



# FCC TEST REPORT

**REPORT NO.:** RF910329R02  
**MODEL NO.:** GL2411V4-0I  
**RECEIVED:** March 29, 2002  
**TESTED:** April 01 ~ April 08 , 2002

**APPLICANT:** GLOBAL SUN TECHNOLOGY, INC.

**ADDRESS:** NO.13 Tung Yuan Rd., Jung Li Industrial Park Jung Li  
City, Tao Yuan Hsien, Taiwan

**ISSUED BY:** Advance Data Technology Corporation

**LAB LOCATION:** 47 14th Lin, Chiapau Tsun, Linko, Taipei,  
Taiwan, R.O.C.

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0528  
ILAC MRA



Lab Code: 200102-0



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## 1 CERTIFICATION

**PRODUCT :** Wireless 11Mbps RF Module  
**MODEL NO. :** GL2411V4-01  
**APPLICANT :** GLOBAL SUN TECHNOLOGY, INC.  
**BRAND NAME :** GLOBAL SUN  
**STANDARDS :** 47 CFR Part 15, Subpart C (Section 15.247),  
ANSI C63.4-1992, Canada RSS 210,  
New Zealand RFS 29

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from Apr 01 to Apr. 08, 2002, The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

**TESTED BY:** Gary Chang, **DATE:** April 9, 2002  
Gary Chang

**CHECKED BY:** Rennie Wang, **DATE:** April 9, 2002  
Rennie Wang

**APPROVED BY:** Alan Lane, **DATE:** April 9, 2002  
Dr. Alan Lane  
Manager



## 2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

<b>APPLIED STANDARD: 47 CFR Part 15, Subpart C</b>			
<b>Standard Section</b>	<b>Test Type and Limit</b>	<b>Result</b>	<b>REMARK</b>
15.207	AC Power Conducted Emission Limit: 48dBuV	PASS	Meet the requirement of limit Minimum passing margin is -14.05dBuV at 18.344MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -3.5dBuV at 132.00MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit



### 3 GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>PRODUCT</b>	Wireless 11Mbps RF Module
<b>MODEL NO.</b>	GL2411V4-0I
<b>POWER SUPPLY</b>	5.0VDC from host equipment
<b>MODULATION TYPE</b>	BPSK, QPSK, CCK
<b>RADIO TECHNOLOGY</b>	DSSS
<b>TRANSFER RATE</b>	1/2/5.5/11Mbps
<b>FREQUENCY RANGE</b>	2412MHz ~ 2462MHz
<b>NUMBER OF CHANNEL</b>	11
<b>OUTPUT POWER</b>	18.24dBm
<b>ANTENNA TYPE</b>	Dipole Antenna
<b>DATA CABLE</b>	NA
<b>I/O PORTS</b>	NA
<b>ASSOCIATED DEVICES</b>	NA

**NOTE:**

- There are three antenna types were provided in this EUT. They are Dipole antennas with different connector, please see as follows for difference:

Antenna	Gain(dBi)	Internal connector	External connector
Dipole	2.5	MCX	Reversed TNC
		MCX	NA
Dipole	1	MCX	NA
Dipole	0	MCX	Reversed SMA
		Detachable	Reversed SMA

- For a more detailed features description, please refer to the manufacturer's specifications or User's Manual.



### 3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided in this EUT.

Channel	Frequency	Channel	Frequency
1	2412 MHz	7	2442 MHz
2	2417 MHz	8	2447 MHz
3	2422 MHz	9	2452 MHz
4	2427 MHz	10	2457 MHz
5	2432 MHz	11	2462 MHz
6	2437 MHz		

**NOTE:**

1. Below 1 GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test.
2. Above 1 GHz, the channel 1, 6, and 11 were tested individually.
3. There are three antenna types were pre-tested in chamber. The minimum and maximum gains of antenna types were chosen for final test.
4. The tested result A is for minimum antenna gain, and the tested result B is for maximum antenna gain.

### 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless 11Mbps RF Module. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC CFR 47 Part 15, Subpart C. (15.247)**

**ANSI C63.4 : 1992, Canada RSS 210, New Zealand RFS 29**

All tests have been performed and recorded as per the above standards.

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



### 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook	Dell	PP01L	TW-09C748-12800-19O-B220	FCC DoC APPROVED
2	PRINTER	HP	2225C+	3123S97230	DSI6XU2225
3	MODEM	ACEEX	1414	980020510	IFAXDM1414

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core.
3	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.

**NOTE:** All power cords of the above support units are non shielded (1.8m).





## 4 TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.45 – 30	48	-

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. All emanations from a class B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 4.1.2 TEST INSTRUMENTS

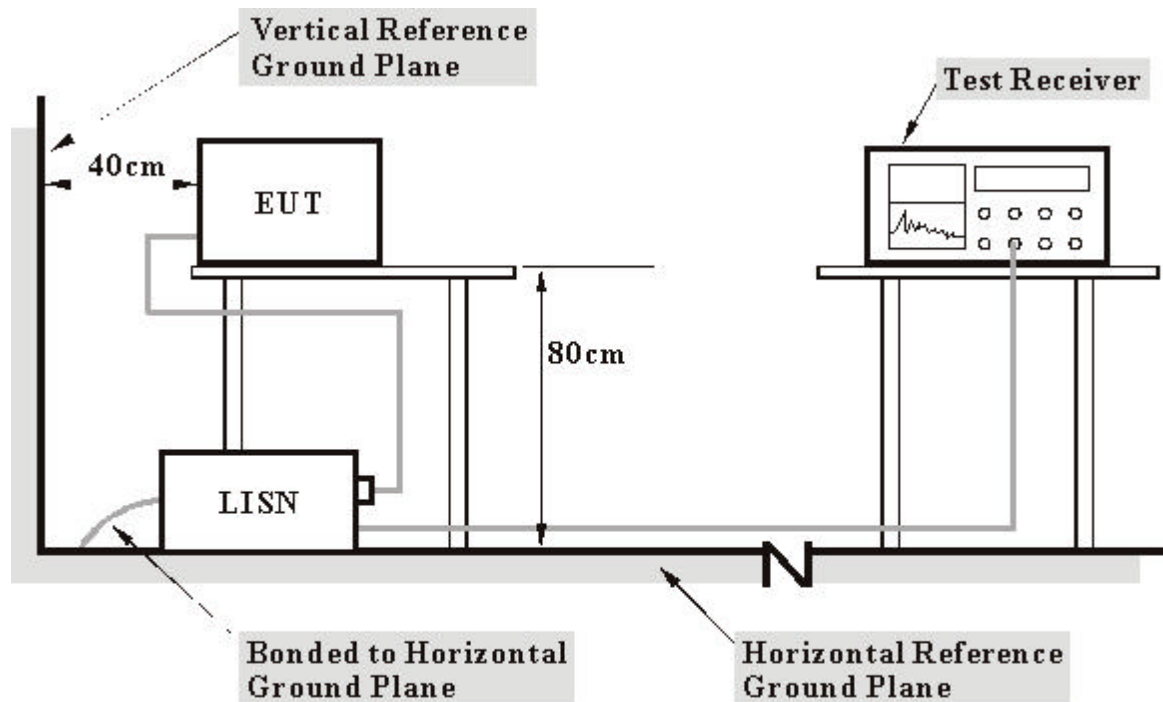
DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS30	834115/016	Mar. 3, 2003
ROHDE & SCHWARZ Artificial Mains Network (For EUT)	ESH3-Z5	847265/023	Jan. 10, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Dec. 10, 2002
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Dec. 10, 2002
EMCO L.I.S.N. (For peripherals)	3825/2	9504-2359	July 10, 2002
Software	Cond-V2L	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C03.01	July 11, 2002
Terminator (For EMCO LISN)	NA	E1-01-300	Feb. 20, 2003
Terminator (For EMCO LISN)	NA	E1-01-301	Feb. 20, 2003
Shielded Room	Site 3	ADT-C03	NA
VCCI Site Registration No.	Site 3	C-274	NA

- NOTE: 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
3. “\*”: These equipment are used for conducted telecom port test only (if tested).

#### 4.1.3 TEST PROCEDURES

- The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- The frequency range from 450 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

#### 4.1.4 TEST SETUP



- Note:**
- Support units were connected to second LISN.
  - Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.



#### 4.1.5 EUT OPERATING CONDITIONS

- a. Connected the EUT to a computer system placed on a testing table.
- b. The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
- c. The computer system sent "H" messages to its screen.
- d. The computer system sent "H" messages to modem.
- e. The computer system sent "H" messages to printer and the printer prints them on paper.



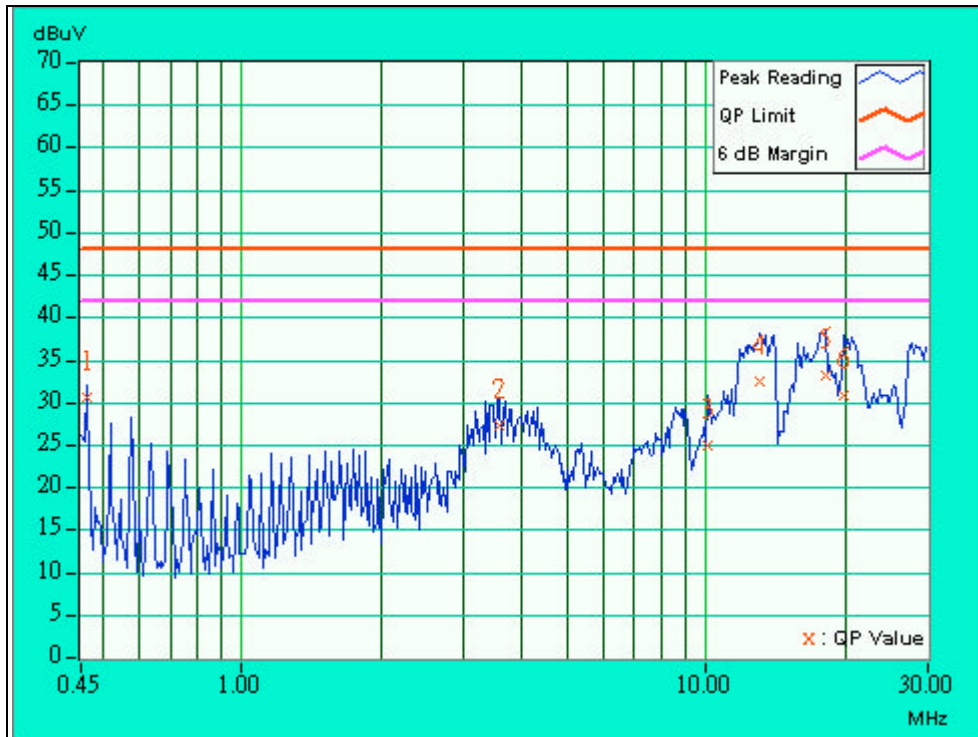
4.1.6 TEST RESULTS

<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 1	<b>6dB BANDWIDTH</b>	10 kHz
<b>INPUT POWER (SYSTEM)</b>	110Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70%RH, 1005 hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.462	0.11	30.12	-	30.23	-	48.00	-	-17.77	-
2	3.586	0.28	26.63	-	26.91	-	48.00	-	-21.09	-
3	10.074	0.40	24.42	-	24.82	-	48.00	-	-23.18	-
4	12.973	0.46	32.02	-	32.48	-	48.00	-	-15.52	-
5	18.004	0.56	32.68	-	33.24	-	48.00	-	-14.76	-
6	19.688	0.59	30.38	-	30.97	-	48.00	-	-17.03	-

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.



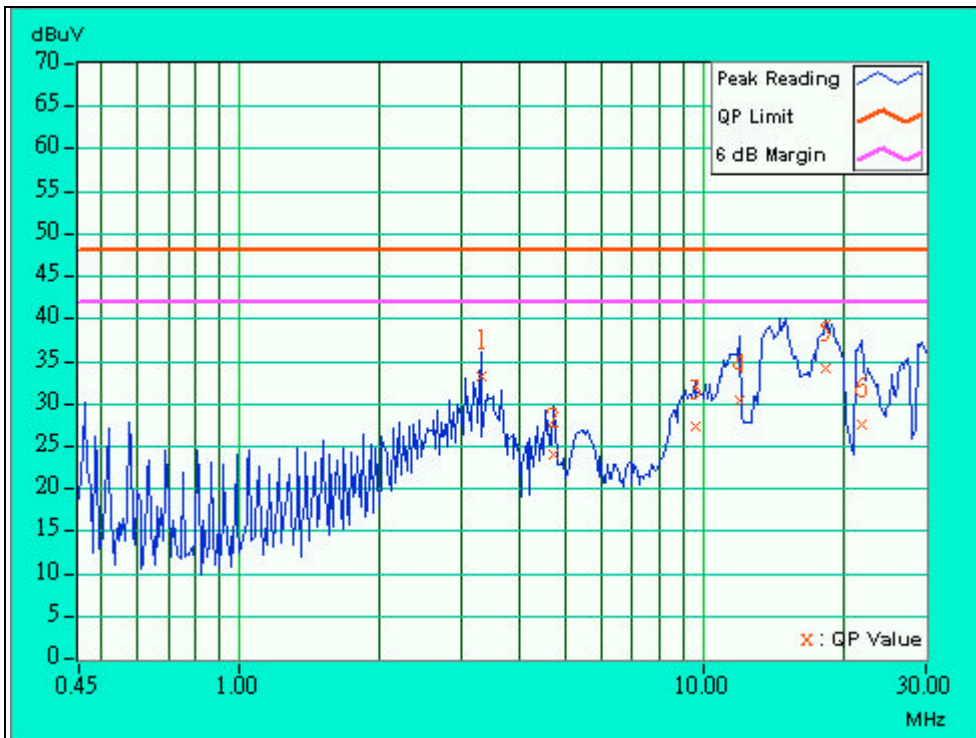


<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 1	<b>6dB BANDWIDTH</b>	10 kHz
<b>INPUT POWER (SYSTEM)</b>	110Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70%RH, 1005 hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	3.297	0.26	32.24	-	32.50	-	48.00	-	-15.50	-
2	4.742	0.31	23.01	-	23.32	-	48.00	-	-24.68	-
3	9.547	0.39	26.42	-	26.81	-	48.00	-	-21.19	-
4	11.914	0.48	29.51	-	29.99	-	48.00	-	-18.01	-
5	18.344	0.80	33.15	-	33.95	-	48.00	-	-14.05	-
6	21.758	0.94	26.74	-	27.68	-	48.00	-	-20.32	-

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.



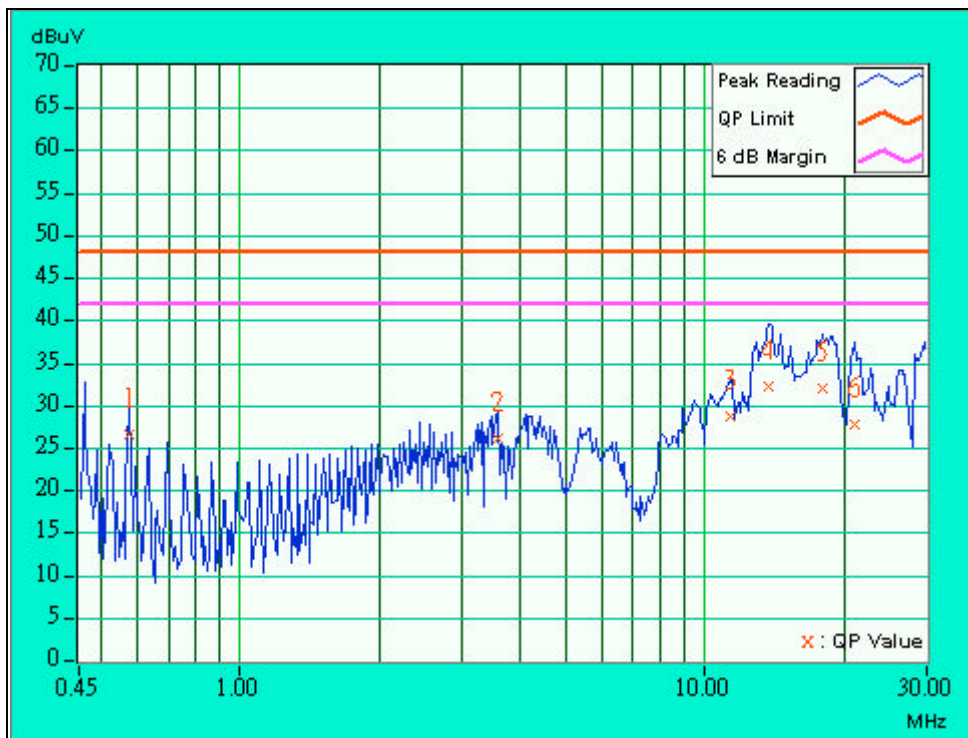


<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 6	<b>6dB BANDWIDTH</b>	10 kHz
<b>INPUT POWER (SYSTEM)</b>	110Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70%RH, 1005 hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.579	0.13	26.03	-	26.16	-	48.00	-	-21.84	-
2	3.586	0.28	25.63	-	25.91	-	48.00	-	-22.09	-
3	11.297	0.43	28.08	-	28.51	-	48.00	-	-19.49	-
4	13.730	0.47	31.81	-	32.28	-	48.00	-	-15.72	-
5	17.898	0.56	31.55	-	32.11	-	48.00	-	-15.89	-
6	21.016	0.58	27.21	-	27.79	-	48.00	-	-20.21	-

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.



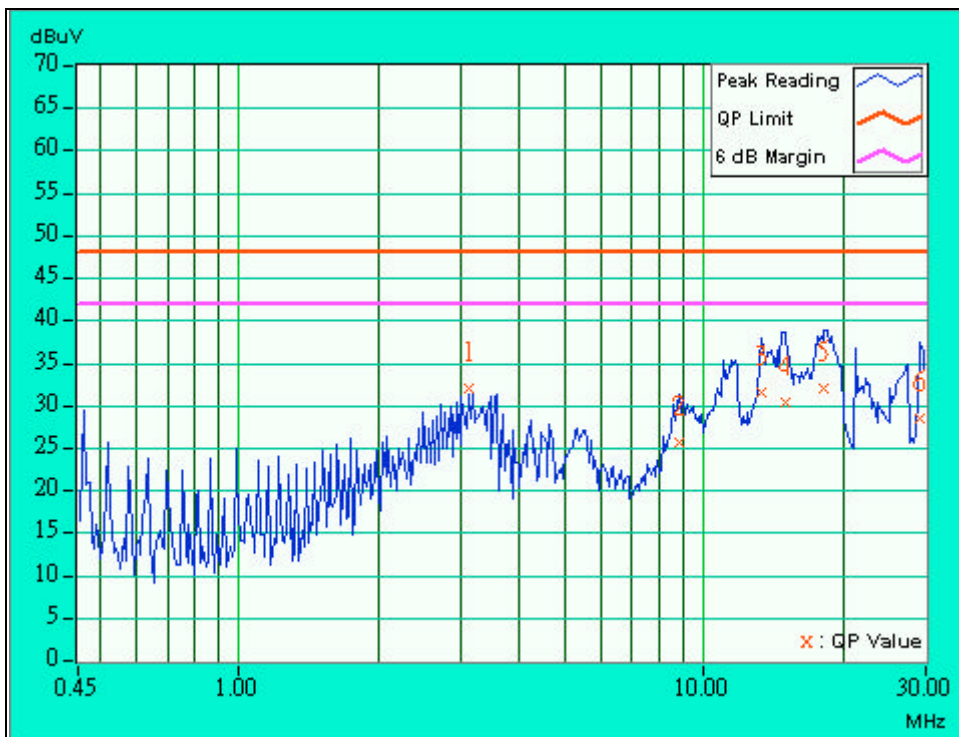


<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 6	<b>6dB BANDWIDTH</b>	10 kHz
<b>INPUT POWER (SYSTEM)</b>	110Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70%RH, 1005 hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq.	Corr. Factor	Reading Value [dB (Uv)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.
1	3.129	0.26	30.60	-	30.86	-	48.00	-	-17.14	-
2	8.813	0.38	24.28	-	24.66	-	48.00	-	-23.34	-
3	13.277	0.53	30.26	-	30.79	-	48.00	-	-17.21	-
4	14.898	0.60	29.10	-	29.70	-	48.00	-	-18.30	-
5	18.141	0.79	30.81	-	31.60	-	48.00	-	-16.40	-
6	29.223	1.34	27.26	-	28.60	-	48.00	-	-19.40	-

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.





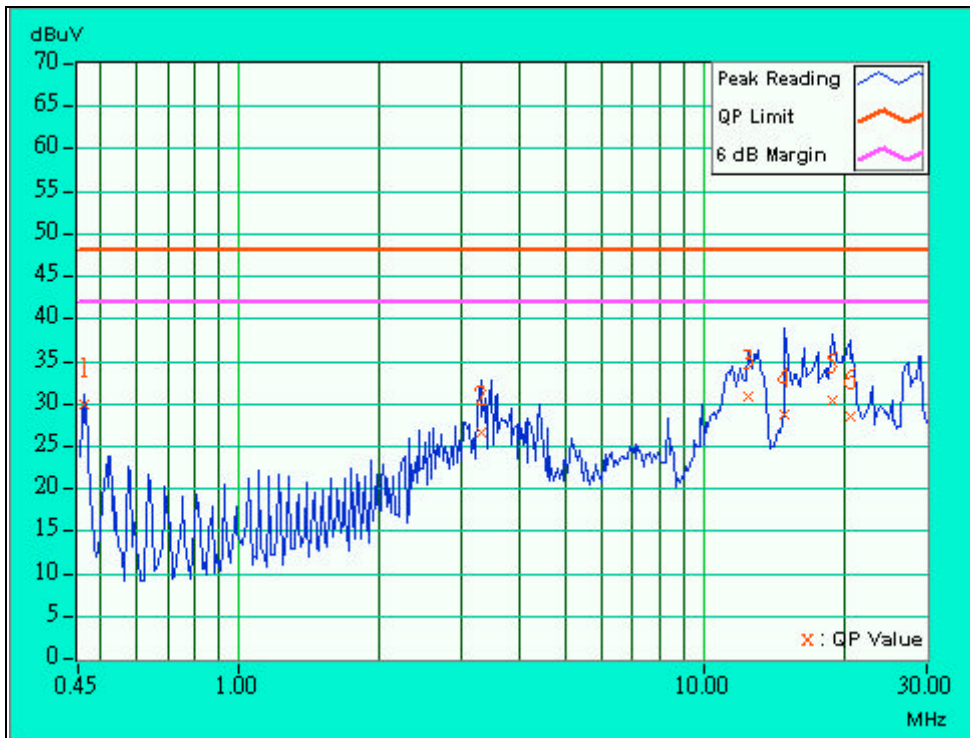


<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 11	<b>6dB BANDWIDTH</b>	10 kHz
<b>INPUT POWER (SYSTEM)</b>	110Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70%RH, 1005 hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.
1	0.462	0.11	29.24	-	29.35	-	48.00	-	-18.65	-
2	3.305	0.27	26.02	-	26.29	-	48.00	-	-21.71	-
3	12.363	0.45	30.35	-	30.80	-	48.00	-	-17.20	-
4	14.863	0.50	28.05	-	28.55	-	48.00	-	-19.45	-
5	18.859	0.58	29.77	-	30.35	-	48.00	-	-17.65	-
6	20.547	0.59	27.87	-	28.46	-	48.00	-	-19.54	-

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.





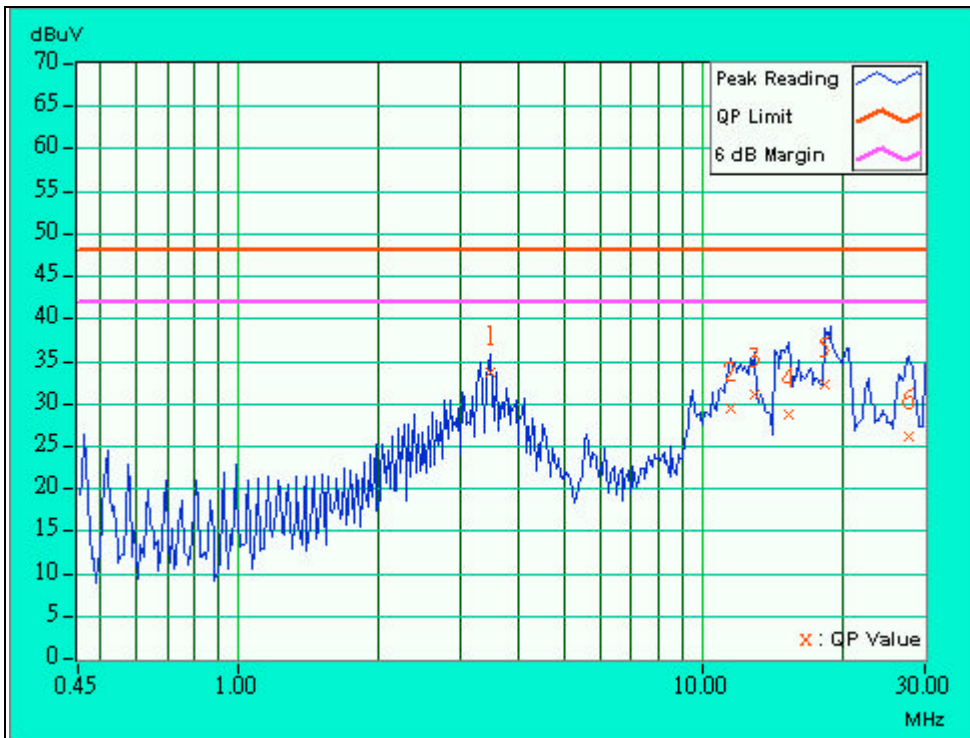


<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 11	<b>6dB BANDWIDTH</b>	10 kHz
<b>INPUT POWER (SYSTEM)</b>	110Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70%RH, 1005 hPa	<b>TESTED BY:</b> Gary Chang	

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	3.477	0.27	32.48	-	32.75	-	48.00	-	-15.25	-
2	11.484	0.46	28.33	-	28.79	-	48.00	-	-19.21	-
3	12.934	0.52	29.95	-	30.47	-	48.00	-	-17.53	-
4	15.254	0.62	27.65	-	28.27	-	48.00	-	-19.73	-
5	18.332	0.80	31.14	-	31.94	-	48.00	-	-16.06	-
6	27.664	1.21	25.02	-	26.23	-	48.00	-	-21.77	-

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.





## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Field strength limits are at the distance of 3 meters, emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (MHz)	Field Strength of Fundamental	
	uV/m	dBuV/m
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

**NOTE:**

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.



#### 4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
* HP Spectrum Analyzer	8590L	3544A01176	May 7, 2002
* HP Preamplifier	8447D	2944A08485	May 7, 2002
* HP Preamplifier	8449B	3008A01201	Dec. 06, 2002
* HP Preamplifier	8449B	3008A01292	Aug. 21, 2002
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 27, 2003
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2002
* CHASE BILOG Antenna	CBL6112A	2221	Aug. 2, 2002
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 6, 2002
* EMCO Horn Antenna	3115	9312-4192	April 15, 2002
* EMCO Turn Table	1060	1115	NA
* SHOSHIN Tower	AP-4701	A6Y005	NA
* Software	AS61D4	NA	NA
* ANRITSU RF Switches	MP59B	M35046	Aug. 2, 2002
* TIMES RF cable	LMR-600	CABLE-ST5-01	Aug. 2, 2002
Open Field Test Site	Site 5	ADT-R05	July 28, 2002
VCCI Site Registration No.	Site 5	R-1039	NA
Site Registration No.	FCC: 90422 Canada IC: IC 3789 VCCI : R-1039		

- NOTE:** 1. The measurement uncertainty is less than +/- 3.0dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to NML/ROC and NIST/USA.
3. "\*" = These equipment are used for the final measurement.
4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz.



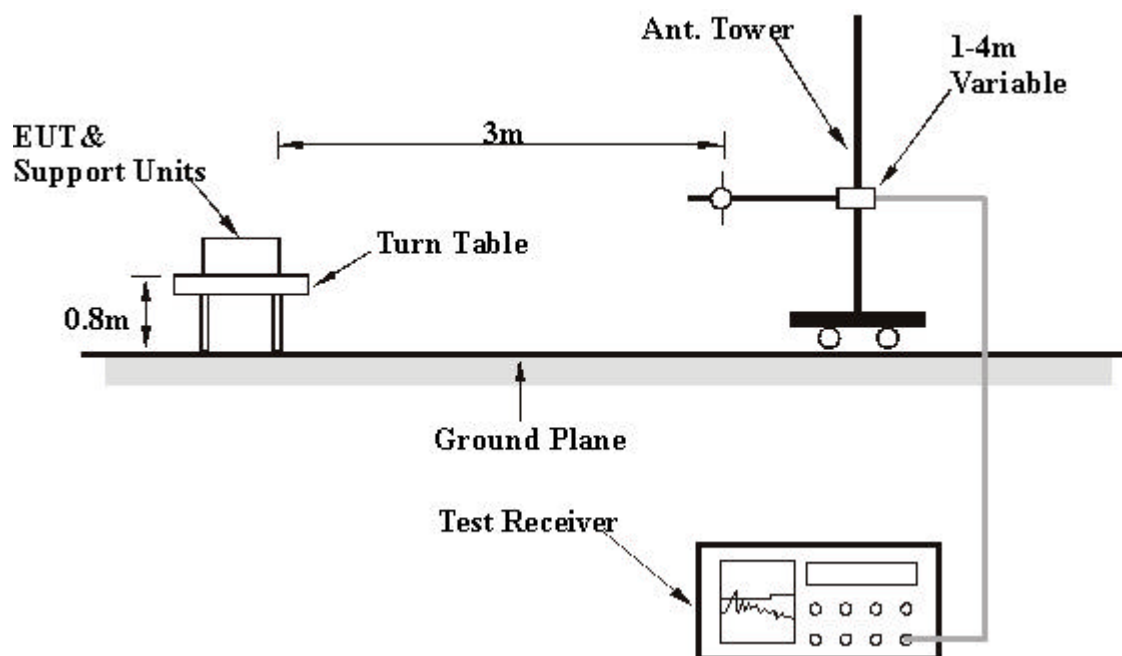
### 4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 300 Hz for Average detection (AV) at frequency above 1GHz.

#### 4.2.4 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

#### 4.2.5 EUT OPERATING CONDITIONS

Same as 4.1.5.



## 4.2.6 TEST RESULTS (A)

<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 11	<b>FREQUENCY RANGE</b>	30-1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

<b>ANTENNA POLARITY &amp; TEST DISTANCE: HORIZONTAL AT 3 M</b>											
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	132.00	34.0 QP	43.50	-9.50	2.03H	15	21.71	11.16	1.13	0.00	-12.29
2	176.00	35.0 QP	43.50	-8.50	1.09H	355	24.59	9.08	1.33	0.00	-10.41
3	308.00	28.0 QP	46.00	-18.00	1.37H	60	12.71	13.38	1.91	0.00	-15.29
4	440.00	31.0 QP	46.00	-15.00	1.72H	271	12.31	16.32	2.38	0.00	-18.69
5	484.00	33.0 QP	46.00	-13.00	1.06H	4	13.57	16.96	2.47	0.00	-19.44
6	572.00	32.8 QP	46.00	-13.20	1.46H	322	11.80	18.25	2.75	0.00	-21.00
7	704.00	31.5 QP	46.00	-14.50	1.07H	12	8.96	19.38	3.16	0.00	-22.54
8	748.00	39.5 QP	46.00	-6.50	1.40H	357	16.10	20.14	3.26	0.00	-23.40
9	880.00	33.0 QP	46.00	-13.00	1.82H	3	8.77	20.68	3.55	0.00	-24.23
10	924.00	33.2 QP	46.00	-12.80	1.43H	317	8.51	21.00	3.68	0.00	-24.69

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.



<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 11	<b>FREQUENCY RANGE</b>	30-1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	132.00	40.0 QP	43.50	-3.50	1.17V	335	27.71	11.16	1.13	0.00	-12.29
2	176.00	37.0 QP	43.50	-6.50	1.44V	39	26.59	9.08	1.33	0.00	-10.41
3	264.00	34.5 QP	46.00	-11.50	1.25V	357	19.92	12.89	1.70	0.00	-14.58
4	308.00	35.0 QP	46.00	-11.00	1.39V	8	19.71	13.38	1.91	0.00	-15.30
5	352.00	38.0 QP	46.00	-8.00	1.09V	358	21.64	14.31	2.05	0.00	-16.37
6	396.00	37.0 QP	46.00	-9.00	1.11V	3	18.82	15.96	2.22	0.00	-18.18
7	440.00	37.0 QP	46.00	-9.00	1.04V	354	18.31	16.32	2.38	0.00	-18.70
8	484.00	36.0 QP	46.00	-10.00	1.00V	8	16.57	16.96	2.47	0.00	-19.44
9	572.00	36.0 QP	46.00	-10.00	1.45V	347	15.00	18.25	2.75	0.00	-21.00
10	704.00	36.8 QP	46.00	-9.20	1.44V	30	14.26	19.38	3.16	0.00	-22.54
11	748.00	40.0 QP	46.00	-6.00	1.25V	337	16.60	20.14	3.26	0.00	-23.40
12	792.00	35.0 QP	46.00	-11.00	1.33V	1	11.09	20.60	3.31	0.00	-23.91
13	880.00	34.5 QP	46.00	-11.50	1.12V	187	10.27	20.68	3.55	0.00	-24.23
14	924.00	31.0 QP	46.00	-15.00	1.33V	324	6.31	21.00	3.68	0.00	-24.69

#### NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.



<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 1	<b>FREQUENCY RANGE</b>	Above 1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	44.7 PK	74.00	-29.30	1.29H	7	49.50	25.20	4.86	34.90	4.84
2	*2412.00	94.2 PK	-	-	1.73H	199	62.00	27.11	5.10	0.00	-32.21
3	*2412.00	90.6 AV	-	-	1.73H	199	58.40	27.11	5.10	0.00	-32.21
4	4076.00	47.1 PK	74.00	-26.90	1.86H	162	44.70	30.13	6.78	34.52	-2.39
5	4824.00	49.0 PK	74.00	-25.00	1.92H	355	45.00	31.43	7.23	34.63	-4.02

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	50.4 PK	74.00	-23.60	1.88V	66	55.20	25.20	4.86	34.90	4.84
2	*2413.00	100.7 PK	-	-	1.86V	355	68.50	27.11	5.10	0.00	-32.21
3	*2413.00	96.2 AV	-	-	1.86V	355	64.00	27.11	5.10	0.00	-32.21
4	4076.00	46.4 PK	74.00	-27.60	1.41V	304	44.00	30.13	6.78	34.52	-2.39
5	4824.00	48.0 AV	54.00	-6.00	1.27V	205	44.00	31.43	7.23	34.63	-4.02
6	4824.00	55.0 PK	74.00	-19.00	1.27V	205	51.00	31.43	7.23	34.63	-4.02

#### NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " \* " : Fundamental frequency
5. The other emission levels were very low against the limit.





<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 6	<b>FREQUENCY RANGE</b>	Above 1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	45.9 PK	74.00	-28.10	1.59H	357	50.40	25.41	4.96	34.90	4.53
2	*2437.00	93.4 PK	-	-	1.58H	7	61.00	27.33	5.08	0.00	-32.40.
3	*2437.00	91.5 AV	-	-	1.58H	7	59.10	27.33	5.08	0.00	-32.40.
4	4126.00	47.5 PK	74.00	-26.50	1.25H	117	45.00	30.32	6.70	34.56	-2.46
5	4874.00	47.1 PK	74.00	-26.90	1.25H	199	43.00	31.47	7.21	34.63	-4.05

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	48.9 PK	74.00	-25.10	1.16V	20	53.40	25.41	4.96	34.90	4.53
2	*2437.00	105.4 PK	-	-	1.57V	184	73.00	27.33	5.08	0.00	-32.40
3	*2437.00	102.8 AV	-	-	1.57V	184	70.40	27.33	5.08	0.00	-32.40
4	4126.00	44.5 PK	74.00	-29.50	1.54V	178	42.00	30.32	6.70	34.56	-2.46
5	4874.00	54.1 PK	74.00	-19.90	1.40V	34	50.00	31.47	7.21	34.63	-4.05
6	4874.00	47.6 AV	54.00	-6.40	1.40V	34	43.50	31.47	7.21	34.63	-4.06

#### NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss.  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " \* " : Fundamental frequency
5. The other emission levels were very low against the limit.



<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 11	<b>FREQUENCY RANGE</b>	Above 1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	45.7 PK	74.00	-28.30	1.92H	356	50.00	25.62	5.02	34.90	4.26
2	*2463.00	93.4 PK	-	-	1.52H	11	61.00	27.33	5.08	0.00	-32.40
3	*2463.00	89.4 AV	-	-	1.52H	11	57.00	27.33	5.08	0.00	-32.40
4	2488.00	44.7 PK	74.00	-29.30	1.13H	78	47.00	27.54	5.06	34.90	2.32
5	4176.00	47.5 PK	74.00	-26.50	1.34H	318	45.00	30.41	6.68	34.58	-2.51
6	4924.00	48.1 PK	74.00	-25.90	1.20H	241	44.00	31.51	7.21	34.62	-4.10

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	49.9 PK	74.00	-24.10	1.00V	122	54.20	25.62	5.02	34.90	4.26
2	*2463.00	104.4 PK	-	-	1.55V	102	72.00	27.33	5.08	0.00	-32.41
3	*2463.00	101.4 AV	-	-	1.55V	102	69.00	27.33	5.08	0.00	-32.41
4	2491.00	46.2 PK	74.00	-27.80	1.00V	273	48.50	27.54	5.06	34.90	2.31
5	4176.00	49.0 PK	74.00	-25.00	1.50V	248	46.50	30.41	6.68	34.58	-2.51
6	4924.00	54.1 PK	74.00	-19.90	1.55V	360	50.00	31.51	7.21	34.62	-4.10
7	4924.00	46.1 AV	54.00	-7.90	1.55V	360	42.00	31.51	7.21	34.62	-4.10

#### NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " \* " : Fundamental frequency
5. The other emission levels were very low against the limit.



## 4.2.7 TEST RESULTS (B)

<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 11	<b>FREQUENCY RANGE</b>	30-1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

**ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M**

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	132.00	36.0 QP	43.50	-7.50	1.20H	324	23.71	11.16	1.13	0.00	-12.29
2	176.00	33.0 QP	43.50	-10.50	1.45H	70	22.59	9.08	1.33	0.00	-10.42
3	396.00	37.8 QP	46.00	-8.20	1.07H	260	19.60	15.96	2.22	0.00	-18.18
4	440.00	35.0 QP	46.00	-11.00	1.06H	5	16.31	16.32	2.38	0.00	-18.70
5	484.00	32.6 QP	46.00	-13.40	1.04H	328	13.17	16.96	2.47	0.00	-19.43
6	572.00	34.1 QP	46.00	-11.90	1.84H	355	13.10	18.25	2.75	0.00	-21.00
7	616.00	31.4 QP	46.00	-14.60	1.71H	26	9.69	18.82	2.89	0.00	-21.71
8	704.00	34.8 QP	46.00	-11.20	1.41H	295	12.26	19.38	3.16	0.00	-22.54
9	748.00	39.1 QP	46.00	-6.90	1.41H	19	15.70	20.14	3.26	0.00	-23.41
10	792.00	37.9 QP	46.00	-8.10	1.26H	356	13.99	20.60	3.31	0.00	-23.91
11	836.00	35.3 QP	46.00	-10.70	1.19H	4	11.31	20.54	3.45	0.00	-23.99

**NOTE:**

5. Emission level = Raw value - Correction Factor
6. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
7. Margin value = Emission level - Limit value
8. The other emission levels were very low against the limit.



<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 11	<b>FREQUENCY RANGE</b>	30-1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

**ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M**

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	132.00	31.0 QP	43.50	-12.50	1.04V	6	18.71	11.16	1.13	0.00	-12.29
2	396.00	30.4 QP	46.00	-15.60	1.54V	345	12.22	15.96	2.22	0.00	-18.18
3	484.00	31.4 QP	46.00	-14.60	1.04V	277	11.97	16.96	2.47	0.00	-19.43
4	616.00	31.0 QP	46.00	-15.00	1.02V	161	9.29	18.82	2.89	0.00	-21.71
5	704.00	32.0 QP	46.00	-14.00	1.61V	6	9.46	19.38	3.16	0.00	-22.55
6	748.00	37.0 QP	46.00	-9.00	1.00V	352	13.60	20.14	3.26	0.00	-23.40
7	880.00	32.0 QP	46.00	-14.00	1.71V	7	7.77	20.68	3.55	0.00	-24.23
8	924.00	31.0 QP	46.00	-15.00	1.06V	357	6.31	21.00	3.68	0.00	-24.69

**NOTE:**

5. Emission level = Raw value - Correction Factor
6. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
7. Margin value = Emission level - Limit value
8. The other emission levels were very low against the limit.



<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 1	<b>FREQUENCY RANGE</b>	Above 1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	50.2 PK	74.00	-23.80	1.07H	50	55.00	25.20	4.86	34.90	4.84
2	*2413.00	94.3 PK	-	-	1.20H	343	62.10	27.11	5.10	0.00	-32.21
3	*2413.00	90.2 AV	-	-	1.20H	343	58.00	27.11	5.10	0.00	-32.21
4	4076.00	48.2 PK	74.00	-25.80	1.11H	46	45.80	30.13	6.78	34.52	-2.39
5	4824.00	47.0 PK	74.00	-27.00	1.36H	325	43.00	31.43	7.23	34.63	-4.02

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (DbuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2038.00	47.6 PK	74.00	-26.40	1.05V	26	52.40	25.20	4.86	34.90	4.84
2	*2413.00	102.4 PK	-	-	1.00V	8	70.20	27.11	5.10	0.00	-32.22
3	*2413.00	98.2 AV	-	-	1.00V	8	66.00	27.11	5.10	0.00	-32.22
4	4076.00	50.4 PK	74.00	-23.60	1.11V	354	48.00	30.13	6.78	34.52	-2.39
5	4824.00	50.8 PK	74.00	-23.20	1.45V	1	46.80	31.43	7.23	34.63	-4.02

#### NOTE:

6. Emission level = Raw value - Correction Factor
7. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
8. Margin value = Emission level - Limit value
9. " \* " : Fundamental frequency
10. The other emission levels were very low against the limit.



<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-01
<b>MODE</b>	Channel 6	<b>FREQUENCY RANGE</b>	Above 1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	49.6 PK	74.00	-24.40	1.08H	295	54.10	25.41	4.96	34.90	4.53
2	*2437.00	94.4 PK	-	-	1.27H	155	62.00	27.33	5.08	0.00	-32.40
3	*2437.00	91.5 AV	-	-	1.27H	155	59.10	27.33	5.08	0.00	-32.40
4	4126.00	48.7 PK	74.00	-25.30	1.08H	85	46.20	30.32	6.70	34.56	-2.46
5	4874.00	48.1 PK	74.00	-25.90	1.21H	244	44.00	31.47	7.21	34.63	-4.05

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (DbuV/m)	Limit (DbuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2063.00	47.5 PK	74.00	-26.50	1.68V	19	52.00	25.41	4.96	34.90	4.53
2	*2437.00	100.9 PK	-	-	1.62V	36	68.50	27.33	5.08	0.00	-32.40
3	*2437.00	95.4 AV	-	-	1.62V	36	63.00	27.33	5.08	0.00	-32.40
4	4126.00	51.5 PK	74.00	-22.50	1.35V	316	49.00	30.32	6.70	34.56	-2.46
5	4874.00	52.1 PK	74.00	-21.90	1.48V	7	48.00	31.47	7.21	34.63	-4.05

#### NOTE:

6. Emission level = Raw value - Correction Factor
7. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss.  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
8. Margin value = Emission level - Limit value
9. " \* " : Fundamental frequency
10. The other emission levels were very low against the limit.



<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>MODE</b>	Channel 11	<b>FREQUENCY RANGE</b>	Above 1000 MHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	20 deg. C, 70 % RH, 1050 hPa	<b>TESTED BY:</b> Gary Chang	

#### ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	44.7 PK	74.00	-29.30	1.44H	23	49.00	25.62	5.02	34.90	4.26
2	*2463.00	95.4 PK	-	-	1.48H	10	63.00	27.33	5.08	0.00	-32.41
3	*2463.00	91.4 AV	-	-	1.48H	10	59.00	27.33	5.08	0.00	-32.41
4	2489.00	46.4 PK	74.00	-27.60	1.33H	77	48.70	27.54	5.06	34.90	2.31
5	4176.00	48.5 PK	74.00	-25.50	1.26H	126	46.00	30.41	6.68	34.58	-2.51
6	4924.00	49.1 PK	74.00	-24.90	1.31H	169	45.00	31.51	7.21	34.62	-4.10

#### ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (DbuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB)	Cable Factor (dB)	Pre-Amp. Factor (dB)	Correction Factor (dB)
1	2088.00	48.7 PK	74.00	-25.30	1.86V	11	53.00	25.62	5.02	34.90	4.26
2	*2463.00	102.9 PK	-	-	1.08V	355	70.50	27.33	5.08	0.00	-32.40
3	*2463.00	98.6 AV	-	-	1.08V	355	66.20	27.33	5.08	0.00	-32.40
4	2494.00	45.7 PK	74.00	-28.30	1.89V	347	48.00	27.54	5.06	34.90	2.31
5	4176.00	47.5 PK	74.00	-26.50	1.10V	13	45.00	30.41	6.68	34.58	-2.51
6	4924.00	51.1 PK	74.00	-22.90	1.48V	255	47.00	31.51	7.21	34.62	-4.10

#### NOTE:

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss  
(Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " \* " : Fundamental frequency
5. The other emission levels were very low against the limit.



### 4.3 6dB BANDWIDTH MEASUREMENT

#### 4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

#### 4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 17, 2002

**NOTE:**

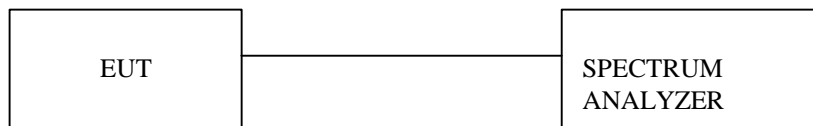
- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



#### 4.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100 kHz RBW and 100 kHz VBW. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

#### 4.3.4 TEST SETUP



For the actual test configuration, please refer to the related Item – Photographs of the Test Configuration.

#### 4.3.5 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.



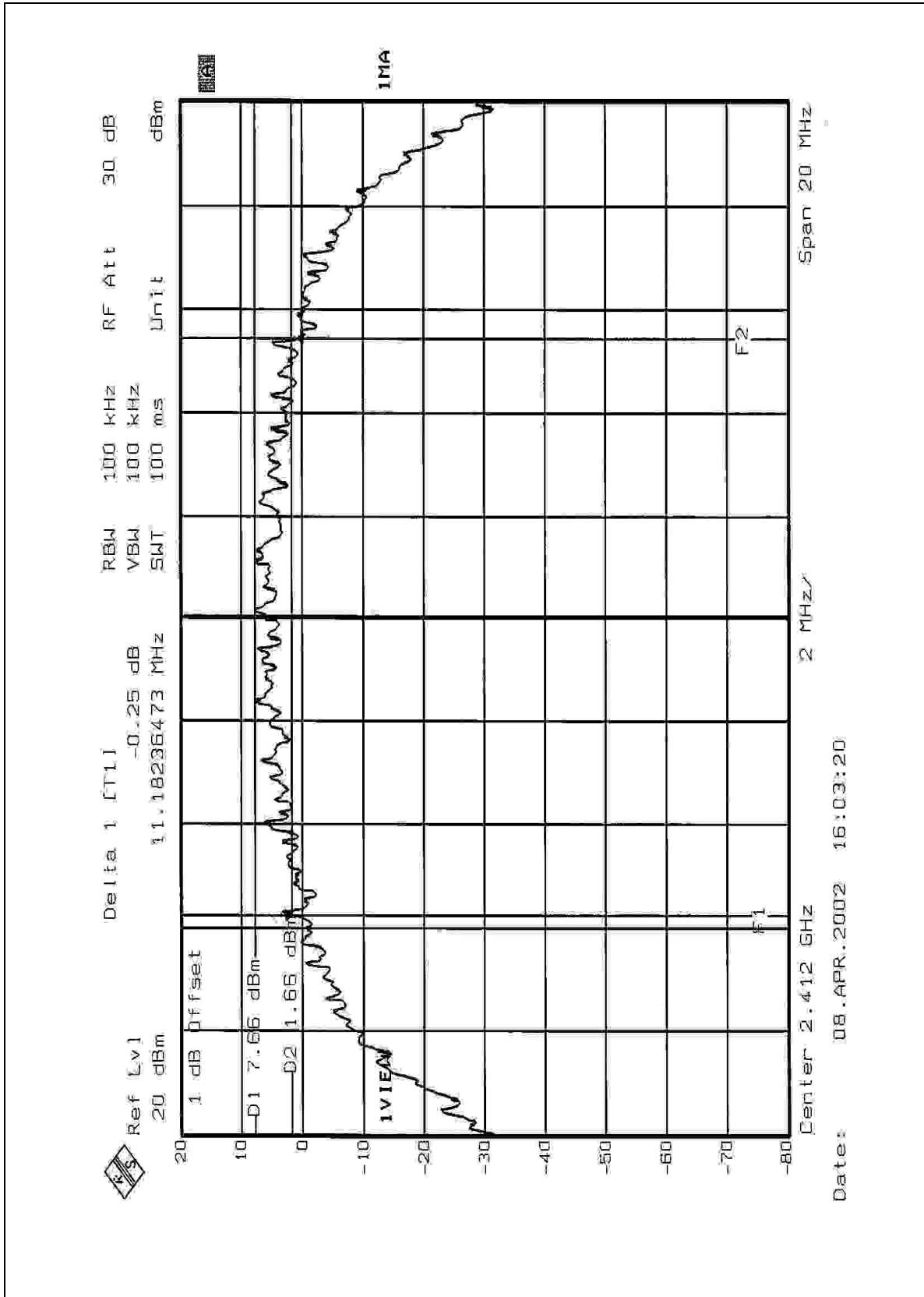
## 4.3.6 TEST RESULTS

<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-0I
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>ENVIRONMENTAL CONDITIONS</b>	24 deg. C, 57%RH, 1005 hPa
<b>TESTED BY:</b> Steven Lu			

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>6 dB BANDWIDTH (MHz)</b>	<b>MINIMUM LIMIT (MHz)</b>	<b>PASS/FAIL</b>
1	2412	11.18	0.5	PASS
6	2437	11.14	0.5	PASS
11	2462	11.14	0.5	PASS

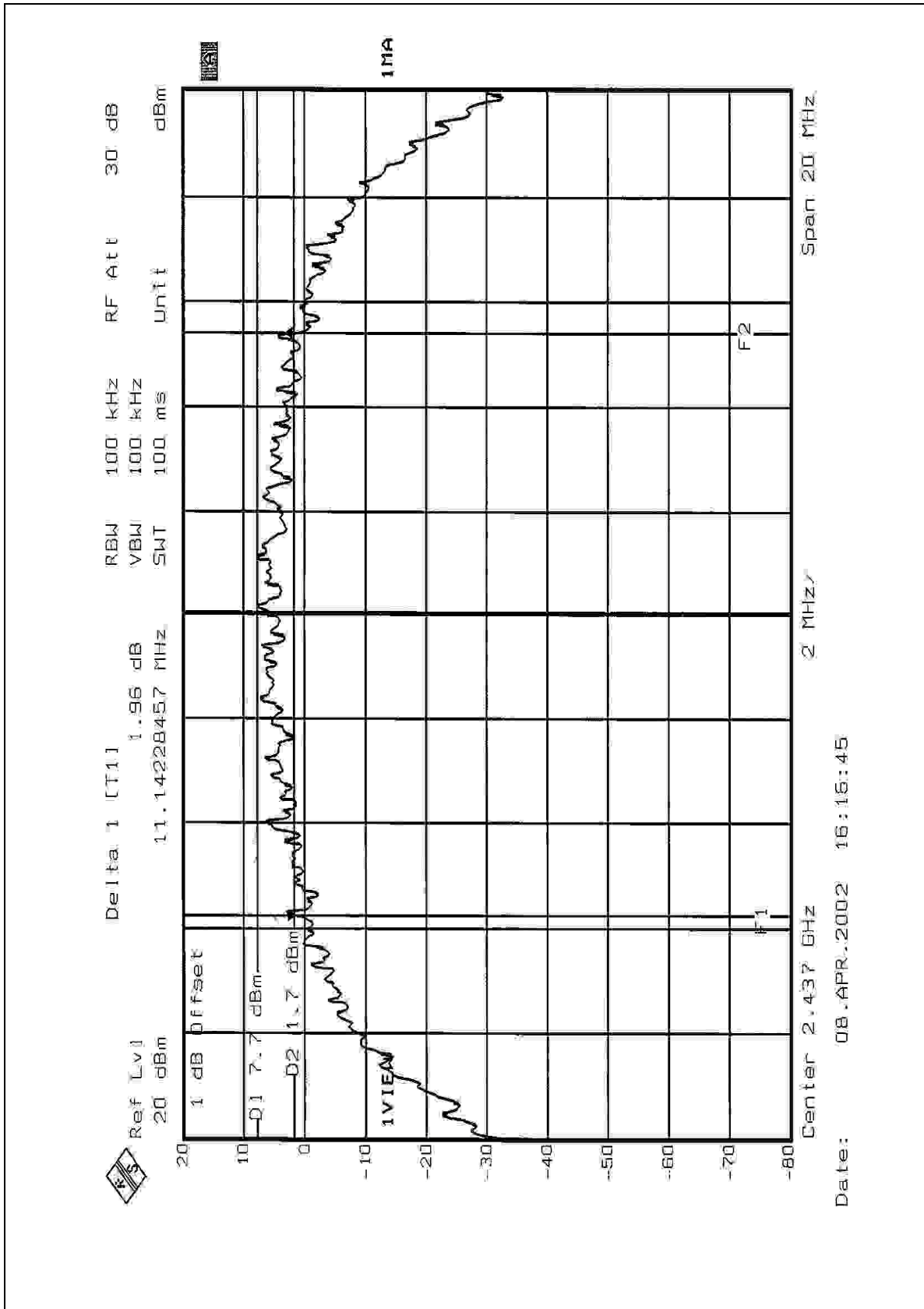


CH1



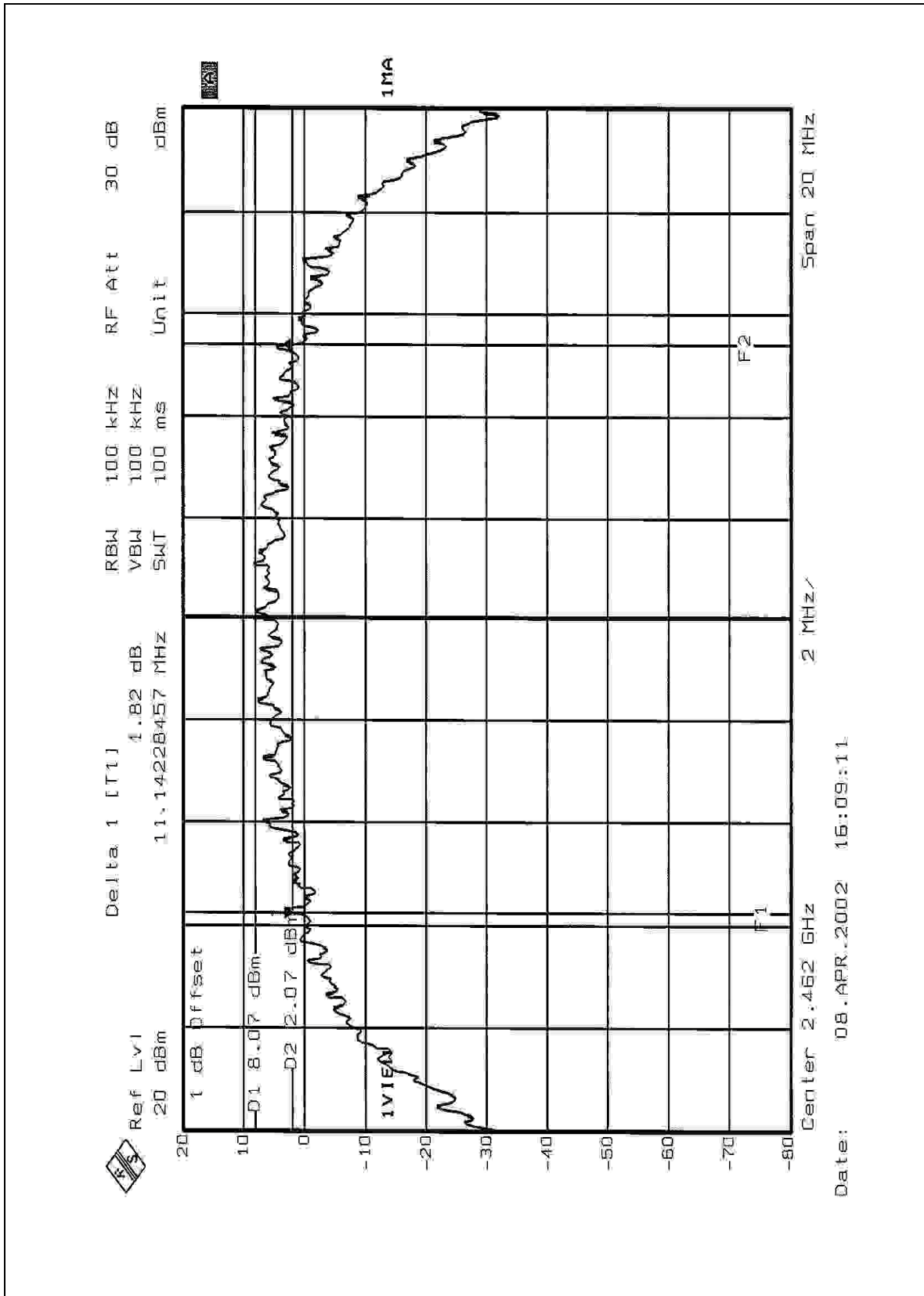


CH6





CH11





#### 4.4 MAXIMUM PEAK OUTPUT POWER

##### 4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

##### 4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SINGLE CHANNEL POWER METER	NRVS	100026	Feb. 21, 2003
PEAK POWER SENSOR	NRV-Z32	100013	Feb. 21, 2003

**NOTE:**

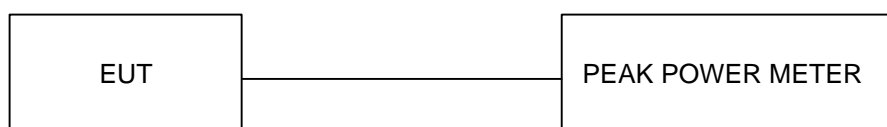
1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.



#### 4.4.3 TEST PROCEDURES

The transmitter output was connected to the peak power meter.

#### 4.4.4 TEST SETUP



#### 4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5



## 4.4.6 TEST RESULTS

<b>EUT</b>	Wireless 11Mbps RF Module	<b>MODEL</b>	GL2411V4-01
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>ENVIRONMENTAL CONDITIONS</b>	24 deg. C, 57%RH, 1005 hPa
<b>TESTED BY:</b> Steven Lu			

<b>CHANNEL</b>	<b>CHANNEL FREQUENCY (MHz)</b>	<b>PEAK POWER OUTPUT (dBm)</b>	<b>PEAK POWER LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	2412	17.31	30	PASS
6	2437	17.86	30	PASS
11	2462	18.24	30	PASS