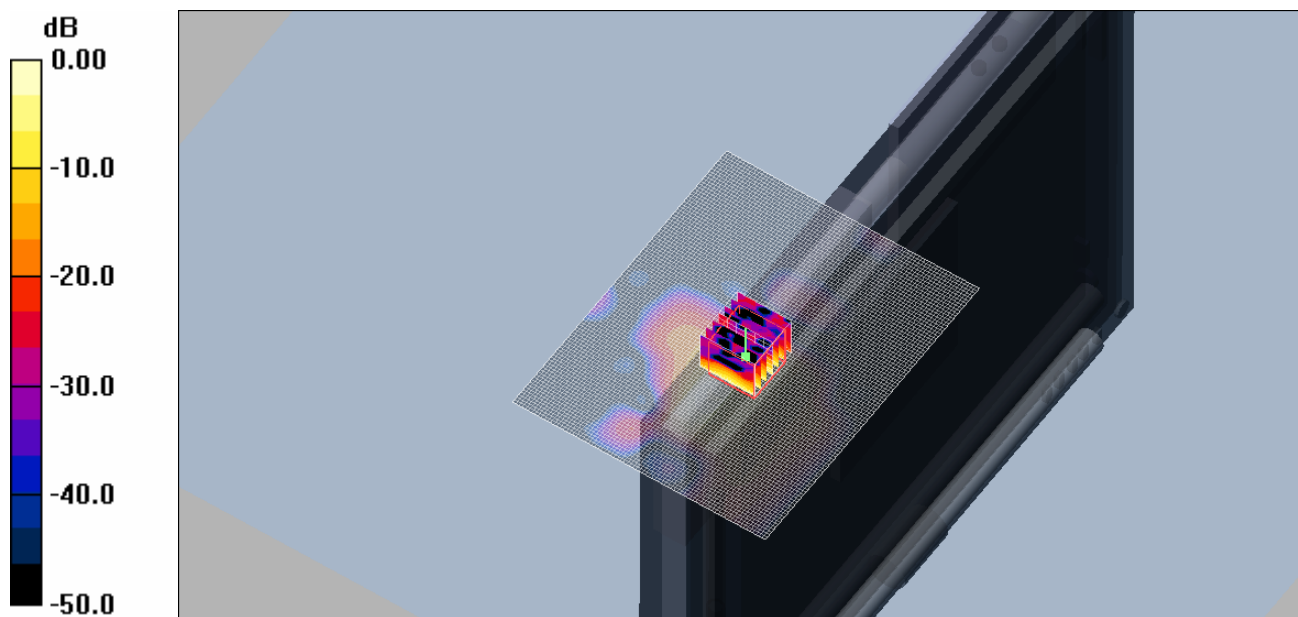
**Channel 120 Test/Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 14.5 V/m; Power Drift = -0.326 dB

Peak SAR (extrapolated) = 5.21 W/kg

**SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.345 mW/g**

Maximum value of SAR (measured) = 2.64 mW/g



0 dB = 2.64mW/g

**SAR MEASUREMENT PLOT 6**

Ambient Temperature  
Liquid Temperature  
Humidity

20.5 Degrees Celsius  
20.0 Degrees Celsius  
63.0 %



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Test Date: 20 March 2007

File Name: Edge On OFDM 5.6 GHz Saratoga Antenna A Bluetooth Off 20-03-07.da4

**DUT: Fujitsu Tablet Saratoga with Athertos 11abg and Bluetooth; Type: XB62; Serial: ZX6X50909**

\* Communication System: OFDM 5770 MHz EU; Frequency: 5700 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.90213$  mho/m,  $\epsilon_r = 43.8429$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(3.63, 3.63, 3.63)

- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

**Channel 140 Test/Area Scan (81x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.21 mW/g

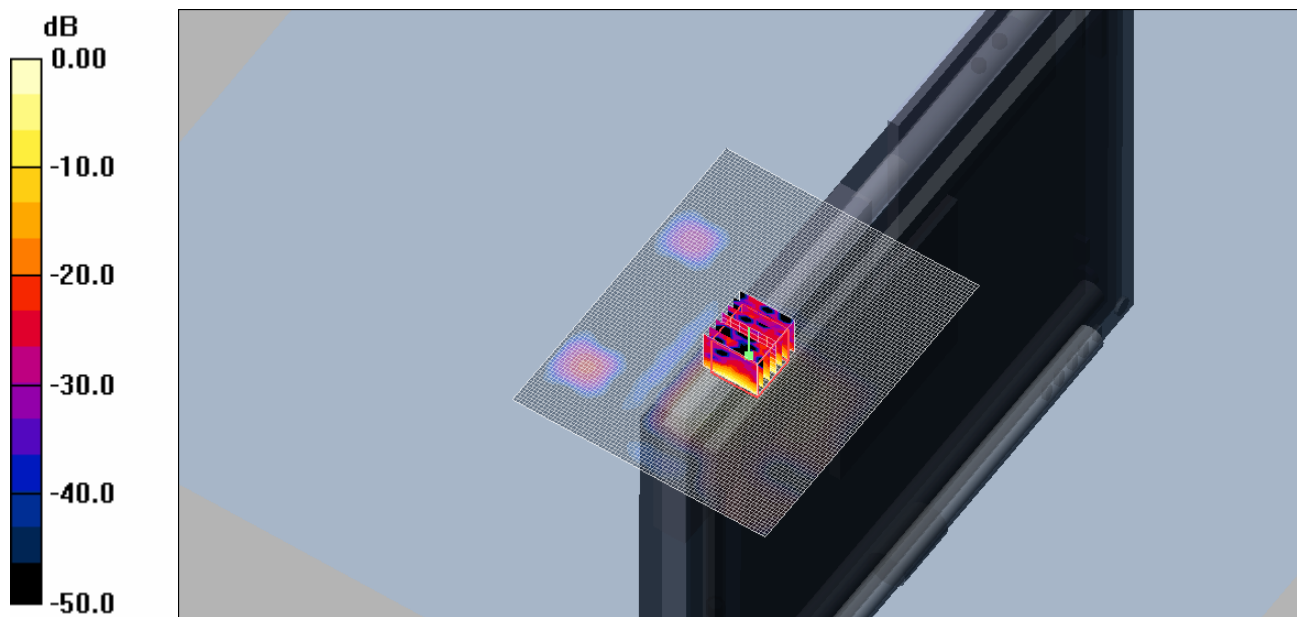
**Channel 140 Test/Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 9.38 V/m; Power Drift = -0.100 dB

Peak SAR (extrapolated) = 3.65 W/kg

**SAR(1 g) = 0.848 mW/g; SAR(10 g) = 0.229 mW/g**

Maximum value of SAR (measured) = 1.84 mW/g



0 dB = 1.84mW/g

**SAR MEASUREMENT PLOT 7**

Ambient Temperature  
Liquid Temperature  
Humidity

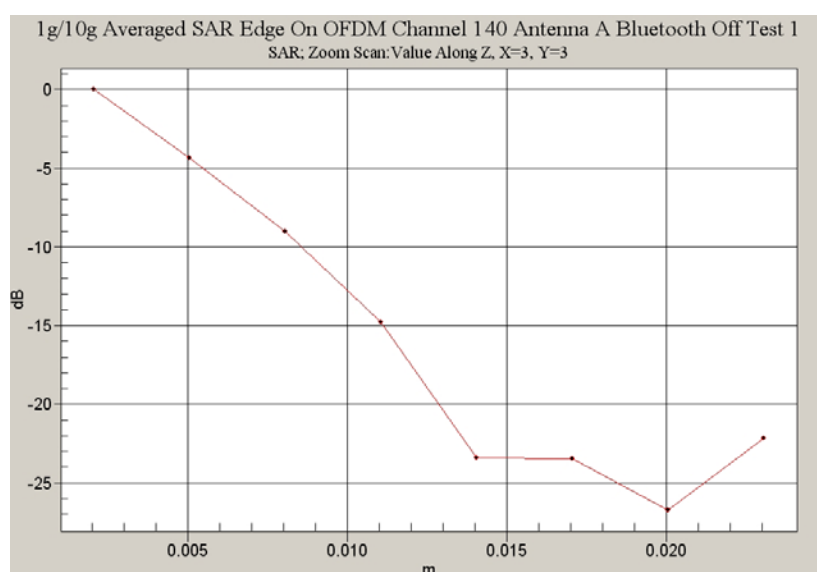
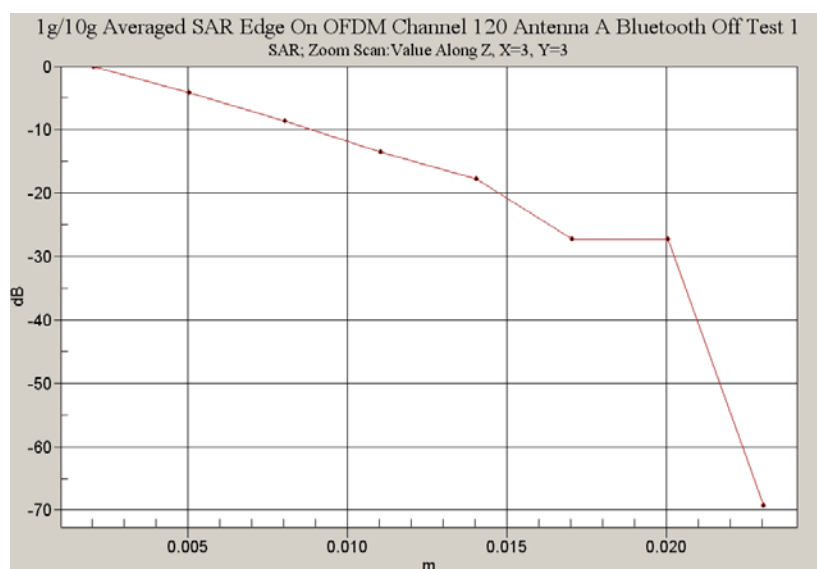
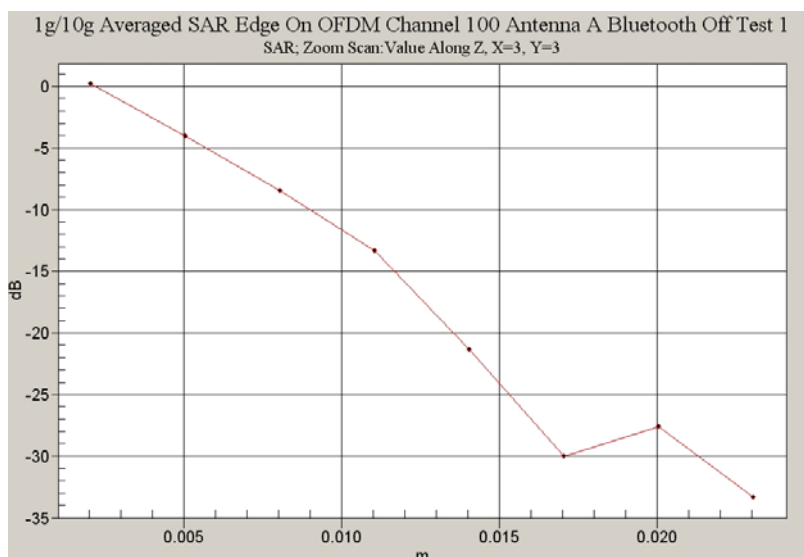
20.5 Degrees Celsius  
20.0 Degrees Celsius  
63.0 %



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Test Date: 20 March 2007

File Name: Edge On OFDM 5.6 GHz Saratoga Antenna A Bluetooth On 20-03-07.da4

DUT: **Fujitsu Tablet Saratoga with Athertos 11abg and Bluetooth; Type: XB62; Serial: ZX6X50909**

\* Communication System: OFDM 5770 MHz EU; Frequency: 5600 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.70335$  mho/m,  $\epsilon_r = 44.1497$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(3.63, 3.63, 3.63)

- Phantom: Flat Phantom 10.1; Serial: P 10.1; Phantom section: Flat 2.2 Section

**Channel 120 Test/Area Scan (81x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.36 mW/g

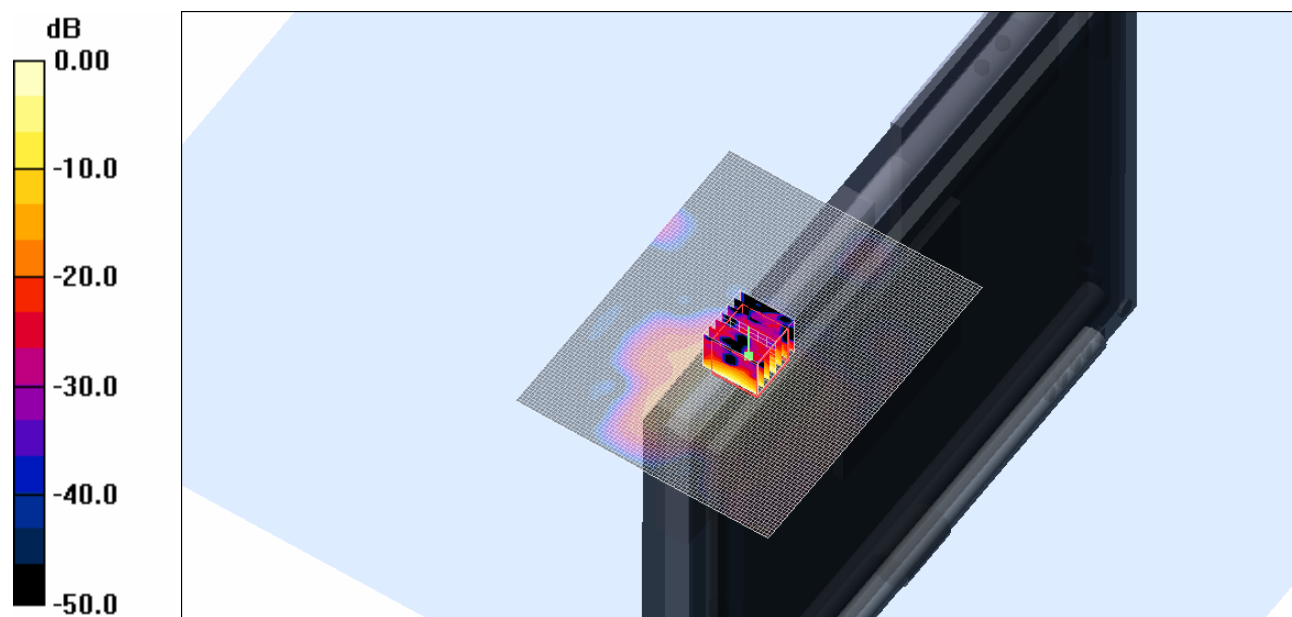
**Channel 120 Test/Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 13.4 V/m; Power Drift = -0.289 dB

Peak SAR (extrapolated) = 5.43 W/kg

**SAR(1 g) = 1.25 mW/g; SAR(10 g) = 0.339 mW/g**

Maximum value of SAR (measured) = 2.70 mW/g



0 dB = 2.70mW/g

**SAR MEASUREMENT PLOT 8**

Ambient Temperature  
Liquid Temperature  
Humidity

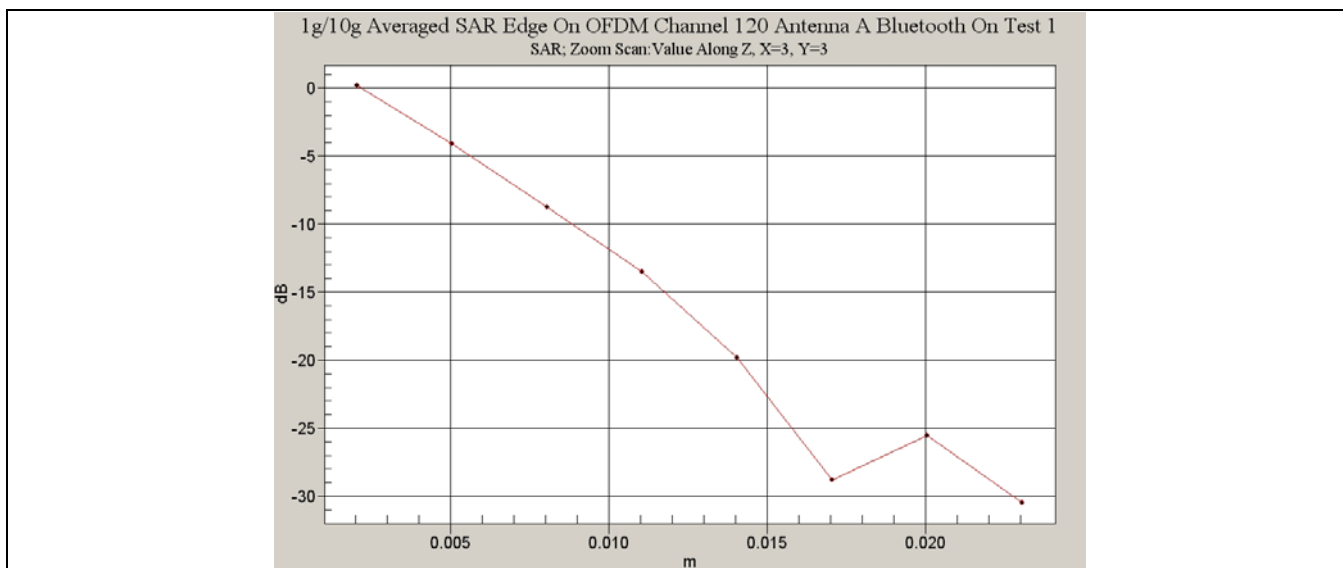
20.5 Degrees Celsius  
20.0 Degrees Celsius  
63.0 %



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Test Date: 20 March 2007

File Name: Validation 5500MHz (DAE 442 Probe EX3DV4) 20-03-07.da4

**DUT: Dipole 5200\_5800 MHz; Type: D5GHzV2; Serial: 1008**

\* Communication System: CW 5500 MHz; Frequency: 5500 MHz; Duty Cycle: 1:1

\* Medium parameters used:  $\sigma = 5.07531$  mho/m,  $\epsilon_r = 34.4482$ ;  $\rho = 1000$  kg/m<sup>3</sup>

- Electronics: DAE3 Sn442; Probe: EX3DV4 - SN3563; ConvF(4.02, 4.02, 4.02)

- Phantom: SAM 22; Serial: 1260; Phantom section: Flat Section

**Channel 1 Test 2/Area Scan (91x91x1):** Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 48.9 mW/g

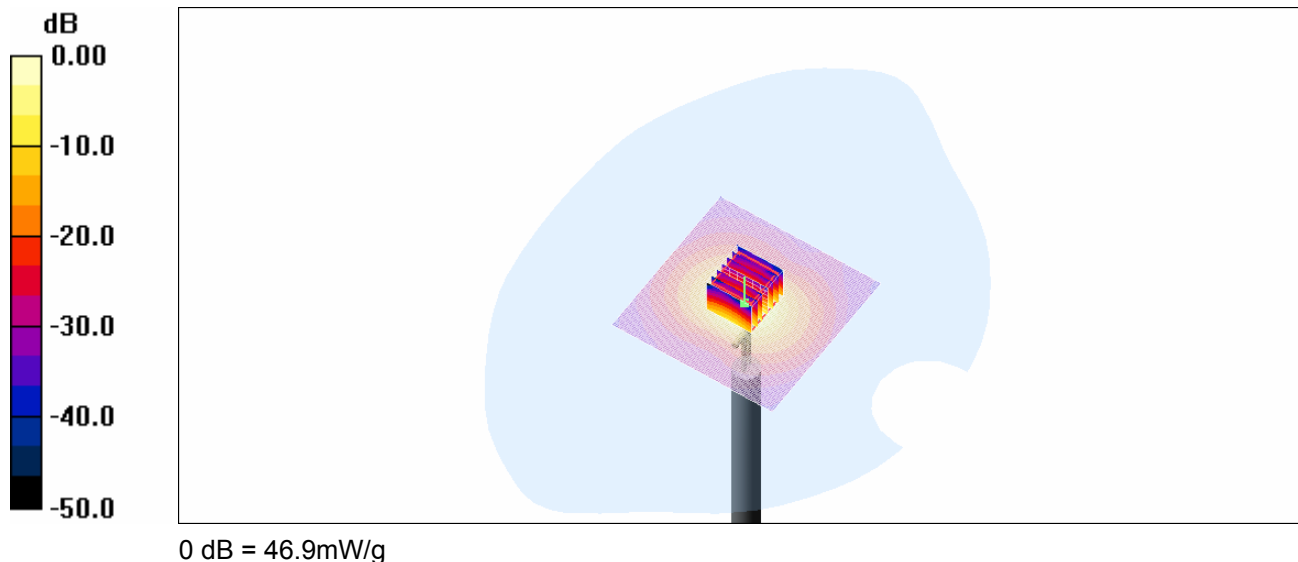
**Channel 1 Test 2/Zoom Scan (7x7x8)/Cube 0:** Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 103.4 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 92.1 W/kg

**SAR(1 g) = 22.4 mW/g; SAR(10 g) = 6.37 mW/g**

Maximum value of SAR (measured) = 46.9 mW/g



**SAR MEASUREMENT PLOT 9**

Ambient Temperature  
Liquid Temperature  
Humidity

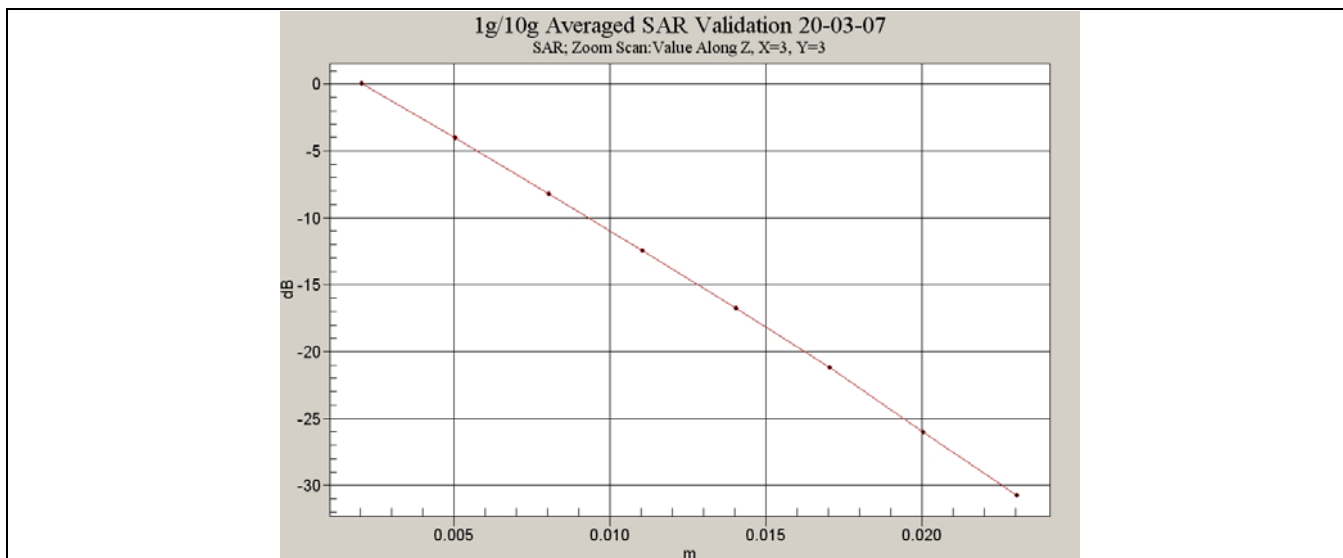
20.5 Degrees Celsius  
20.0 Degrees Celsius  
63.0 %



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