



FCC TEST REPORT

for

47 CFR Part 15 Subpart C and IC RSS-210 Issue 6

Equipment : Wireless 802.11g CF Card
Trade Name : USI / SparkLAN
Model No. : CF-G-MR-01 / WCFM-100
FCC ID : IXM-CFGMR01
IC ID : 4110A-CFGMR01
Filing Type : Certification
Applicant : **Universal Scientific Industrial Co., Ltd.**
141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

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- The data shown in this test report were carried out on Apr. 25, 2006 at **Sporton International Inc. LAB.**
- Report No.: FR641805, Report Version: Rev. 01

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1. General Description of Equipment under Test

1.1 Applicant

Universal Scientific Industrial Co., Ltd.

141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

1.2 Manufacturer

Universal Scientific Industrial Co., Ltd.

141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

1.3 Basic Description of Equipment under Test

Equipment : Wireless 802.11g CF Card
Trade Name : USI / SparkLAN
Model No. : CF-G-MR-01 / WCFM-100
FCC ID : IXM-CFGMR01
IC ID : 4110A-CFGMR01
Power Supply Type : From System



1.4 Feature of Equipment under Test

Product Feature & Specification			
1. Type of Modulation	DSSS / OFDM		
2. Number of Channels	11		
3. Frequency Band	2.4GHz~2.4835GHz		
4. Carrier Frequency of each channel	2412MHz+(n-1)*5MHz, n=1~11		
5. Channel Spacing	5MHz		
6. Maximum Output Power to Antenna (Normal Condition)	802.11b: 17.8 dBm 802.11g: 16.6 dBm		
7. Type of Antenna Connector	N/A		
8. Antenna Type	1 Ceramic antenna, model name: RFANT5220110A0T 2 Ceramic antenna, model name: AT5020_B2R8HAA		
9. Antenna Gain	1 2 dBi 2 0 dBi		
10. Function Type	Transmitter		Transceiver V
11. Power Rating (DC/AC Voltage) :	3.3V/520mA		

2 Test Configuration of Equipment under Test

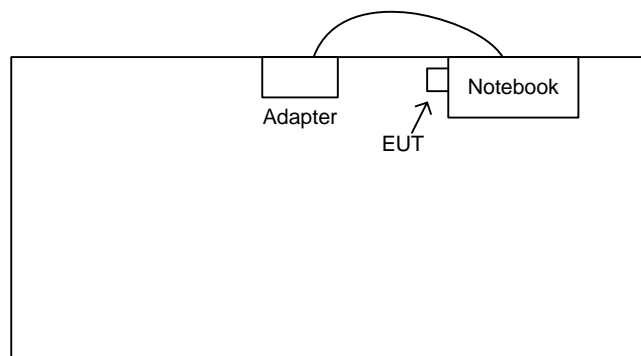
2.1 Test Manner

- a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- b. For spurious emission below 1GHz, only one channel of each application was tested because it is not related to channel selection.
- c. The EUT is programmed to transmit signal continuously for all testings.
- d. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000MHz.

2.2 Test Mode

Application		
Radiated Emission	802.11b	802.11g
	Mode 1: Tx_CH01_2412 MHz	Mode 4: Tx_CH01_2412 MHz
	Mode 2: Tx_CH06_2437 MHz	Mode 5: Tx_CH06_2437 MHz
	Mode 3: Tx_CH11_2462 MHz	Mode 6: Tx_CH11_2462 MHz
Conducted Emission	Mode 1: WLAN Link Mode	

2.3 Connection Diagram of Test System



2.4 Ancillary Equipment List

Item	Asset	Model Name	Power Cord
1.	Notebook (DELL)	PP05L	N/A



3. RF Utility

The programmed RF Utility is installed in notebook to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testings.



4. General Information of Test

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
TEL : 886-3-327-3456
FAX : 886-3-318-0055

Test Site No : CO01-HY, 03CH06-HY

4.1 Test Voltage

120V/ 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2003

4.3 Test in Compliance with

47 CFR Part 15 Subpart C and IC RSS-210 Issued 6

4.4 Frequency Range Investigated

a. Radiation: from 30 MHz to 25000 MHz

4.5 Test Distance

The test distance of radiated emission from antenna to EUT is 3 m.



5. Test Data and Test Result

5.1 List of Measurements and Examinations

The Emission Mode: Wireless LAN

FCC Rule	IC RSS-210 Issued 6	Description of Test	Result
15.207	§6.6	Conducted Emission	Pass
15.247(a)(2)	Amendment 1	6dB Bandwidth	Pass
15.247(b)	§6.2.2 (o) (b) & Amendment 1	Maximum Peak Output Power	Pass
15.209(a)	§6.3	Radiated Emission	Pass
15.247 (c)	§6.3	100kHz Bandwidth of Frequency Band Edges	Pass
15.247(d)	§6.2.2 (o) (b) & Amendment 1	Power Spectral Density	Pass
15.203 15.247(b)(4)	NA	Antenna Requirement	Pass

5.2 6dB Bandwidth Measurement

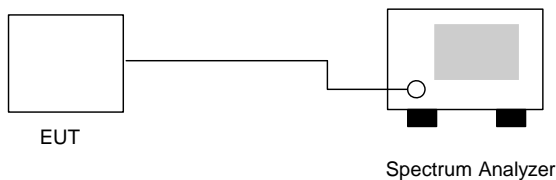
5.2.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.2.2 Test Procedure :

1. The transmitter output was connected to the spectrum analyzer directly.
2. Set RBW of spectrum analyzer to 100kHz and VBW to 100kHz.
3. The 6 dB bandwidth is defined as the frequency range where the power is higher than the peak power minus 6dB.

5.2.3 Test Setup Layout :



5.2.4 Test Result :

- Application Type : WLAN 802.11b/g
- Temperature : 24°C
- Relative Humidity : 53%
- Test Enginner : Anderson

802.11b

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	9.52	> 0.5MHz	Mode 1
06	2437	9.56	> 0.5MHz	Mode 2
11	2462	9.52	> 0.5MHz	Mode 3

802.11g

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.56	> 0.5MHz	Mode 4
06	2437	16.60	> 0.5MHz	Mode 5
11	2462	16.56	> 0.5MHz	Mode 6

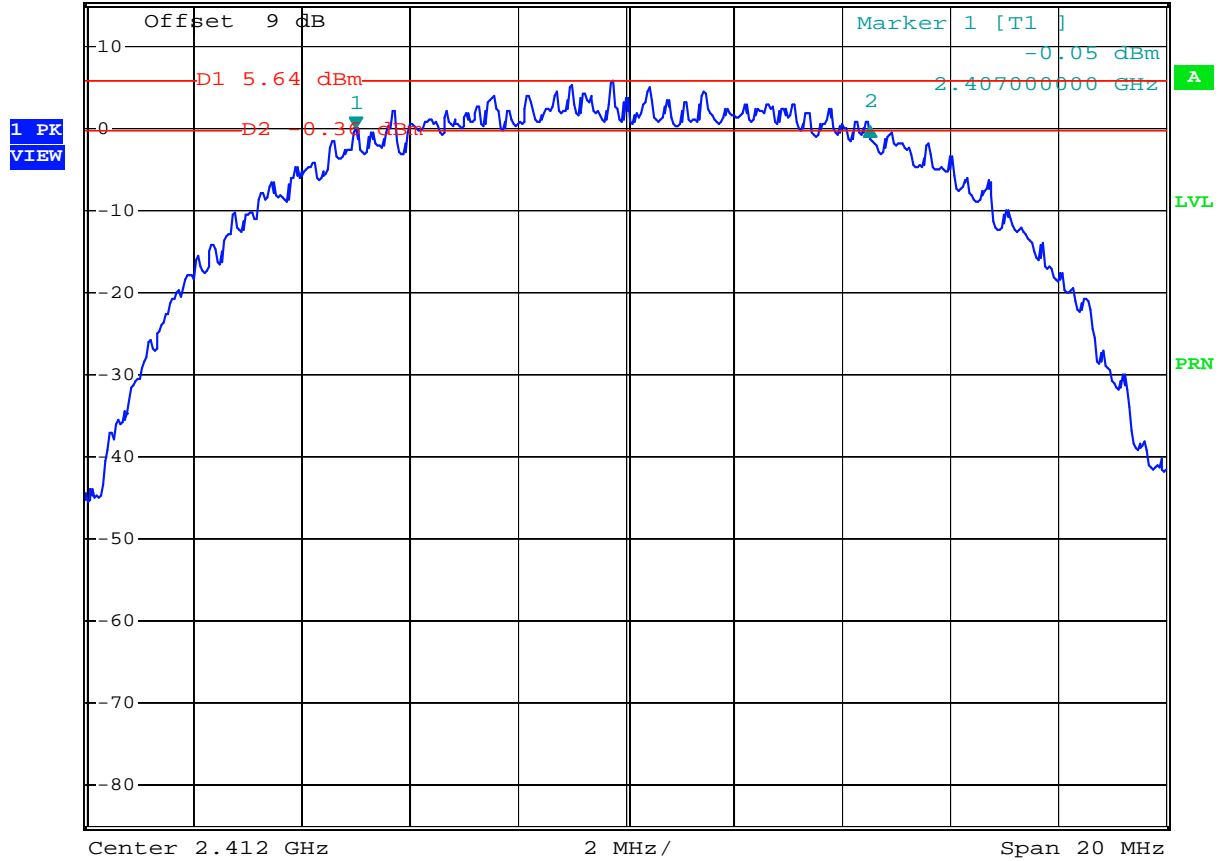


5.2.5 6dB Bandwidth

Mode 1



*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz 0.13 dB
 *Att 20 dB *SWT 500 ms 9.52000000 MHz
 Ref 15 dBm Offset 9 dB



Date: 24.APR.2006 20:07:30



Mode 2

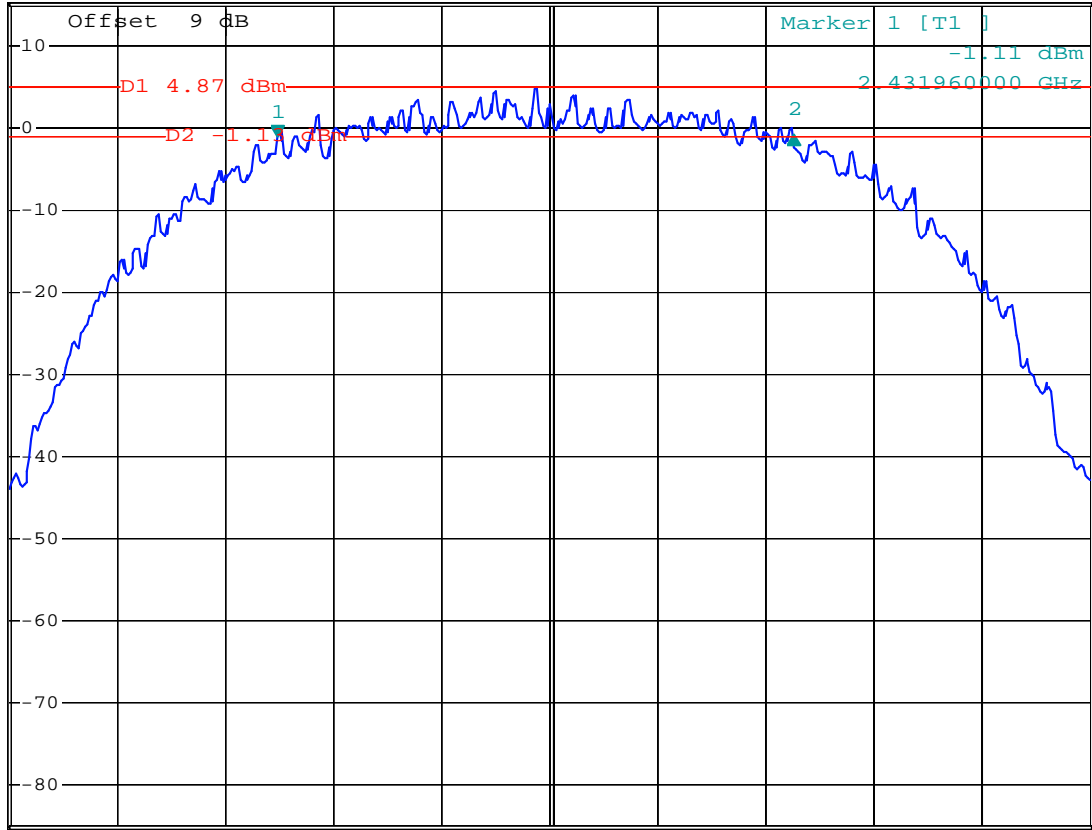


*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz 0.31 dB
 *SWT 500 ms 9.560000000 MHz

Ref 15 dBm

*Att 20 dB

1 PK VIEW



Center 2.437 GHz

2 MHz/

Span 20 MHz

Date: 24.APR.2006 19:58:52



Mode 3

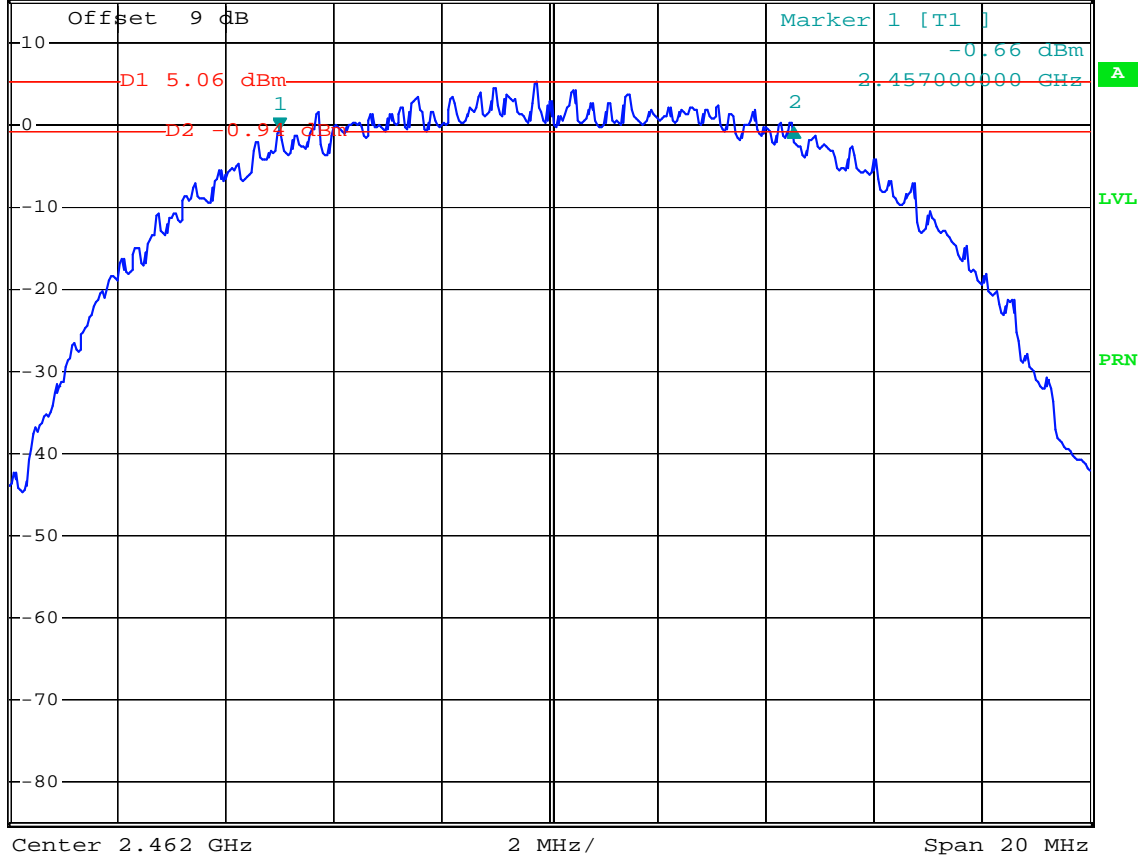


*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz 0.23 dB
 *SWT 500 ms 9.520000000 MHz

Ref 15 dBm

*Att 20 dB

1 PK VIEW



Date: 24.APR.2006 20:04:11



Mode 4

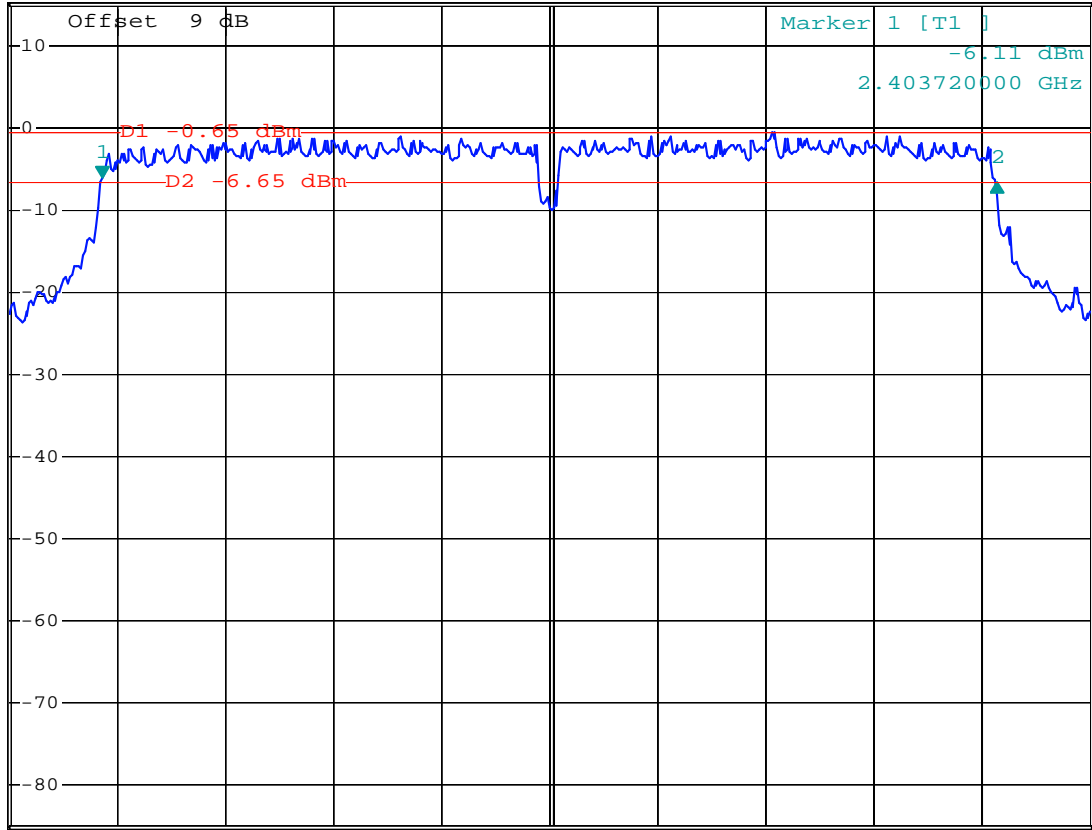


*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz -0.52 dB
 *SWT 500 ms 16.560000000 MHz

Ref 15 dBm

*Att 20 dB

1 PK VIEW



Center 2.412 GHz

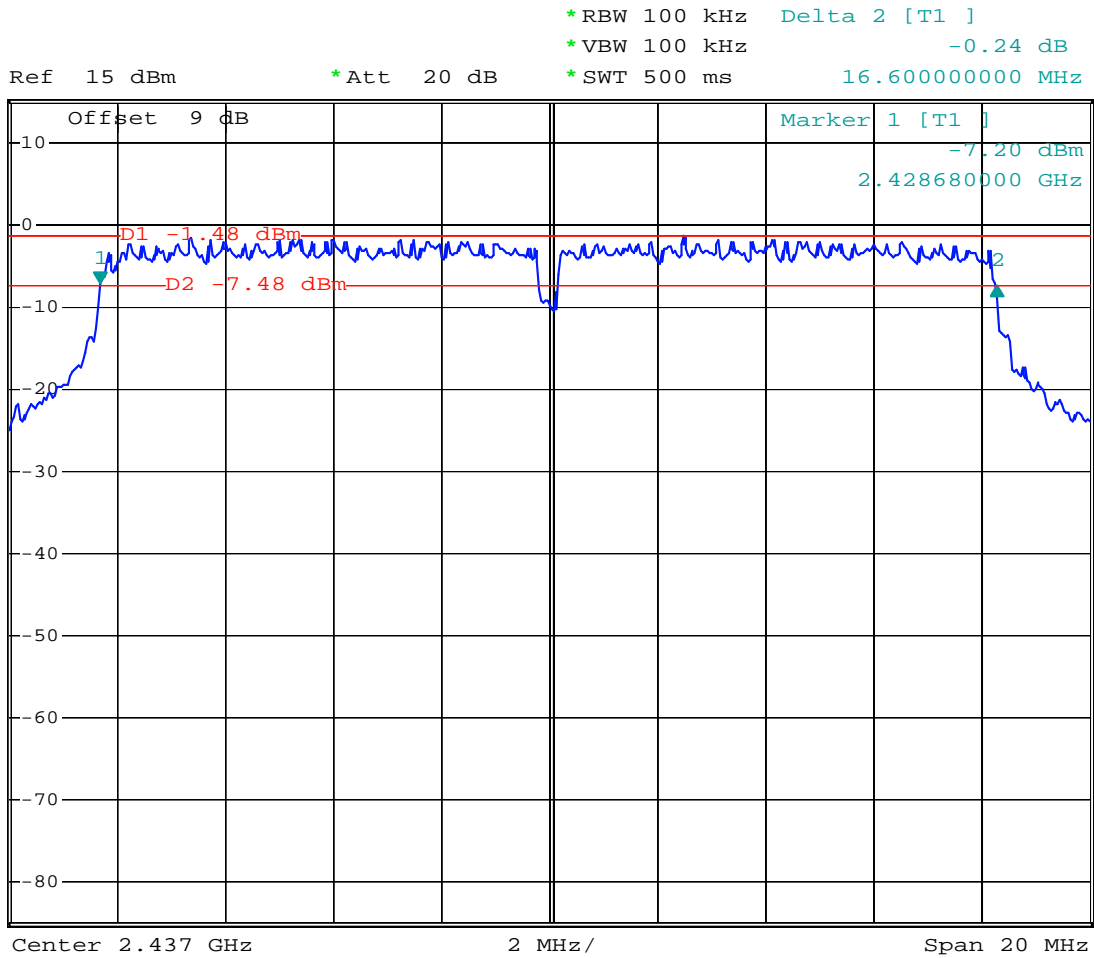
2 MHz/

Span 20 MHz

Date: 24.APR.2006 18:37:02



Mode 5



Date: 24.APR.2006 18:38:20



Mode 6

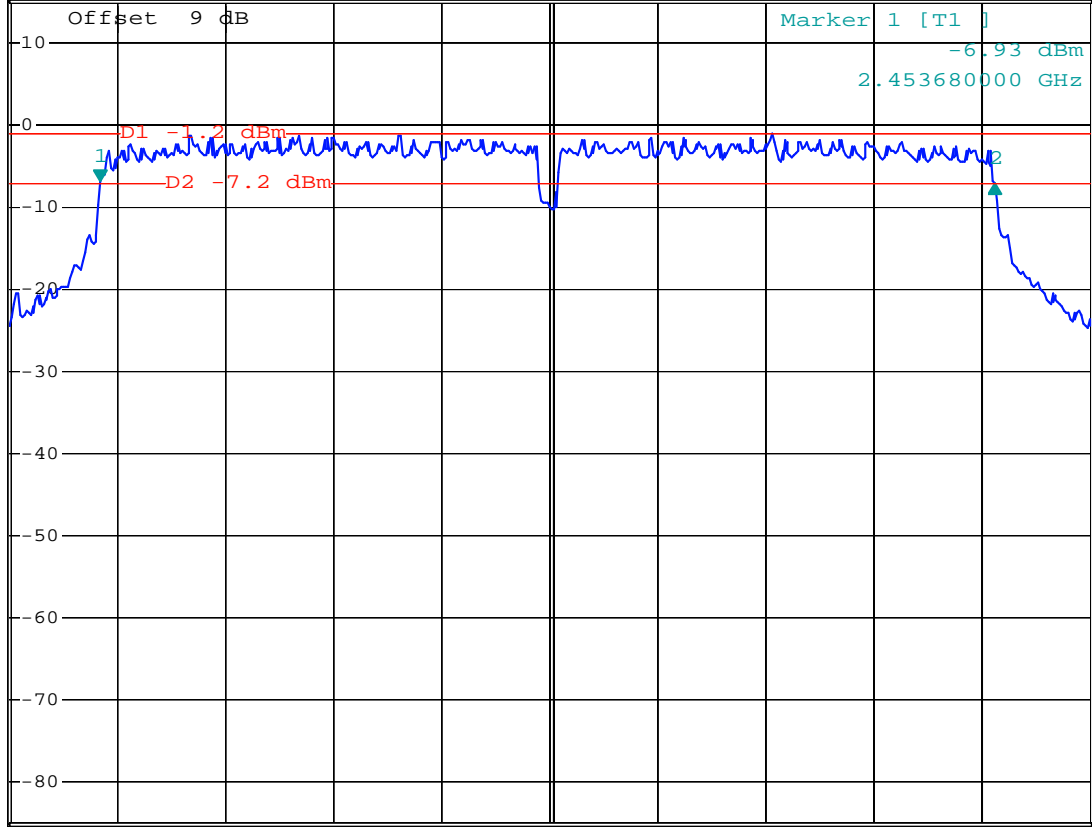


*RBW 100 kHz Delta 2 [T1]
 *VBW 100 kHz -0.15 dB
 *SWT 500 ms 16.560000000 MHz

Ref 15 dBm

*Att 20 dB

1 PK
VIEW



Center 2.462 GHz

2 MHz/

Span 20 MHz

Date: 24.APR.2006 18:39:27

5.3 Power Spectral Density Measurement

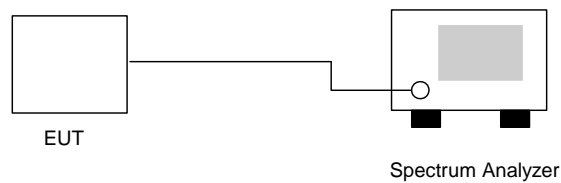
5.3.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.3.2 Test Procedure :

1. The transmitter output was connected to spectrum analyzer directly.
2. The spectrum analyzer's resolution bandwidth was set at 3kHz RBW and 30kHz VBW as that of the fundamental frequency. Set the sweep time=span/3kHz.
3. The power spectral density was measured and recorded.
4. The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

5.3.3 Test Setup Layout :





5.3.4 Test Result :

- Application Type : 802.11b/g
- Temperature : 24°C
- Relative Humidity : 53%
- Test Enginner : Anderson

802.11b

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-7.89	8	Mode 1
06	2437	-8.62	8	Mode 2
11	2462	-8.51	8	Mode 3

802.11g

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-15.72	8	Mode 4
06	2437	-15.92	8	Mode 5
11	2462	-15.75	8	Mode 6

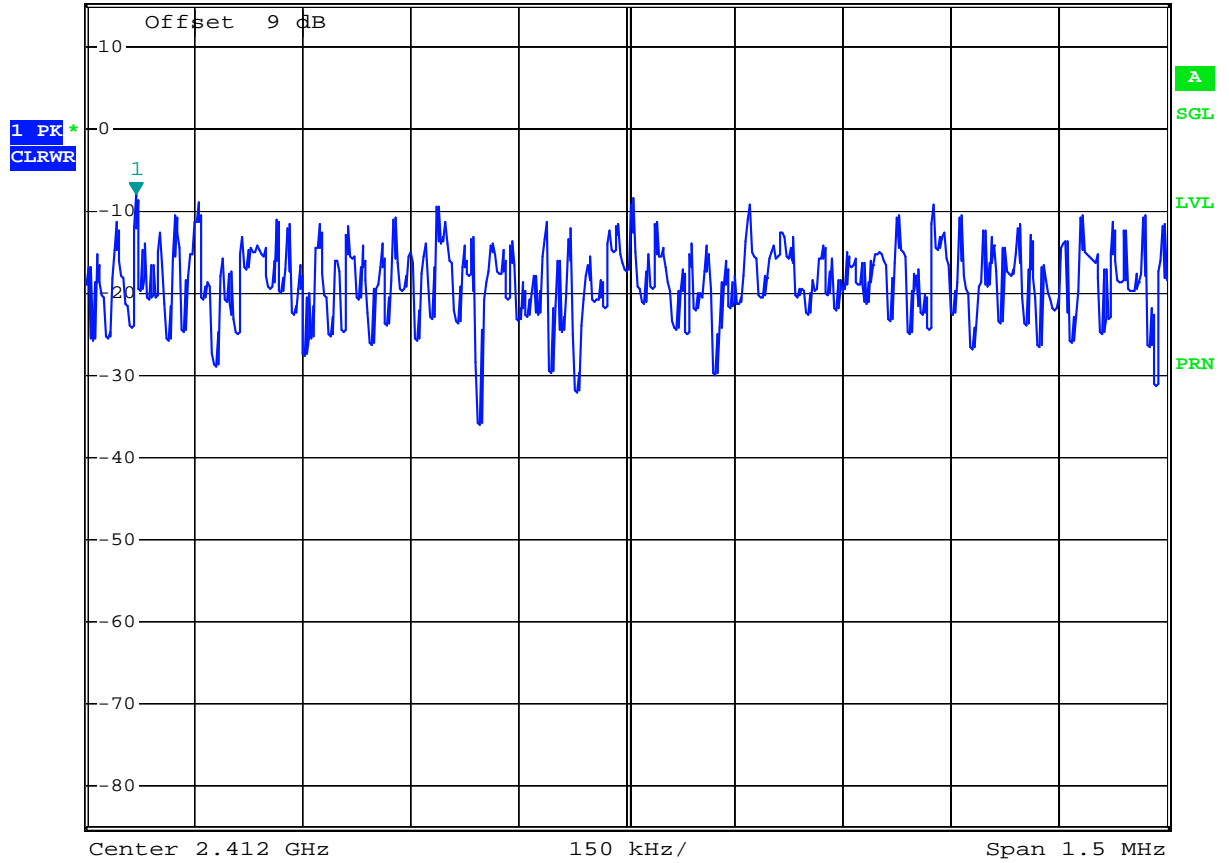


5.3.5 Power Spectral Density

Mode 1



Ref 15 dBm *Att 20 dB *RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -7.89 dBm
*SWT 500 s 2.411319000 GHz



Date: 24.APR.2006 20:20:04



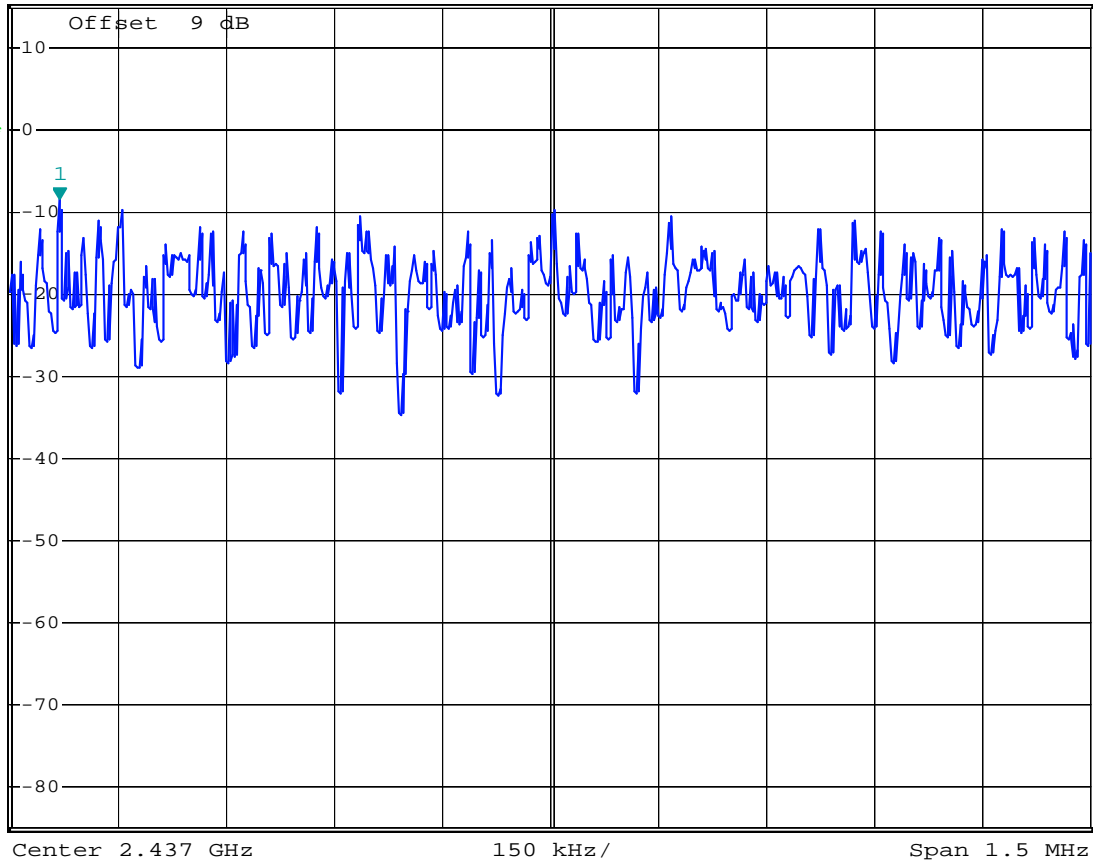
Mode 2



*RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -8.62 dBm
*SWT 500 s 2.436319000 GHz

Ref 15 dBm

*Att 20 dB



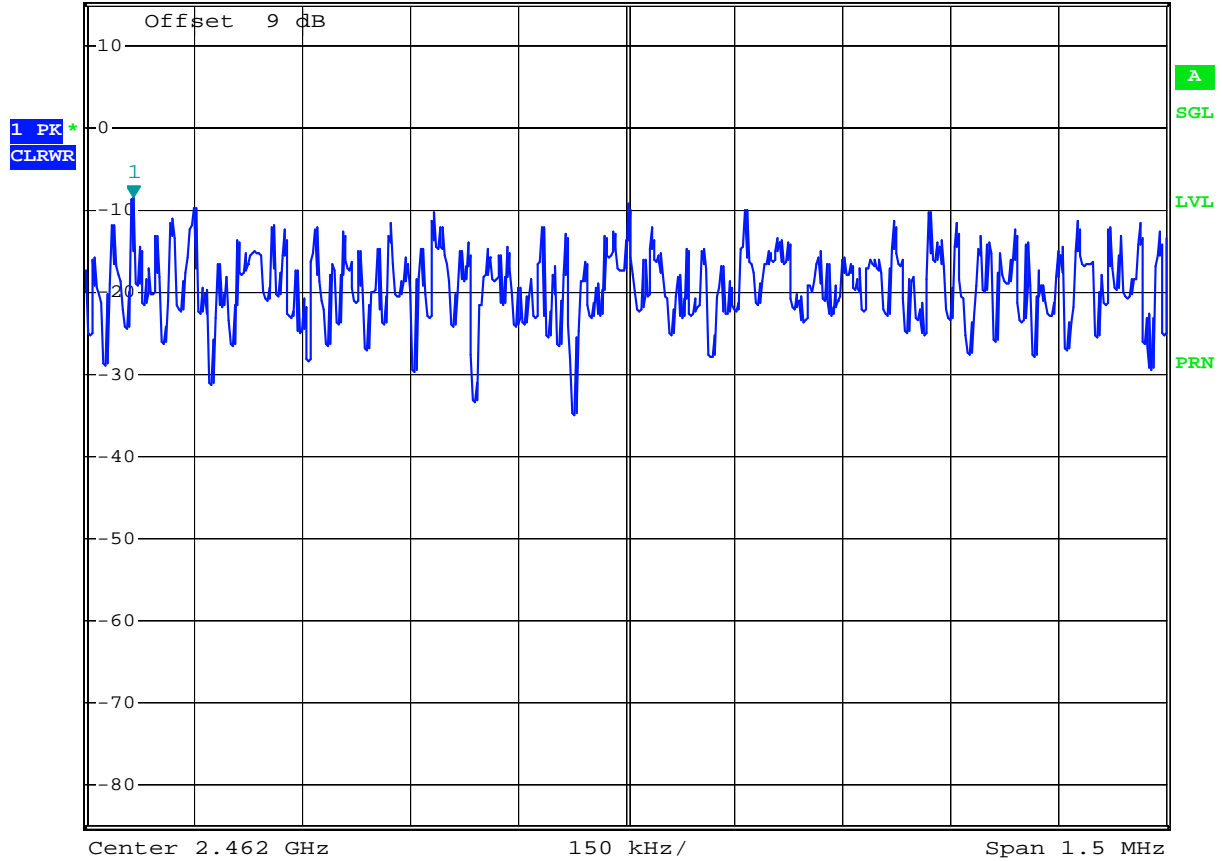
Date: 24.APR.2006 20:29:52



Mode 3



Ref 15 dBm *Att 20 dB *RBW 3 kHz Marker 1 [T1]
*VBW 30 kHz -8.51 dBm
*SWT 500 s 2.461316000 GHz



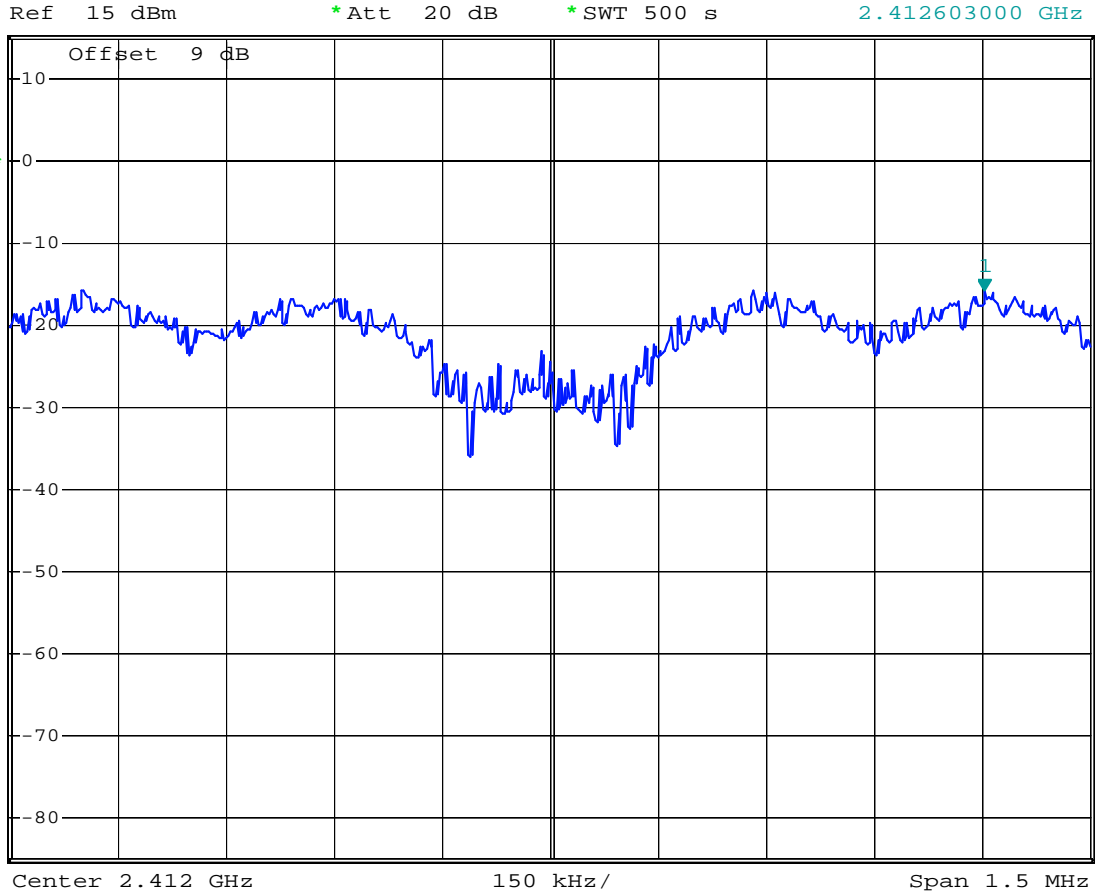
Date: 24.APR.2006 20:40:10



Mode 4



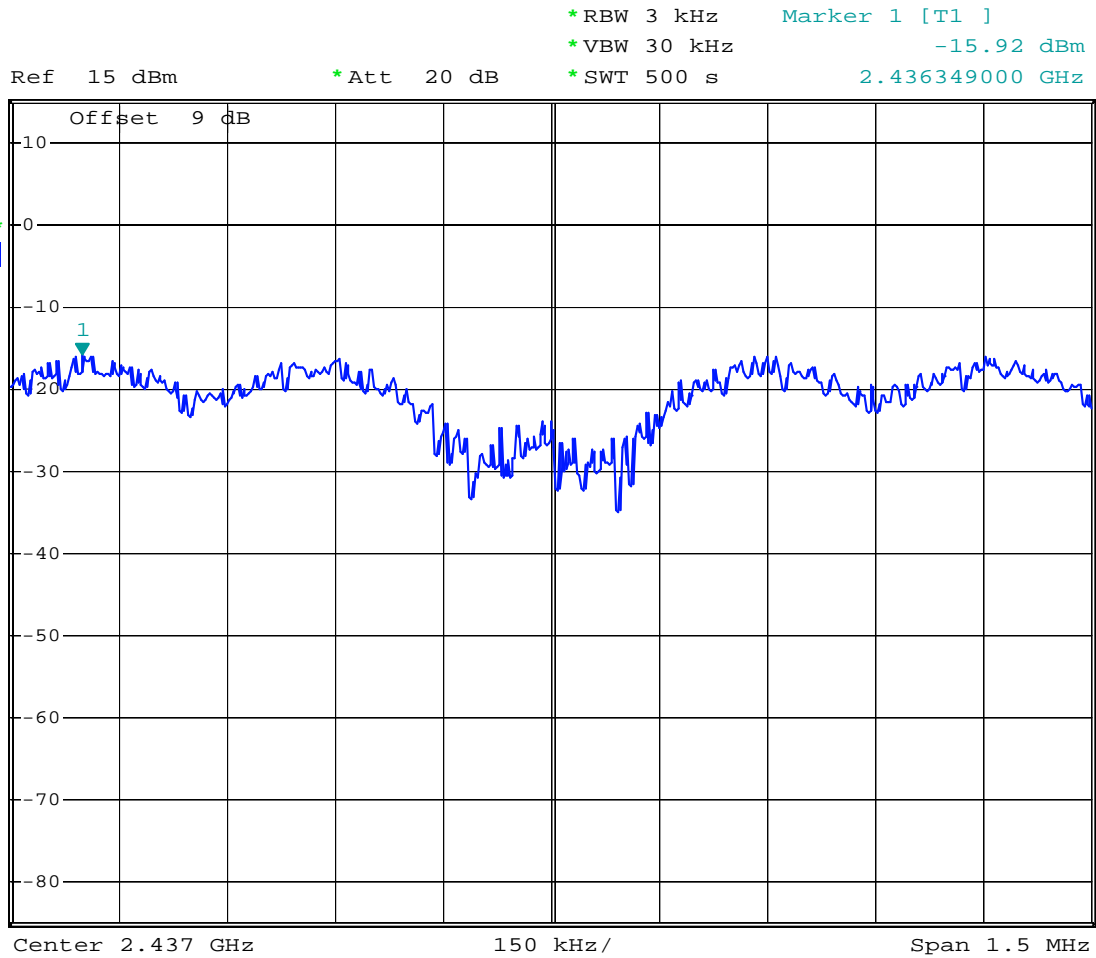
*RBW 3 kHz Marker 1 [T1]
 *VBW 30 kHz -15.72 dBm
 *SWT 500 s 2.412603000 GHz



Date: 24.APR.2006 18:56:59



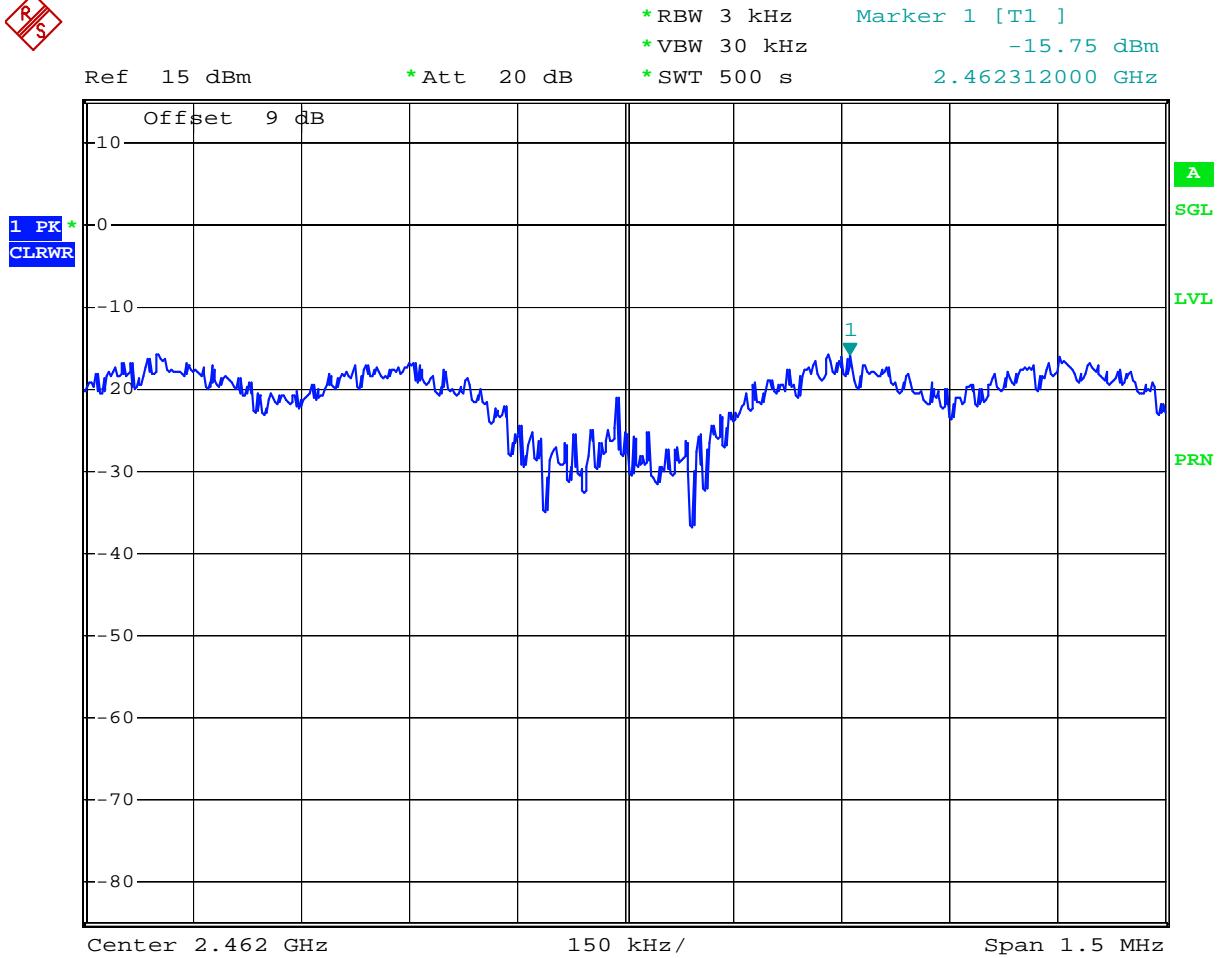
Mode 5



Date: 24.APR.2006 19:07:31



Mode 6



Date: 24.APR.2006 19:26:00



5.4 Band Edges Measurement

5.4.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.4.2 Test Procedure :

- 1. The transmitter output was connected to the spectrum analyzer via a low lose cable.
2. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100 kHz bandwidth from band edge.
3. The band edges was measured and recorded.

5.4.3 Test Result :

- Application Type : WLAN 802.11b/g and BT
Temperature : 24°C
Relative Humidity : 53%
Test Enginner : Anderson
Test Result in WLAN lower band (Channel 1) : PASS
Test Result in WLAN higher band (Channel 11) : PASS
Test Result in BT lower band (Channel 00) : PASS
Test Result in BT higher band (Channel 78) : PASS

5.4.4 Note on Band Edge Emission :

WLAN 802.11b

CH01 (Horizontal)

Table with 11 columns: Frequency, Level, Over Limit, Limit Line, Read Level, Antenna Factor, Cable Loss, Preamp Factor, Ant Pos, Table Pos, Remark. Rows for 2390.00 MHz showing Peak and Average values.

CH01 (Vertical)

Table with 11 columns: Frequency, Level, Over Limit, Limit Line, Read Level, Antenna Factor, Cable Loss, Preamp Factor, Ant Pos, Table Pos, Remark. Rows for 2390.00 MHz showing Peak and Average values.



CH11 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	57.69	-16.31	74.00	58.55	30.29	4.36	35.51	100	1	Peak
2483.50	45.05	-8.95	54.00	45.91	30.29	4.36	35.51	100	112	Average

CH11 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	56.44	-17.56	74.00	57.30	30.29	4.36	35.51	100	1	Peak
2483.50	46.25	-7.75	54.00	47.11	30.29	4.36	35.51	157	258	Average

➤WLAN 802.11g

CH01 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390.00	70.82	-3.18	74.00	71.76	30.26	4.26	35.46	100	347	Peak
2390.00	53.03	-0.97	54.00	53.97	30.26	4.26	35.46	126	164	Average

CH01 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390.00	66.45	-7.55	74.00	67.39	30.26	4.26	35.46	100	360	Peak
2390.00	45.41	-8.59	54.00	46.35	30.26	4.26	35.46	100	54	Average

CH11 (Horizontal)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.50	67.93	-6.07	74.00	68.79	30.29	4.36	35.51	100	16	Peak
2483.50	53.18	-0.82	54.00	54.04	30.29	4.36	35.51	100	16	Average



CH11 (Vertical)

Frequency (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.00	54.01	-19.99	74.00	54.87	30.29	4.36	35.51	100	2	Peak
2484.00	44.53	-9.47	54.00	45.39	30.29	4.36	35.51	100	109	Average



5.4.5 20dB Band Edge

WLAN 802.11b

CH01

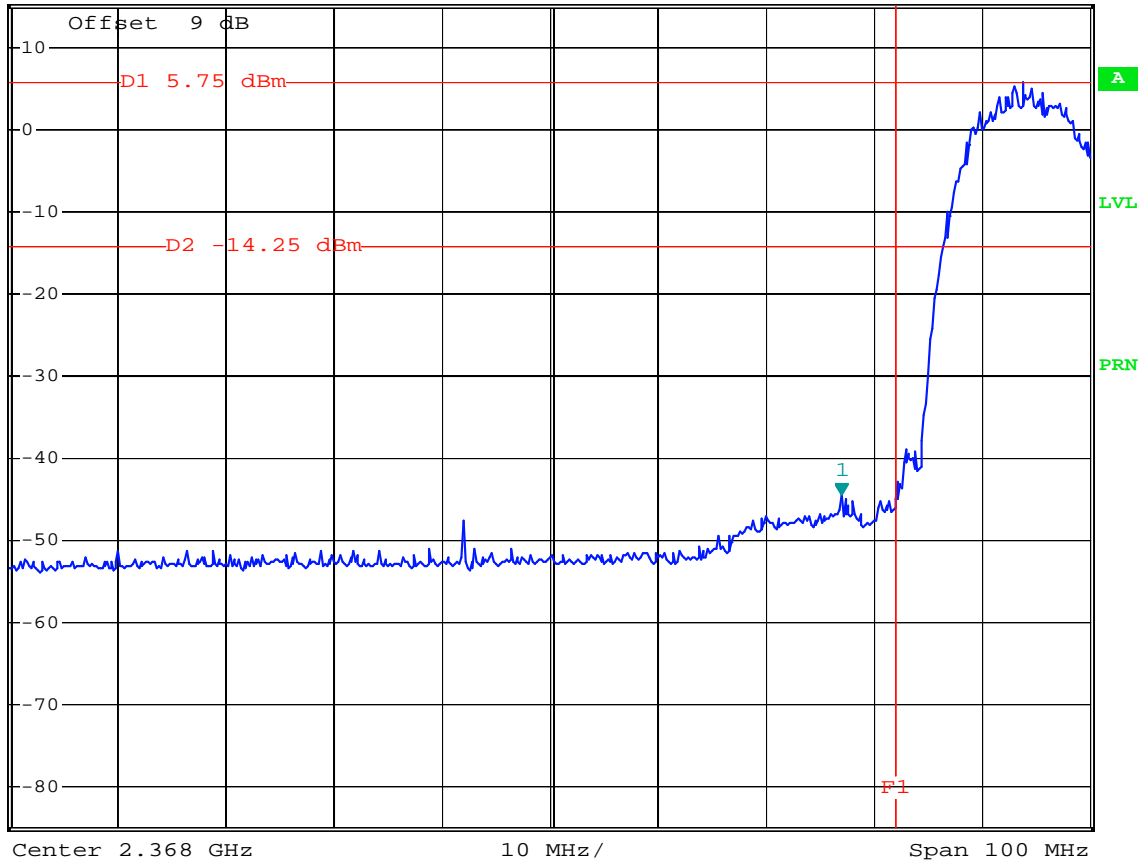


*RBW 100 kHz Marker 1 [T1]
 *VBW 100 kHz -44.48 dBm
 *SWT 500 ms 2.395000000 GHz

Ref 15 dBm

*Att 20 dB

1 PK
MAXH



Date: 24.APR.2006 19:42:04



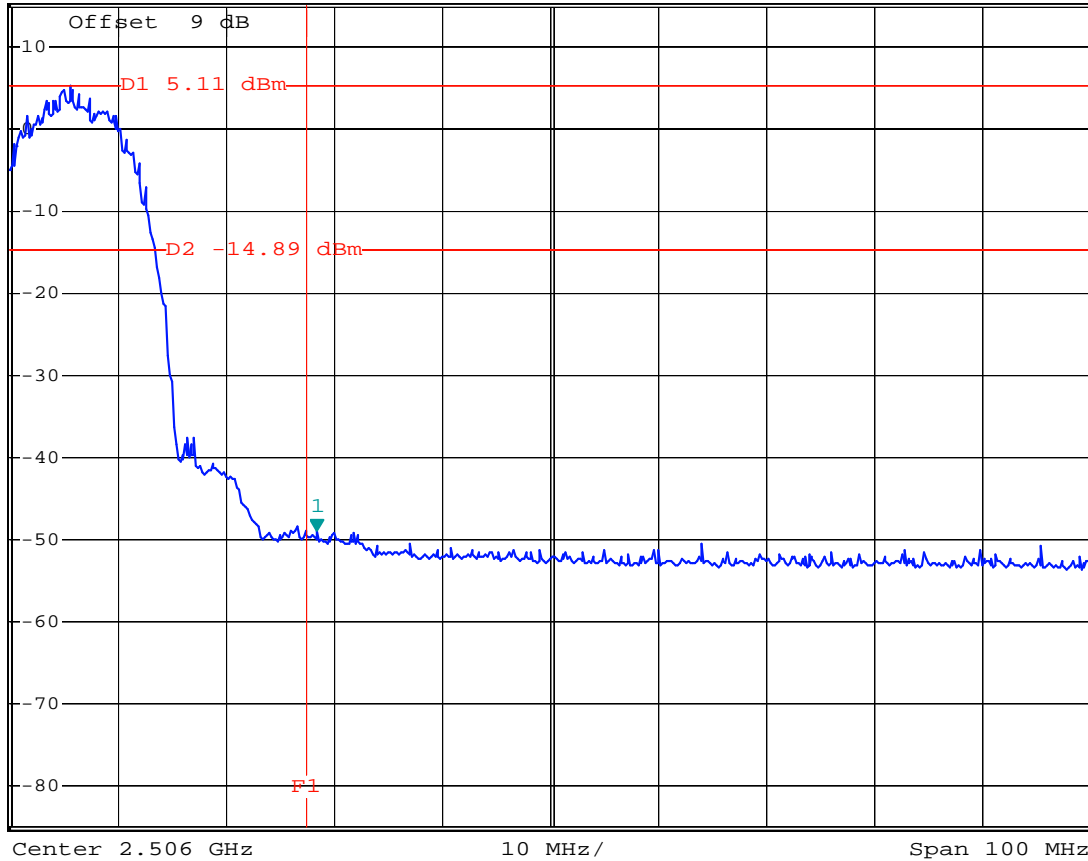
CH11



*RBW 100 kHz Marker 1 [T1]
*VBW 100 kHz -48.99 dBm
*SWT 500 ms 2.484300000 GHz

Ref 15 dBm

*Att 20 dB



Date: 24.APR.2006 19:48:58



WLAN 802.11g

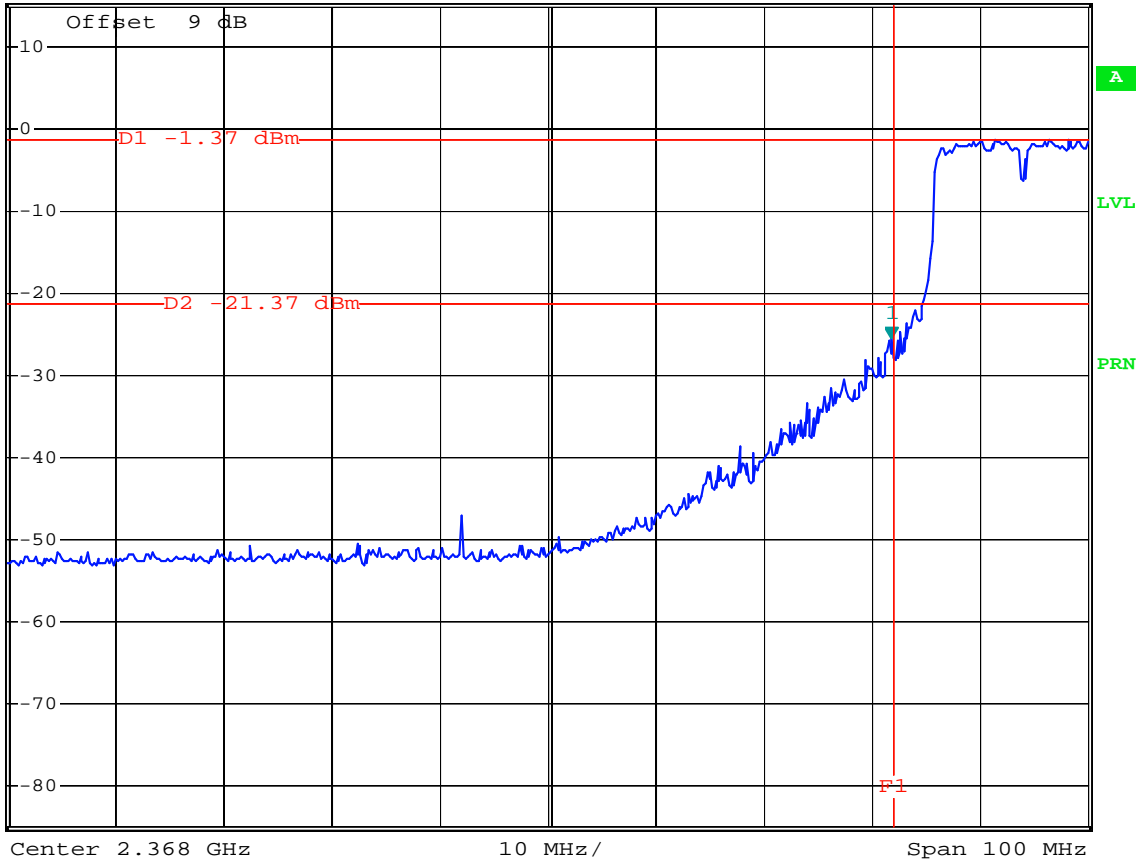
CH01



*RBW 100 kHz Marker 1 [T1]
 *VBW 100 kHz -25.62 dBm
 *SWT 500 ms 2.399800000 GHz

Ref 15 dBm *Att 20 dB

1 PK
 MAXH



Date: 24.APR.2006 19:34:47



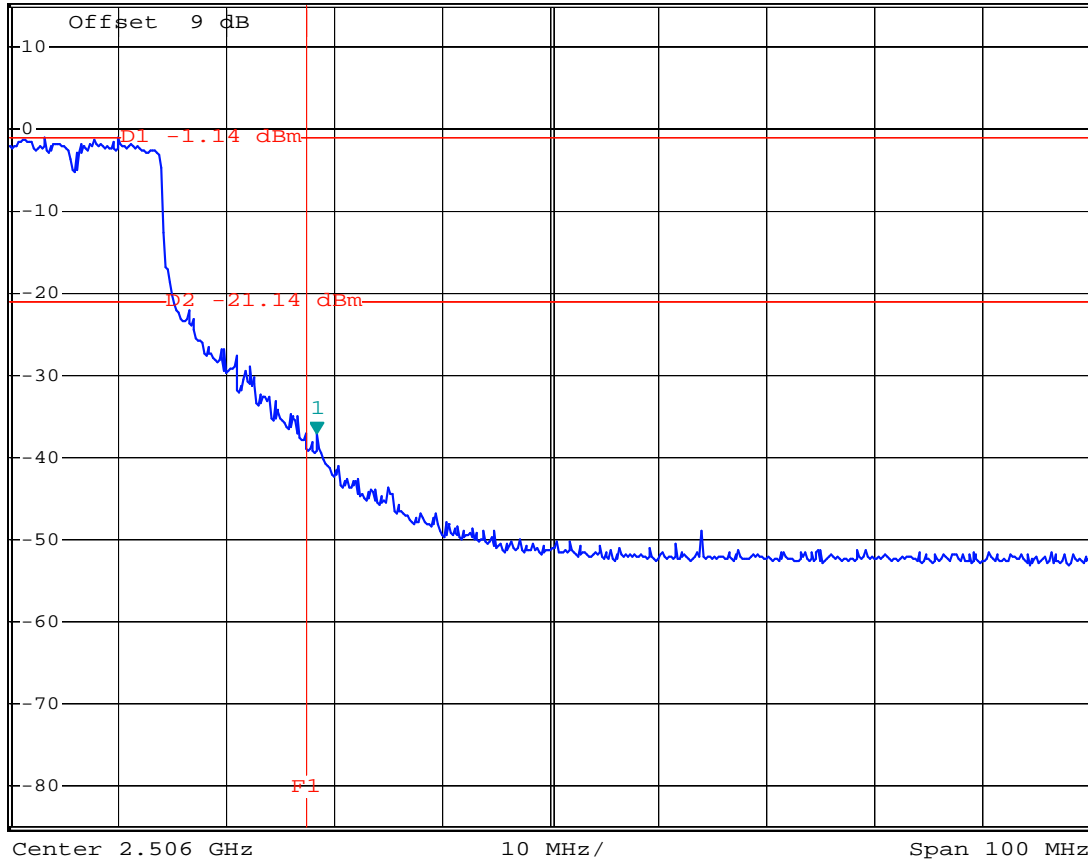
CH11



*RBW 100 kHz Marker 1 [T1]
*VBW 100 kHz -37.18 dBm
*SWT 500 ms 2.484400000 GHz

Ref 15 dBm

*Att 20 dB



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5.5 Peak Output Power Measurement

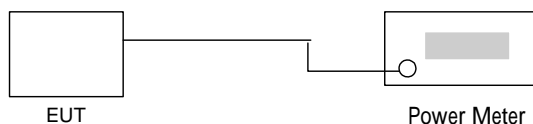
5.9.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.9.2 Test Procedure :

1. The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter for WLAN measurement. The power is equal to the reading level on power meter plus cable loss at the EUT antenna terminal.
2. The antenna port(RF output) of the EUT was connected to the input (RF input) of a spectrum analyzer for BT measurement. The cable loss has been offset before testing.

5.9.3 Test Setup Layout :



5.9.4 Test Result :

- Application Type : WLAN 802.11b/g
- Temperature : 24°C
- Relative Humidity : 53 %
- Test Enginner : Anderson

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	17.8	1W/30 dBm
06	2437	17.3	1W/30 dBm
11	2462	17.2	1W/30 dBm

WLAN 802.11b

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	17.5	1W/30 dBm
06	2437	17.6	1W/30 dBm
11	2462	17.6	1W/30 dBm



5.6 Conducted Emission

5.10.1 Measuring Instruments

As described in chapter 6 of this test Report.

5.10.2 Test Procedures :

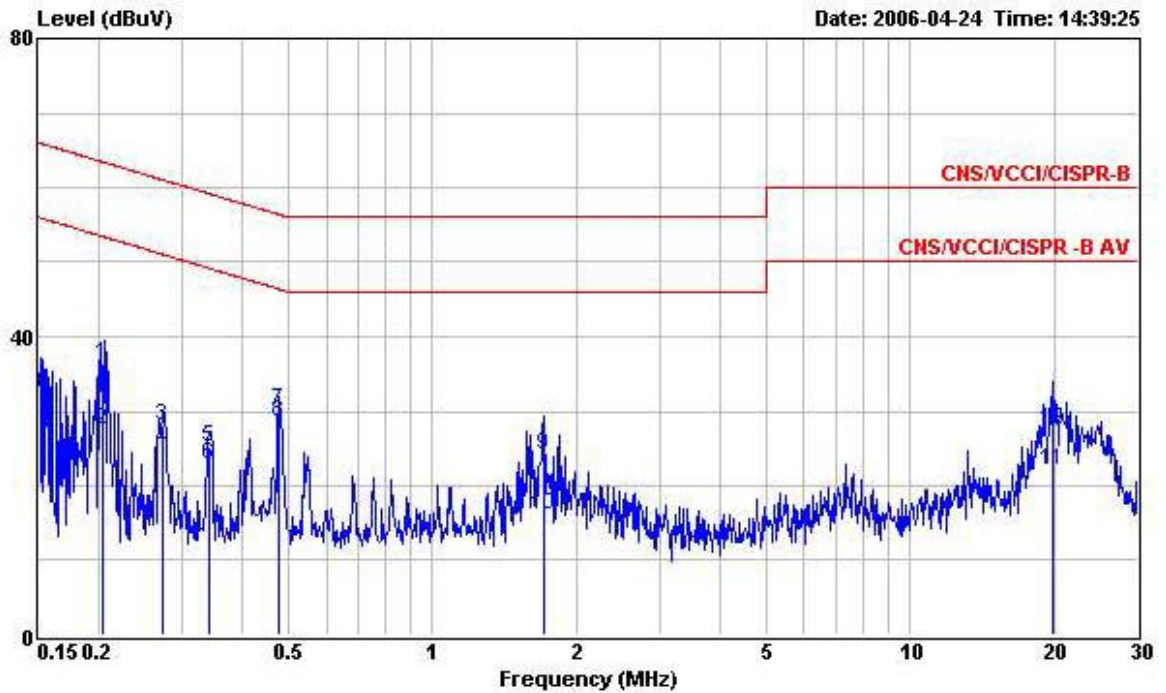
- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of a line impedance stabilization network (LISN).
- c. All the support units are connected to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.



5.10.3 Test Data

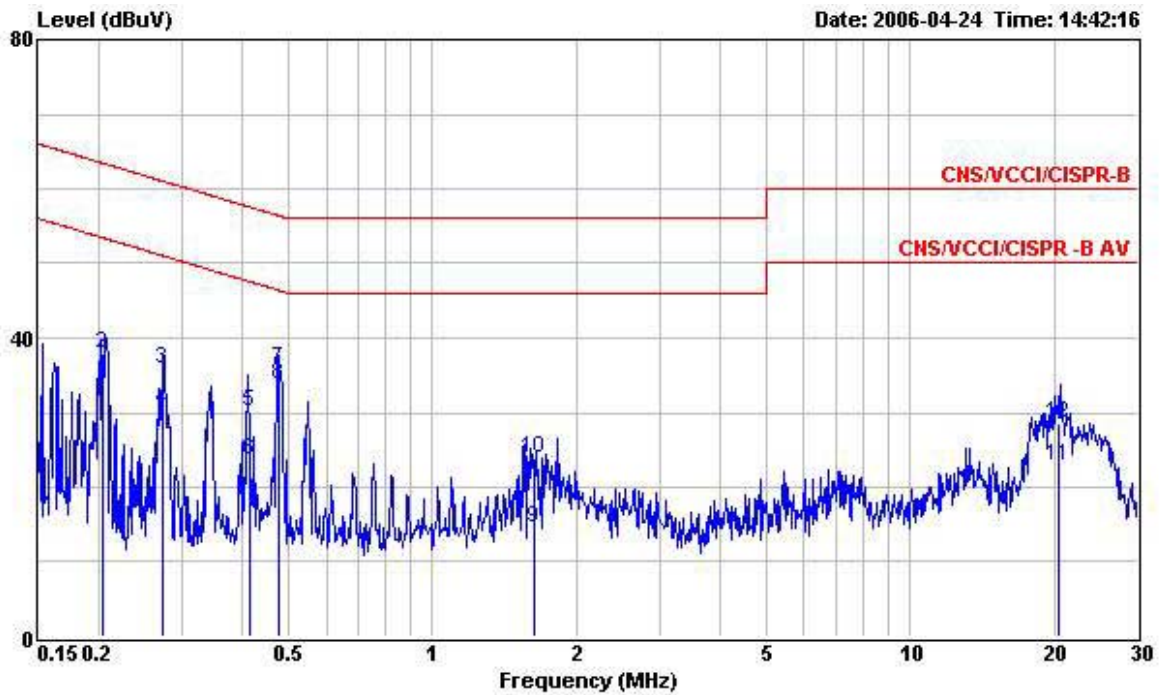
- Temperature : 24 °C
- Relating Humidity : 53 %
- Test Engineer : Anderson
- Test Mode : Mode 1

The test that passed at minimum margin was marked by the frame in the following table.



Site : CO01-HY
 Condition : CNS/WCCI/CISPR-B 2001/004 200505 LINE
 EUT : Wireless 802.11g CF Card
 Power : 120V/60Hz(From Notebook)
 Model : FD641805
 Memo : Wlan Link Mode
 Memo :
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.205	36.39	-27.02	63.41	36.27	0.06	0.06	QP
2	0.205	27.56	-25.85	53.41	27.44	0.06	0.06	Average
3	0.272	28.03	-33.03	61.06	27.90	0.06	0.07	QP
4	0.272	24.90	-26.16	51.06	24.77	0.06	0.07	Average
5	0.342	25.29	-33.87	59.16	25.15	0.06	0.08	QP
6	0.342	22.74	-26.42	49.16	22.60	0.06	0.08	Average
7	0.478	30.01	-26.37	56.38	29.87	0.07	0.07	QP
8	0.478	28.68	-17.70	46.38	28.54	0.07	0.07	Average
9	1.704	24.20	-31.80	56.00	23.99	0.11	0.10	QP
10	1.704	15.98	-30.02	46.00	15.77	0.11	0.10	Average
11	19.868	22.12	-27.88	50.00	21.63	0.31	0.18	Average
12	19.868	27.60	-32.40	60.00	27.11	0.31	0.18	QP



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200505 NEUTRAL
 EUT : Wireless 802.11g CF Card
 Power : 120V/60Hz(From Notebook)
 Model : FD641805
 Memo : Wlan Link Mode
 Memo :
 Memo :

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.205	29.76	-23.65	53.41	29.59	0.11	0.06	Average
2	0.205	37.97	-25.44	63.41	37.80	0.11	0.06	QP
3	0.273	35.92	-25.11	61.03	35.74	0.11	0.07	QP
4	0.273	30.36	-20.67	51.03	30.18	0.11	0.07	Average
5	0.413	30.20	-27.39	57.59	30.01	0.11	0.08	QP
6	0.413	23.55	-24.04	47.59	23.36	0.11	0.08	Average
7	0.477	35.72	-20.67	56.39	35.52	0.13	0.07	QP
8	0.477	33.69	-12.70	46.39	33.49	0.13	0.07	Average
9	1.638	14.56	-31.44	46.00	14.23	0.23	0.10	Average
10	1.638	23.84	-32.16	56.00	23.51	0.23	0.10	QP
11	20.470	22.81	-27.19	50.00	22.19	0.44	0.18	Average
12	20.470	28.54	-31.46	60.00	27.92	0.44	0.18	QP



5.7 Radiated Emission Measurement

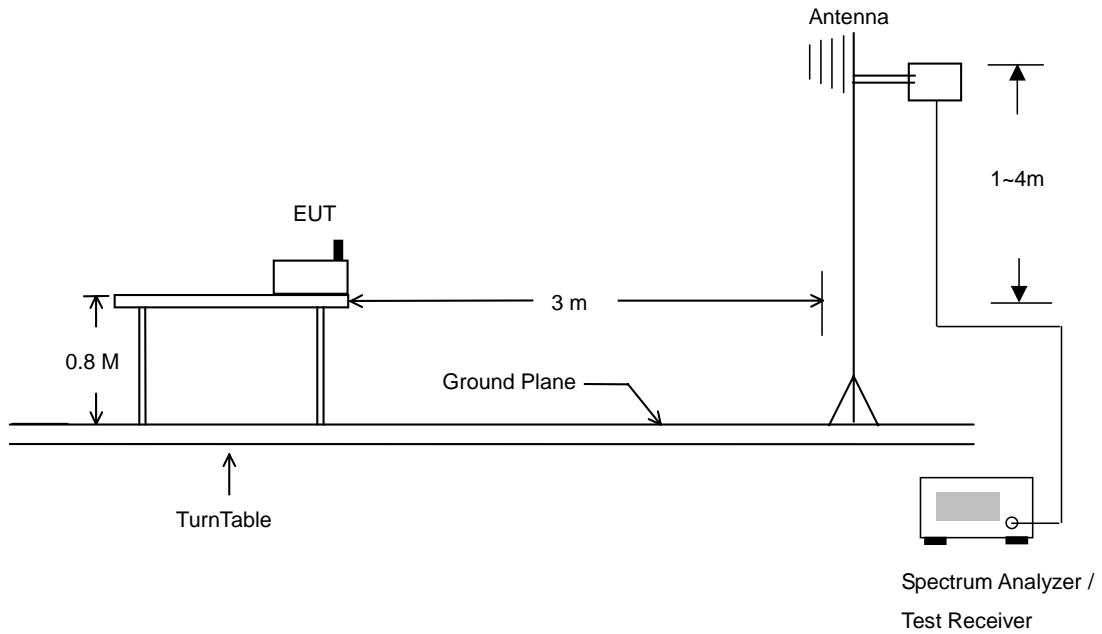
5.11.1 Measuring Instruments

As described in chapter 6 of this Report.

5.11.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- e. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. For testing below 1GHz, If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

5.11.3 Typical Test Setup Layout of Radiated Emission

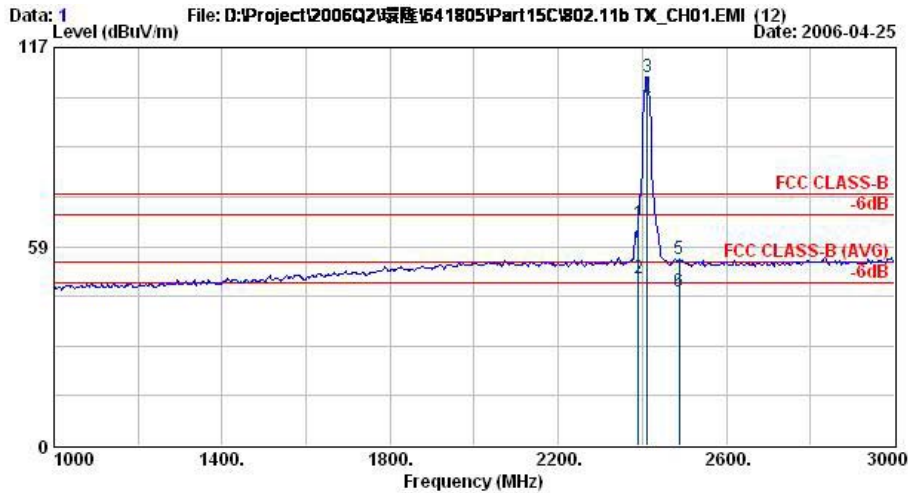




5.11.4 Test Data

- Temperature : 24°C
- Relating Humidity : 53%
- Test Enginner : Anderson
- Test Mode : Mode 1
- Polarization : Horizontal

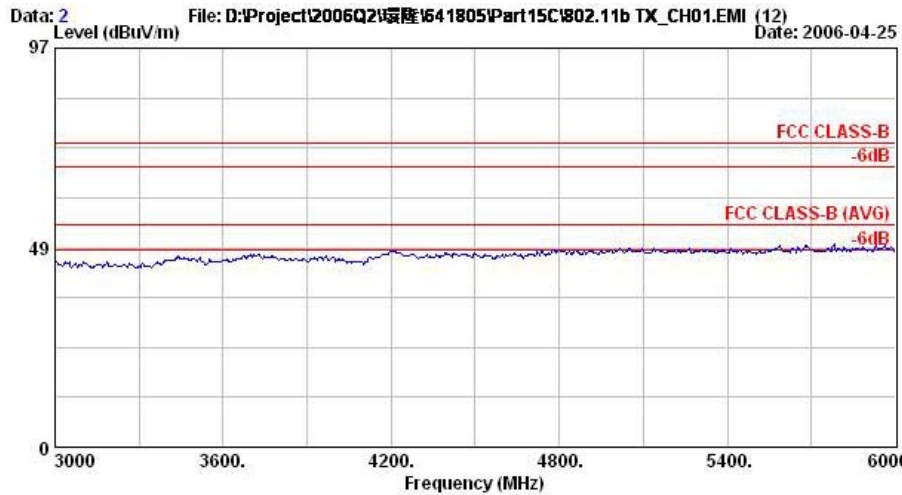
The test that passed at minimum margin was marked by the frame in the following table.



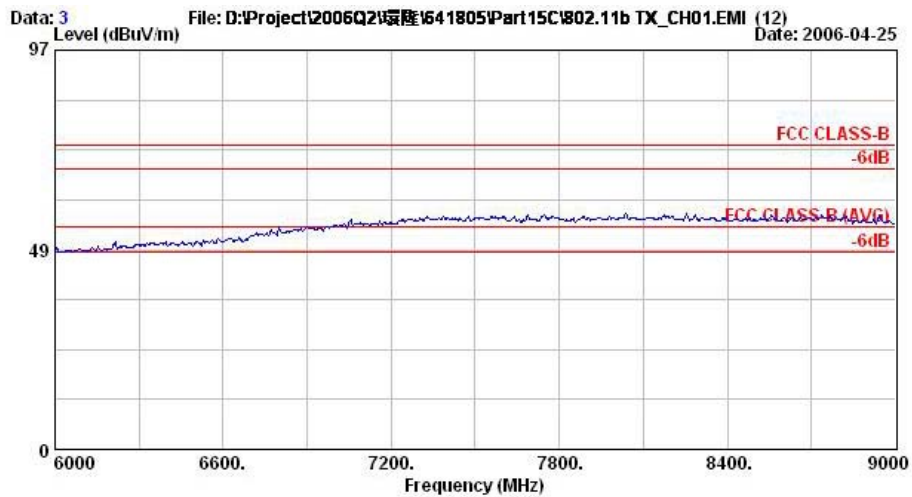
Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH01,2412MHz
 Power : 16

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2390.00	65.44	-8.56	74.00	66.16	30.48	4.26	35.46	100	2	Peak
2 @	2390.00	49.35	-4.65	54.00	50.06	30.48	4.26	35.46	100	110	Average
3 @	2412.00	108.16			108.88	30.47	4.26	35.46	100	2	Peak
4 @	2412.00	101.28			102.00	30.47	4.26	35.46	100	110	Average
5 @	2488.00	54.70	-19.30	74.00	55.45	30.40	4.36	35.51	100	2	Peak
6 @	2488.00	45.25	-8.75	54.00	46.00	30.40	4.36	35.51	100	110	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH01,2412MHz
Power : 16

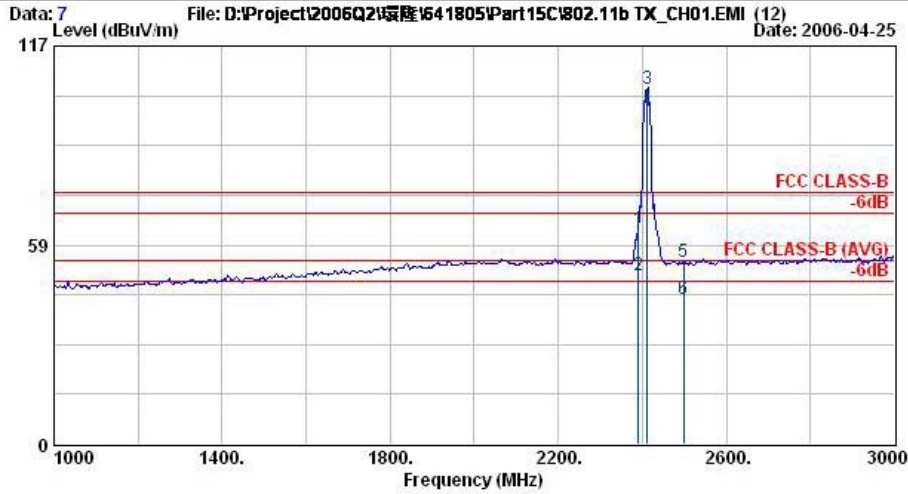


Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH01,2412MHz
Power : 16



- Polarization : Vertical

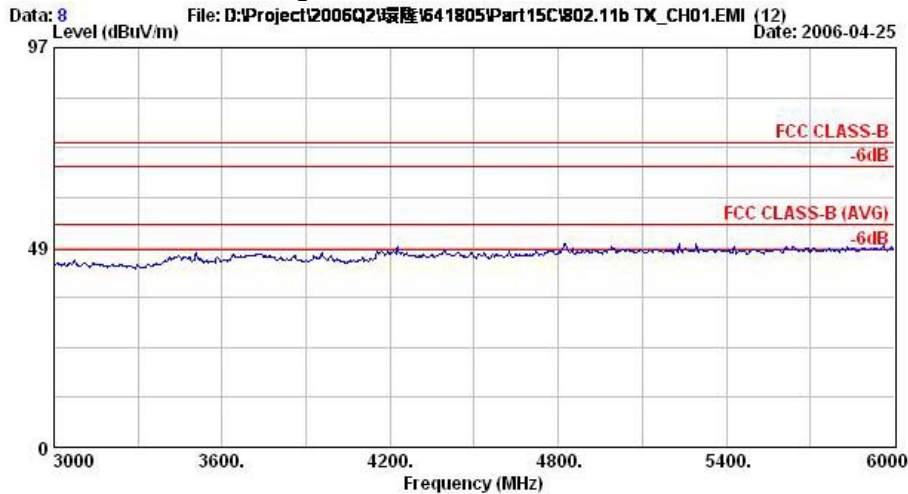
The test that passed at minimum margin was marked by the frame in the following table.



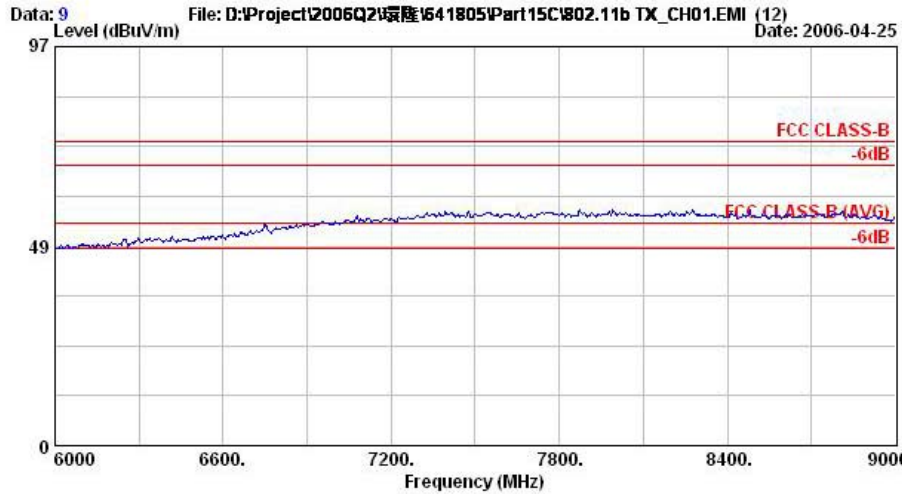
Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH01,2412MHz
 Power : 16

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2390.00	63.22	-10.78	74.00	64.15	30.26	4.26	35.46	100	1	Peak
2 @	2390.00	49.37	-4.63	54.00	50.31	30.26	4.26	35.46	173	216	Average
3 @	2412.00	104.28			105.21	30.27	4.26	35.46	100	1	Peak
4 @	2412.00	97.70			98.63	30.27	4.26	35.46	173	216	Average
5 @	2498.00	53.48	-20.52	74.00	54.32	30.30	4.39	35.53	100	1	Peak
6 @	2498.00	42.64	-11.36	54.00	43.48	30.30	4.39	35.53	173	216	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH01,2412MHz
 Power : 16

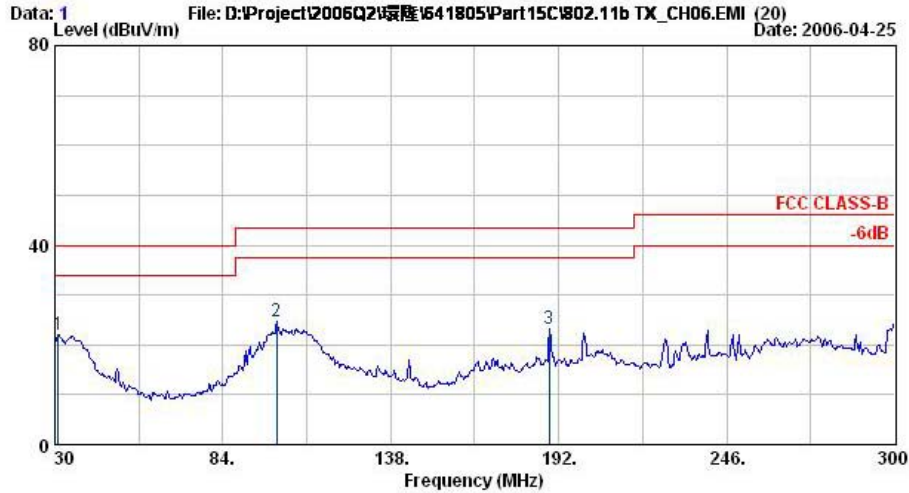


Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH01,2412MHz
Power : 16



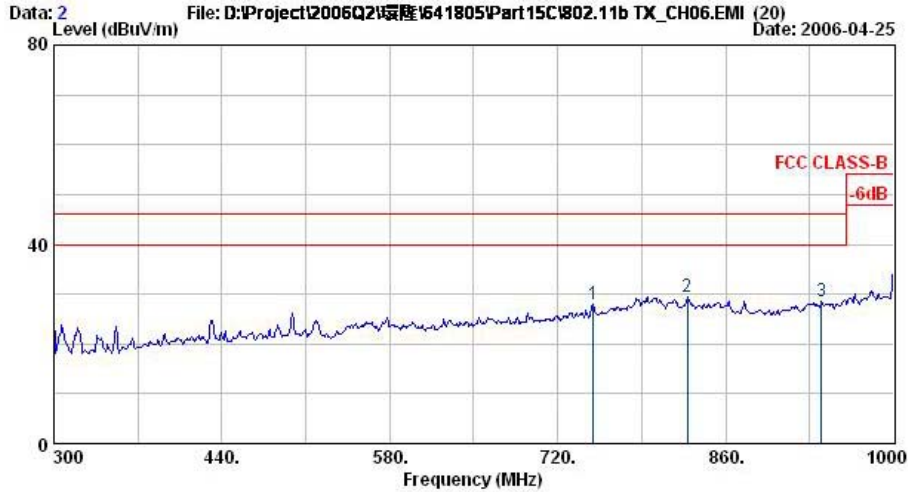
- Test Mode : Mode 2
- Polarization : Horizontal

The test that passed at minimum margin was marked by the frame in the following table.



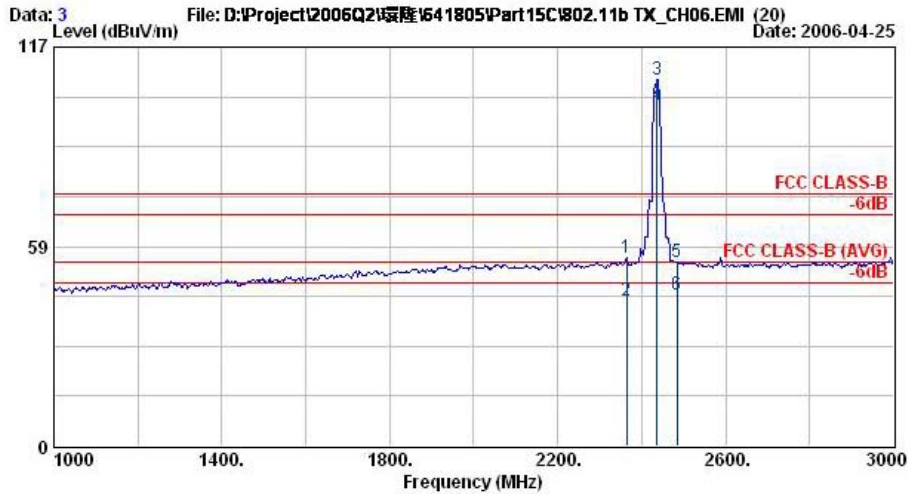
Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH06,2437MHz
 Power : 16

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	Loss	Factor	Pos	Pos	
						dB	dB	cm	deg	
1	31.08	22.11	-17.89	40.00	34.30	0.93	31.52	400	0	Peak
2	101.28	24.64	-18.86	43.50	43.71	1.65	31.29	400	0	Peak
3	189.03	23.22	-20.28	43.50	42.25	2.59	31.09	400	0	Peak



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH06,2437MHz
 Power : 16

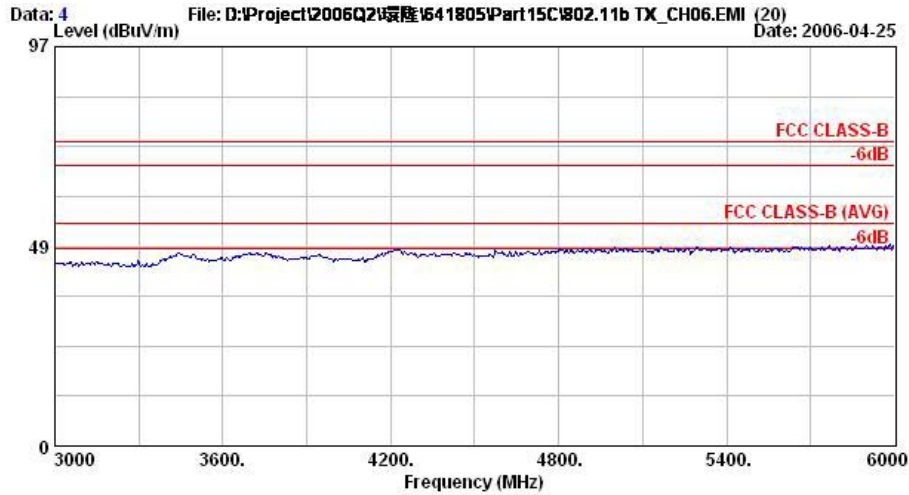
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	749.40	28.08	-17.92	46.00	33.22	20.46	5.11	30.71	100	0	Peak
2	827.80	29.49	-16.51	46.00	33.04	21.37	5.53	30.44	112	207	Peak
3	939.80	28.69	-17.31	46.00	31.65	21.15	6.06	30.16	100	0	Peak



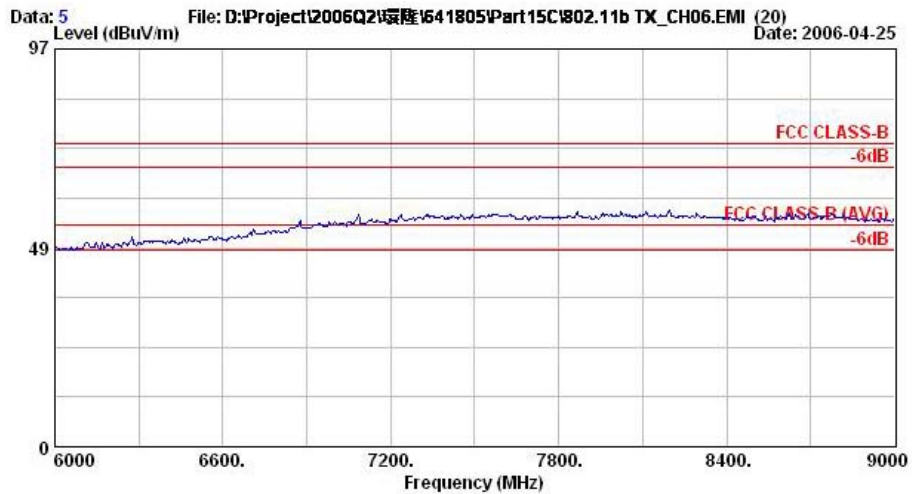
Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH06,2437MHz
 Power : 16

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2364.00	55.33	-18.67	74.00	56.30	30.24	4.20	35.42	100	2	Peak
2	2364.00	42.79	-11.21	54.00	43.77	30.24	4.20	35.42	100	109	Average
3 X	2437.00	107.28			108.18	30.28	4.29	35.47	100	2	Peak
4 @	2437.00	100.00			100.90	30.28	4.29	35.47	100	109	Average
5	2484.00	54.01	-19.99	74.00	54.87	30.29	4.36	35.51	100	2	Peak
6	2484.00	44.53	-9.47	54.00	45.39	30.29	4.36	35.51	100	109	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH06;2437MHz
Power : 16



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH06;2437MHz
Power : 16



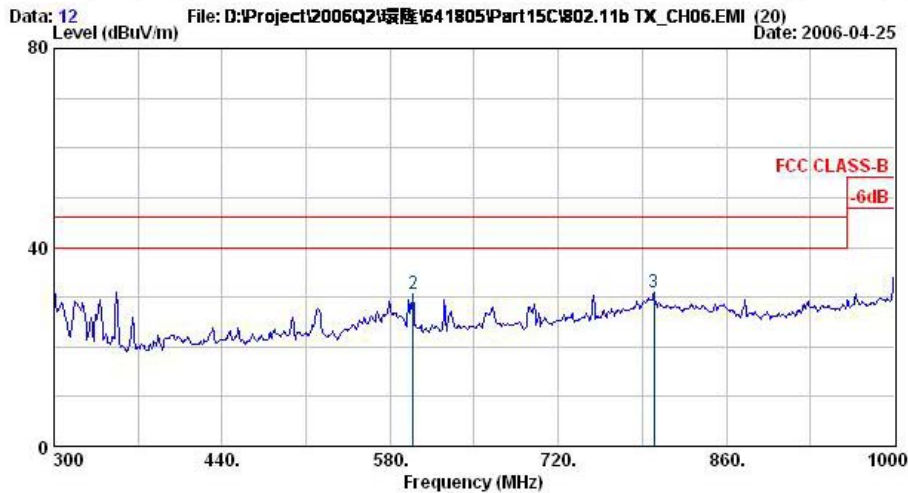
• Polarization : Vertical

The test that passed at minimum margin was marked by the frame in the following table.



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b_TX_CH06,2437MHz
 Power : 16

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	Remark
1	35.94	31.35	-8.65	40.00	45.28	16.62	1.12	31.67	400	0	Peak
2	91.29	35.35	-8.15	43.50	56.00	9.18	1.68	31.52	123	147	Peak
3	101.28	34.30	-9.20	43.50	53.37	10.57	1.65	31.29	400	0	Peak

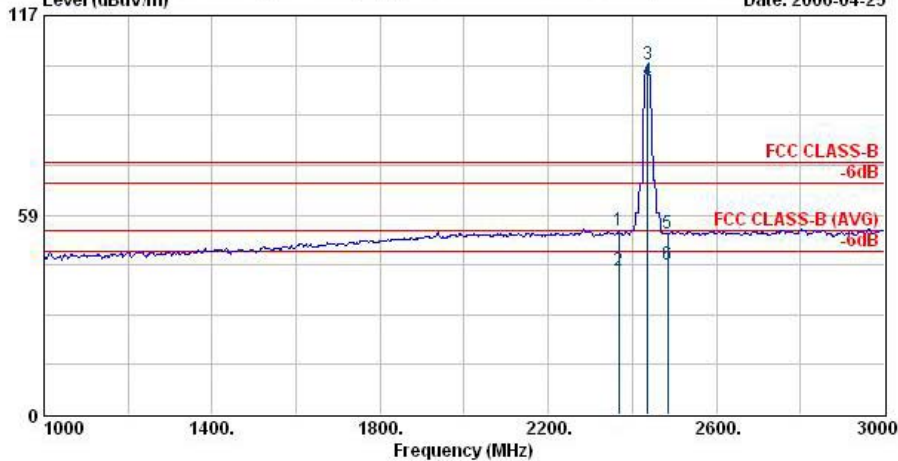


Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b_TX_CH06,2437MHz
 Power : 16

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	Remark
1	300.00	31.71	-14.29	46.00	46.70	12.94	3.30	31.24	100	0	Peak
2	598.90	30.56	-15.44	46.00	38.58	17.97	4.66	30.65	100	0	Peak
3	799.80	31.05	-14.95	46.00	33.65	21.90	5.62	30.12	100	0	Peak



Data: 13 File: D:\Project\2006Q2\項目1641805\Part15C\802.11b_TX_CH06.EMI (20) Date: 2006-04-25
 Level (dBuV/m)

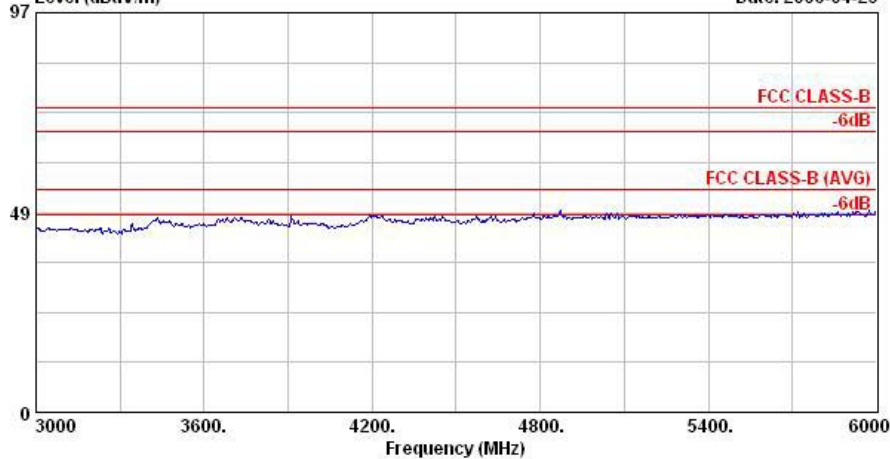


Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH06,2437MHz
 Power : 16

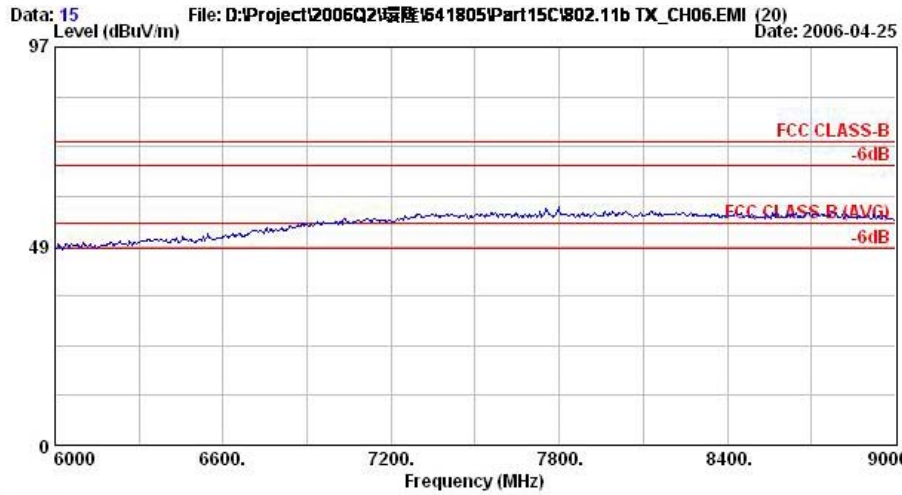
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2368.00	53.91	-20.09	74.00	54.87	30.24	4.23	35.44	100	360	Peak
2	2368.00	42.28	-11.72	54.00	43.24	30.24	4.23	35.44	175	216	Average
3 X	2437.00	102.56			103.47	30.28	4.29	35.47	100	360	Peak
4 @	2437.00	97.79			98.69	30.28	4.29	35.47	175	216	Average
5	2483.50	52.99	-21.01	74.00	53.85	30.29	4.36	35.51	100	360	Peak
6	2483.50	43.95	-10.05	54.00	44.81	30.29	4.36	35.51	175	216	Average

Remark: #3 and #4 Fundamental Signal

Data: 14 File: D:\Project\2006Q2\項目1641805\Part15C\802.11b_TX_CH06.EMI (20) Date: 2006-04-25
 Level (dBuV/m)



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH06,2437MHz
 Power : 16

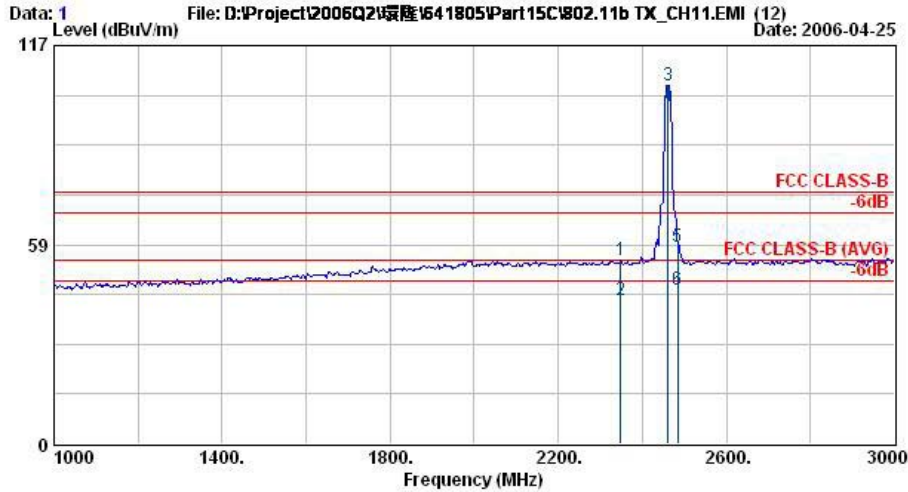


Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH06,2437MHz
Power : 16



- Test Mode : Mode 3
- Polarization : Horizontal

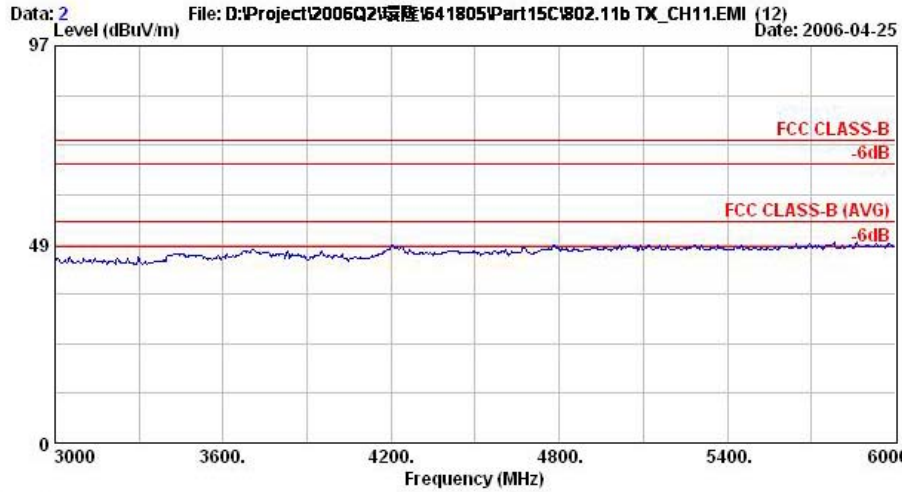
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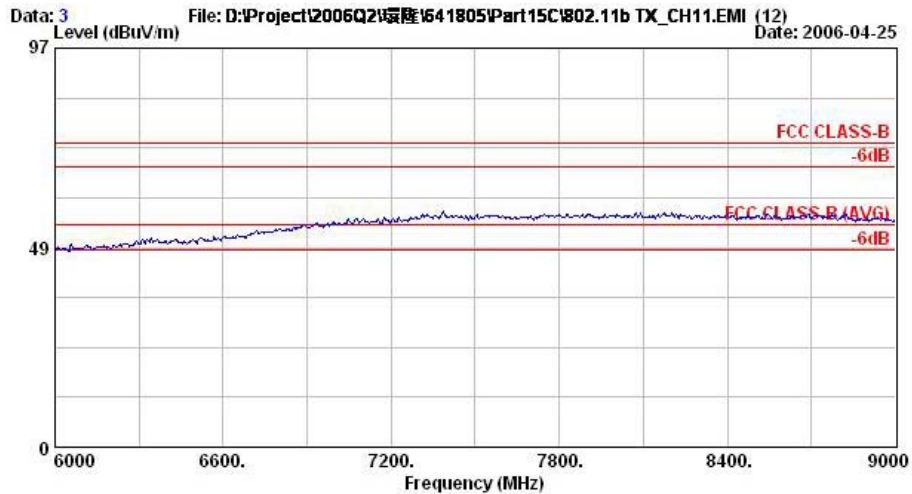
Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b_TX_CH11,2462MHz
 Power : 16

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2348.00	53.84	-20.16	74.00	54.82	30.24	4.20	35.42	100	1	Peak
2	2348.00	42.39	-11.61	54.00	43.37	30.24	4.20	35.42	100	112	Average
3 X	2462.00	105.40			106.28	30.29	4.33	35.49	100	1	Peak
4 @	2462.00	99.32			100.20	30.29	4.33	35.49	100	112	Average
5	2483.50	57.69	-16.31	74.00	58.55	30.29	4.36	35.51	100	1	Peak
6	2483.50	45.05	-8.95	54.00	45.91	30.29	4.36	35.51	100	112	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH11,2462MHz
Power : 16

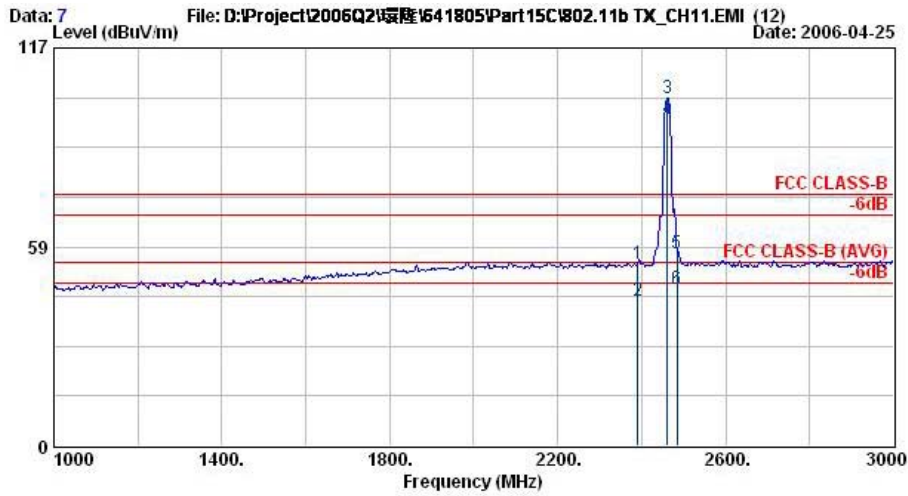


Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH11,2462MHz
Power : 16



- Polarization : Vertical

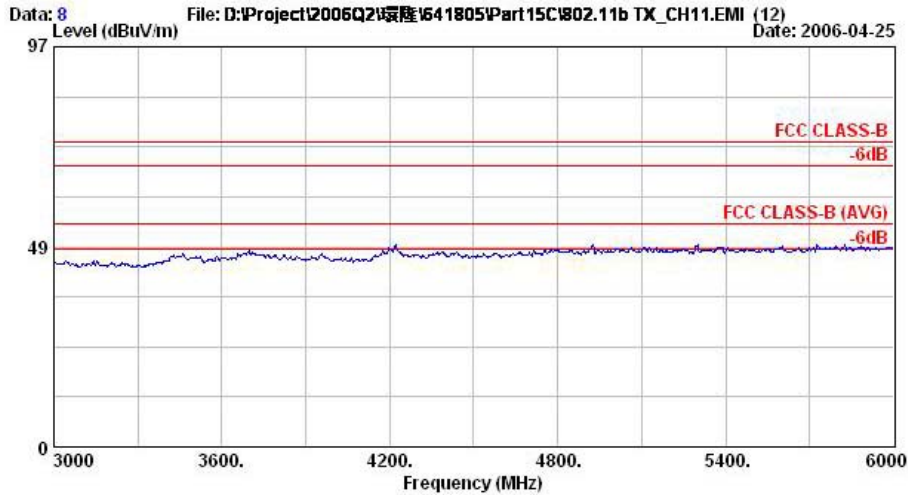
The test that passed at minimum margin was marked by the frame in the following table.



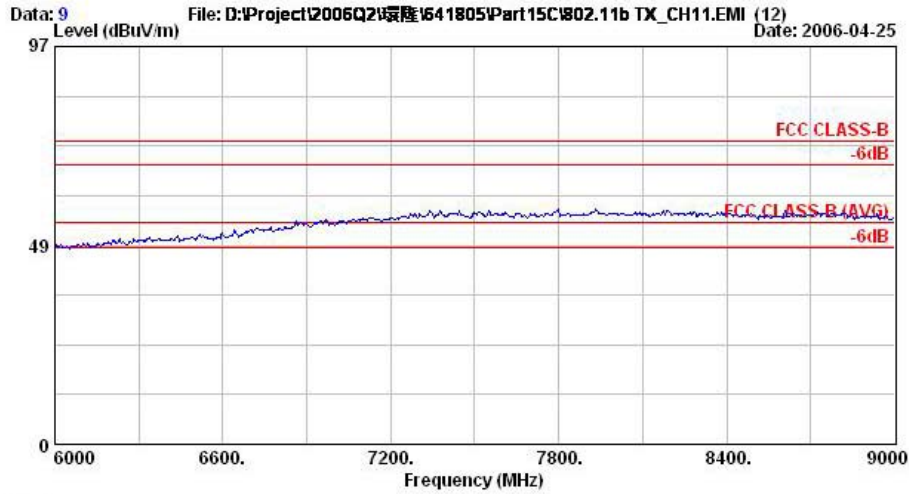
Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH11,2462MHz
 Power : 16

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	53.71	-20.29	74.00	54.64	30.26	4.26	35.46	100	1	Peak
2	2390.00	42.53	-11.47	54.00	43.47	30.26	4.26	35.46	157	258	Average
3 X	2462.00	102.02			102.90	30.29	4.33	35.49	100	1	Peak
4 X	2462.00	96.33			97.21	30.29	4.33	35.49	157	258	Average
5	2483.50	56.44	-17.56	74.00	57.30	30.29	4.36	35.51	100	1	Peak
6	2483.50	46.25	-7.75	54.00	47.11	30.29	4.36	35.51	157	258	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11b TX_CH11,2462MHz
 Power : 16

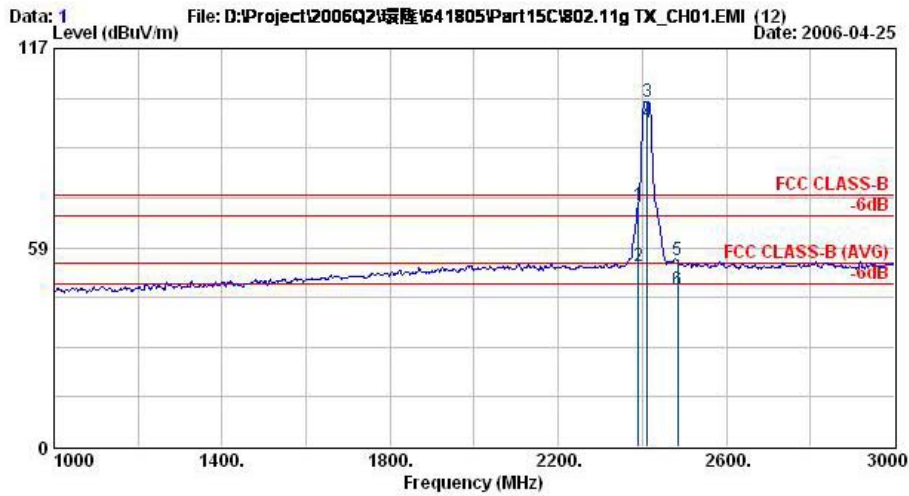


Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11b TX_CH11,2462MHz
Power : 16



- Test Mode : Mode 4
- Polarization : Horizontal

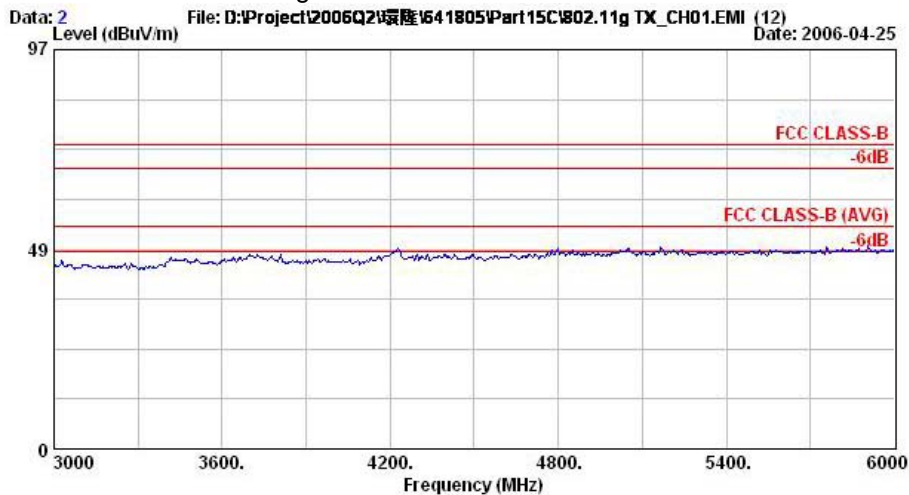
The test that passed at minimum margin was marked by the frame in the following table.



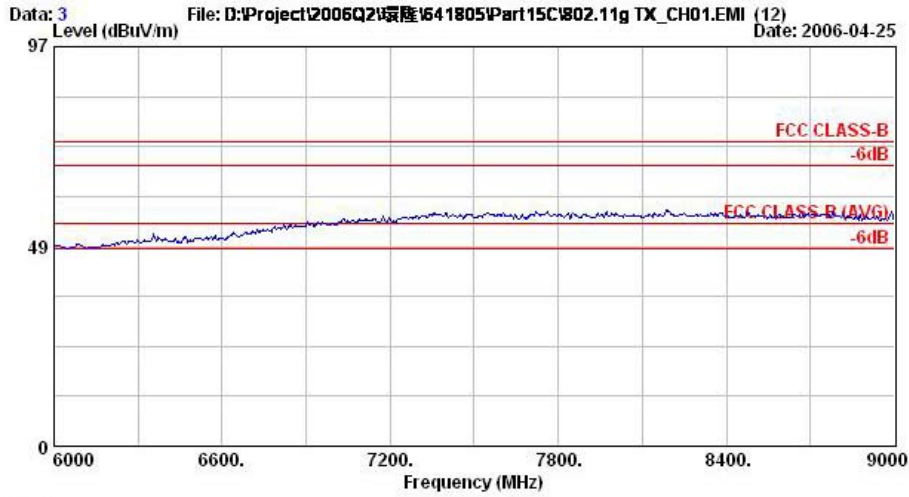
Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g_TX_CH01;2412MHz
 Power : 13

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	70.82	-3.18	74.00	71.76	30.26	4.26	35.46	100	347	Peak
2	2390.00	53.03	-0.97	54.00	53.97	30.26	4.26	35.46	126	164	Average
3	2412.00	101.31			102.24	30.27	4.26	35.46	100	347	Peak
4	2412.00	95.19			96.12	30.27	4.26	35.46	126	164	Average
5	2484.00	54.61	-19.39	74.00	55.46	30.29	4.36	35.51	100	347	Peak
6	2484.00	46.24	-7.76	54.00	47.10	30.29	4.36	35.51	126	164	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g_TX_CH01;2412MHz
 Power : 13

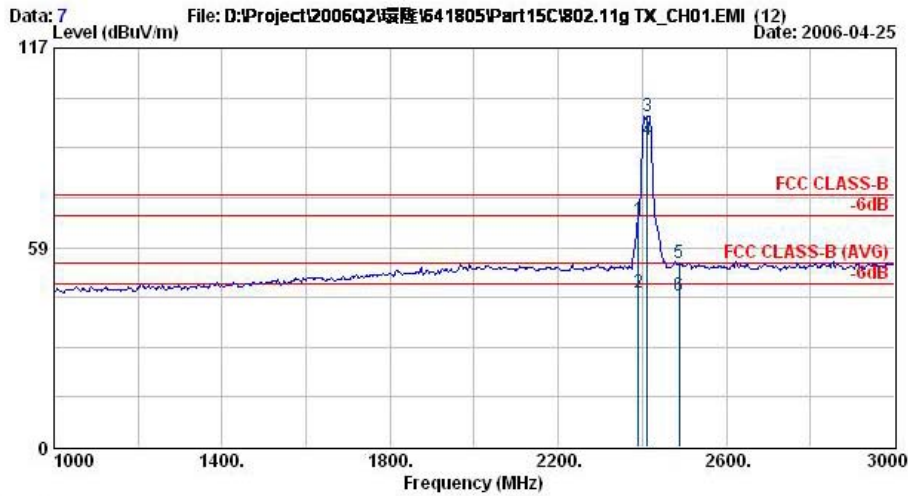


Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11g TX_CH01,2412MHz
Power : 13



- Polarization : Vertical

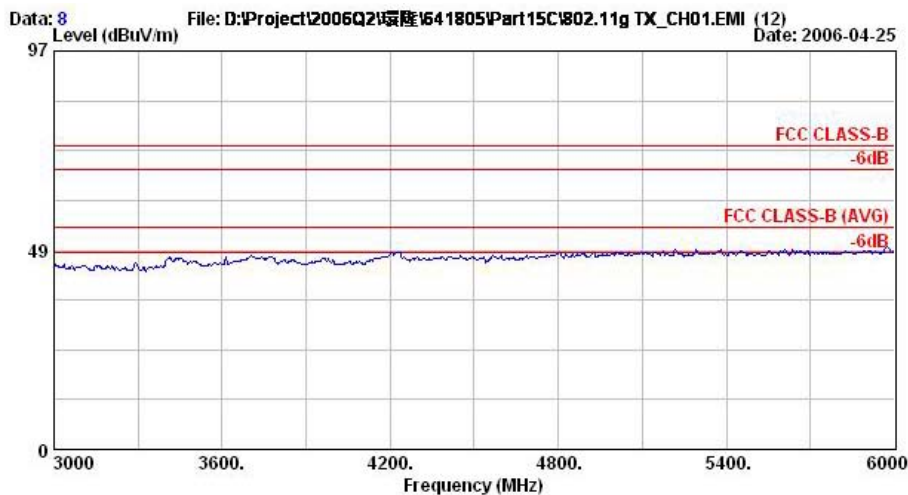
The test that passed at minimum margin was marked by the frame in the following table.



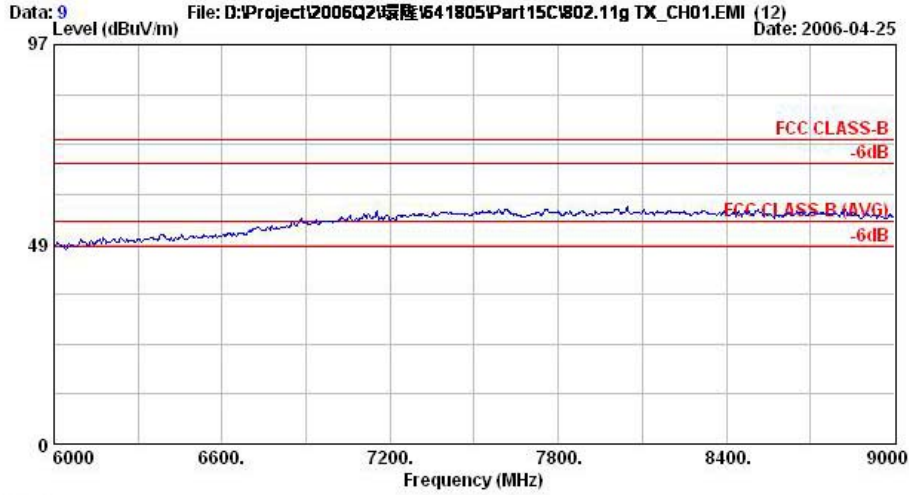
Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g_TX_CH01,2412MHz
 Power :

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	66.45	-7.55	74.00	67.39	30.26	4.26	35.46	100	360	Peak
2	2390.00	45.41	-8.59	54.00	46.35	30.26	4.26	35.46	100	54	Average
3 X	2412.00	96.83			97.76	30.27	4.26	35.46	100	360	Peak
4 X	2412.00	89.98			90.91	30.27	4.26	35.46	100	54	Average
5	2488.00	54.07	-19.93	74.00	54.92	30.30	4.36	35.51	100	360	Peak
6	2488.00	44.50	-9.50	54.00	45.35	30.30	4.36	35.51	100	54	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g_TX_CH01,2412MHz
 Power : 13

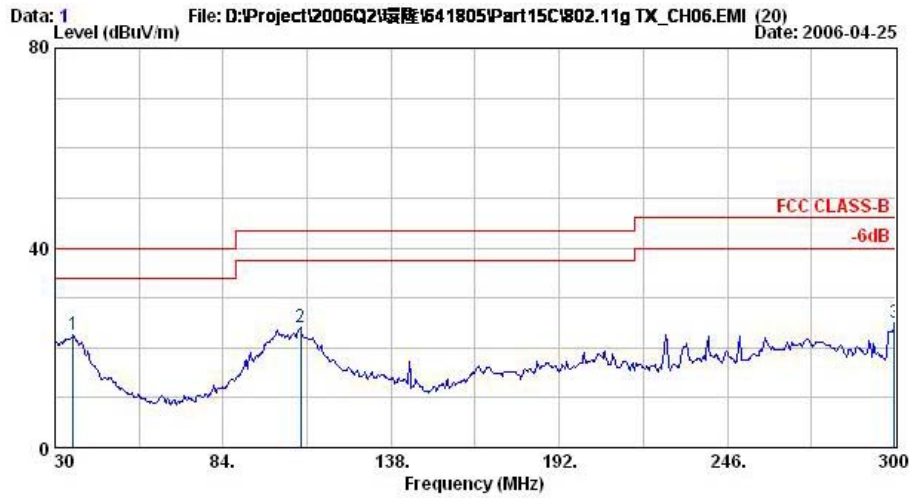


Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11g_TX_CH01_2412MHz
Power : 13



- Test Mode : Mode 5
- Polarization : Horizontal

The test that passed at minimum margin was marked by the frame in the following table.

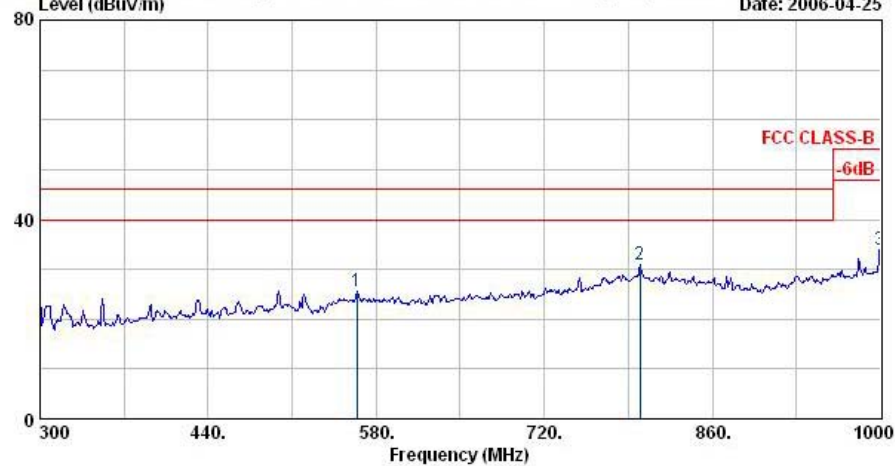


Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH06,2437MHz
 Power : 13

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	35.94	22.64	-17.36	40.00	36.57	16.62	1.12	31.67	400	0	Peak
2	108.84	24.10	-19.40	43.50	41.68	11.48	1.89	30.94	400	0	Peak
3	299.73	24.97	-21.03	46.00	39.96	12.94	3.30	31.24	400	0	Peak



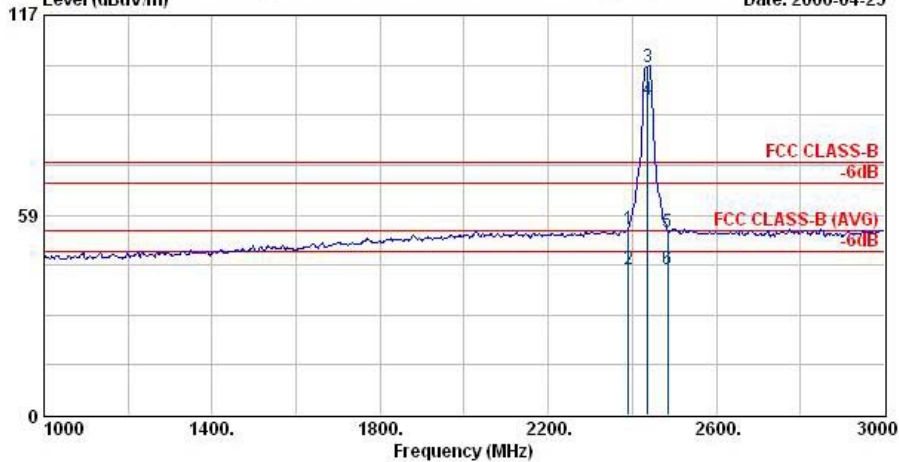
Data: 2 File: D:\Project\2006Q2\瑞隆\641805\Part15C\802.11g TX_CH06.EMI (20) Date: 2006-04-25



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH06,2437MHz
 Power : 13

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	563.90	25.51	-20.49	46.00	33.26	18.49	4.44	30.67	100	0	Peak
2 @	799.80	30.99	-15.01	46.00	33.59	21.90	5.62	30.12	107	286	Peak
3	1000.00	33.98	-20.02	54.00	35.40	22.97	6.24	30.63	100	0	Peak

Data: 3 File: D:\Project\2006Q2\瑞隆\641805\Part15C\802.11g TX_CH06.EMI (20) Date: 2006-04-25



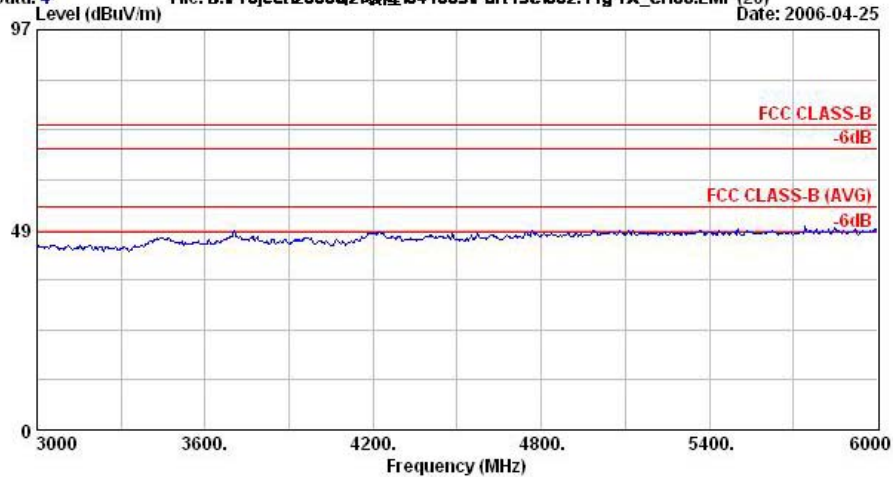
Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH06,2437MHz
 Power : 13

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2390.00	54.54	-19.46	74.00	55.48	30.26	4.26	35.46	100	184	Peak
2 @	2390.00	42.82	-11.18	54.00	43.76	30.26	4.26	35.46	100	81	Average
3 @	2437.00	101.92			102.82	30.28	4.29	35.47	100	184	Peak
4 @	2437.00	92.15			93.05	30.28	4.29	35.47	100	81	Average
5	2483.50	53.69	-20.31	74.00	54.55	30.29	4.36	35.51	100	184	Peak
6 @	2483.50	42.65	-11.35	54.00	43.51	30.29	4.36	35.51	100	81	Average

Remark: #3 and #4 Fundamental Signal

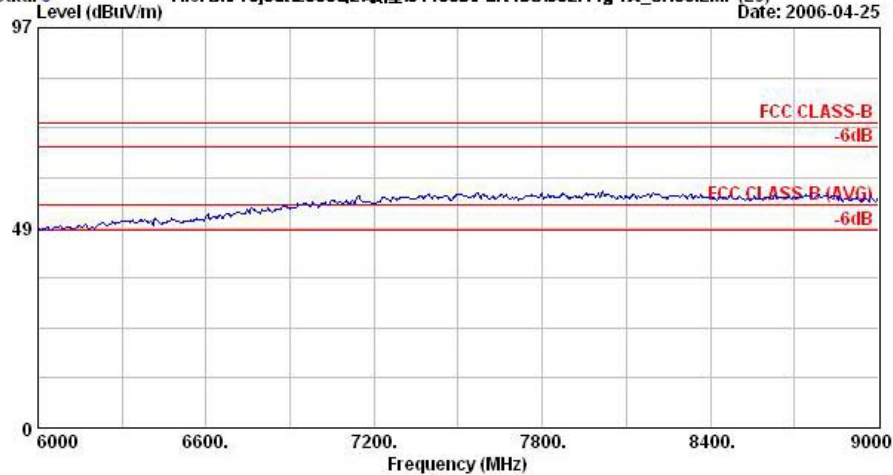


Data: 4 File: D:\Project\2006Q2\環陸\641805\Part15C\802.11g TX_CH06.EMI (20) Date: 2006-04-25



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11g TX_CH06,2437MHz
Power : 13

Data: 5 File: D:\Project\2006Q2\環陸\641805\Part15C\802.11g TX_CH06.EMI (20) Date: 2006-04-25



Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11g TX_CH06,2437MHz
Power : 13



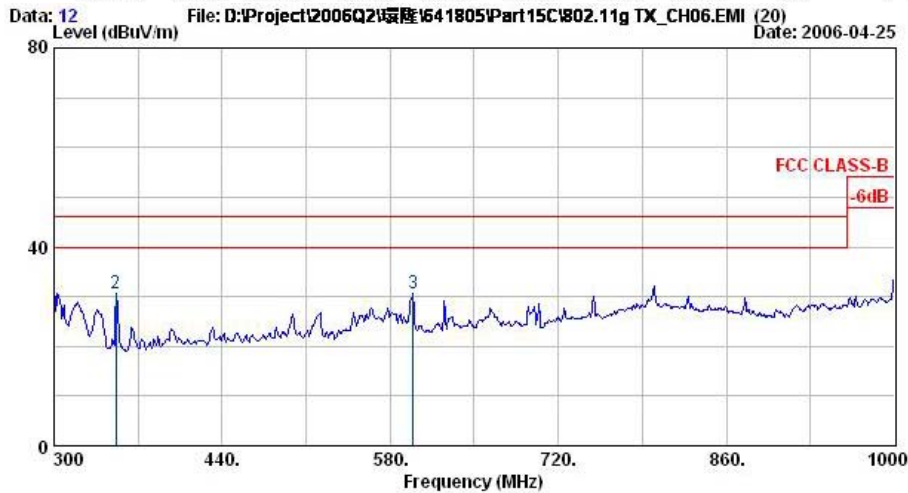
- Polarization : Vertical

The test that passed at minimum margin was marked by the frame in the following table.



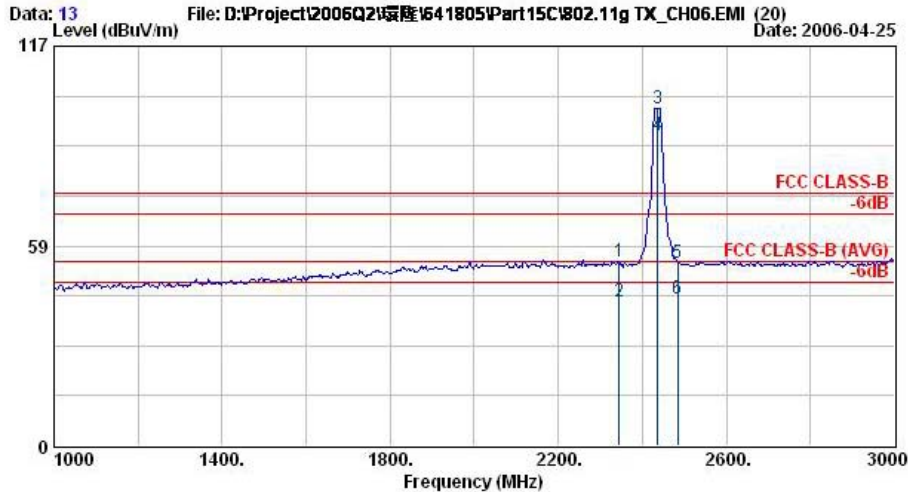
Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH06,2437MHz
 Power : 13

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	37.29	31.12	-8.88	40.00	45.93	15.73	1.19	31.73	126	301 Peak
2 @	91.29	34.24	-9.26	43.50	54.89	9.18	1.68	31.52	400	0 Peak
3 @	101.28	31.81	-11.69	43.50	50.87	10.57	1.65	31.29	400	0 Peak



Site : 03CH06-HY
 Condition : BI-LOG-2004-1122 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH06,2437MHz
 Power : 13

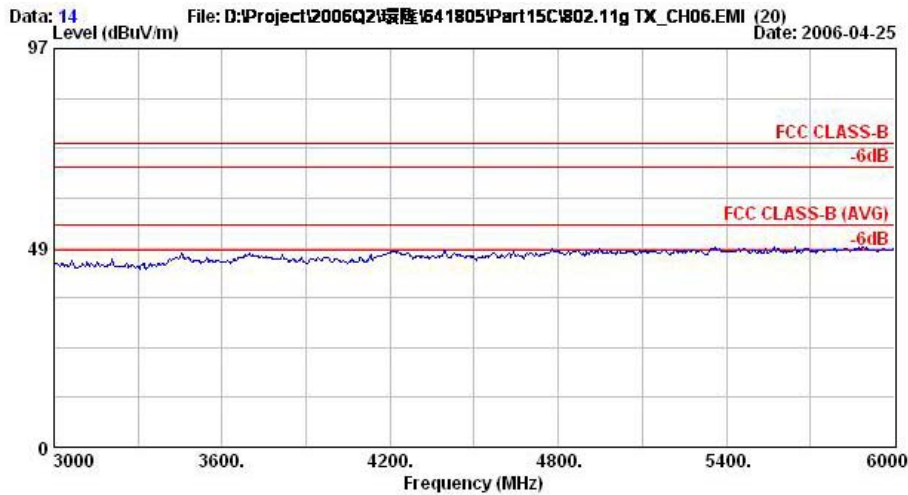
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	300.00	31.46	-14.54	46.00	46.45	12.94	3.30	31.24	100	0 Peak
2 @	351.80	30.68	-15.32	46.00	43.41	14.48	3.59	30.80	100	0 Peak
3 @	598.90	30.59	-15.41	46.00	38.61	17.97	4.66	30.65	100	0 Peak



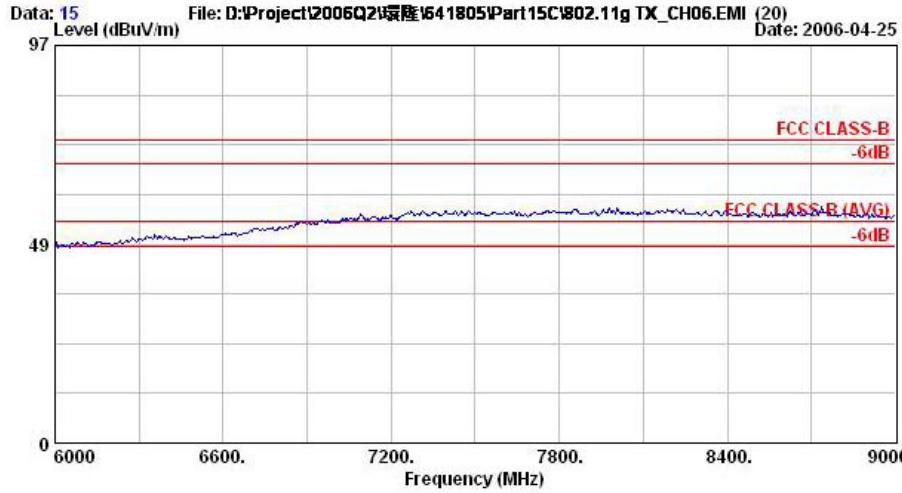
Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g_TX_CH06,2437MHz
 Power : 13

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	2344.00	53.99	-20.01	74.00	54.98	30.24	4.20	35.42	100	356	Peak
2 @	2344.00	42.06	-11.94	54.00	43.04	30.24	4.20	35.42	100	306	Average
3 @	2437.00	98.68			99.58	30.28	4.29	35.47	100	356	Peak
4 @	2437.00	90.80			91.70	30.28	4.29	35.47	100	306	Average
5	2483.50	53.62	-20.38	74.00	54.48	30.29	4.36	35.51	100	356	Peak
6 @	2483.50	43.25	-10.75	54.00	44.11	30.29	4.36	35.51	100	306	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g_TX_CH06,2437MHz
 Power : 13

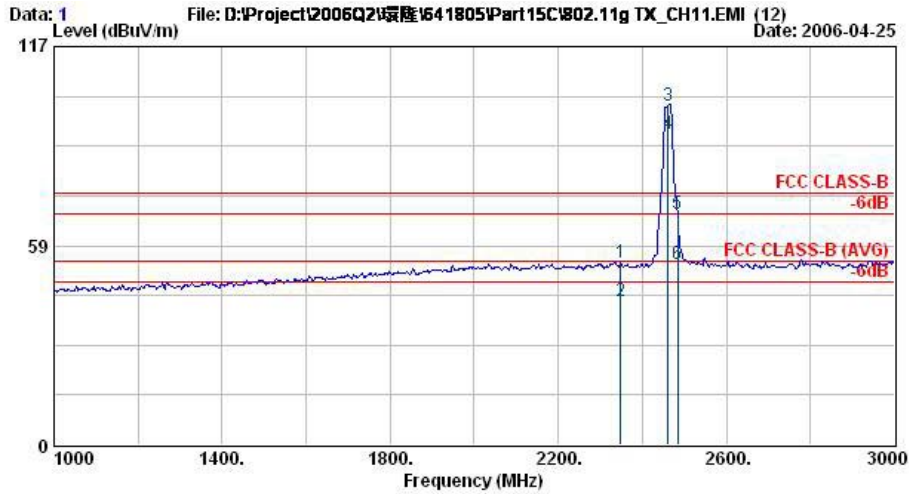


Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11g TX_CH06,2437MHz
Power : 13



- Test Mode : Mode 6
- Polarization : Horizontal

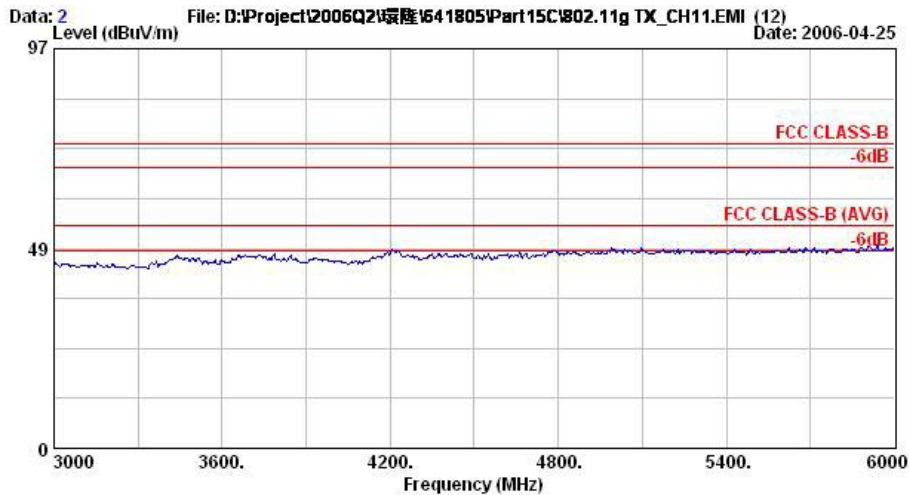
The test that passed at minimum margin was marked by the frame in the following table.



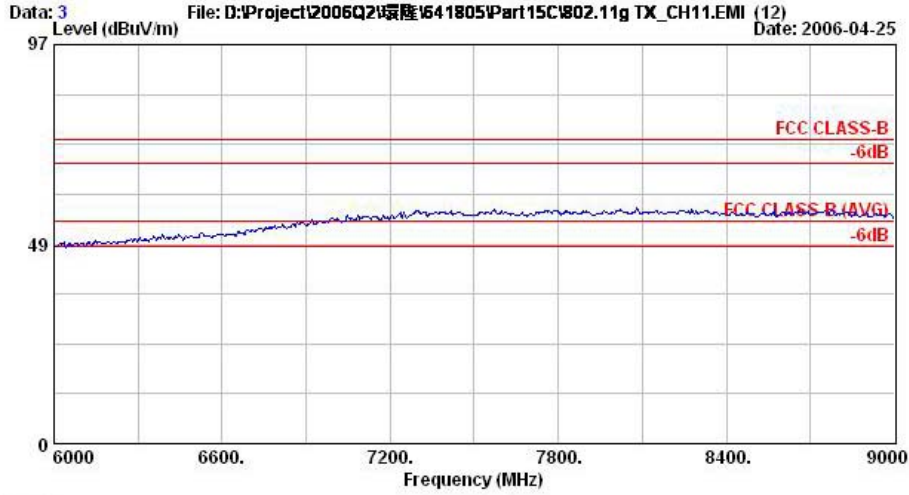
Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH11,2462MHz
 Power : 13

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2348.00	53.67	-20.33	74.00	54.65	30.24	4.20	35.42	100	16	Peak
2 @	2348.00	42.05	-11.95	54.00	43.03	30.24	4.20	35.42	100	16	Average
3 @	2462.00	99.69			100.57	30.29	4.33	35.49	100	16	Peak
4 @	2462.00	91.48			92.36	30.29	4.33	35.49	100	16	Average
5 @	2483.50	67.93	-6.07	74.00	68.79	30.29	4.36	35.51	100	16	Peak
6 @	2483.50	53.18	-0.82	54.00	54.04	30.29	4.36	35.51	100	16	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
 Condition : HF-ANT-060410 HORIZONTAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH11,2462MHz
 Power : 13

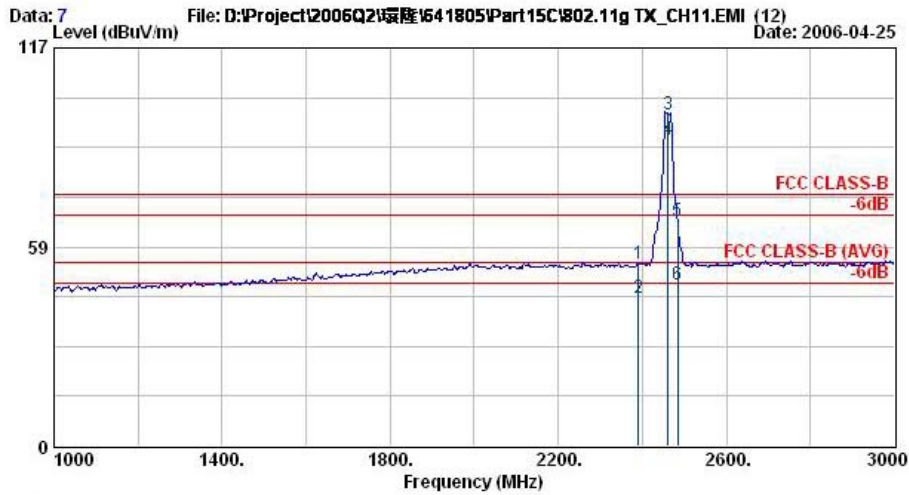


Site : 03CH06-HY
Condition : HF-ANT-060410 HORIZONTAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11g TX_CH11_2462MHz
Power : 13



- Polarization : Vertical

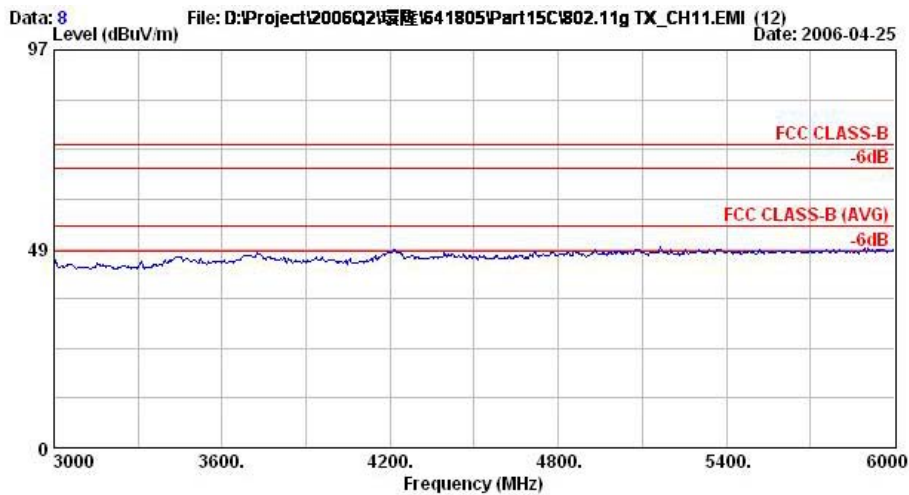
The test that passed at minimum margin was marked by the frame in the following table.



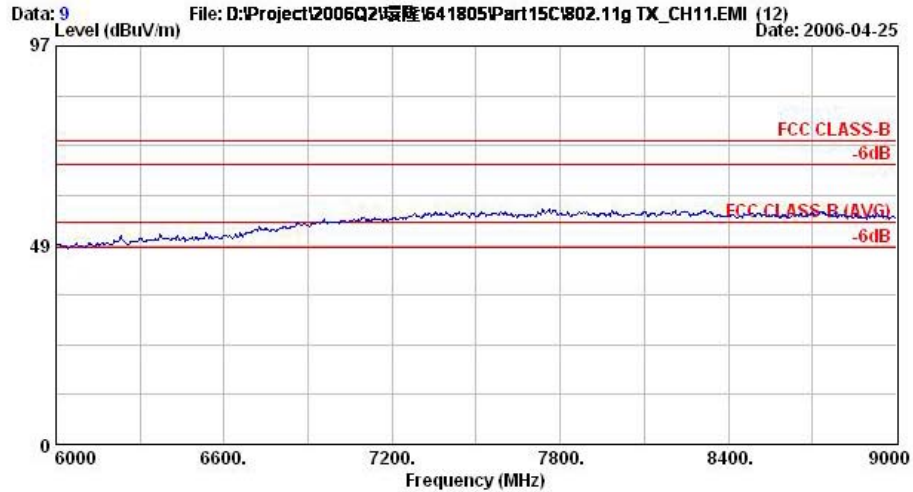
Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH11,2462MHz
 Power : 13

	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 @	2390.00	53.48	-20.52	74.00	54.42	30.26	4.26	35.46	100	360	Peak
2 @	2390.00	43.43	-10.57	54.00	44.37	30.26	4.26	35.46	100	55	Average
3 @	2462.00	97.50			98.38	30.29	4.33	35.49	100	360	Peak
4 @	2462.00	90.13			91.01	30.29	4.33	35.49	100	55	Average
5 @	2483.50	65.90	-8.10	74.00	66.76	30.29	4.36	35.51	100	360	Peak
6 @	2483.50	47.20	-6.80	54.00	48.06	30.29	4.36	35.51	100	55	Average

Remark: #3 and #4 Fundamental Signal



Site : 03CH06-HY
 Condition : HF-ANT-060410 VERTICAL
 EUT : Wireless 802.11g CF Card
 Power : For System
 Model : FR 641805
 Memo : 802.11g TX_CH11,2462MHz
 Power : 13



Site : 03CH06-HY
Condition : HF-ANT-060410 VERTICAL
EUT : Wireless 802.11g CF Card
Power : For System
Model : FR 641805
Memo : 802.11g TX_CH11,2462MHz
Power : 13

Remark: There is no more obvious spurious emission except the listings above.



5.8 Antenna Requirements

5.12.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no other antenna except assembled by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

5.12.2 Antenna Connected Construction

The antenna used in this product is Ceramic antenna. There is no connector on antenna port and it is considered to meet antenna requirement of FCC.

5.12.3 Antenna Gain

The antenna gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



6. List of Measuring Equipments Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Oct. 19, 2005	Oct. 19, 2006	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Mar. 29, 2006	Mar. 29, 2007	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Apr. 19, 2006	Apr. 19, 2007	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 22, 2005	Dec. 22, 2006	Conduction (CO01-HY)
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Jul. 25, 2005	Jul. 24, 2006	Radiation (03CH06-HY)
Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jun. 28, 2005	Jun. 27, 2006	Radiation (03CH06-HY)
Controller	CT	SC100	N/A	N/A	N/A	N/A	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 22, 2004	Nov. 22, 2006	Radiation (03CH06-HY)
Horn Antenna	Com-Power	AH118	071025	1G-18G	Feb. 1, 2005	Feb. 1, 2007	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-249	14G - 40G	Jul. 21, 2005	Jul. 20, 2006	Radiation (03CH06-HY)
Amplifier	MITEQ	AMF-6F	997165	26G - 40G	Jul. 21, 2005	Jul. 20, 2006	Radiation (03CH06-HY)
Turn Table	HD	DS 420	420/650/00	0 ~ 360 degree	N/A	N/A	Radiation (03CH06-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	N/A	Radiation (03CH06-HY)



7. Uncertainty Evaluation

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		



Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	C_i	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty $U_c(y)$	2.36				
Measuring uncertainty for a level of confidence of 95% $U = 2U_c(y)$	4.72				