



**TEST REPORT OF A 2.4/5 GHZ IEEE 802.11a/g WLAN  
CARDBUS CARD, BRAND AGERE, MODEL 1106, IN  
CONFORMITY WITH FEDERAL REGULATED SAR  
(SPECIFIC ABSORPTION RATE) REQUIREMENTS IN  
THE USA AND CANADA.**

FCC listed : 90828  
Industry Canada : IC3501  
VCCI registered : R-1518, C-1598

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Test specification(s): FCC/CA SAR Requirements  
Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
Manufacturer: Agere Systems Netherlands BV  
Brand mark: Agere  
Model: 1106  
FCC ID: IMR1106CB

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**Description of test item**

Test item : 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
Manufacturer : Agere Systems Nederland B.V.  
Brand : Agere  
Model : 1106  
Serial numbers : 04NG12910086  
Revision : n.a.  
Receipt number : 4  
Receipt date : February 12, 2004

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**Test(s) performed**

Location : Niekerk  
Test(s) started : June 15, 2004  
Test(s) completed : June 24, 2004  
Purpose of test(s) : To verify compliance with Federal regulated SAR requirements in the US and Canada  
Test specification(s) : IEEE C95.1-1991, FCC OET Bulletin 65 (Supplement C), Industry Canada RSS-102 (Issue 1)  
Test engineer : J. Schuurmans, B.Sc.E.E.   
Project leader : H.J. Pieters   
Report written by : J. Schuurmans, B.Sc.E.E.   
Report approved by : P. de Beer   
Report date : July 4, 2004

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The test results relate only to the item(s) tested.



## Table of contents

1	General	6
1.1	Purpose of tests	6
1.2	Applied standards/publications	6
1.3	References	6
2	Summary and conclusion	7
2.1	Exposure category	7
2.2	Summary of results	7
2.3	Compliance	7
3	Identification of Equipment Under Test (EUT)	8
3.1	Equipment under Test (EUT) details	8
3.2	EUT test operating configurations	8
3.3	Additional operating configurations	9
4	Test conditions	9
4.1	Environmental conditions	9
4.2	System performance check 2.4 GHz	9
4.2.1	2450 MHz validation parameters	11
4.3	System validation on 5 GHz	13
4.3.1	5 GHz validation parameters	15
4.4	Measured maximum output power of EUT	16
4.4.1	Measured Average power on 2.4 GHz	16
4.4.2	Measured Average Power on 5 GHz	16
4.5	Tissue simulating liquid dielectric parameters	17
4.5.1	Mixing procedures and recipe	17
4.5.2	Dielectric parameters for 2.4 GHz, body tissue	18
4.5.3	Dielectric parameters for 2.4GHz, head tissue	19
4.5.4	Dielectric parameters for 5 GHz body tissue	20
4.5.5	Dielectric parameters for 5GHz, head tissue	21
4.5.6	Tissue simulating liquid temperature requirements	22
5	Photographs of EUT in host	22
5.1	Host IBM	22
5.2	Host COMPAQ	23
5.3	Host ACER	24
6	Identification of EUT-Phantom positions	25
6.1	Portable Device operating near the body	25
6.1.1	Position perpendicular	25
6.1.2	Position lapheld	26
7	Test Results	27
7.1	Test methodology	27
7.2	Results	28
7.3	Step size and scan information	29



8	Plots of measurement data.....	30
8.1.1	Validation 2.4 GHz.....	30
8.1.2	Validation 2.4 GHz.....	31
8.1.3	Validation 2.4 GHz.....	32
8.1.4	System validation 5360 MHz.....	33
8.1.5	System validation 5360 MHz.....	34
8.1.6	System validation 5360 MHz.....	35
8.1.7	System validation 5360 MHz.....	36
8.1.8	System validation 5740 MHz.....	37
8.1.9	System validation 5740 MHz.....	38
8.1.10	System validation 5740 MHz.....	39
8.2	Host: ACER.....	40
8.2.1	Host ACER, Lapheld channel 1.....	40
8.2.2	Host ACER, Lapheld channel 6.....	41
8.2.3	Host ACER, Lapheld channel 11.....	42
8.2.4	Host ACER, Lapheld channel 36.....	43
8.2.5	Host ACER, Lapheld channel 48.....	44
8.2.6	Host ACER, Lapheld channel 52.....	45
8.2.7	Host ACER, Lapheld channel 64.....	46
8.2.8	Host ACER, Lapheld channel 165.....	47
8.2.9	Host ACER, Perpendicular + 10 mm channel 6.....	48
8.2.10	Host ACER, Perpendicular + 10 mm channel 52.....	49
8.2.11	Host ACER, Perpendicular + 10 mm channel 165.....	50
8.3	Host: IBM.....	51
8.3.1	Host IBM, Lapheld channel 1.....	51
8.3.2	Host IBM, Lapheld channel 6.....	52
8.3.3	Host IBM, Lapheld channel 11.....	53
8.3.4	Host IBM, Lapheld channel 52.....	54
8.3.5	Host IBM, Lapheld channel 165.....	55
8.3.6	Host IBM, Perpendicular + 10 mm channel 6.....	56
8.3.7	Host IBM, Perpendicular + 10 mm channel 52.....	57
8.3.8	Host IBM, Perpendicular + 10 mm channel 165.....	58
8.4	Host: COMPAQ.....	59
8.4.1	Host COMPAQ, Lapheld channel 1.....	59
8.4.2	Host COMPAQ, Lapheld channel 6.....	60
8.4.3	Host COMPAQ, Lapheld channel 11.....	61
8.4.4	Host COMPAQ, Lapheld channel 36.....	62
8.4.5	Host COMPAQ, Lapheld channel 48.....	63
8.4.6	Host COMPAQ, Lapheld channel 52.....	64
8.4.7	Host COMPAQ, Lapheld channel 64.....	65
8.4.8	Host COMPAQ, Lapheld channel 165.....	66
8.4.9	Host COMPAQ, Perpendicular + 10 mm channel 6.....	67
8.4.10	Host COMPAQ, Perpendicular + 10 mm channel 52.....	68
8.4.11	Host COMPAQ, Perpendicular + 10 mm channel 165.....	69
8.5	Hotspot identification.....	70



9	Description of test configuration.....	71
9.1	SAR measurement system.....	71
9.1.1	Robot System description.....	71
9.1.2	Probe description.....	72
9.1.3	Amplifier description.....	72
9.1.4	Phantom description.....	72
9.2	Measurement Procedure.....	72
9.2.1	SARA2 Interpolation and Extrapolation schemes.....	73
9.2.2	Interpolation of 2D area scan.....	73
9.2.3	Extrapolation of 3D scan.....	73
9.2.4	Interpolation of 3D scan and volume averaging.....	73
10	Additional information supplementary to the test report.....	75
10.1	Probe information.....	75
10.2	SAR system check.....	75
10.3	5.8 GHz system check.....	76
10.3.1	Introduction.....	76
10.3.2	Validation results using WR187 waveguide.....	77
10.3.3	An alternative open-ended waveguide geometry.....	77
10.4	Dielectric property measurement of tissue-simulant liquids for SAR testing.....	79
10.4.1	Introduction.....	79
10.4.2	TEM-cell construction.....	79
10.4.3	Calculation of dielectric properties from VNA measurements.....	79
10.5	Measurement uncertainty.....	81
10.5.1	Introduction.....	81
10.5.2	Uncertainty calculated for IEEE1528 : standard measurements (2450 MHz).....	82
10.5.3	Uncertainty calculated for IEEE1528 : standard measurements (5800 MHz).....	83
10.5.4	Uncertainty calculated for IEEE1528 : System performance check (2450 MHz).....	84
10.5.5	Uncertainty calculated for IEEE1528 : System performance check (5800 MHz).....	85
11	List of utilized test equipment.....	86
12	Test software.....	86

**Annexes:**

- Calibration Certificate Dosimetric E-field Probe.
- Immersible SAR probe calibration report IXP – 050 S/N 0131
- IndexSAR report no. IXS-0223, Compensating for the finite size of SAR probes used in electric field gradients



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# 1 General.

## 1.1 Purpose of tests.

Tests were conducted to verify compliance with Federal regulated SAR requirements in the US and Canada.

## 1.2 Applied standards/publications.

The Equipment Under Test (EUT) was tested in conformity with the described test method(s) in the following Standards and/or publications:

- IEEE Std C95.1-1999 edition: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300GHz
- FCC OET Bulletin 65 (Supplement C) edition 01-01: Evaluating Compliance with FCC Guidelines for Human Exposure to radio Frequency Fields. Additional information for evaluating Compliance of Mobile and Portable Devices with FCC limits for Human Exposure to Radiofrequency Emissions.
- Industry Canada RSS-102 (Issue 1).

## 1.3 References.

The methods and procedures applicable to measurements as performed and indicated in this test report are also described in detail in the following reference documents:

Publications	Year	Title
IEEE Std. 1528	2003	Recommended Practice for Determining the Peak Spatial-Average Specific Absorption rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.
FCC OET Bulletin 65, Edition 97-01	1997	Evaluating Compliance with FCC Guidelines for Human Exposure to radio Frequency Fields
ANSI/IEEE C95.3	2002	IEEE Recommended Practice for the Measurement and Computations of Radio Frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100kHz-300GHz



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## 2 Summary and conclusion.

### 2.1 Exposure category.

The EUT is a portable device used near the body.

According to the characteristics of the EUT and typical application and usage in accordance with the relevant product specifications of the manufacturer the EUT is identified to the exposure category:

*General population/Uncontrolled exposure.*

### 2.2 Summary of results.

In the 2.4 GHz frequency range (2412 – 2472 MHz) the maximum peak spatial-average SAR measured was **1.502 W/Kg** averaged over 1g with the EUT transmitting on 2437 MHz (channel 6) at a power level of 21.4 dBm (conducted average including 3 dBi antenna gain) while the EUT was positioned in a lapheld fashion.

In the 5 GHz frequency range (5150 – 5350 MHz) the maximum peak spatial-average SAR measured was **1.456 W/Kg** averaged over 1g with the EUT transmitting on 5260 MHz (channel 52) at a power level of 20.4 dBm (conducted average including 4 dBi antenna gain) while the EUT was positioned in a lapheld fashion.

In the 5 GHz frequency range (5745 – 5825 MHz) the maximum peak spatial-average SAR measured was **0.422 W/Kg** averaged over 1g with the EUT transmitting on 5825 MHz (channel 165) at a power level of 17.2 dBm (conducted average including 4 dBi antenna gain) while the EUT was positioned in a lapheld fashion.

### 2.3 Compliance.

The equipment was found to be compliant with requirements of standards as indicated in the table below:

Exposure Category and SAR Limits	Test Requirements	Compliance (Yes/No)
<b>General population/Uncontrolled exposure</b>  Limit Value for this Category as per 47 CFR 1.1093 (d)(2): Spatial Peak SAR shall not exceed <b>1.6 W/kg</b> as averaged over 1 g of tissue	Requirements using guidelines established in IEEE C95.1-1991	Yes/ <del>no</del>
	FCC OET Bulletin 65 (Supplement C)	Yes/ <del>no</del>
	Industry Canada RSS-102 (Issue 1).	Yes/ <del>no</del>



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### 3 Identification of Equipment Under Test (EUT).

The following is the information provided by the applicant.

#### 3.1 Equipment under Test (EUT) details.

Description	Model number	Serial number	FCC ID	Cable descriptions
2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	1106	04NG22910025	IMR1106CB	None.
Laptop Compaq	N610C	CNU3520X3V	DoC	DC power cord
AC Adaptor	PA-1650-02	3Y09478704	DoC	AC power cord / DC power cord
laptop Acer	Travelmate 350 2001	9145H018S510800AC0M	DoC	DC power cord
AC Adpater Acer 19V 3.2A	PA-1600-02	1229852CA	DoC	DC power cord / AC power cord
P/S2 mouse Microsoft	X04-72169	63618-OEM 7353451-6	DoC	Serial cable to laptop
Laptop IBM	1161-250	AA-FT4DD 00/05	DoC	DC power cord
IBM DC power supply 16V – 3A	O2k6543	1Z0rN857D91	DoC	DC power cord / AC power cord

#### 3.2 EUT test operating configurations.

Modulation type/ operating modes : DSSS (1, 2, 5.5, 11 MBit/s ), OFDM (6, 9, 12, 18, 24, 36, 48, 54 MBit/s), BPSK, QPSK, 16QAM, 64 QAM  
 Operating frequency range : 2400-2483.5 MHz (13 channels)  
 5180 -5320 MHz (14 channels), 5745-5825 MHz (11 channels)  
 Maximum indicated power : 21.4 dBm average power incl antenna gain @ 2412 MHz – 2472 MHz  
 20.4dBm average power incl antenna gain @ 5180 MHz – 5320 MHz  
 17.2 dBm average power incl antenna gain @ 5745 MHz – 5825 MHz  
 Duty cycle during testing : 100%  
 Antenna type(s) and gain : Integral, gain +3 dBi @ 2.4 GHz, gain +4 dBi @ 5 GHz  
 Power supply/ power source : See section 3.1  
 Primary User Functions of EUT : Data Radio Communication through Air  
 EUT Accessories : See section 3.1  
 Hardware/software changes applied for testing : EUT is made to transmit with 100% duty cycle, by means of specific test software supplied by applicant.





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### 3.3 Additional operating configurations.

Power and signal distribution, grounding, interconnecting cabling and physical placement of the EUT under circumstances of testing at the test system are in accordance with the typical application and usage in so far as is practicable, and is in accordance with the relevant product specifications of the manufacturer.

The configuration of the EUT and its position are fully detailed and documented in the test report.

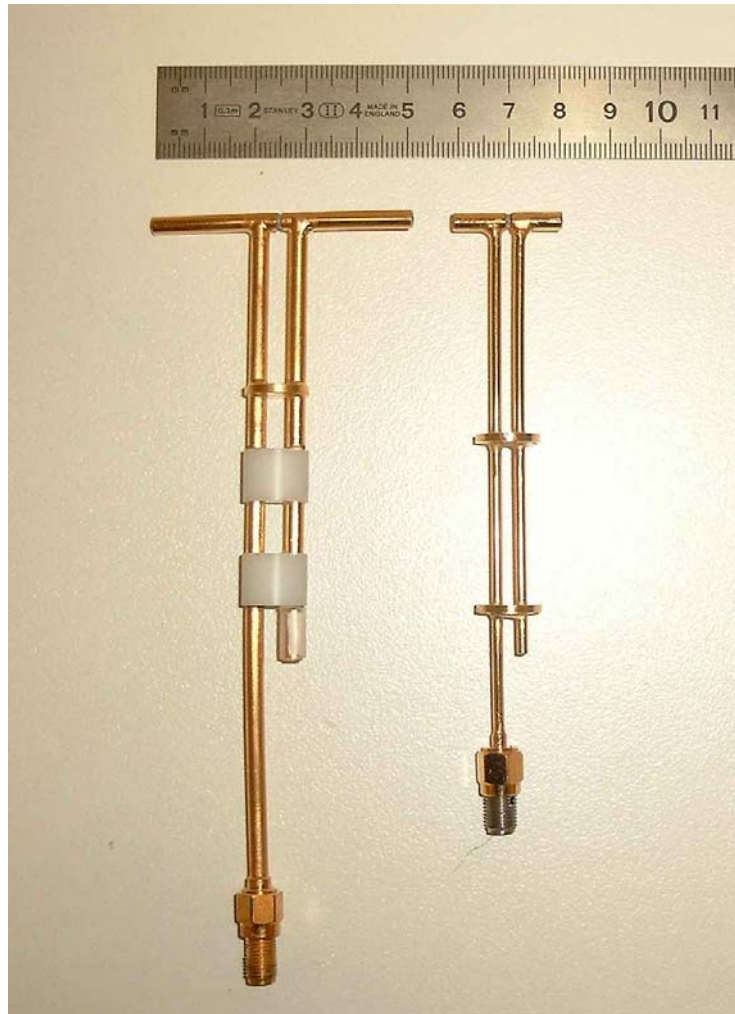
## 4 Test conditions.

### 4.1 Environmental conditions.

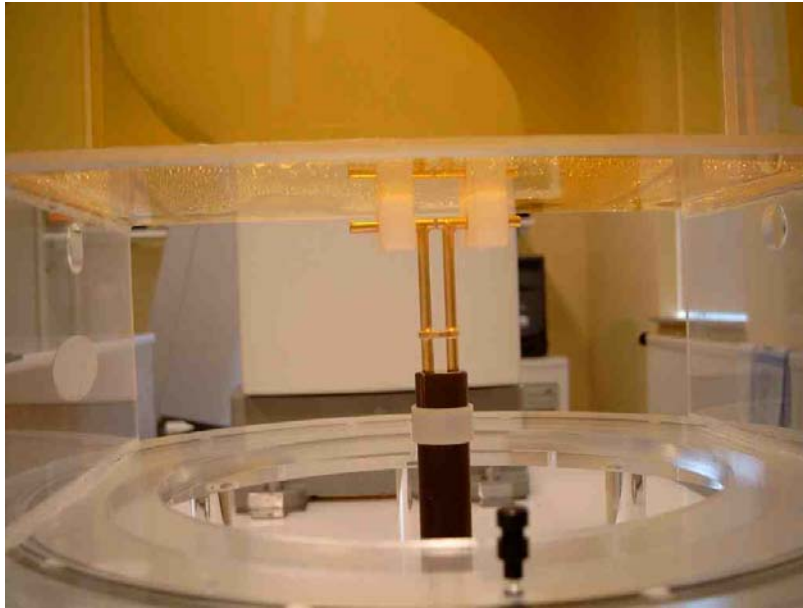
Requirement for	Specification	Determined value
Ambient temperature	+18°C to +25°C Temperature shall not exceed $\pm 2$ °C during the test	21-23
Ambient humidity	20% to 75%	48%-58%
Electro Magnetic environment	the ambient interference power shall be less than 0,012 W/kg	below the required lower detection limit of 0,010 W/kg, checked before and after test

### 4.2 System performance check 2.4 GHz.

The purpose of the system performance check (*system check*) is to verify that the system operates within its specifications at the device test frequency. The system check is to make sure that the system works correctly at the time of the compliance test. The system check has been performed using the specified tissue-equivalent liquid and at a chosen fixed frequency that is within  $\pm 10\%$  of the compliance test mid-band frequency. The system check is performed prior to compliance tests and the result must always be within  $\pm 10\%$  of the target value corresponding to the test frequency, liquid and the source used. In section 10.3 a description of this check is given. Below photographs of the 2.4 and 5 GHz check instrument setup and validation dipoles.

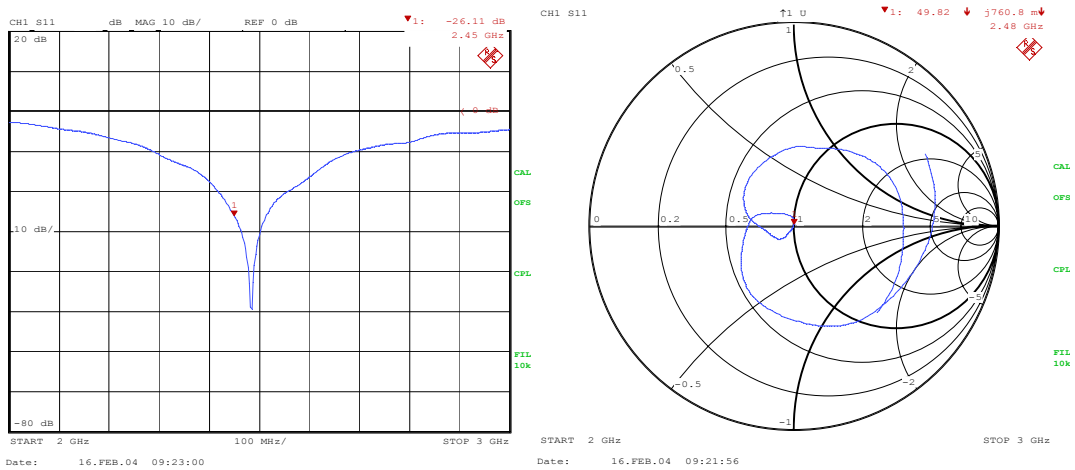


**Photo 1: validation dipoles**



**Photo 2: 2.4 GHz dipole validation**

**Photo 3: instrument setup system check**



**Figure 1:  $|S_{11}|$  and  $S_{11}$  smith chart of the 2.4 GHz dipole placed underneath the filled phantom**

The target values are 1 g or 10 g averaged SAR values measured on systems for which *system validation* has been performed.

The following system performance check results were obtained in accordance with Chapter 8 of IEEE 1528 of December, 2003:

#### 4.2.1 2450 MHz validation parameters.

At 2450 MHz a system validation was executed according IEEE Std. 1528-2003 . Dipole used see Photo 1.



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Frequency = 2450 MHz		Target value	Measured value	Deviation <sup>1</sup>
Date: June 17, 2004	Peak Spatial-Average SAR 1g [W/kg]	52	51.76	-0.46
	Peak Spatial-Average SAR 10g [W/kg]	24	26.12	+8.3%
Date June 18, 2004	Peak Spatial-Average SAR 1g [W/kg]	52	50.08	-3.7
	Peak Spatial-Average SAR 10g [W/kg]	24	25.6	+6.7%
Date June 23, 2004	Peak Spatial-Average SAR 1g [W/kg]	52	55.348	+6.4%
	Peak Spatial-Average SAR 10g [W/kg]	24	28.216	+17.6%

Detailed validation results may be found in section 8.

<sup>1</sup> Deviation is calculated:  $100\% * ((\text{measured value}) / (\text{reference value}) - 1)$

### 4.3 System validation on 5 GHz.

For 5.8 the proposed method in “*First Draft- Annex X: Frequency Extension to 3GHz-6GHz of IEEE Std. 1528-2003 recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communication Devices: Measurement Techniques*” February 28, 2003, was performed, but the described value of SAR could not be reached. This is consistent with the experience of the manufacturer of our SAR system, IndexSar Inc. from the UK. As an alternative the waveguide method, proposed by Ghandi, and repeated by Indexsar, was used to validate the system setup. The results show that this validation is within 10% of the expected values. Detailed information is included in paragraph 10.3. A picture of the waveguide used is shown here.

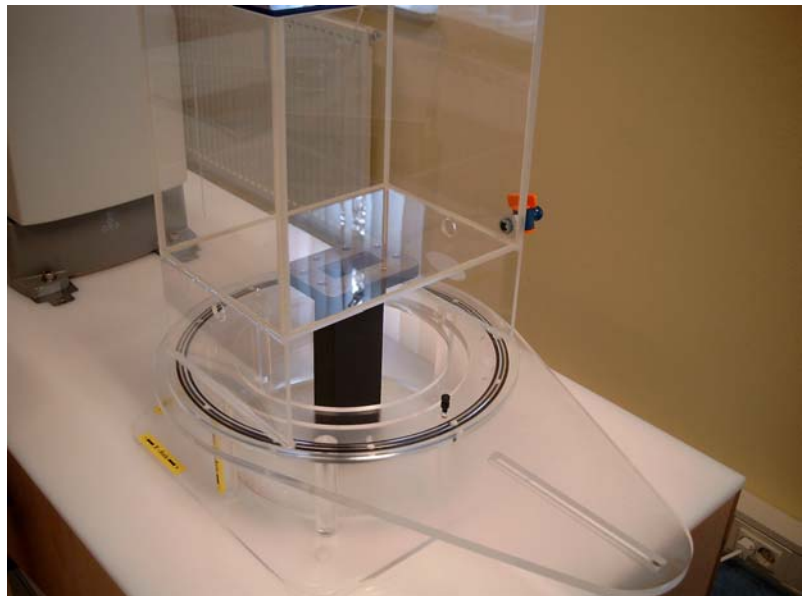
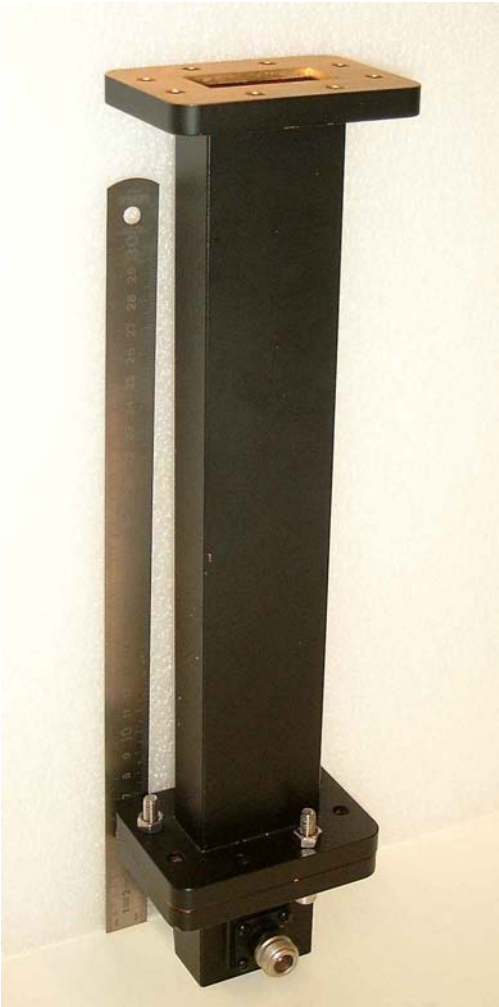


Photo 4: (above) Waveguide in position under phantom

Photo 5: (left) Waveguide.



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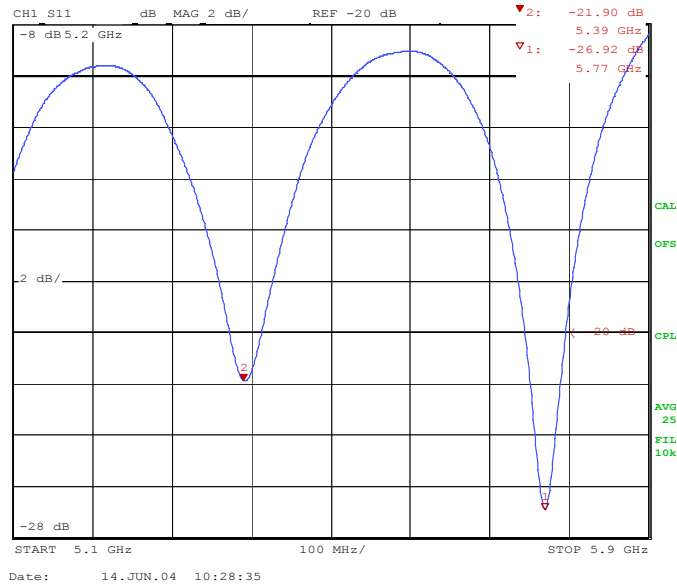


Figure 2:  $|S_{11}|$  of the Waveguide spaced 8mm from the filled phantom.



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#### 4.3.1 5 GHz validation parameters.

The measurement was performed at 5.350 GHz, and 5.740 GHz (Which is within 10% of the frequency band of interest)

Frequency = 5350 MHz		Target value	Measured value	Deviation <sup>2</sup>
Date June 14, 2004		35.8	35.5	-0.8%
Date June 15, 2004	Peak Spatial-Average SAR 1g [W/kg]	35.8	39.8	-1.3%
Date June 16, 2004	Peak Spatial-Average SAR 1g [W/kg]	35.8	35.4	-1.1%
Date: June 24, 2004	Peak Spatial-Average SAR 1g [W/kg]	35.8	33.3	-7.0%

Frequency = 5740 MHz		Target value	Measured value	Deviation <sup>3</sup>
Date: June 15, 2004	Peak Spatial-Average SAR 1g [W/kg]	39.5	41.67	5.5%
Date June 16, 2004	Peak Spatial-Average SAR 1g [W/kg]	39.5	40.28	2%
Date June 24, 2004	Peak Spatial-Average SAR 1g [W/kg]	39.5	40.77	3.2%

<sup>2</sup> Deviation is calculated:  $100\% * ((\text{measured value}) / (\text{reference value}) - 1)$

<sup>3</sup> Deviation is calculated:  $100\% * ((\text{measured value}) / (\text{reference value}) - 1)$



#### 4.4 Measured maximum output power of EUT.

The EUT has been set to the maximum output power level that is defined by the manufacturer and/or the operating requirements of the system (see section 3.3 EUT test operating configurations).

The results of tests on the EUT are depicted in table below. Listed is the higher of the conducted average power and ERP.

##### 4.4.1 Measured Average power on 2.4 GHz.

Transmission bit rate DSSS mode (Mbit/s)	Average transmit output power (conducted, dBm)		
	Channel 1 (2412 MHz)	Channel 6 (2437 MHz)	Channel 11 (2462 MHz)
1	21.3	21.2	21.2
2	21.3	21.2	21.2
5.5	20.6	21.3	21.4
11	21.4	21.3	21.3

Table 1: Average output power including antenna gain

Transmission bit rate OFDM mode (Mbit/s)	Average transmit output power (conducted, dBm)		
	Channel 1 (2412 MHz)	Channel 6 (2437 MHz)	Channel 11 (2462 MHz)
6	20.6	21.4	21.2
18	20.6	21.4	21.2
36	20.6	21.4	21.2
54	18.0	18.0	17.6

Table 2: Average output power including antenna gain

From table 1 and 2 it can be seen that in channel 6 the highest power is found. First SAR scan will therefore be performed at channel 6, using OFDM 6 Mb/s (See also section 7.1)

##### 4.4.2 Measured Average Power on 5 GHz.

Transmission bit-rate (Mbit/s)	Average transmit output power (conducted, dBm)			
	Ch. 36 (5180 MHz)	CH 48 (5240 MHz)	Ch. 52 (5260 MHz)	Ch. 64 (5320 MHz)
6	17.4	19.0	20.4	17.9
18	17.4	19.0	20.4	17.9
36	17.4	19.0	20.4	17.9
54	17.4	17.0	17.2	17.0

Table 3: Average output power including antenna gain

Transmission bit rate (Mbit/s)	Average transmit output power (conducted, dBm)		
	Channel 157 (5785 MHz)	Channel 161 (5805 MHz)	Channel 165 (5825 MHz)
6	17.1	16.8	17.2
18	17.1	16.8	17.2
36	17.1	16.8	17.2
54	14.2	13.8	13.6

Table 4: Average output power including antenna gain

From tables 3 and 4 it can be seen that channels 52 and 165 have the highest output power. Therefore, first SAR scan will be done in those channels. See also section 7.1.





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The power levels were monitored before and after each full 3D scan. These levels are specified in chapter 8. In addition a 30 minutes power stability measurement was done. The drift occurs in the first 10 minutes of the measurement.

Transmission bit rate (Mbit/s)	Average transmit output power drift [dB]		
	Channel 6 (2437 MHz)	Channel 52 (5240 MHz)	Channel 165 (5825 MHz)
OFDM 9	0.4	0.4	0.4

**Table 5:** average output power drift

## 4.5 Tissue simulating liquid dielectric parameters.

For the purpose of the tests as described in this report the following tissue dielectric parameters have been determined. The tables indicate the dielectric parameters of the liquids used during the tests. The indicated required values are derived from IEEE Std. 1528-2003 and OET Bulletin 65 supplement C. At frequencies other than reference frequencies, for which tissue parameters are given in the standards, the parameters have been determined by the linear interpolation. Depending on the intended use of the EUT the interpolated values will refer to the mid-band frequency of each operating mode. The measurement method is described in section 10.4.

Deviation of the actual parameters vs. the prescribed parameters is calculated according to:  $D = (A/T - 1) * 100\%$  where D is deviation in %, A is the actual value and T is the Target value.

Note: The liquids are mixed in december 2003. During several SAR evaluations throughout 2004, the liquids proved to be stable. Deviation from target are always within 10%. Because of the stability, only one measurement for these liquids has been done.

For all tests liquids of Bristol University have been used

### 4.5.1 Mixing procedures and recipe.

All Tissue Equivalent Liquids are obtained from Bristol University. The recipe is proprietary.

Contact details:

Medical Physics Department

University of Bristol, Bristol Haematology & Oncology Centre

Horfield road, Bristol BS2 8 ED, United Kingdom

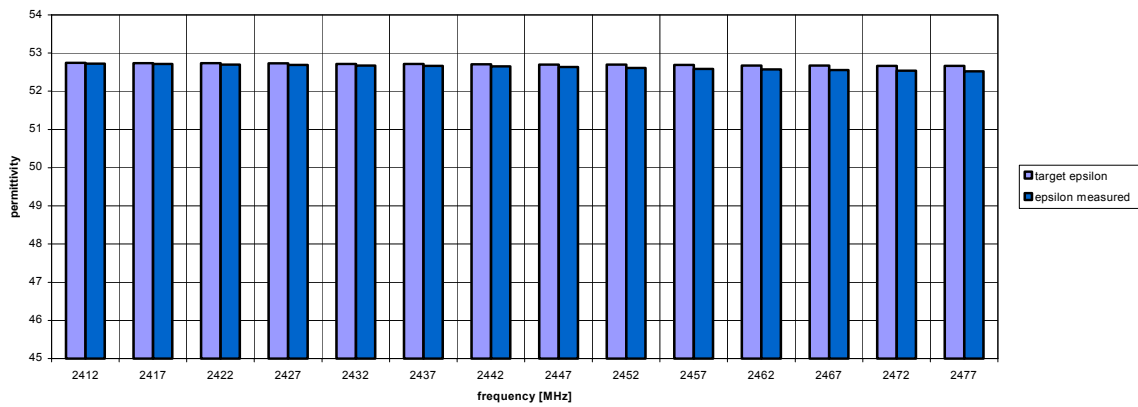
Tel. 44 117 928 2469.



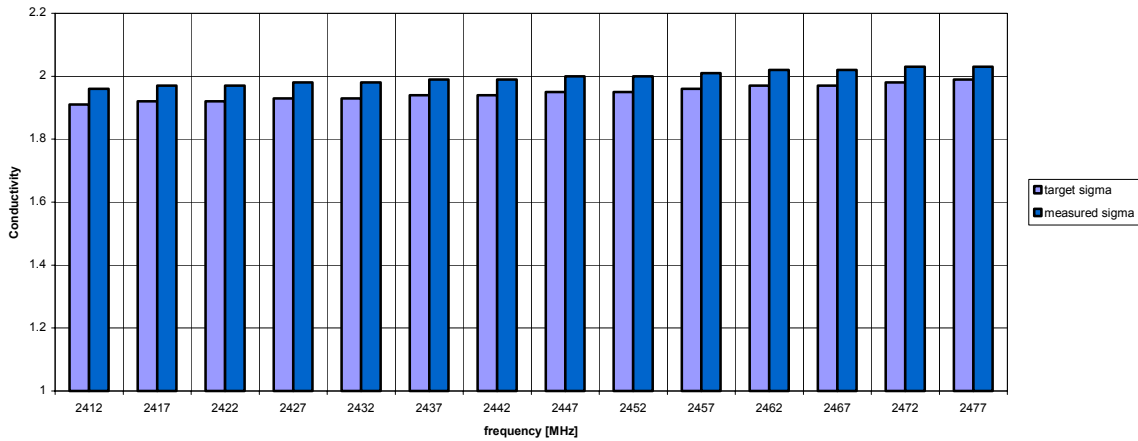
#### 4.5.2 Dielectric parameters for 2.4 GHz, body tissue.

Freq (MHz)	$\epsilon$	$\sigma$	$\epsilon$		$\sigma$		Measured			
			Min	Max	Min	Max	$\epsilon$	$\Delta$	$\sigma$	$\Delta$
2412	52.75	1.91	47.78	58.03	1.72	2.11	52.72	-0.05%	1.96	2.57%
2437	52.72	1.94	47.45	57.99	1.74	2.13	52.67	-0.1%	1.99	2.48%
2462	5268	1.97	47.42	57.95	1.77	2.16	52.57	-0.2%	2.02	2.46%

2.4 GHz body liquid validation



2.4 GHz body liquid validation



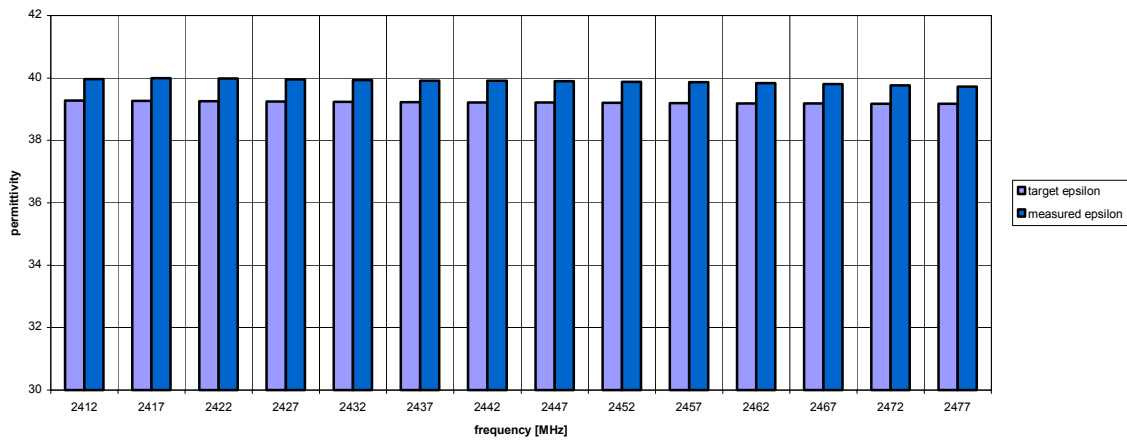


Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

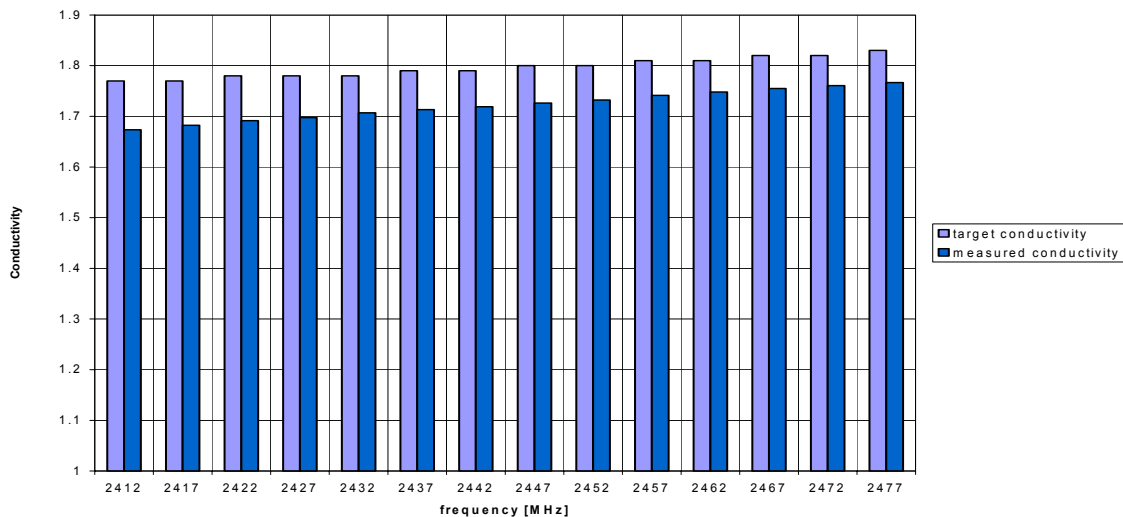
### 4.5.3 Dielectric parameters for 2.4GHz, head tissue.

Freq (MHz)	$\epsilon$	$\sigma$	$\epsilon$		$\sigma$		Measured			
			Min	Max	Min	Max	$\epsilon$	$\Delta$	$\sigma$	$\Delta$
2412	39.27	1.77	35.34	43.10	1.63	1.99	39.97	1.78%	1.67	-5.44%
2437	39.22	1.79	35.30	43.15	1.61	1.97	39.92	1.77%	1.71	-4.27%
2462	39.18	1.81	35.27	35.27	43.10	1.99	39.83	1.67%	1.75	-3.42%

2.4 GHz head liquid validation



2.4 GHz head liquid validation



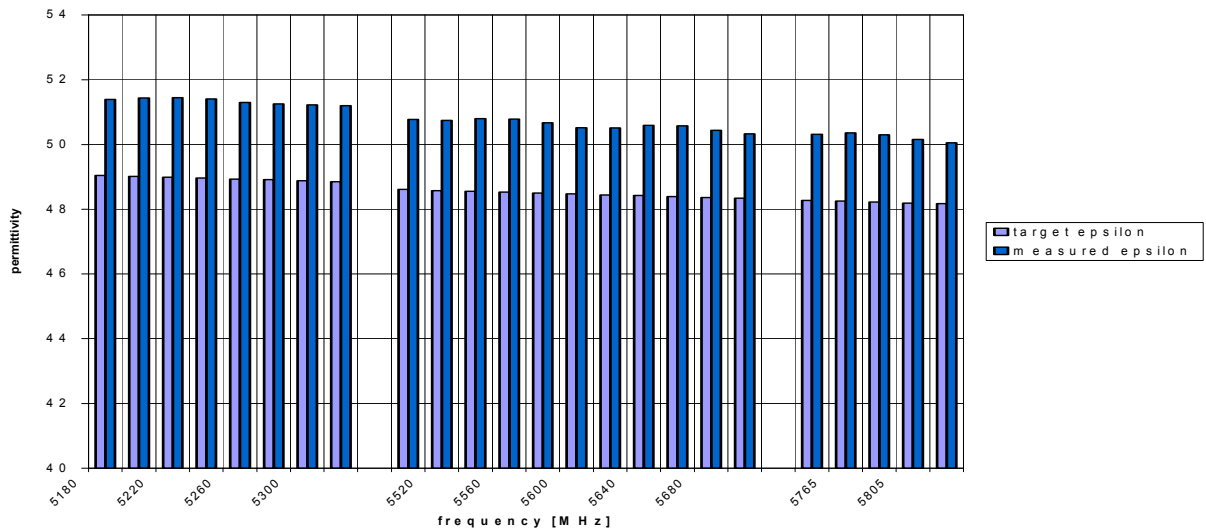


Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

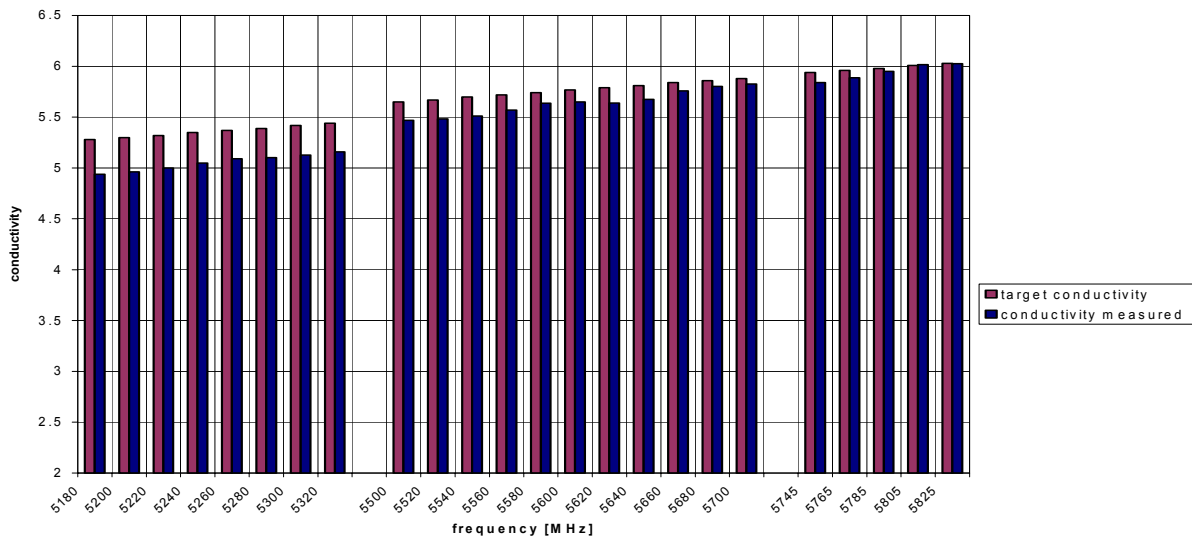
#### 4.5.4 Dielectric parameters for 5 GHz body tissue.

Freq (MHz)	$\epsilon$	$\sigma$	$\epsilon$		$\sigma$		Measured			
			Min	Max	Min	Max	$\epsilon$	$\Delta$	$\sigma$	$\Delta$
5180	49.04	5.28	44.14	53.95	4.75	5.8	51.39	4.79%	4.94	-6.48%
5600	48.47	5.77	43.62	53.32	5.19	6.34	50.67	4.48%	5.64	-1.79%
5825	48.17	6.03	43.35	52.98	5.43	6.63	50.05	3.91%	6.03	-0.06%

5 GHz body liquid validation



5 GHz body liquid validation

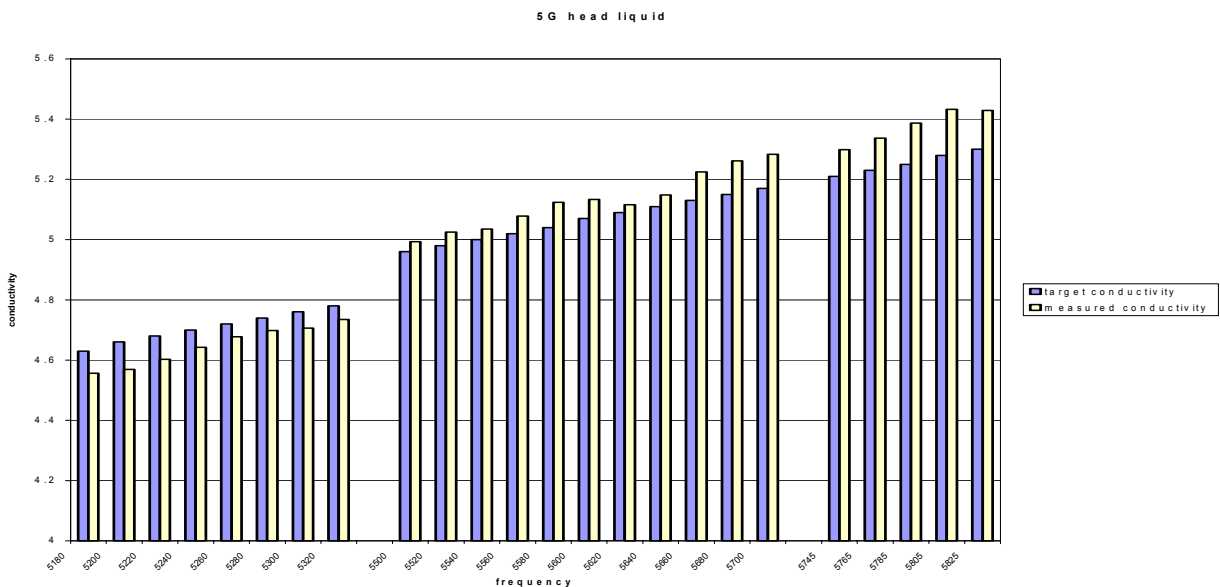
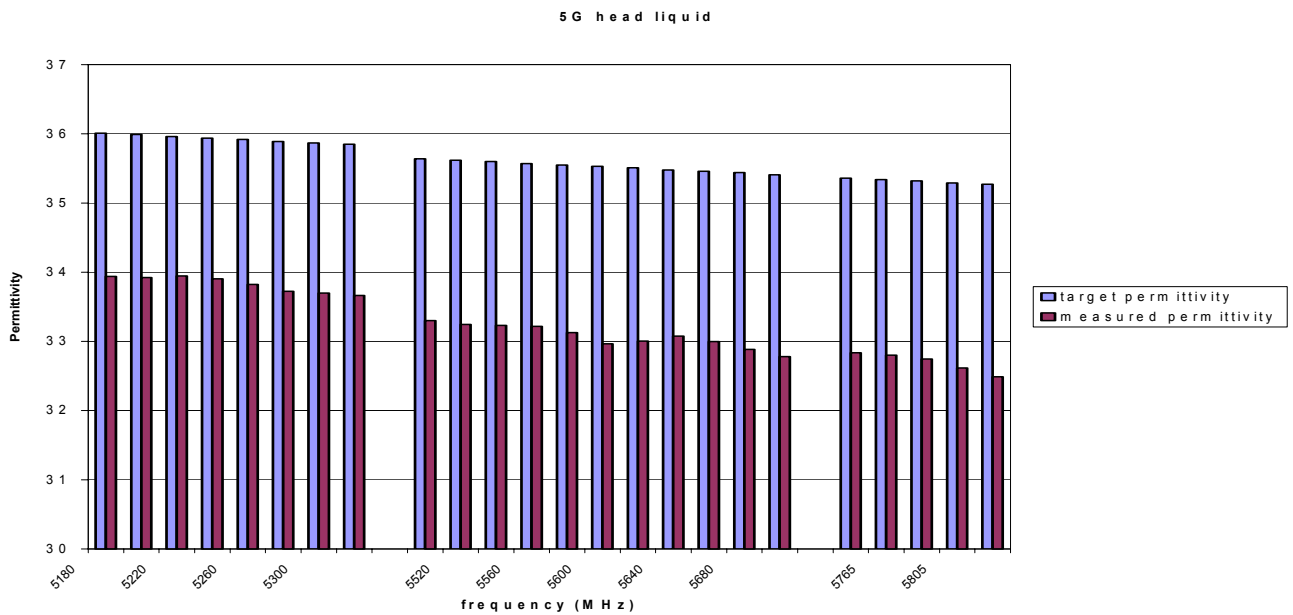




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

#### 4.5.5 Dielectric parameters for 5GHz, head tissue.

Freq (MHz)	$\epsilon$	$\sigma$	$\epsilon$		$\sigma$		Measured			
			Min	Max	Min	Max	$\epsilon$	$\Delta$	$\sigma$	$\Delta$
5180	36.01	4.63	32.41	39.61	4.17	5.10	33.9	-5.86%	4.56	-1.51%
5600	35.53	5.07	31.98	39.08	4.56	5.57	33.3	-6.57%	4.99	0.60%
5825	35.27	5.30	31.74	38.80	4.77	5.83	32.49	-7.88%	5.42	2.26%



#### 4.5.6 Tissue simulating liquid temperature requirements.

The variation of the liquid temperature shall not exceed  $\pm 2$  C during the test; The actual tissue simulating liquid temperature were recorded to be within these limits.

## 5 Photographs of EUT in host.

### 5.1 Host IBM

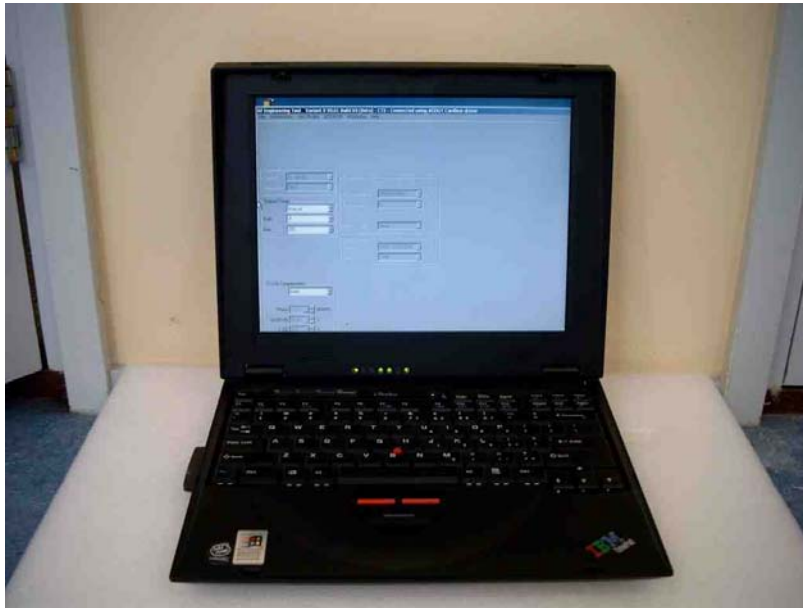


Figure 3: Front view with card in bottom slot



Figure 4: Side view. Offset Card to base = 13 mm

## 5.2 Host COMPAQ.



Figure 5: Front view with card in bottom slot

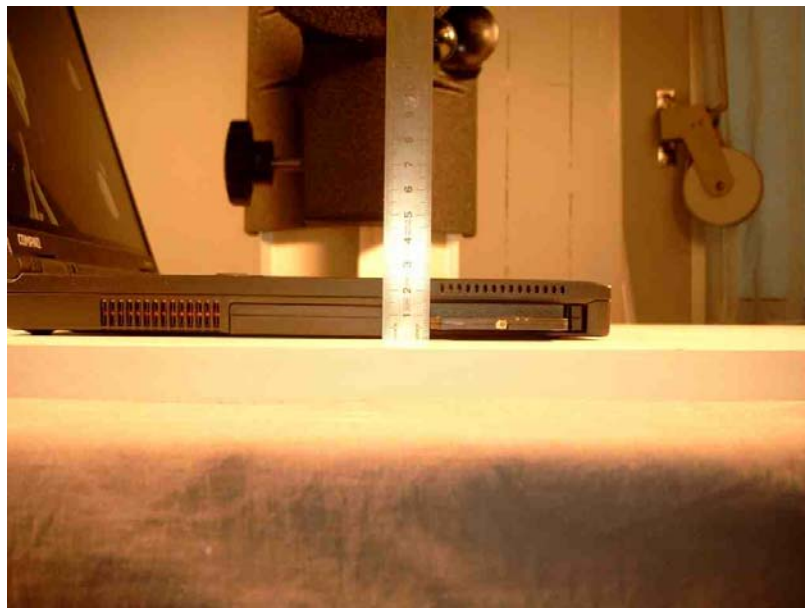


Figure 6: Side view. Offset Card to base = 5 mm

### 5.3 Host ACER.



Figure 7: Front view with card in bottom slot

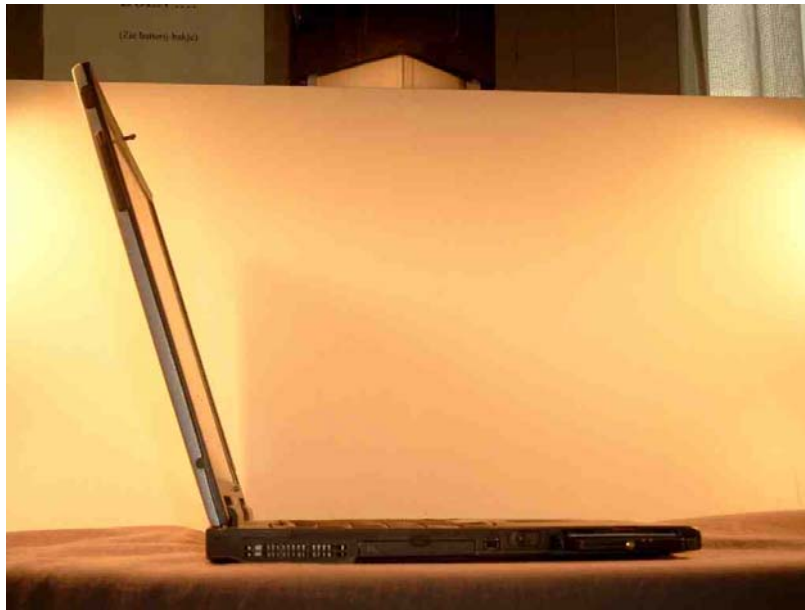


Figure 8: Side view. Offset Card to base = 8 mm



## 6 Identification of EUT-Phantom positions.

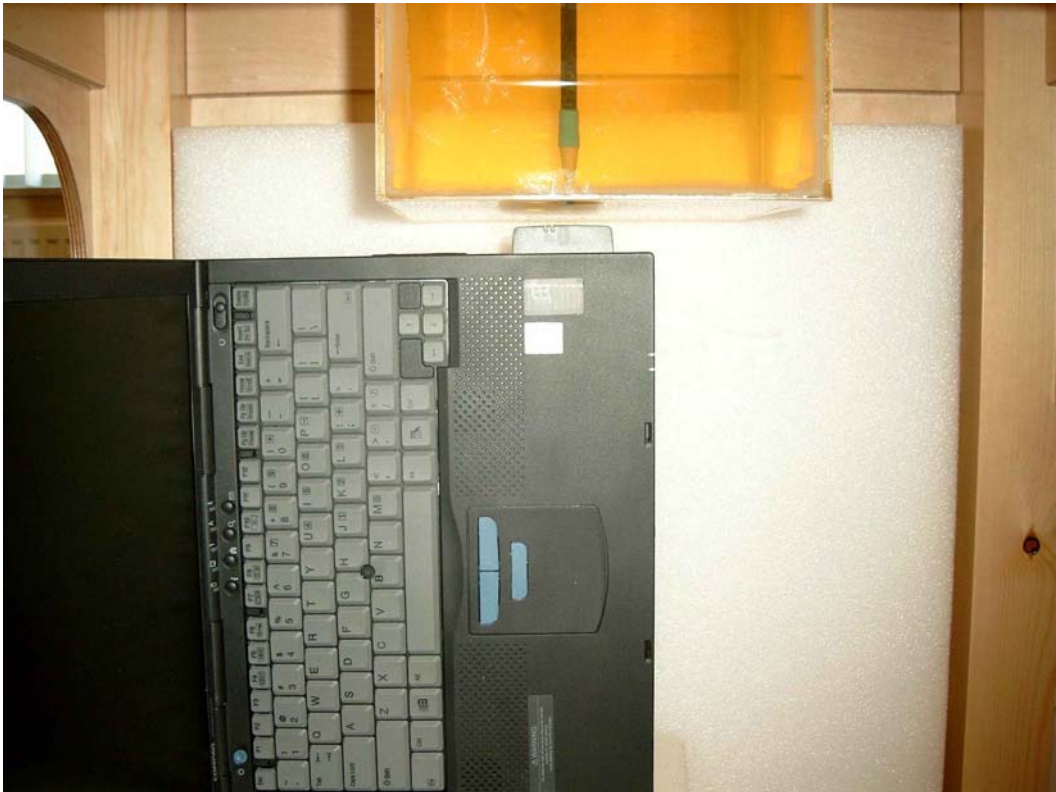
### 6.1 Portable Device operating near the body.

Following the guidelines from FCC OET bulletin 65 C and the TCB RF exposure training notes, 2 positions were investigated. The 'lapheld' position reflects the situation where the laptop is placed on the users lap. The laptop containing the EUT is placed underneath the flat phantom with the EUT placed in the bottom slot, thus minimizing the distance of the EUT and the users body.

The second position reflects bystander SAR. This position means that the card is facing the phantom bottom shell perpendicularly. The position is referred to as 'perpendicular'. The separation distance is 5 mm, which still yields a useful reading of the field strength in the liquid.

#### 6.1.1 Position perpendicular

The separation distance,  $d$  of 10 mm measured from side of the EUT to the bottom of the phantom.



### 6.1.2 Position lapheld

This position follows the directions from FCC TCB training notes dated April 2002. This position reflects the situation where the user had the laptop on his or her lap, with the card inserted in the lower slot. The separation distance,  $d$  was determined to be 13 mm, and reflects the position where the host would be positioned on the lap.





**Test specification(s):** FCC/CA SAR Requirements  
**Description of EUT:** 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
**Manufacturer:** Agere Systems Netherlands BV  
**Brand mark:** Agere  
**Model:** 1106  
**FCC ID:** IMR1106CB

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## 7 Test Results.

### 7.1 Test methodology

SAR evaluation starts with determining at which channels/modulation/bitrate combination SAR scans have to be performed. To do this, average conducted power is measured for all modulations and bitrates. From these measurements, in a given channel the modulation/bitrate is found by looking at the highest power found in that channel. In that channel, SAR is measured at that bitrate and modulation type. Should it appear that SAR tests in that channel show higher SAR than half the limit, SAR is also measured in the highest and lowest channel in that band. After testing, the channel with highest SAR found is rechecked by measuring Spot SAR in that channel while setting all modulation and bitrates. Should a higher value be found, a full SAR scan is performed for that particular bitrate/modulation. The highest value found is reported.



Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
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 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

## 7.2 Results

Host	Distance base to slot	Channel / modulation	Lapheld contact PSA <sup>4</sup> SAR 1g (W/kg)	Perpendicular + 10 mm PSA SAR (1g) (W/kg)
ACER	8 mm	1 (2412) OFDM 6 Mbit/s	0.548	n.a.
		6 (2437) OFDM 6 MBit/s	0.891	0.436
		11 (2462) OFDM 6 MBit/s	0.808	n.a.
		36 (5180) OFDM 6 MBit/s	0.693	n.a.
		48 (5240) OFDM 6 MBit/s	1.021	n.a.
		52 (5260) OFDM 6 MBit/s	0.956	0.713
		64 (5320) OFDM 6 MBit/s	0.652	n.a.
		157 (5785) OFDM 6 MBit/s	n.a.	n.a.
		161 (5805) OFDM 6 MBit/s	n.a.	n.a.
		165 (5825) OFDM 6 MBit/s	0.529	0.406
IBM	10 mm	1 (2412) OFDM 6 Mbit/s	0.455	n.a.
		6 (2437) OFDM 6 MBit/s	0.934	0.518
		11 (2462) OFDM 6 MBit/s	0.884	n.a.
		36 (5180) OFDM 6 MBit/s	n.a.	n.a.
		48 (5240) OFDM 6 MBit/s	n.a.	n.a.
		52 (5260) OFDM 6 MBit/s	0.363	0.501
		64 (5320) OFDM 6 MBit/s	n.a.	n.a.
		157 (5785) OFDM 6 MBit/s	n.a.	n.a.
		161 (5805) OFDM 6 MBit/s	n.a.	n.a.
		165 (5825) OFDM 6 MBit/s	0.188	0.203
COMPAQ EVO	5 mm	1 (2412) OFDM 6 Mbit/s	0.793	n.a.
		6 (2437) OFDM 6 MBit/s	1.502	0.468
		11 (2462) OFDM 6 MBit/s	1.414	n.a.
		36 (5180) OFDM 6 MBit/s	0.507	n.a.
		48 (5240) OFDM 6 MBit/s	1.02	n.a.
		52 (5260) OFDM 6 MBit/s	1.456	0.703
		64 (5320) OFDM 6 MBit/s	0.487	n.a.
		157 (5785) OFDM 6 MBit/s	0.422	0.288
		161 (5805) OFDM 6 MBit/s	n.a.	n.a.
		165 (5825) OFDM 6 MBit/s	n.a.	n.a.

**Note:** When SAR measured in the channel with highest power is lower than 3 dB below the SAR limit, testing of the other channels is optional (ref: OET bull 65 suppl C p. 40): The channels indicated with “n.a.” have not been measured.

<sup>4</sup> PSA SAR is Peak Spatial-Average SAR.



**Test specification(s):** FCC/CA SAR Requirements  
**Description of EUT:** 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
**Manufacturer:** Agere Systems Netherlands BV  
**Brand mark:** Agere  
**Model:** 1106  
**FCC ID:** IMR1106CB

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### **7.3 Step size and scan information.**

Measurements on 2.4 GHz: A 35x35 mm area is scanned centered around the hotspot using 7 steps in the x-y plane and 10 steps of 3.5 mm in the z plane. The first area scan is performed with the probe tip 5 mm above the phantom bottom shell

For 5150-5350 MHz a 21x21 mm area is scanned centered around the hotspot using 7 steps of 3 mm in the x-y plane, and 7 steps of 2 mm in the z plane. The first area scan is performed with the probe tip 2 mm above the phantom bottom shell

For 5785-5825 MHz a 24x24 mm area is scanned centered around the hotspot using 8 steps of 3 mm in the x-y plane, and 7 steps of 2 mm in the z plane. The first area scan is performed with the probe tip 1 mm above the phantom bottom shell

The location of the hotspot is determined prior to each 3D scan by means of an area scan.

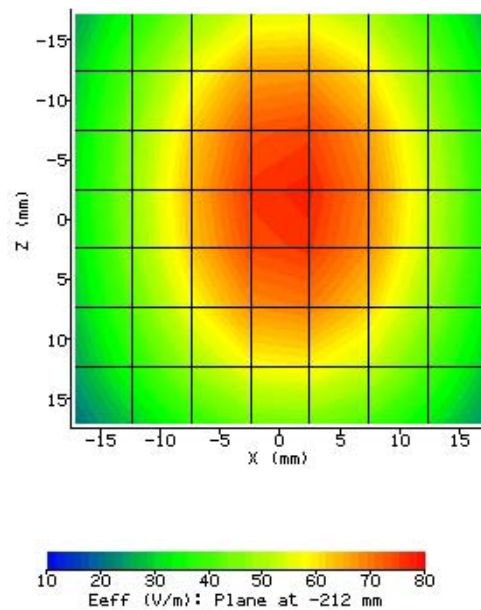
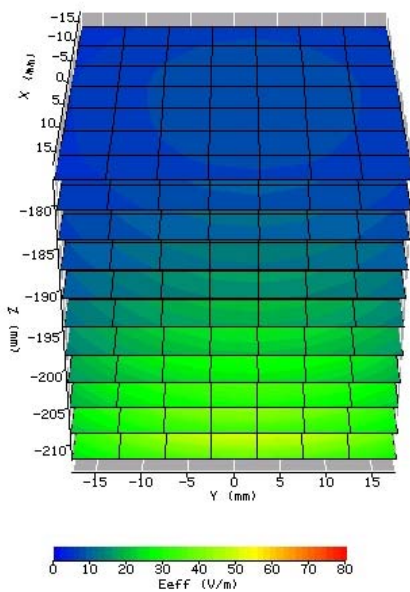


Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

## 8 Plots of measurement data.

### 8.1.1 Validation 2.4 GHz

Device Under Test:		<b>Validation dipole</b>	
HOST		<b>n.a.</b>	
Position / Channel		<b>n.a.</b>	
DATE [dd/mm/yyyy]		<b>17-6-2004</b>	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	2450	Stepsize x and y [mm]	5
Antenna Configuration:	Dipole	No of steps z	10
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	3.5
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	5
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.534
Probe Serial Number:	131	Probe battery check [d/m/y]:	17-6-2004
Liquid Simulant:	Head	Max E-field [V/m in liquid]	72.14
Permittivity / Conductivity [S/m]	39.2 / 1.8	Location of max. X= [mm]	3.5
Liquid Temperature [C]	20	Location of max Y= [mm]	0.5
Ambient Temperature [C]	22	Location of max Z= [mm]	-212
Relative Humidity [%]	50	SAR Drift: [dB]	0
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		<b>12.94</b>	
<b>SAR 10g [W/kg]:</b>		<b>6.53</b>	

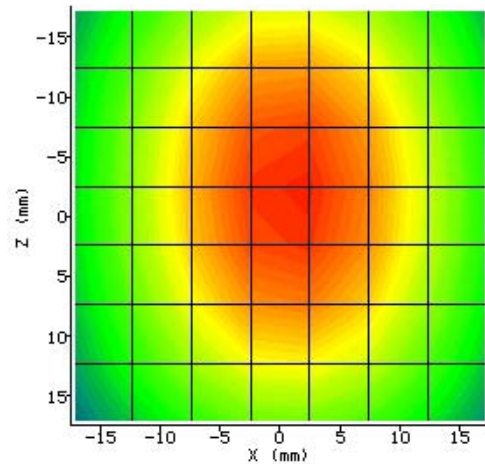
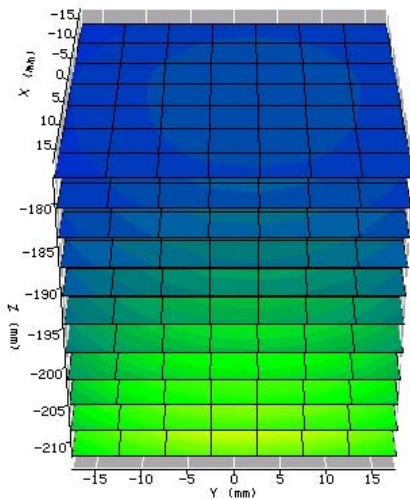




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

8.1.2 Validation 2.4 GHz

Device Under Test:		<b>Validation dipole</b>	
HOST		<b>n.a.</b>	
Position / Channel		<b>n.a.</b>	
DATE [dd/mm/yyyy]		<b>18-6-2004</b>	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	2450	Stepsize x and y [mm]	5
Antenna Configuration:	Dipole	No of steps z	10
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	3.5
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	5
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.534
Probe Serial Number:	131	Probe battery check [d/m/y]:	18-6-2004
Liquid Simulant:	Head	Max E-field [V/m in liquid]	77.13
Permittivity / Conductivity [S/m]	39.2 / 1.8	Location of max. X= [mm]	1.5
Liquid Temperature [C]	20	Location of max Y= [mm]	2
Ambient Temperature [C]	22	Location of max Z= [mm]	-212
Relative Humidity [%]	50	SAR Drift: [dB]	0
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		<b>12.52</b>	
<b>SAR 10g [W/kg]:</b>		<b>6.40</b>	



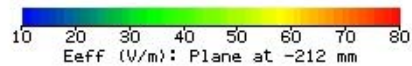
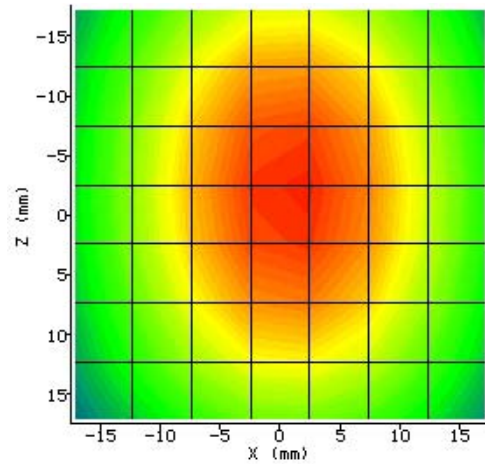
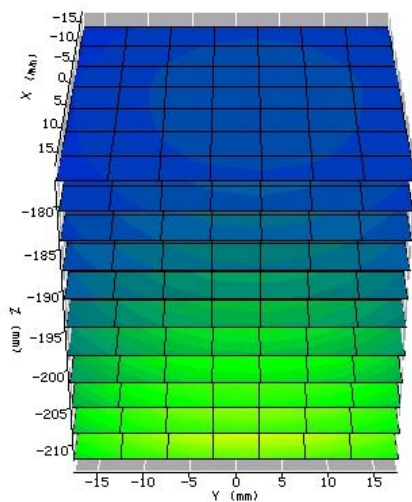




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.1.3 Validation 2.4 GHz

Device Under Test:		<b>Validation dipole</b>	
HOST		<b>n.a.</b>	
Position / Channel		<b>n.a.</b>	
DATE [dd/mm/yyyy]		<b>23-6-2004</b>	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	2450	Stepsize x and y [mm]	5
Antenna Configuration:	Dipole	No of steps z	10
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	3.5
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	5
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.534
Probe Serial Number:	131	Probe battery check [d/m/y]:	23-6-2004
Liquid Simulant:	Head	Max E-field [V/m in liquid]	75.64
Permittivity / Conductivity [S/m]	35.2 / 1.80	Location of max X= [mm]	1.5
Liquid Temperature [C]	20	Location of max Y= [mm]	2
Ambient Temperature [C]	22	Location of max Z= [mm]	-212
Relative Humidity [%]	50	SAR Drift: [dB]	0.0
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		<b>13.837</b>	
<b>SAR 10g [W/kg]:</b>		<b>7.054</b>	



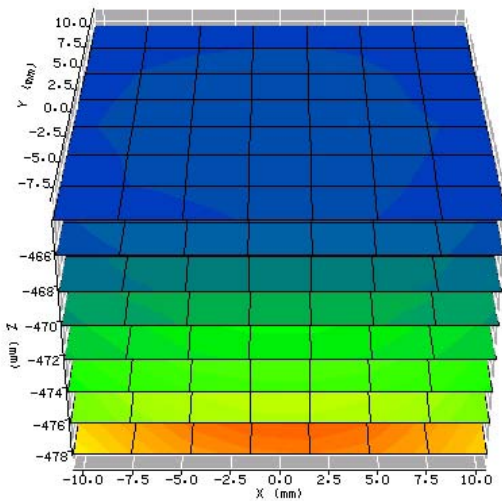




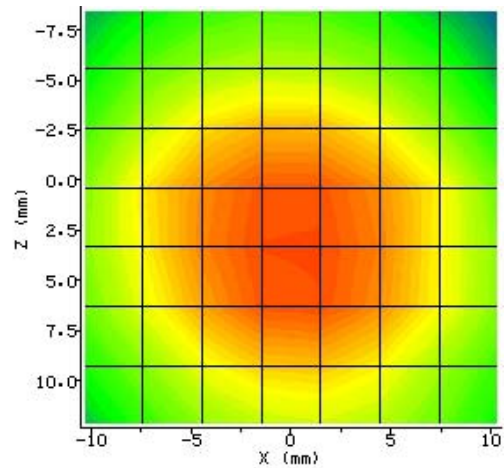
Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.1.4 System validation 5360 MHz

Device Under Test:		Validation Waveguide	
HOST		n.a.	
Position / Channel		n.a.	
DATE [dd/mm/yyyy]		14-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	5360	Stepsize x and y [mm]	3
Antenna Configuration:	Waveguide	No. of steps z	7
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	2
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	2
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.480
Probe Serial Number:	131	Probe battery check [d/m/y]:	14-6-2004
Liquid Simulant:	Head	Max E-field [V/m in liquid]	44.43
Permittivity / Conductivity [S/m]	35.9 / 4.8	Location of max. X= [mm]	-0.7
Liquid Temperature [C]	21.2	Location of max Y= [mm]	-10.3
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-478.3
Relative Humidity [%]	50	SAR Drift: [dB]	0.03
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		8.882	
<b>SAR 10g [W/kg]:</b>		4.199	



0 5 10 15 20 25 30 35 40  
E<sub>eff</sub> (V/m)



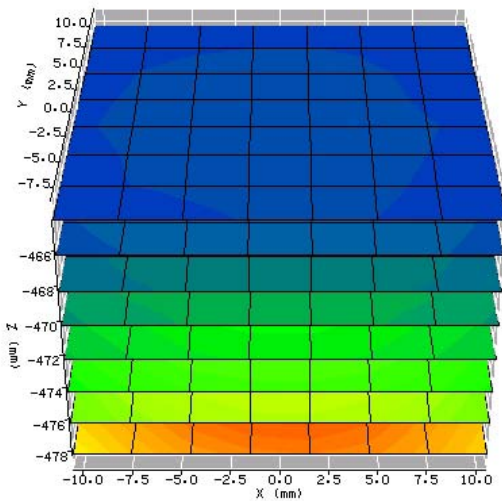
24 26 28 30 32 34 36 38 40  
E<sub>eff</sub> (V/m): Plane at -478.299987792



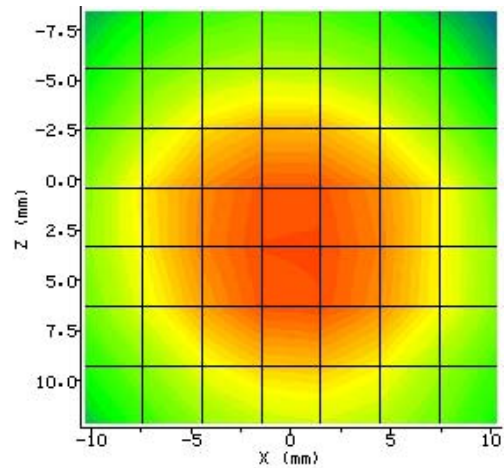
Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.1.5 System validation 5360 MHz

Device Under Test:		Validation Waveguide	
HOST		n.a.	
Position / Channel		n.a.	
DATE [dd/mm/yyyy]		15-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	5360	Stepsize x and y [mm]	3
Antenna Configuration:	Waveguide	No. of steps z	10
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	2
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	2
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.48
Probe Serial Number:	131	Probe battery check [d/m/y]:	15-6-2004
Liquid Simulant:	Head	Max E-field [V/m in liquid]	45.2
Permittivity / Conductivity [S/m]	35.9 / 4.8	Location of max. X= [mm]	-9.2
Liquid Temperature [C]	23.0	Location of max Y= [mm]	1.5
Ambient Temperature [C]	23.0	Location of max Z= [mm]	478.3
Relative Humidity [%]	50.0	SAR Drift: [dB]	-0.51
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		8.829	
<b>SAR 10g [W/kg]:</b>		4.100	



0 5 10 15 20 25 30 35 40  
E<sub>eff</sub> (V/m)



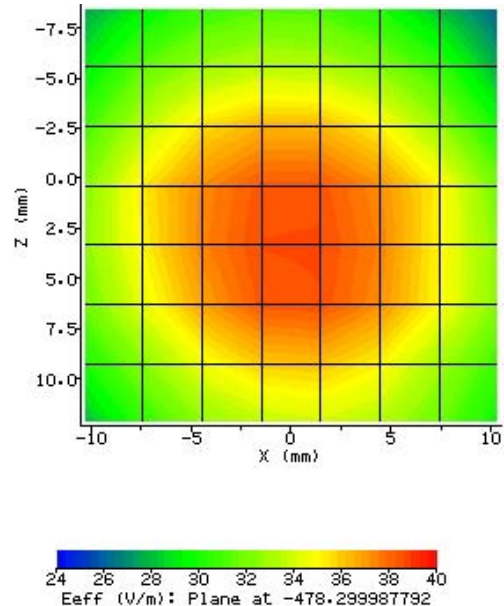
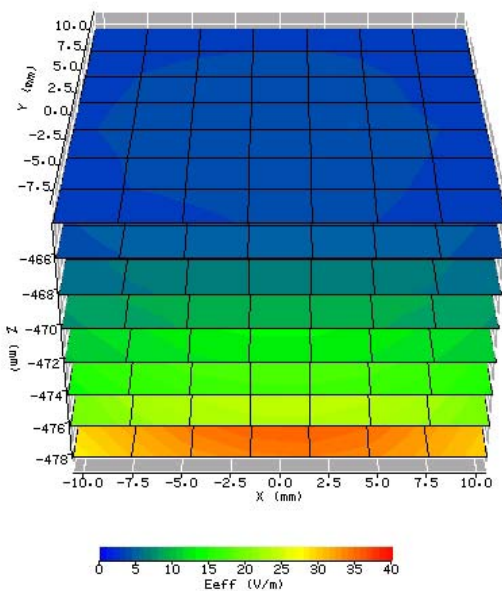
24 26 28 30 32 34 36 38 40  
E<sub>eff</sub> (V/m): Plane at -478.299987792



Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

8.1.6 System validation 5360 MHz

Device Under Test:		Validation Waveguide	
HOST		n.a.	
Position / Channel		n.a.	
DATE [dd/mm/yyyy]		16-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	5360	Stepsize x and y [mm]	3
Antenna Configuration:	Waveguide	No. of steps z	10
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	2
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	2
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.48
Probe Serial Number:	131	Probe battery check [d/m/y]:	16-6-2004
Liquid Simulant:	Head	Max E-field [V/m in liquid]	38.5
Permittivity / Conductivity [S/m]	35.9 / 4.8	Location of max. X= [mm]	0.3
Liquid Temperature [C]	21.2	Location of max Y= [mm]	0.38
Ambient Temperature [C]	22	Location of max Z= [mm]	-478.3
Relative Humidity [%]	48	SAR Drift: [dB]	0.03
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		8.849	
<b>SAR 10g [W/kg]:</b>		4.001	

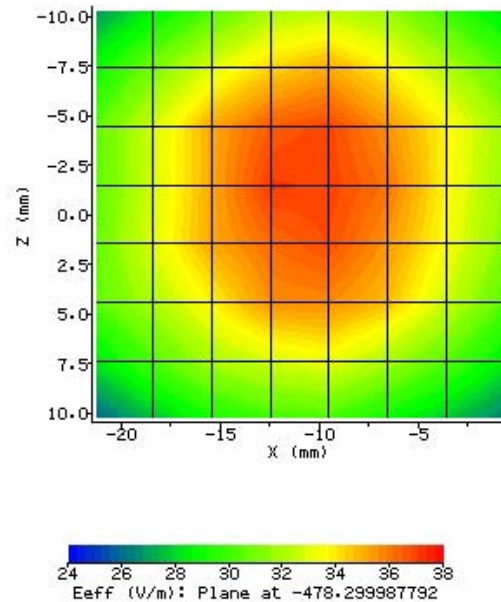
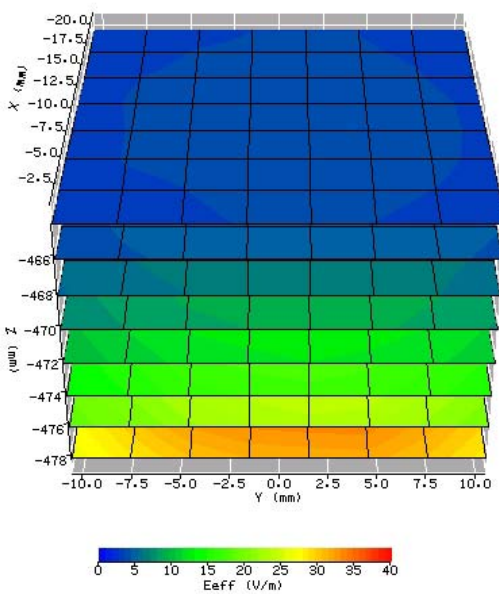




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.1.7 System validation 5360 MHz

Device Under Test:		Validation Waveguide	
HOST		n.a.	
Position / Channel		n.a.	
DATE [dd/mm/yyyy]		24-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	5360	Stepsize x and y [mm]	3
Antenna Configuration:	Waveguide	No. of steps z	10
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	2
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	2
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.48
Probe Serial Number:	131	Probe battery check [d/m/y]:	24-6-2004
Liquid Simulant:	Head	Max E-field [V/m in liquid]	37.3
Permittivity / Conductivity [S/m]	35.9 / 4.8	Location of max. X= [mm]	-11.3
Liquid Temperature [C]	20.5	Location of max Y= [mm]	1.8
Ambient Temperature [C]	21	Location of max Z= [mm]	-478.3
Relative Humidity [%]	56	SAR Drift: [dB]	0.13
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		8.316	
<b>SAR 10g [W/kg]:</b>		3.728	

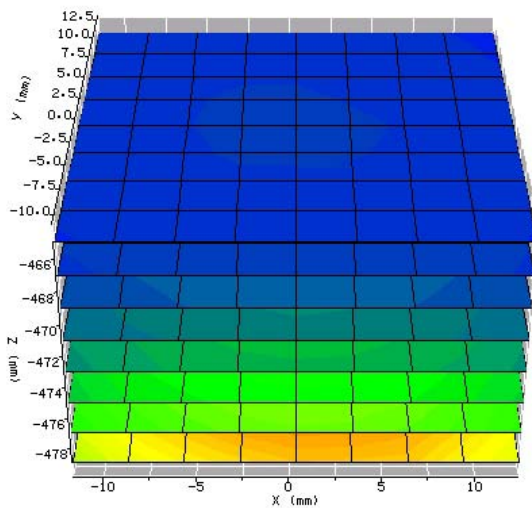




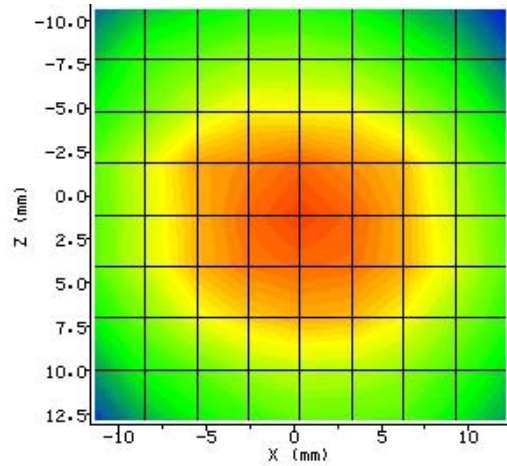
Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.1.8 System validation 5740 MHz

Device Under Test:		Validation Waveguide	
HOST		n.a.	
Position / Channel		n.a.	
DATE [dd/mm/yyyy]		15-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	8
Test Frequency [MHz]	5740	Stepsize x and y [mm]	3
Antenna Configuration:	Waveguide	No. of steps z	7
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	2
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	1
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.435
Probe Serial Number:	131	Probe battery check [d/m/y]:	15-6-2004
Liquid Simulant:	Head	Max E-field [V/m in liquid]	43.8
Permittivity / Conductivity [S/m]	35.4 / 5.2	Location of max X= [mm]	-8.55
Liquid Temperature [C]	21.2	Location of max Y= [mm]	1.7
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-479
Relative Humidity [%]	50	SAR Drift: [dB]	0
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		10.417	
<b>SAR 10g [W/kg]:</b>		4.517	



0 5 10 15 20 25 30 35 40 45 50  
E<sub>eff</sub> (V/m)



27.5 32.5 37.5 42.5 47.5  
E<sub>eff</sub> (V/m): Plane at -479 mm

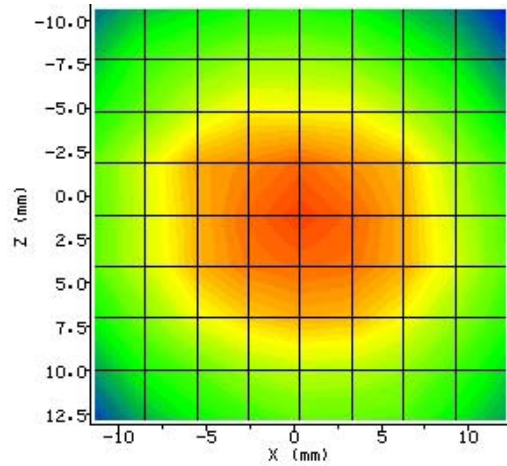
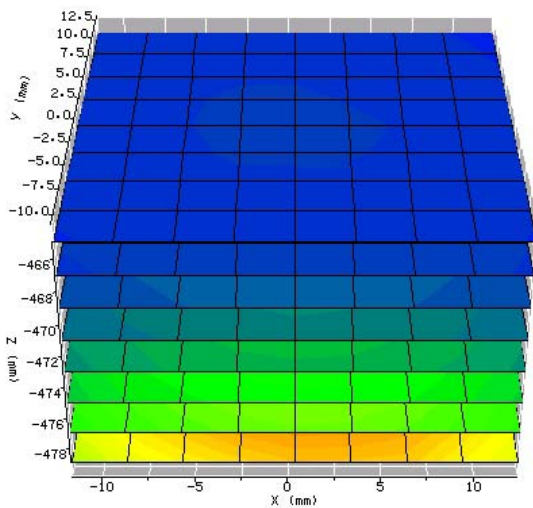




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.1.9 System validation 5740 MHz

Device Under Test:		Validation Waveguide	
HOST		n.a.	
Position / Channel		n.a.	
DATE [dd/mm/yyyy]		16-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	8
Test Frequency [MHz]	5740	Stepsize x and y [mm]	3
Antenna Configuration:	Waveguide	No. of steps z	7
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	2
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	1
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.435
Probe Serial Number:	131	Probe battery check [d/m/y]:	16-6
Liquid Simulant:	Head	Max E-field [V/m in liquid]	47.7
Permittivity / Conductivity [S/m]	35.4 / 5.2	Location of max. X= [mm]	0.38
Liquid Temperature [C]	21.2	Location of max Y= [mm]	1.13
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-479
Relative Humidity [%]	48	SAR Drift: [dB]	0
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		10.07	
<b>SAR 10g [W/kg]:</b>		4.367	



0 5 10 15 20 25 30 35 40 45 50  
E<sub>eff</sub> (V/m)

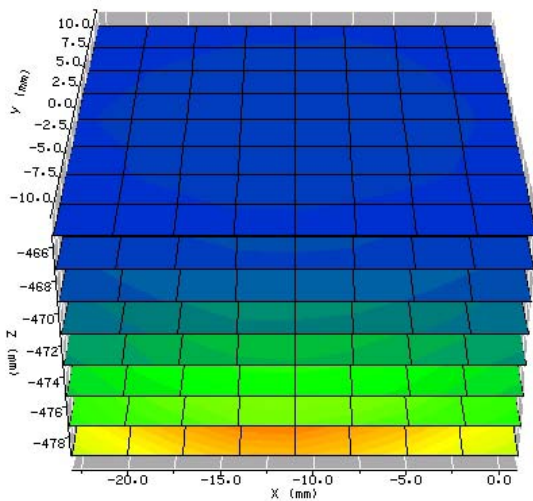
27.5 32.5 37.5 42.5 47.5  
E<sub>eff</sub> (V/m): Plane at -479 mm



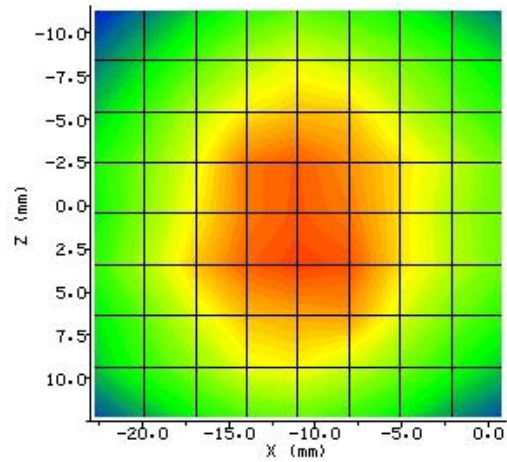
Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.1.10 System validation 5740 MHz

Device Under Test:		Validation Waveguide	
HOST		n.a.	
Position / Channel		n.a.	
DATE [dd/mm/yyyy]		24-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	8
Test Frequency [MHz]	5740	Stepsize x and y [mm]	3
Antenna Configuration:	Waveguide	No. of steps z	7
Power / (setting(s)) [dBm]	24	Stepsize z [mm]	2
Type of Modulation:	CW	Dist probe tip – phantom shell [mm]	1
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.435
Probe Serial Number:	131	Probe battery check [d/m/y]:	24-6
Liquid Simulant:	Head	Max E-field [V/m in liquid]	48.94
Permittivity / Conductivity [S/m]	35.4 / 5.2	Location of max. X= [mm]	-11
Liquid Temperature [C]	21.2	Location of max Y= [mm]	-0.7
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-479.3
Relative Humidity [%]	50	SAR Drift: [dB]	0.07
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		10.192	
<b>SAR 10g [W/kg]:</b>		4.343	



E<sub>eff</sub> (V/m)



E<sub>eff</sub> (V/m): Plane at -479.299987792

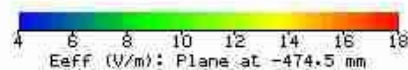
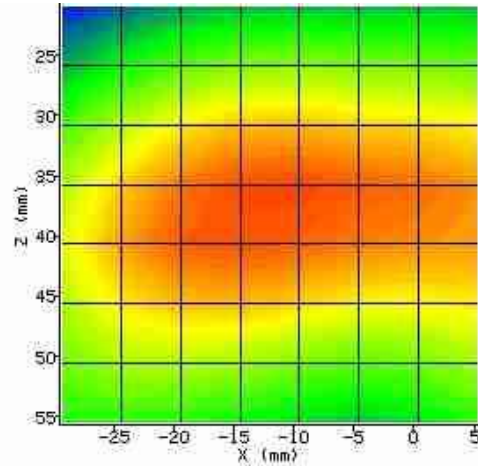
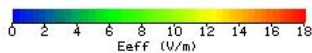
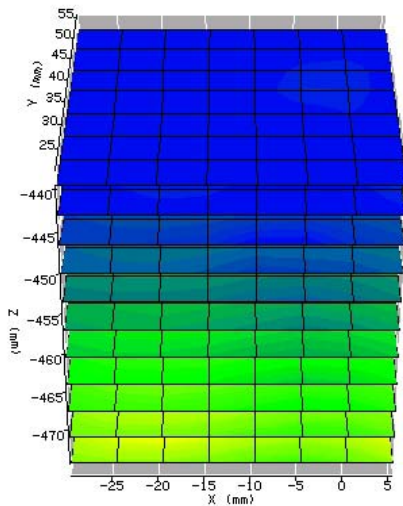


Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

## 8.2 Host: ACER

### 8.2.1 Host ACER, Lapheld channel 1

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		Lapheld / 1	
DATE [dd/mm/yyyy]		17-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	2412	Stepsize x and y [mm]	5
Antenna Configuration:	Integral	No. of steps z	10
Power / (setting(s) [dBm]	21.4	Stepsize z [mm]	3.5
Type of Modulation / bitrate[Mbit/s]	DSSS 11	Dist probe tip – phantom shell [mm]	5
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.54
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	17-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	15.19
Permittivity / Conductivity [S/m]	52.8 / 1.9	Location of max X= [mm]	-0.25
Liquid Temperature [C]	22.5	Location of max Y= [mm]	33.25
Ambient Temperature [C]	23.0	Location of max Z= [mm]	-474.5
Relative Humidity [%]	49	SAR Drift: [dB]	0.02
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.548	
<b>SAR 10g [W/kg]:</b>		0.299	



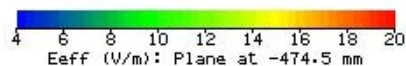
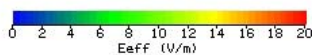
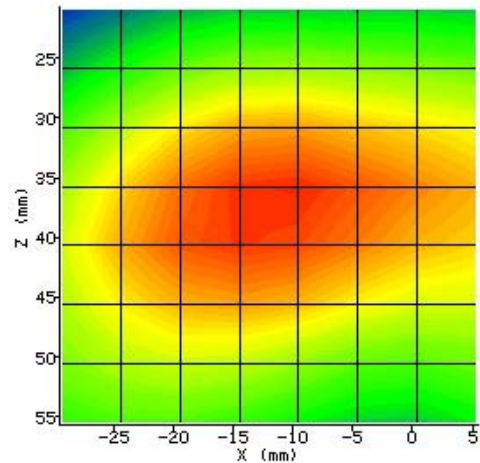
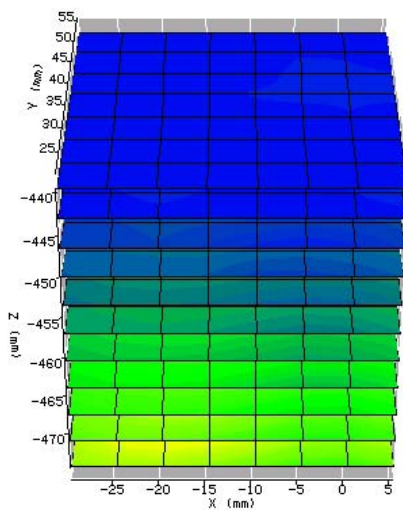




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.2.2 Host ACER, Lapheld channel 6

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		Lapheld / 6	
DATE [dd/mm/yyyy]		18-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	2437	Stepsize x and y [mm]	5
Antenna Configuration:	Integral	No. of steps z	10
Power / (setting(s)) [dBm]	21.4	Stepsize z [mm]	3.5
Type of Modulation / bitrate[Mbit/s]	OFDM 6	Dist probe tip – phantom shell [mm]	5
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.54
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	18-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	21.4
Permittivity / Conductivity [S/m]	52.7 / 1.9	Location of max. X= [mm]	-12.5
Liquid Temperature [C]	21.5	Location of max Y= [mm]	38.755
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-474.5
Relative Humidity [%]	50.0	SAR Drift: [dB]	0.02
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.891	
<b>SAR 10g [W/kg]:</b>		0.480	

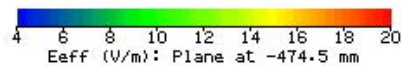
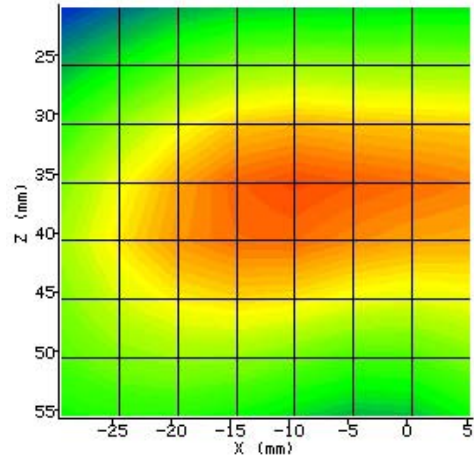
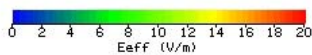
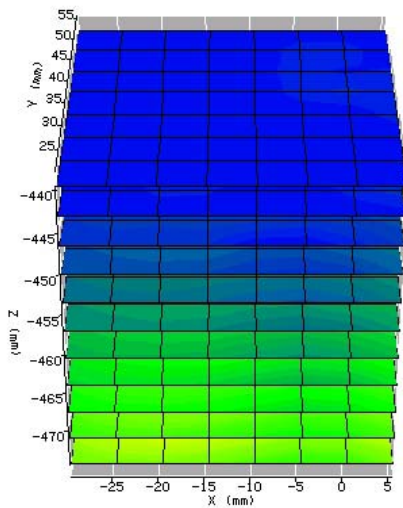




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.2.3 Host ACER, Lapheld channel 11

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		Lapheld / 11	
DATE [dd/mm/yyyy]		18-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	2462	Stepsize x and y [mm]	5
Antenna Configuration:	Integral	No. of steps z	10
Power / (setting(s)) [dBm]	21.4	Stepsize z [mm]	3.5
Type of Modulation / bitrate[Mbit/s]	DSSS 5.5	Dist probe tip – phantom shell [mm]	5
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.54
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	18-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	18.8
Permittivity / Conductivity [S/m]	52.7 / 2.0	Location of max. X= [mm]	-9.5
Liquid Temperature [C]	21.5	Location of max Y= [mm]	39.25
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-474.5
Relative Humidity [%]	51.0	SAR Drift: [dB]	0.06
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.808	
<b>SAR 10g [W/kg]:</b>		0.488	





Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

#### 8.2.4 Host ACER, Lapheld channel 36

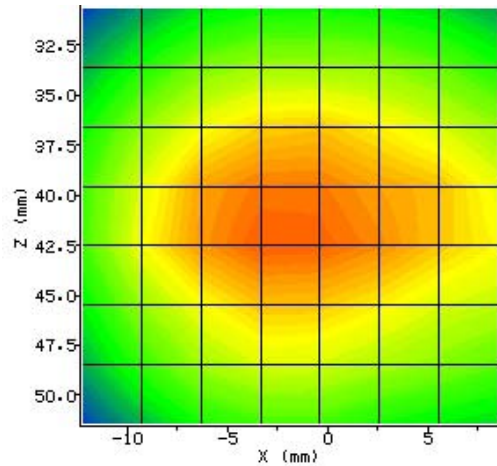
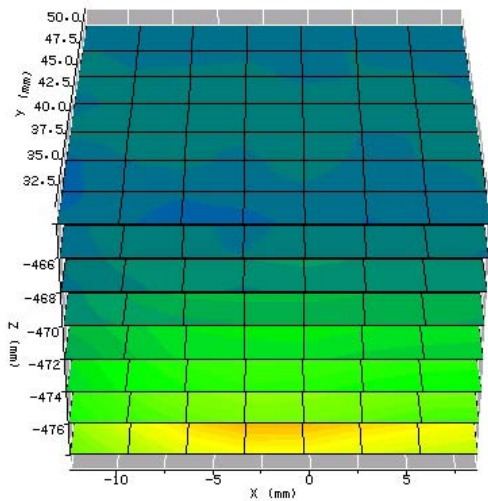
Device Under Test:		<b>Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card</b>	
HOST		<b>ACER</b>	
Position / Channel		<b>Lapheld / 36</b>	
DATE	[dd/mm/yyyy]	<b>14-6-2004</b>	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency	[MHz] 5180	Stepsize x and y	[mm] 3
Antenna Configuration:	Integral	No. of steps z	7
Power / (setting(s))	[dBm] 17.4	Stepsize z	[mm] 2
Type of Modulation / bitrate	[Mbit/s] OFDM 6	Dist probe tip – phantom shell	[mm] 2
Modn. Duty Cycle	[%] 100	Probe conversion factor .....	0.870
Probe Serial Number:	131	Probe battery check	[dd/mm/yyyy]: 14-6-2004
Liquid Simulant:	Body	Max E-field	[V/m in liquid] 12.27
Permittivity / Conductivity	[S/m] 49.0 / 5.3	Location of max. X=	[mm] -17.4
Liquid Temperature	[C] 21.5	Location of max Y=	[mm] -9.7
Ambient Temperature	[C] 22.0	Location of max Z=	[mm] -479.0
Relative Humidity	[%] 51.0	SAR Drift:	[dB] -0.05
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.693	
<b>SAR 10g [W/kg]:</b>		0.304	



Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.2.5 Host ACER, Lapheld channel 48

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		Lapheld / 48	
DATE [dd/mm/yyyy]		14-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	5240	Stepsize x and y [mm]	3
Antenna Configuration:	Integral	No. of steps z	7
Power / (setting(s)) [dBm]	19.0	Stepsize z [mm]	2
Type of Modulation / bitrate[Mbit/s]	OFDM 6	Dist probe tip – phantom shell [mm]	2
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.870
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	14-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	12.93
Permittivity / Conductivity [S/m]	49.0 / 5.3	Location of max. X= [mm]	-2.7
Liquid Temperature [C]	20.0	Location of max Y= [mm]	40.5
Ambient Temperature [C]	21.0	Location of max Z= [mm]	-478
Relative Humidity [%]	56.0	SAR Drift: [dB]	-0.05
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		1.021	
<b>SAR 10g [W/kg]:</b>		0.446	

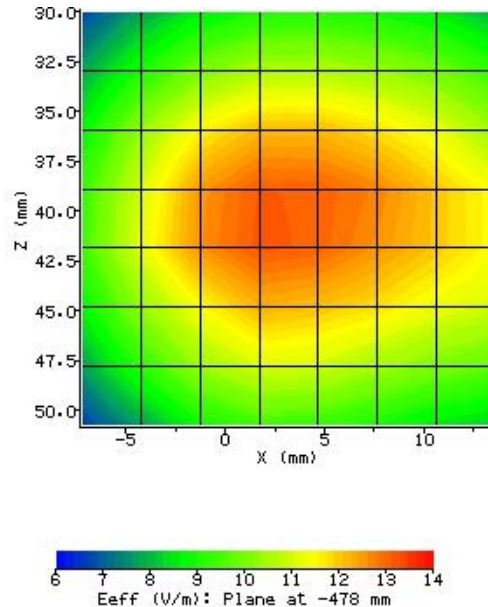
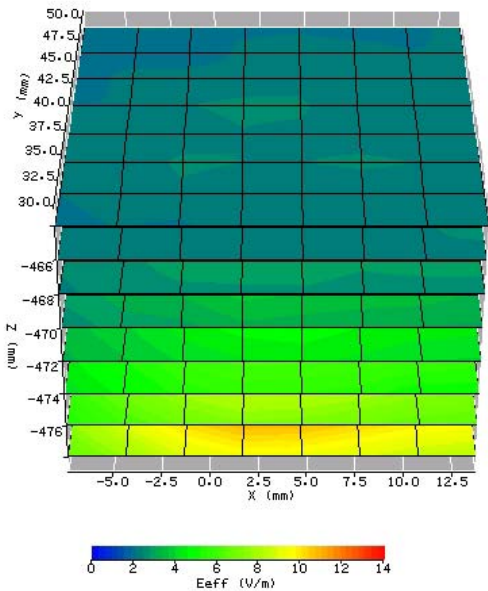




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

8.2.6 Host ACER, Lapheld channel 52

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		Lapheld / 52	
DATE [dd/mm/yyyy]		14-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	5260	Stepsize x and y [mm]	3
Antenna Configuration:	Integral	No. of steps z	7
Power / (setting(s)) [dBm]	20.4	Stepsize z [mm]	2
Type of Modulation / bitrate[Mbit/s]	OFDM 6	Dist probe tip – phantom shell [mm]	2
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.870
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	14-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	13.07
Permittivity / Conductivity [S/m]	48.9 / 5.3	Location of max. X= [mm]	2.9
Liquid Temperature [C]	20.0	Location of max Y= [mm]	40.4
Ambient Temperature [C]	21.0	Location of max Z= [mm]	-478
Relative Humidity [%]	56.0	SAR Drift: [dB]	-0.23
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.956	
<b>SAR 10g [W/kg]:</b>		0.416	

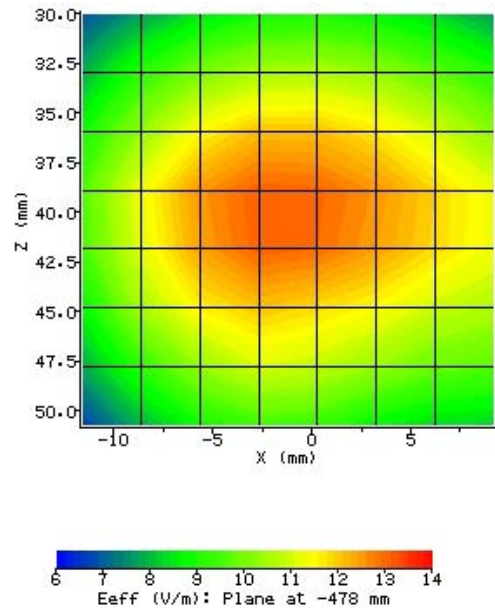
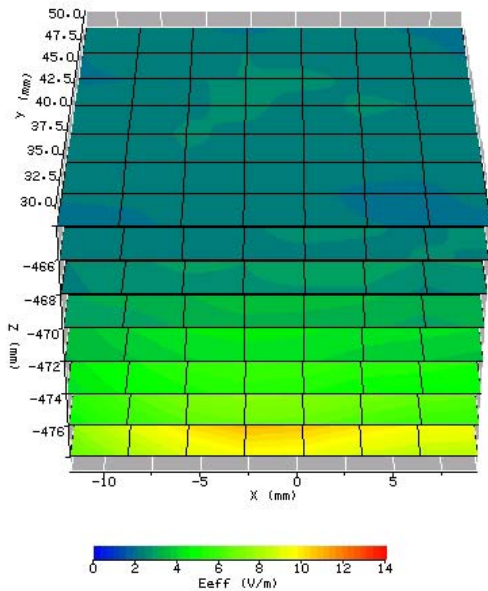




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

8.2.7 Host ACER, Lapheld channel 64

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		Lapheld / 64	
DATE [dd/mm/yyyy]		15-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	5320	Stepsize x and y [mm]	3
Antenna Configuration:	Integral	No. of steps z	7
Power / (setting(s)) [dBm]	17.9	Stepsize z [mm]	2
Type of Modulation / bitrate[Mbit/s]	OFDM 6	Dist probe tip – phantom shell [mm]	2
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.870
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	15-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	11.00
Permittivity / Conductivity [S/m]	48.9 / 5.4	Location of max. X= [mm]	-3.0
Liquid Temperature [C]	21.0	Location of max Y= [mm]	40.0
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-478.0
Relative Humidity [%]	56.0	SAR Drift: [dB]	0
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.652	
<b>SAR 10g [W/kg]:</b>		0.282	



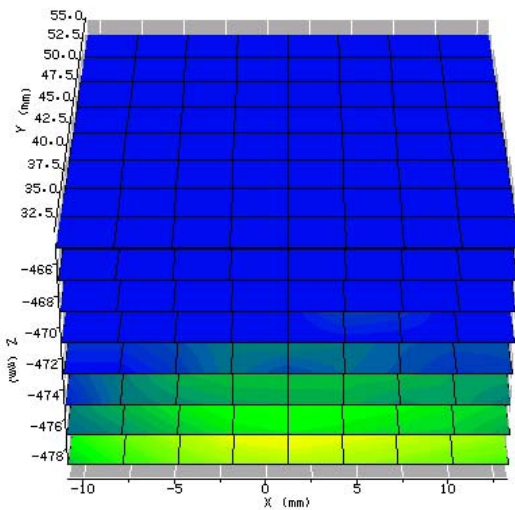




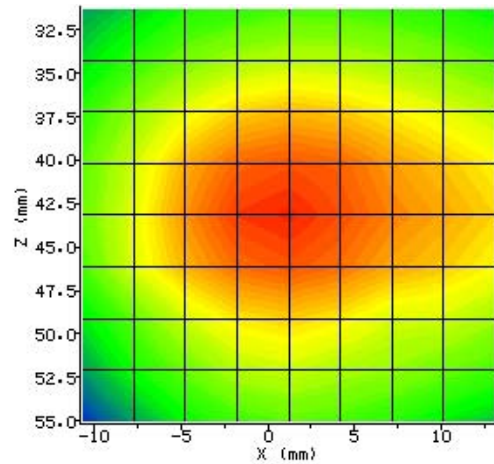
Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

8.2.8 Host ACER, Lapheld channel 165

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		Lapheld / 165	
DATE [dd/mm/yyyy]		15-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	8
Test Frequency [MHz]	5825	Stepsize x and y [mm]	3
Antenna Configuration:	Integral	No. of steps z	7
Power / (setting(s)) [dBm]	17.2	Stepsize z [mm]	2
Type of Modulation / bitrate[Mbit/s]	OFDM 6	Dist probe tip – phantom shell [mm]	1
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.750
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	14-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	8.53
Permittivity / Conductivity [S/m]	48.2 / 6.0	Location of max. X= [mm]	0.6
Liquid Temperature [C]	21.0	Location of max Y= [mm]	43.2
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-479.0
Relative Humidity [%]	58.0	SAR Drift: [dB]	-0.93
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.529	
<b>SAR 10g [W/kg]:</b>		0.212	



E<sub>eff</sub> (V/m)



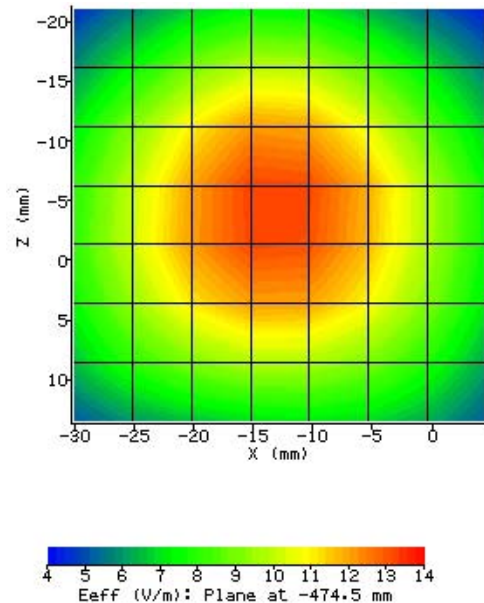
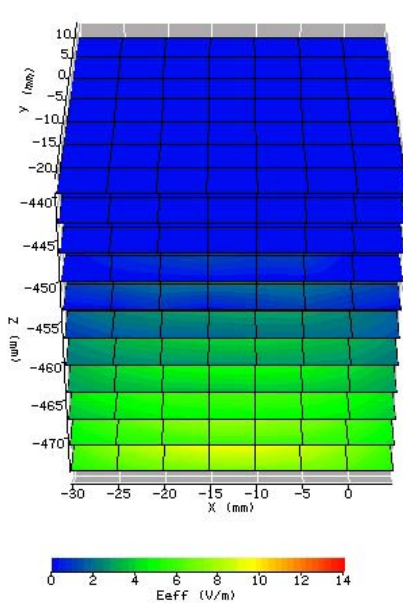
E<sub>eff</sub> (V/m): Plane at -479 mm



Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.2.9 Host ACER, Perpendicular + 10 mm channel 6

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		perpendicular / channel 6	
DATE [dd/mm/yyyy]		18-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	2437	Stepsize x and y [mm]	5
Antenna Configuration:	Integral	No. of steps z	10
Power / (setting(s)) [dBm]	21.4	Stepsize z [mm]	3.5
Type of Modulation / bitrate [Mbit/s]	OFDM 6	Dist probe tip – phantom shell [mm]	5
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.54
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	18-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	13.12
Permittivity / Conductivity [S/m]	52.7 / 1.9	Location of max. X= [mm]	-13.25
Liquid Temperature [C]	21.5	Location of max Y= [mm]	-3.25
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-475.5
Relative Humidity [%]	54.0	SAR Drift: [dB]	0.18
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.436	
<b>SAR 10g [W/kg]:</b>		0.239	



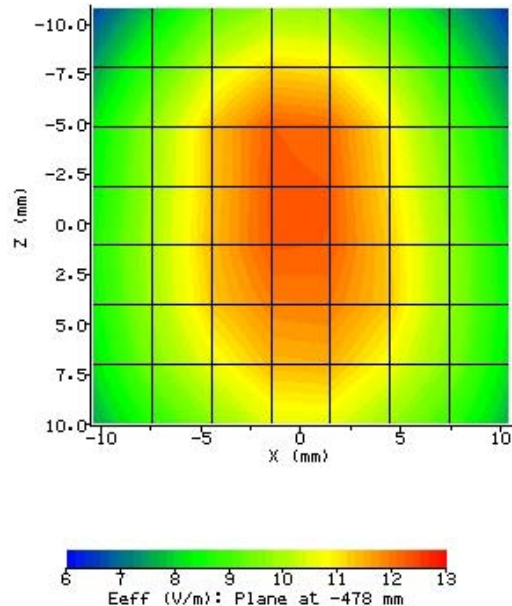
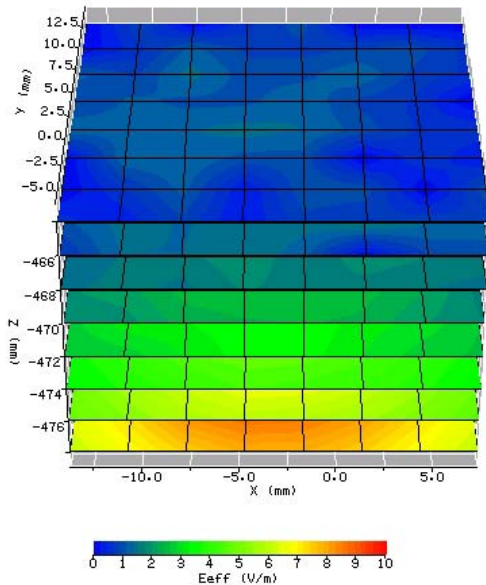




Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

### 8.2.10 Host ACER, Perpendicular + 10 mm channel 52

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		perpendicular / channel 52	
DATE [dd/mm/yyyy]		15-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	7
Test Frequency [MHz]	5260	Stepsize x and y [mm]	3
Antenna Configuration:	Integral	No. of steps z	7
Power / (setting(s)) [dBm]	20.4	Stepsize z [mm]	2
Type of Modulation / bitrate [Mbit/s]	OFDM 6	Dist probe tip – phantom shell [mm]	2
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.870
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	14-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	12.2
Permittivity / Conductivity [S/m]	49.0 / 5.4	Location of max X= [mm]	-0.3
Liquid Temperature [C]	22.5	Location of max Y= [mm]	0.5
Ambient Temperature [C]	23.0	Location of max Z= [mm]	-478.0
Relative Humidity [%]	57.0	SAR Drift: [dB]	0.09
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.713	
<b>SAR 10g [W/kg]:</b>		0.299	





Test specification(s): FCC/CA SAR Requirements  
 Description of EUT: 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card  
 Manufacturer: Agere Systems Netherlands BV  
 Brand mark: Agere  
 Model: 1106  
 FCC ID: IMR1106CB

**8.2.11 Host ACER, Perpendicular + 10 mm channel 165**

Device Under Test:		Agere CB 1106 2.4/5 GHz IEEE 802.11g/a WLAN Cardbus card	
HOST		ACER	
Position / Channel		perpendicular / channel 165	
DATE [dd/mm/yyyy]		15-6-2004	
System / software:		SARA v2.3	
Phantom S/No:	Box phantom.	No. of steps x and y	8
Test Frequency [MHz]	5825	Stepsize x and y [mm]	3
Antenna Configuration:	Integral	No. of steps z	7
Power / (setting(s)) [dBm]	17.2	Stepsize z [mm]	2
Type of Modulation / bitrate [Mbit/s]	OFDM 6	Dist probe tip – phantom shell [mm]	1
Modn. Duty Cycle [%]	100	Probe conversion factor .....	0.750
Probe Serial Number:	131	Probe battery check [dd/mm/yyyy]:	14-6-2004
Liquid Simulant:	Body	Max E-field [V/m in liquid]	9.35
Permittivity / Conductivity [S/m]	48.2 / 6.0	Location of max X= [mm]	-2.0
Liquid Temperature [C]	22.5	Location of max Y= [mm]	-8.9
Ambient Temperature [C]	22.0	Location of max Z= [mm]	-479.0
Relative Humidity [%]	57.0	SAR Drift: [dB]	0.67
<b>Results:</b>			
<b>SAR 1g [W/kg]:</b>		0.406	
<b>SAR 10g [W/kg]:</b>		0.175	

