

FCC TEST REPORT

for

47 CFR Part 15 Subpart C

Equipment : 802.11g Hi-Gain Wireless LAN USB Adapter

Trade (Model) Name : Edimax (EW-7317UHg, GWU-07HG)

GetNet (GW-9317UHg)

Hawking (HWU54D)

Black Box (LW6002A)

FCC ID : NDD9573170407

Filing Type : Certification

Applicant : **EDIMAX Technology Co., Ltd.**
No. 3, Wu Chuan 3rd Road, Wu-Ku Industrial
Park, Taipei Hsien, Taiwan.

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.
- **Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.**

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

SPORTON International Inc.

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History of this test report

Original Report Issue Date: June 21, 2004

No additional attachment.

Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

CERTIFICATE OF COMPLIANCE
for

47 CFR Part 15 Subpart C

Equipment : 802.11g Hi-Gain Wireless LAN USB Adapter

Trade (Model) Name : Edimax (EW-7317UHg, GWU-07HG)

GetNet (GW-9317UHg)

Hawking (HWU54D)

Black Box (LW6002A)

FCC ID : NDD9573170407

Filing Type : Certification

Applicant : EDIMAX Technology Co., Ltd.

No. 3, Wu Chuan 3rd Road, Wu-Ku Industrial Park,
Taipei Hsien, Taiwan.

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2001** and the equipment under test was **passed** all test items required in FCC Part 15 subpart C, relative to the equipment under test. Testing was carried out on June 20, 2004 at **SPORTON International Inc.** LAB.



Daniel Lee
Manager

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. General Description of Equipment under Test

1.1. Applicant

EDIMAX Technology Co., Ltd.

No. 3, Wu Chuan 3rd Road, Wu-Ku Industrial Park, Taipei Hsien, Taiwan.

1.2 Manufacturer

EDIMAX Technology Co., Ltd.

No. 3, Wu Chuan 3rd Road, Wu-Ku Industrial Park, Taipei Hsien, Taiwan.

1.3 Basic Description of Equipment under Test

Equipment : 802.11g Hi-Gain Wireless LAN USB Adapter
Trade (Model) Name : Edimax (EW-7317UHg, GWU-07HG)
GetNet (GW-9317UHg)
Hawking (HWU54D)
Black Box (LW6002A)
FCC ID : NDD9573170407
Power Supply Type : 5V

1.4 Feature of Equipment under Test

Product Feature & Specification			
1. Host/Radio interface	Mini USB2.0		
2. Modulation Type/Data Rate	802.11b: CCK (11Mbps) 802.11g: OFDM (54Mbps)		
3. Freq.Range/Carrier Freqs.	2400 MHz ~ 2483.5 MHz		
4. Number of Channels	USA/Canada: 11	V	European: 13
	Japan: 13, 14		Other:
5. Carrier Frequency of each channel	2412 MHz +(n-1)*5 MHz, n= 1~11		
6. Maximum Output Power to Antenna (Normal Condition)	802.11b:16dBm		
	802.11g:16dBm		
7. Channel Spacing	5 MHz		
8. Type of Antenna Connector	I-PEX		
9. Antenna Gain	6 dBi		
10. Function Type	Transmitter	V	Transceiver V
11. Attached Data Cables(length, shield)	N/A		
12. Power Rating (DC/AC , Voltage)	DC 5V		
13. Duty Cycle	N/A		
14. Temperature / Humidity Range	0°C to 55°C		
	Max TO 95%		

2 Test Configuration of Equipment under Test

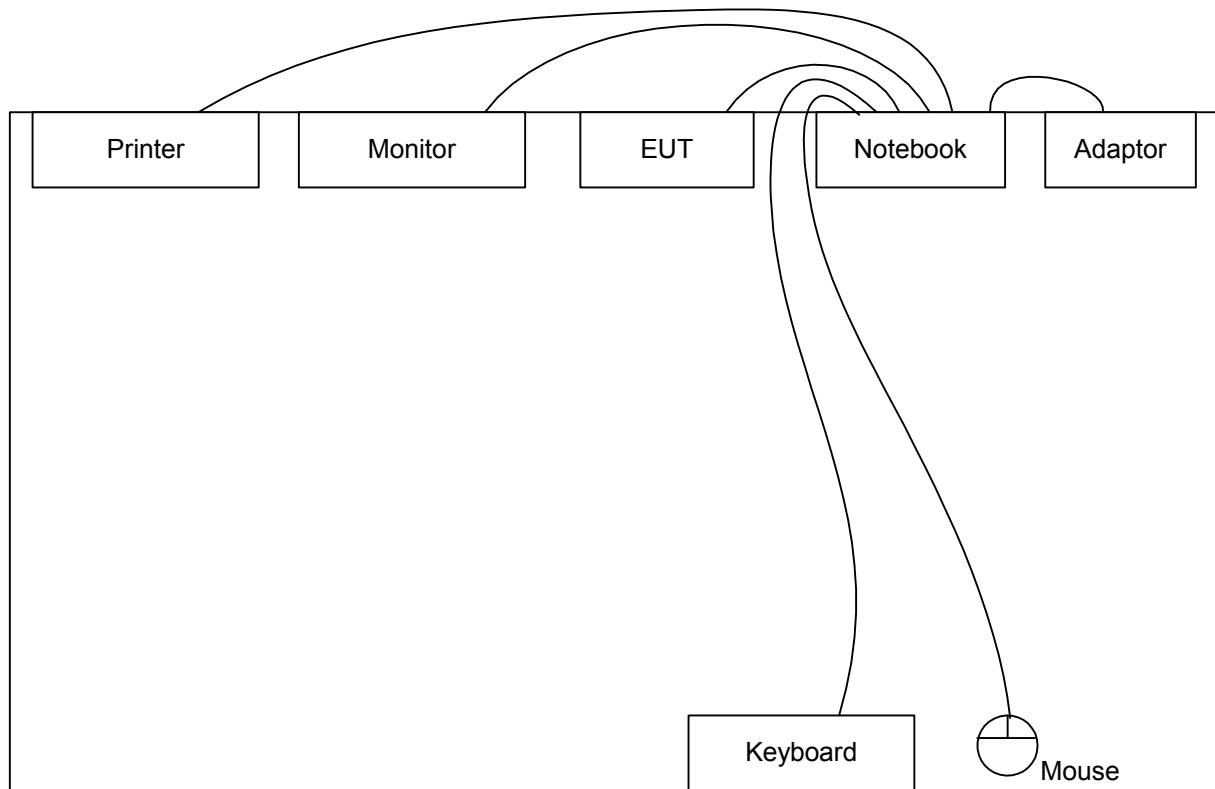
2.1 Test Manner

- a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2001 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- b. The complete test system included VIEWSONIC Monitor, LOGITECH PS2 Keyboard, LOGITECH USB Mouse, EPSON Printer, ACER Notebook and EUT for EMI test.
- c. The EUT can operate on eleven channels from 2412MHz to 2462MHz. (as listed in section 1.4).
- d. The following test modes were tested for conduction test:
 Mode 1: Operating
 The following test modes were tested for radiation test:
 Mode 1: 11b TX CH01 (2412MHz)
 Mode 2: 11b TX CH06 (2437MHz)
 Mode 3: 11b TX CH11 (2462MHz)
 Mode 4: 11g TX CH01 (2412MHz)
 Mode 5: 11g TX CH06 (2437MHz)
 Mode 6: 11g TX CH11 (2462MHz)
- e. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 25000MHz.

2.2 Description of Test System

Item	Asset	Model Name	Power Cord	S/N
1.	PC (COMPAQ)	D380MX	N/A	SP0021
2.	Monitor (VIEWSONIC)	VCDTS21553-3P	Shielded, 1.7m	SP0023
3.	PS2 Keyboard (LOGITECH)	Y-SJ17	Shielded, 1.7m	SP0027
4.	USB Mouse (LOGITECH)	M-BE58	Shielded, 1.7m	SP0031
5.	Printer (EPSON)	STYLUS COLRO 680	Shielded, 1.35m	SP0035
6.	Notebook (ACER)	C4000L	N/A	SP0047

2.3 Connection Diagram of Test System



3 Operation of Equipment under Test

An executive program, EMCTEST.EXE on Win XP continuously generating a complete line of "H" pattern, was used as the test software.

The program was executed as follows:

- a. Turn on the power of all equipment.
- b. The PC reads the test program from the hard disk drive and runs it.
- c. The PC sends "H" messages to the monitor, and the monitor displays "H" patterns on the screen.
- d. The PC sends "H" messages to the printer, then the printer prints them on the paper.
- e. The PC sends "H" messages to the internal hard disk , and the hard disk reads and writes the message.
- f. Repeat the steps from c to e.

At the same time, the following program was executed:

"Set Tx Power.EXE" sends continuous transmitting.

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, 03CH03-HY

4.1 Test Voltage

110V/ 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2001

4.3 Test in Compliance with

47 CFR Part 15 Subpart C

4.4 Frequency Range Investigated

- a. Conduction: from 150 kHz to 30 MHz
- b. 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 Report of Measurements and Examinations

5.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.207	Conducted Emission	Pass
15.247(a)(2)	6dB Bandwidth	Pass
15.247(b)	Maximum Peak Output Power	Pass
15.209(a)	Radiated Emission	Pass
15.247 (c)	100kHz Bandwidth of Frequency Band Edges	Pass
15.247(d)	Power Spectral Density	Pass
15.203 15.247(B)(4)	Antenna Requirement	Pass
1.1307 2.1091	RF Exposure	Pass

5.2 6dB Bandwidth

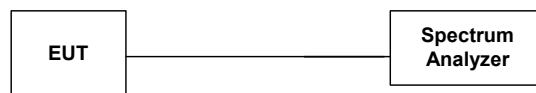
5.2.1 Measuring Instruments :

As described in chapter 7 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 :

- Mode 1~3 : WLAN 802.11b
- Temperature : 26°C
- Relative Humidity : 53%

Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	11.82	0.5	Mode 1
06	2437	11.80	0.5	Mode 2
11	2462	11.00	0.5	Mode 3

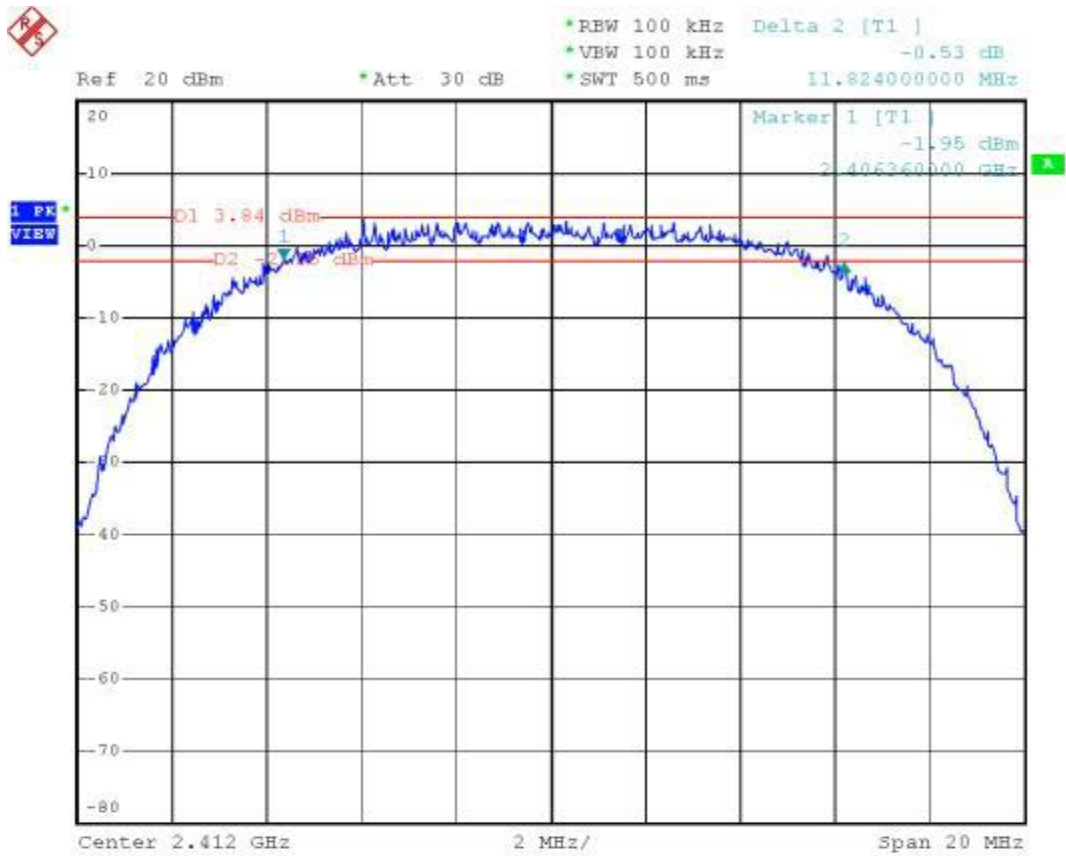
5.2.5 Test Result :

- Mode 4~6 : WLAN 802.11g
- Temperature : 26°C
- Relative Humidity : 53%

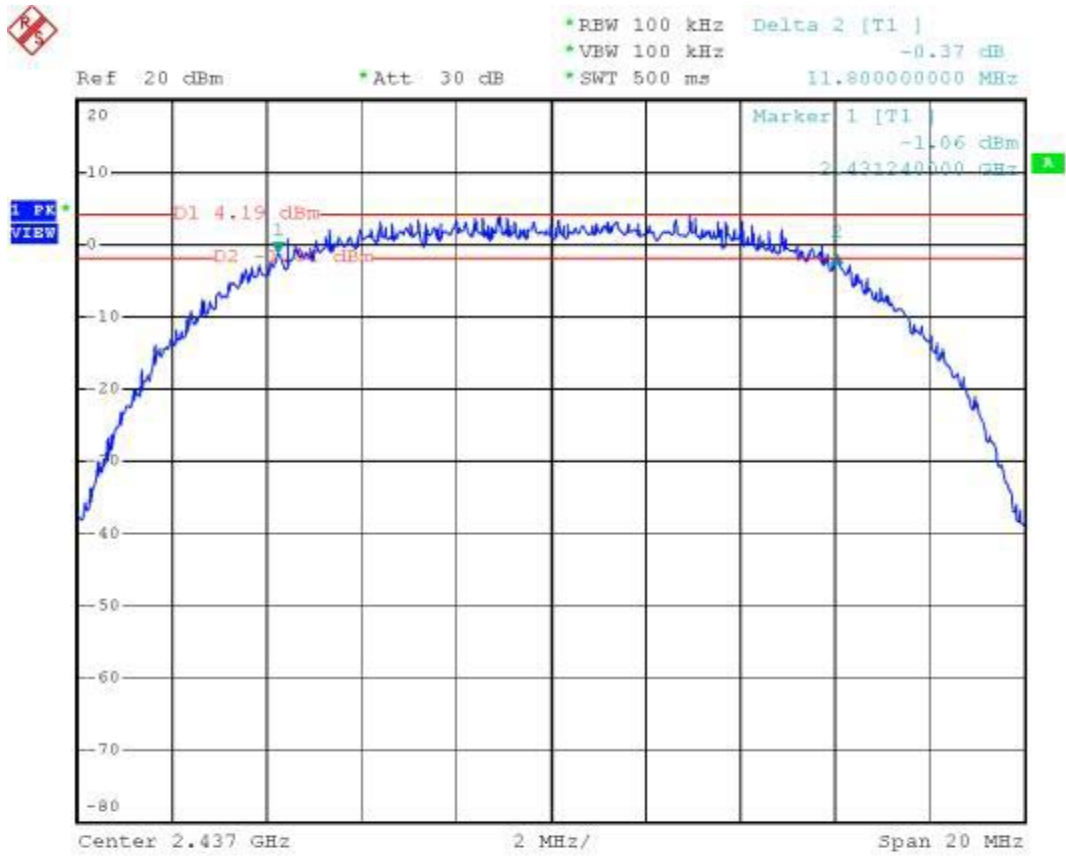
Channel	Frequency (MHz)	6dB Emission bandwidth (MHz)	Limits (MHz)	Plot Ref. No.
01	2412	16.52	0.5	Mode 4
06	2437	16.56	0.5	Mode 5
11	2462	16.52	0.5	Mode 6

5.2.6 6dB Bandwidth

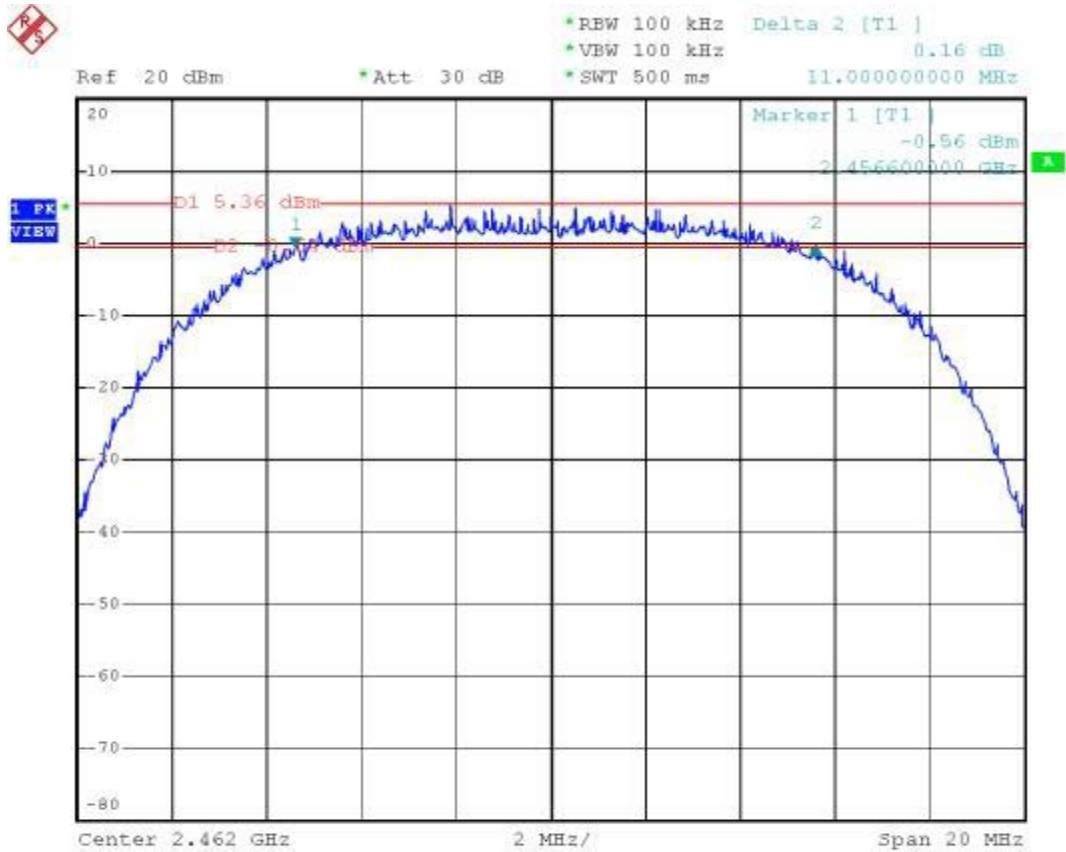
Mode 1 : 802.11b CH01 (2412MHz)



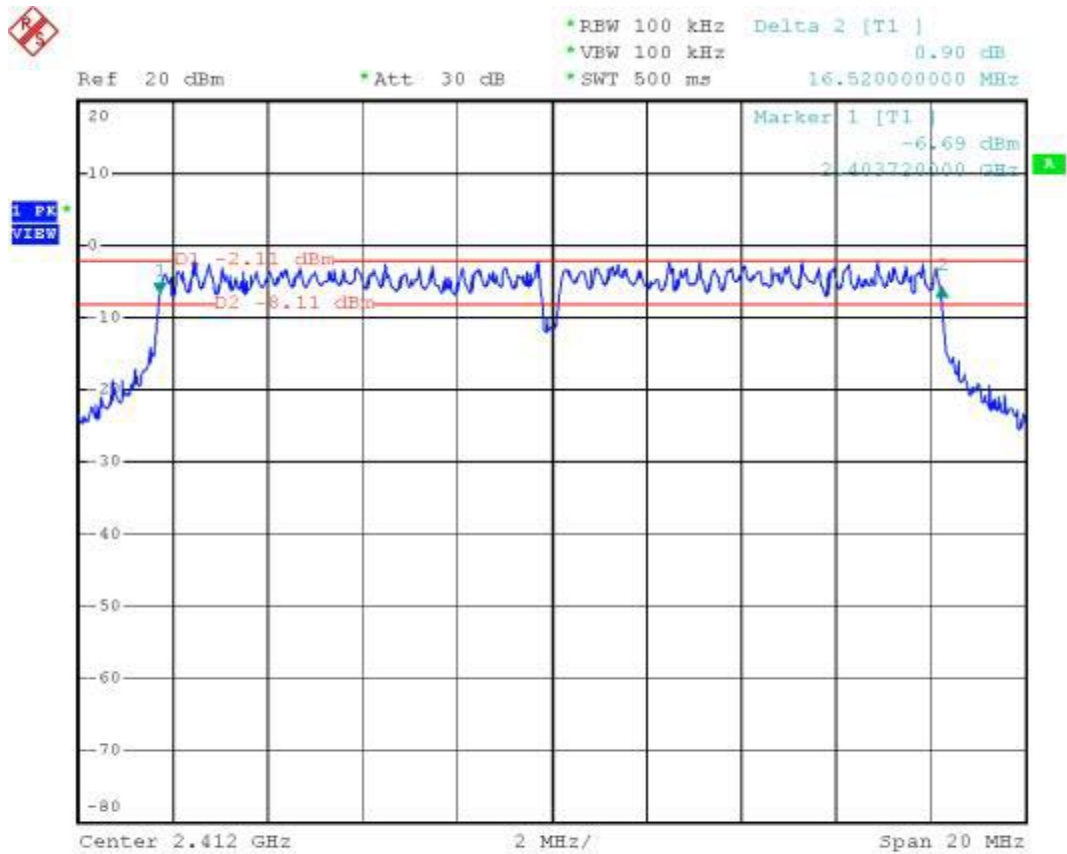
Mode 2 : 802.11b CH06 (2437MHz)



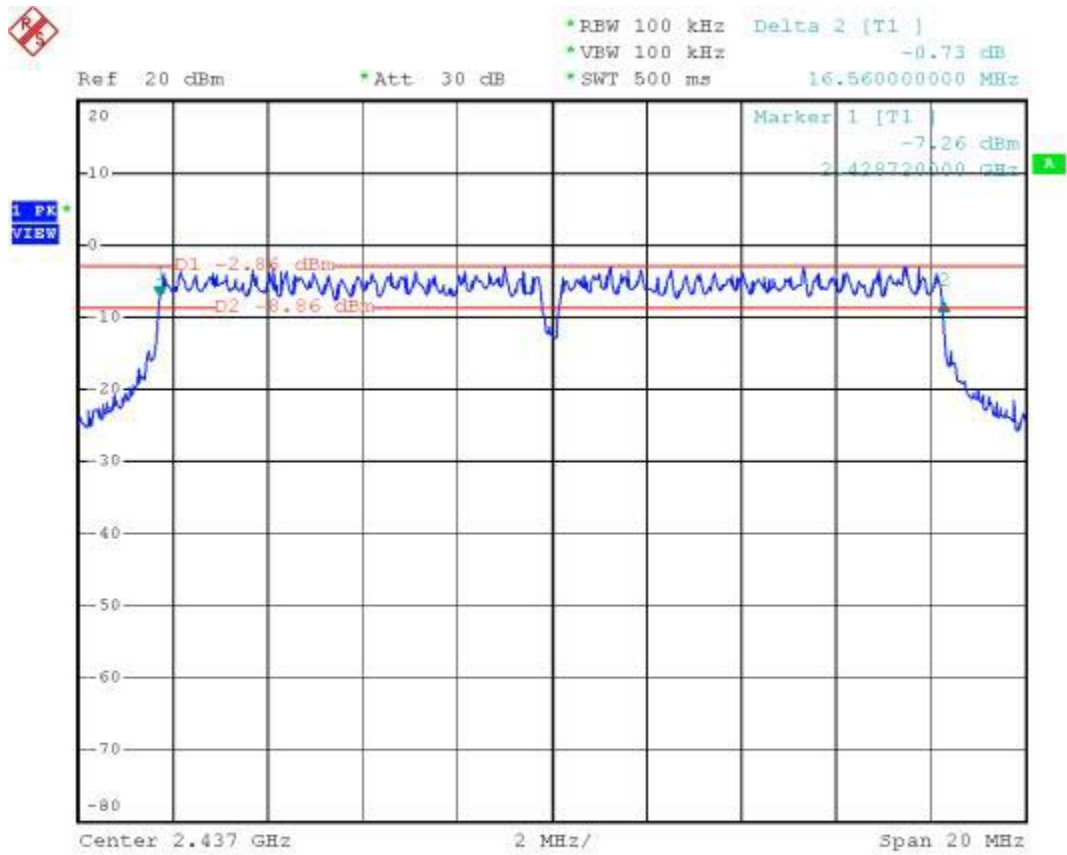
Mode 3 : 802.11b CH11(2462MHz)



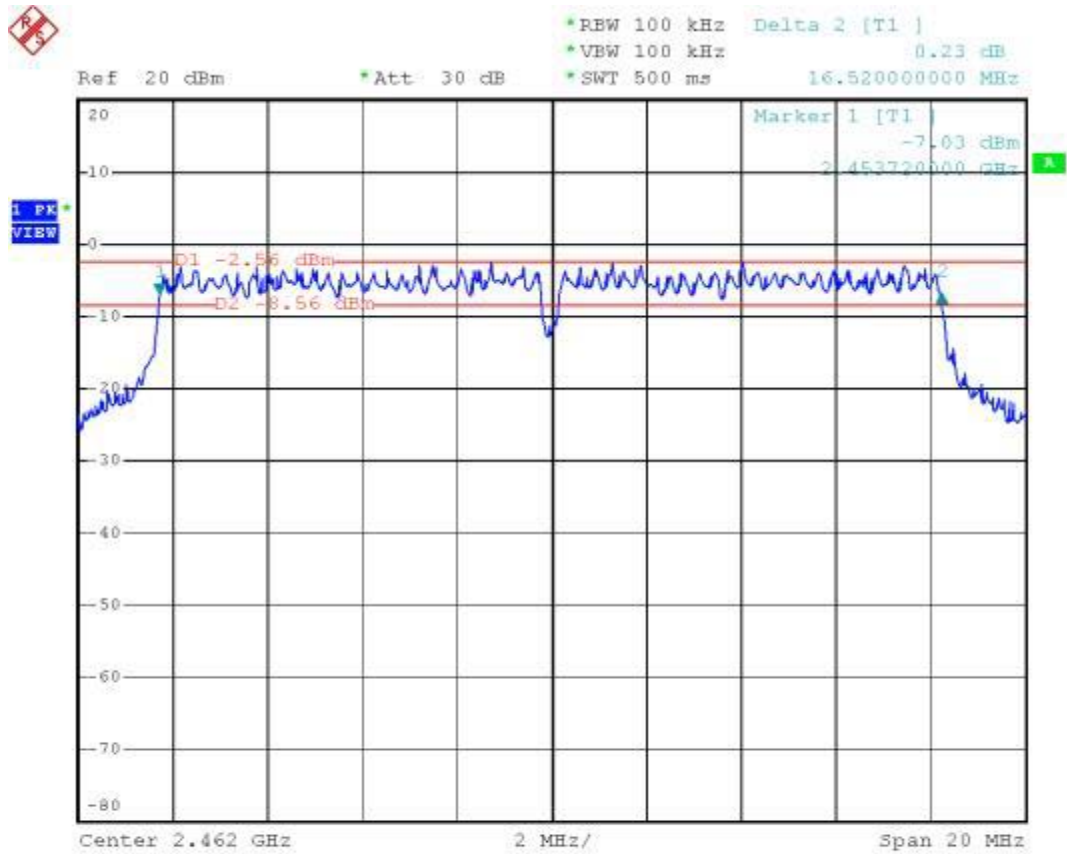
Mode 4 : 802.11g CH01 (2412MHz)



Mode 5 : 802.11g CH06 (2437MHz)



Mode 6 : 802.11g CH11(2462MHz)



5.3 Power Spectral Density

5.3.1 Measuring Instruments :

As described in chapter 7 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 :

- Mode 1~3: WLAN 802.11b
- Temperature : 26°C
- Relative Humidity : 53%

Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	0.84	8	Mode 1
06	2437	0.73	8	Mode 2
11	2462	3.14	8	Mode 3

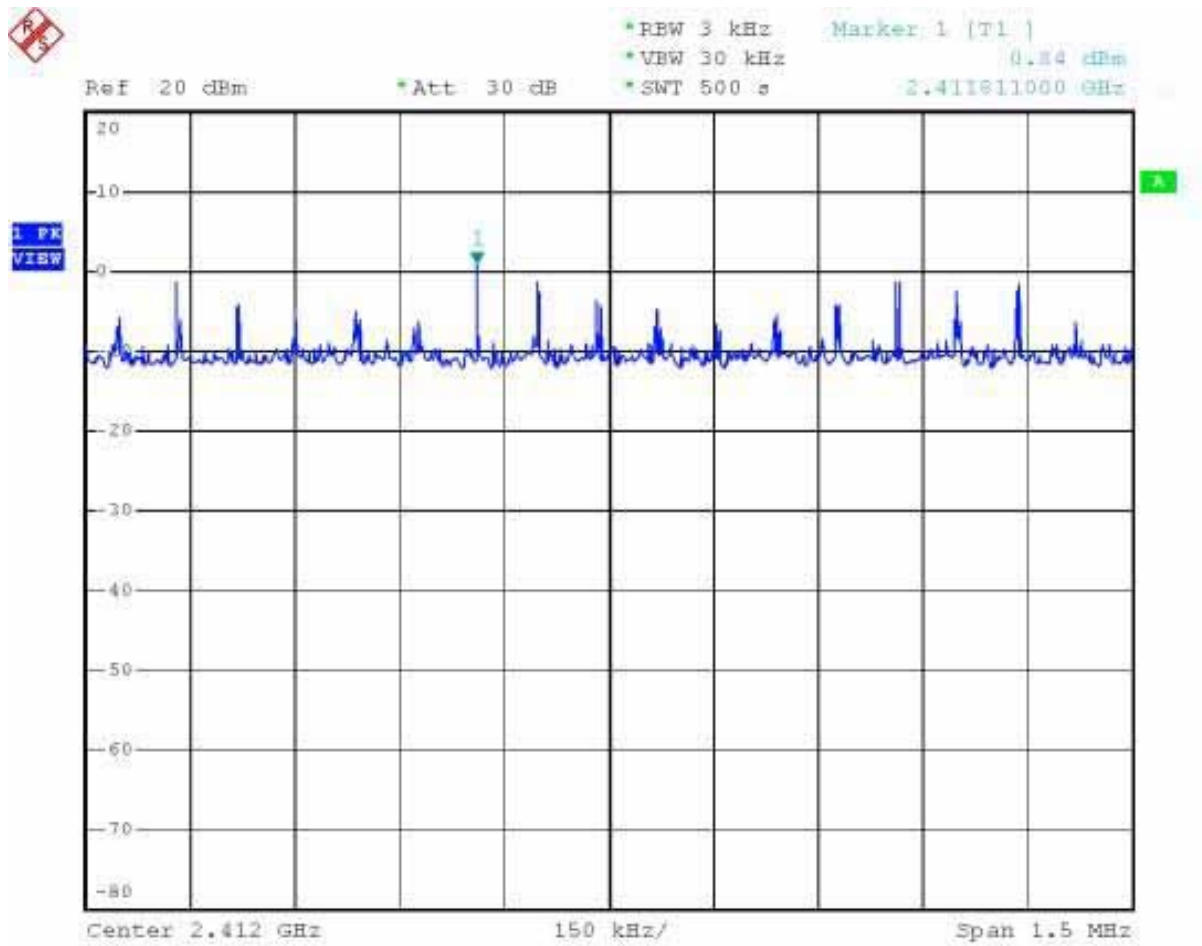
5.3.5 Test Result :

- Mode 4~6: WLAN 802.11g
- Temperature : 25°C,
- Relative Humidity : 52%

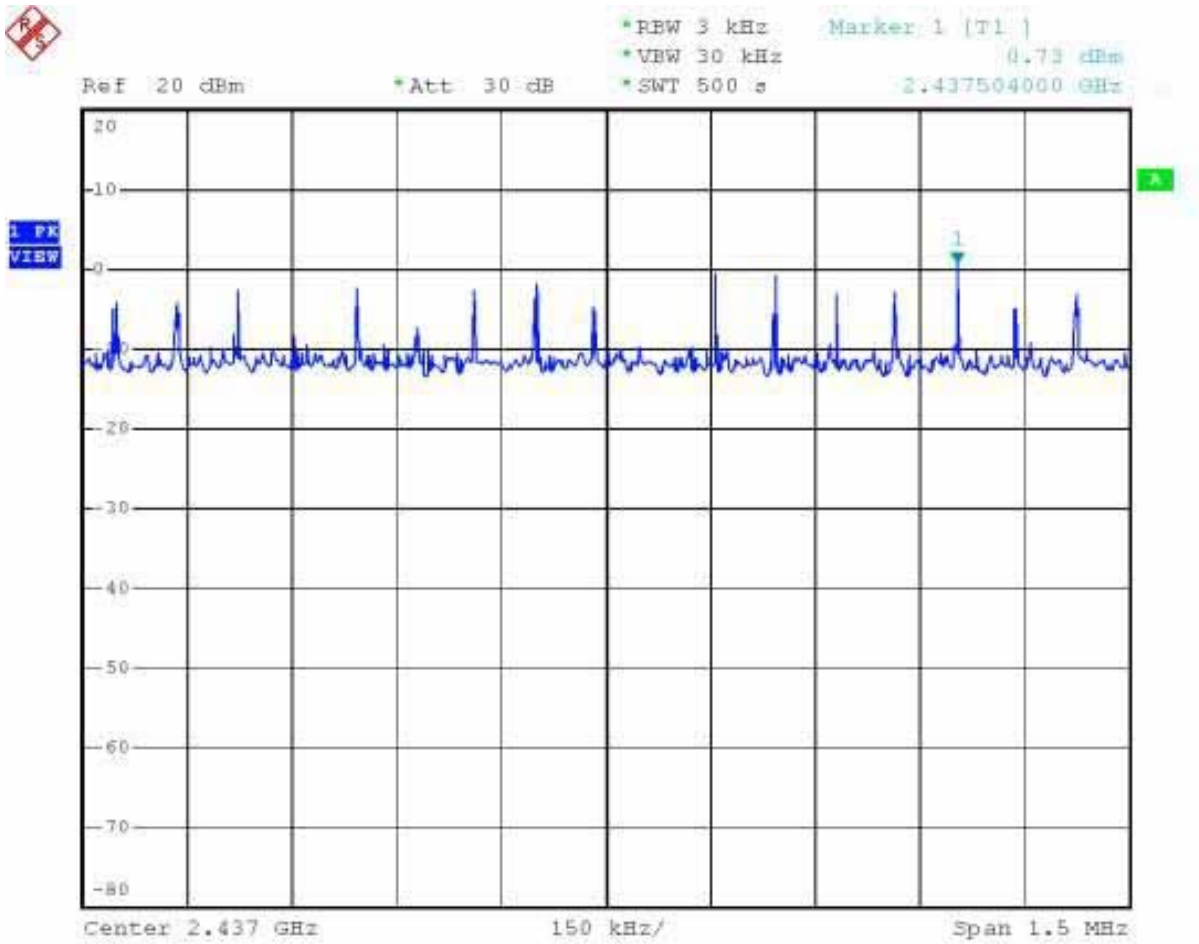
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)	Plot Ref. No.
01	2412	-14.77	8	Mode 4
06	2437	-15.05	8	Mode 5
11	2462	-14.32	8	Mode 6

5.3.6 Power Spectral Density

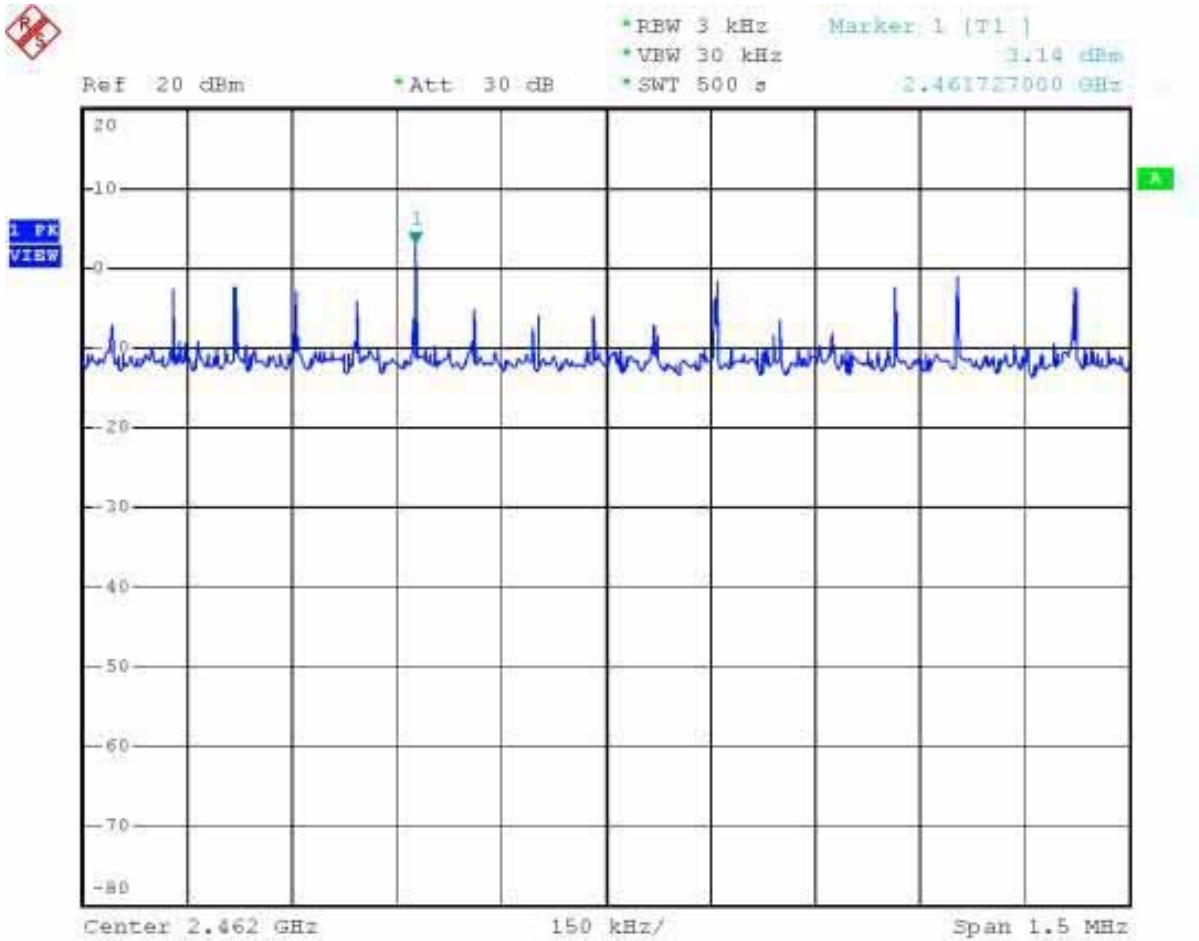
Mode 1 : 802.11b CH01(2412MHz)



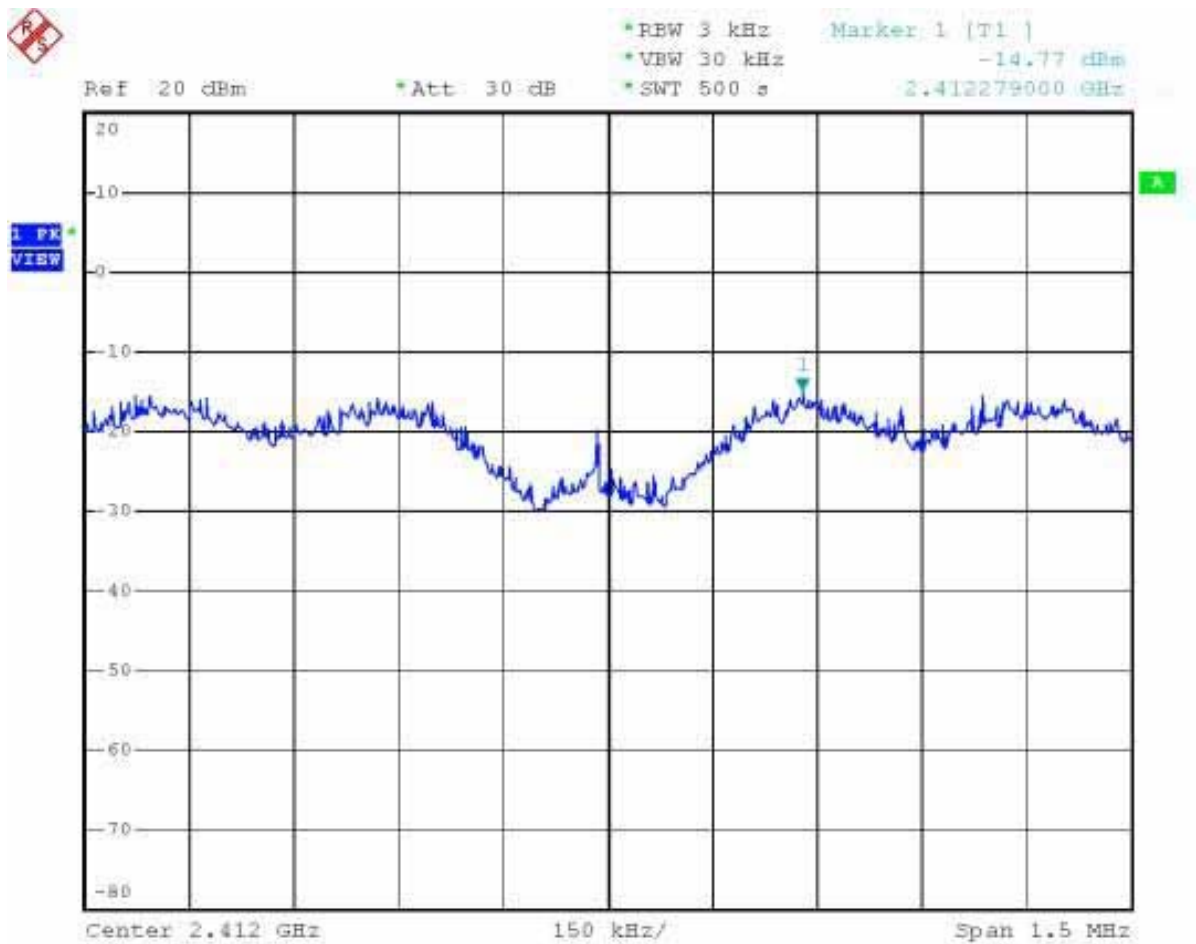
Mode 2 : 802.11b CH06 (2437MHz)



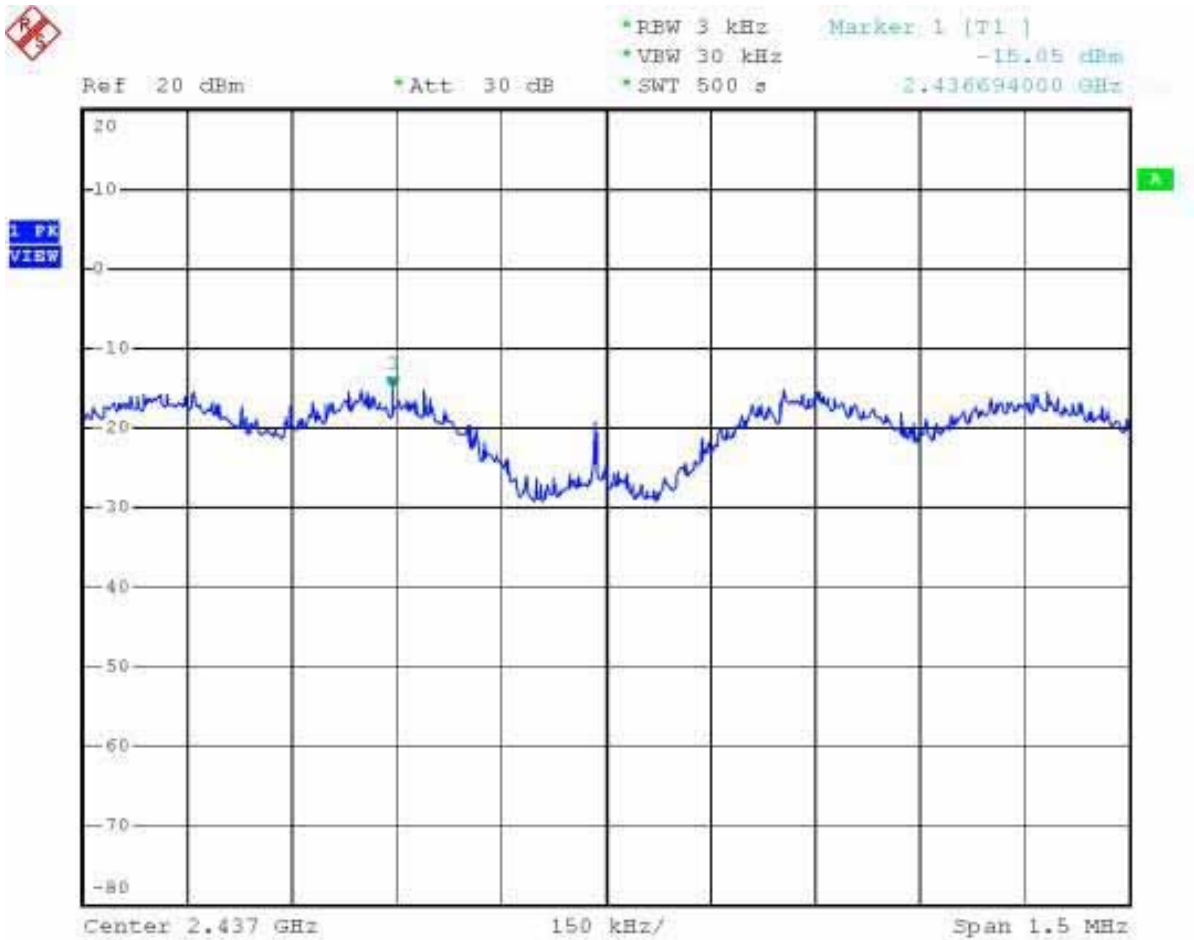
Mode 3 : 802.11b CH11 (2462MHz)



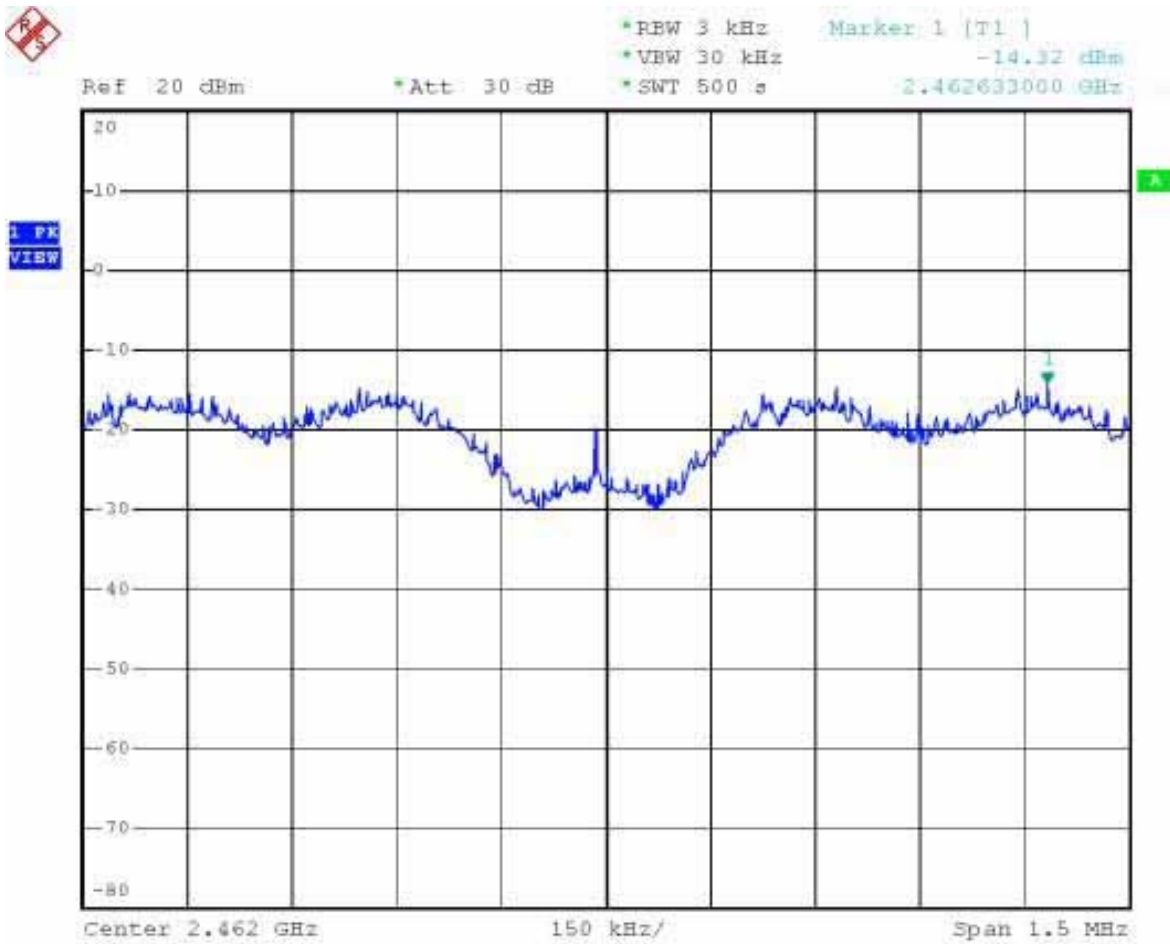
Mode 4 : 802.11g CH01(2412MHz)



Mode 5 : 802.11g CH06 (2437MHz)



Mode 6 : 802.11g CH11 (2462MHz)



5.4 Band Edges Measurement

5.4.1 Measuring Instruments :

As described in chapter 7 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 :

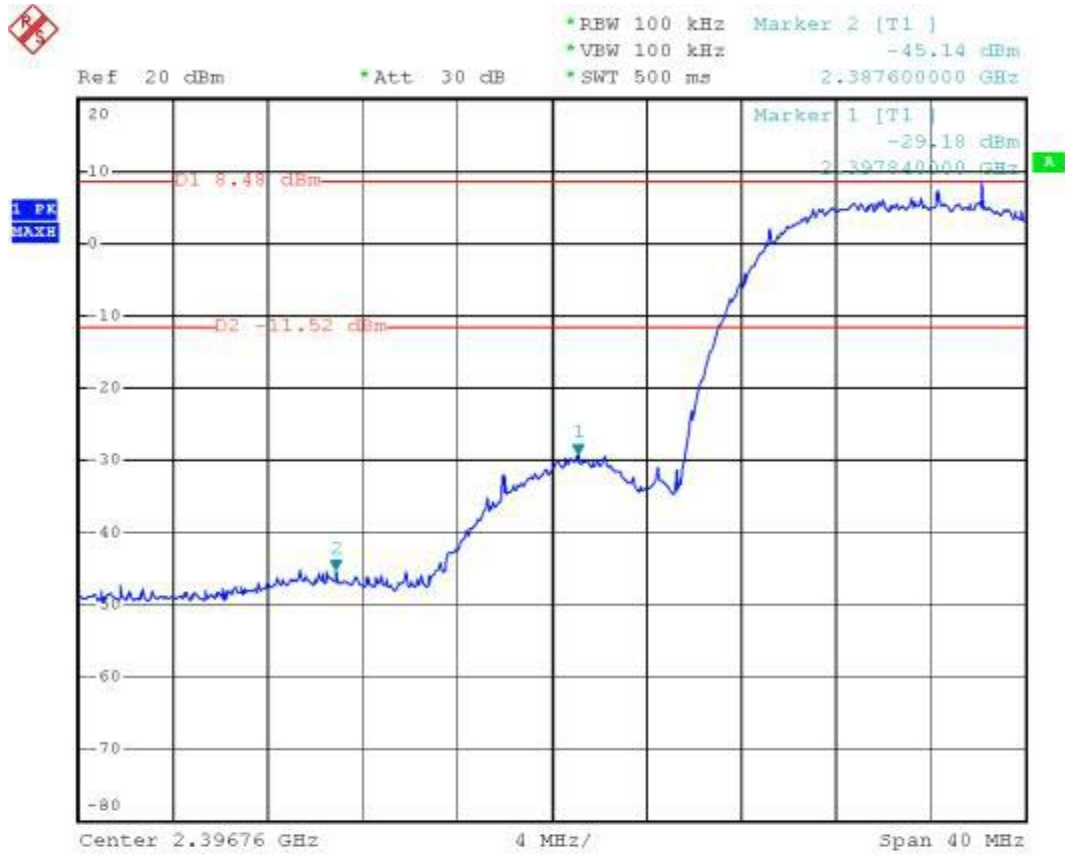
- Mode 1 and 3 : WLAN 802.11b
- Temperature : 26°C
- Relative Humidity : 53%
- Test Result in lower band (Channel 1) : PASS
- Test Result in higher band (Channel 11) : PASS

5.4.4 Test Result :

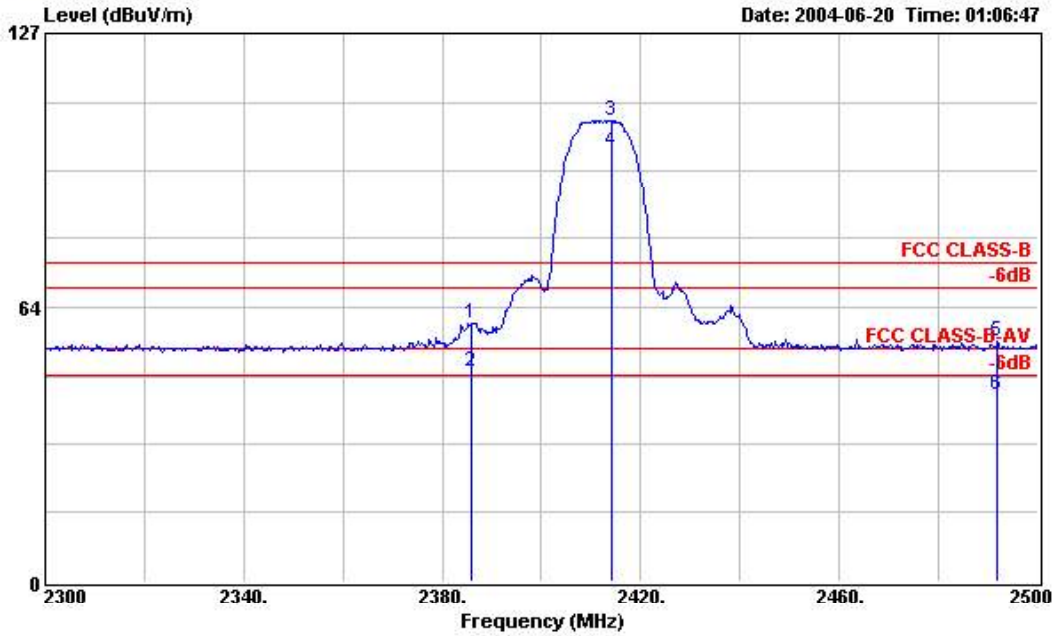
- Mode 4 and 6 : WLAN 802.11g
- Temperature : 26°C
- Relative Humidity : 53%
- Test Result in lower band (Channel 1) : PASS
- Test Result in higher band (Channel 11) : PASS

5.4.5 Band Edge Ruled

Mode1 : 802.11b CH01 (2412MHz)



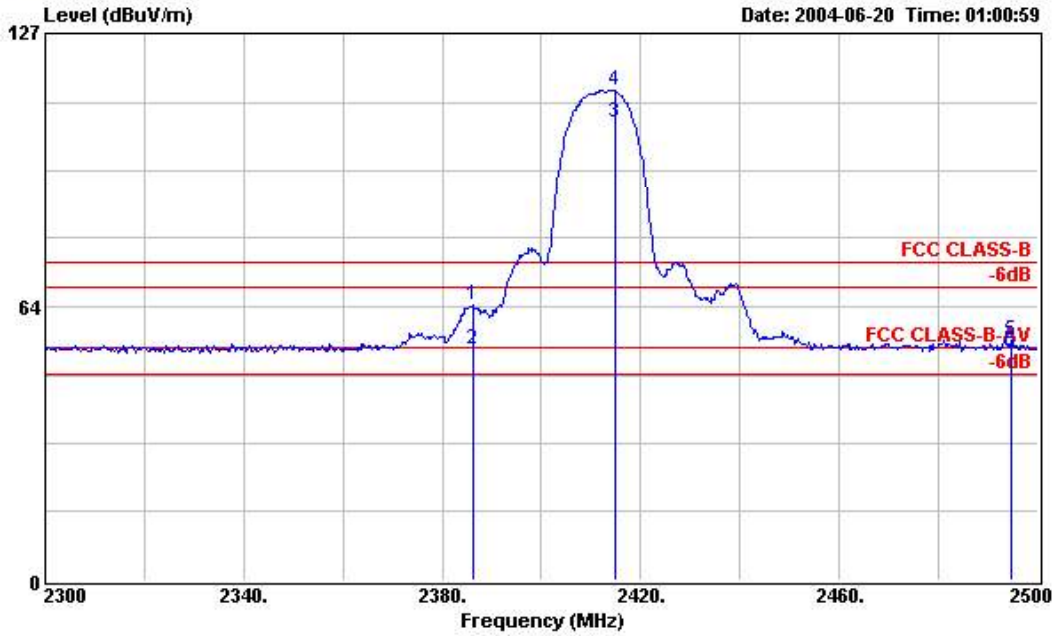
Horizontal



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11b TX_CH:01;2412MHz

Line	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	2386.000	59.82	-14.18	74.00	29.97	28.13	1.72	0.00	Peak	---	---
2	2386.000	48.66	-5.34	54.00	18.81	28.13	1.72	0.00	Average	100	266

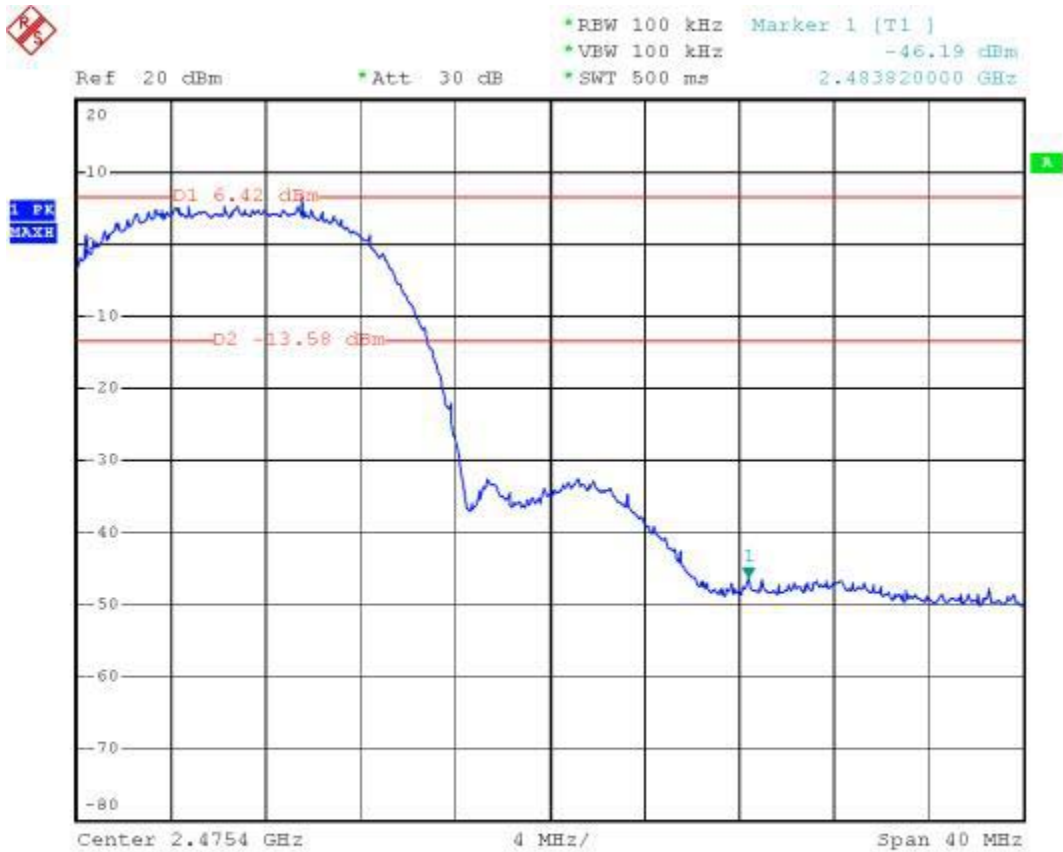
Vertical



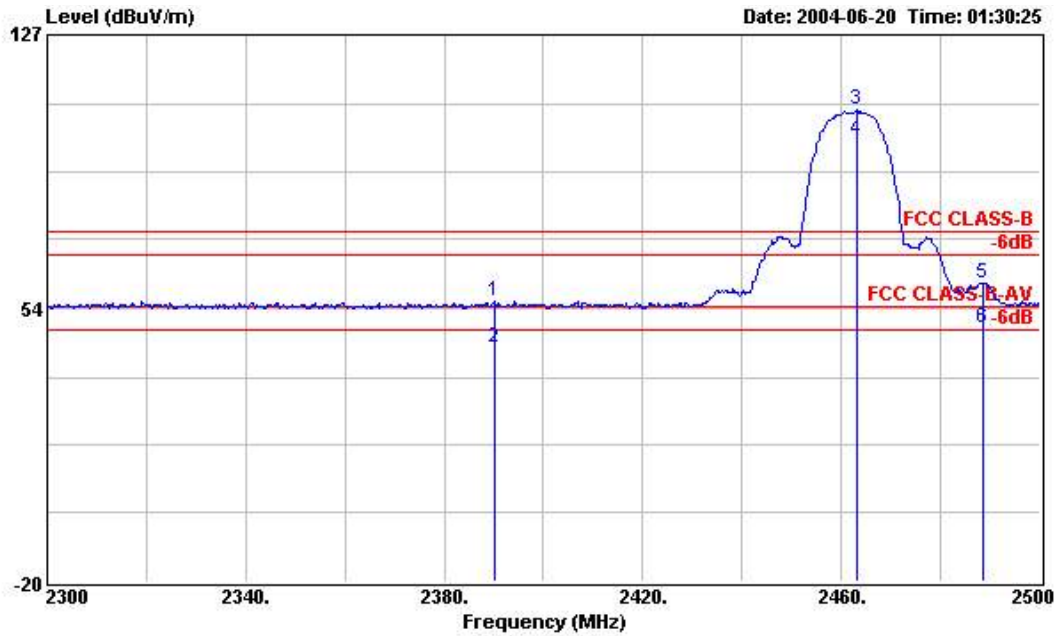
Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11b TX_CH:01;2412MHz

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	2386.200	63.94	-10.06	74.00	34.07	28.13	1.74	0.00	Peak	---	---
2	2386.200	53.62	-0.38	54.00	23.75	28.13	1.74	0.00	Average	100	162

Mode 3 : 802.11b CH11 (2462MHz)



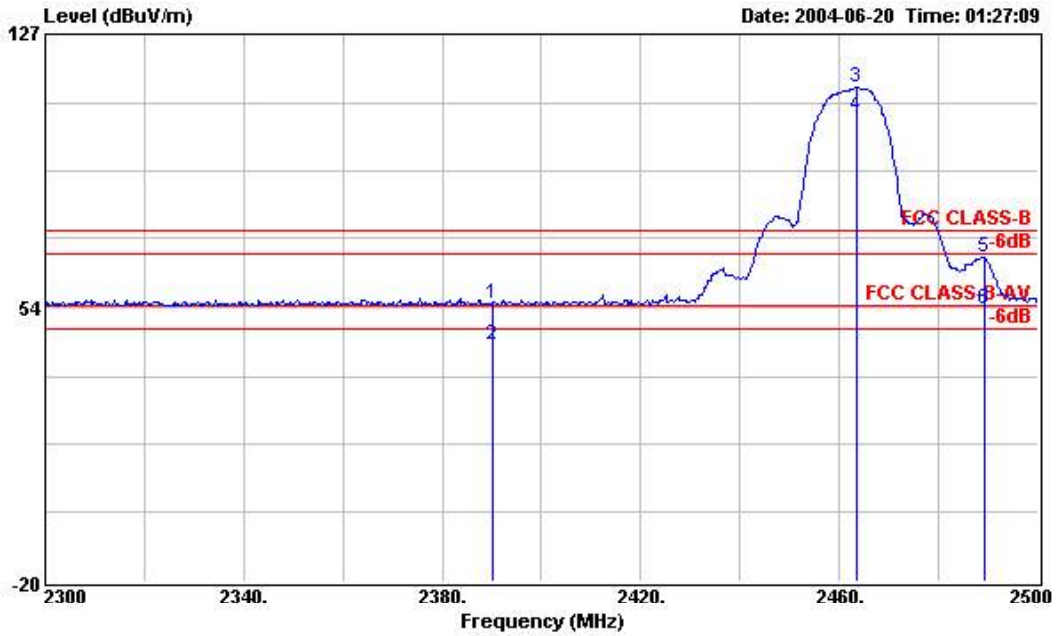
Horizontal



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11b TX_CH:11;2462MHz

Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
5	2488.600	60.30	-13.70	74.00	30.11	28.40	1.79	0.00 Peak	---	---
6	2488.600	48.41	-5.59	54.00	18.22	28.40	1.79	0.00 Average	100	264

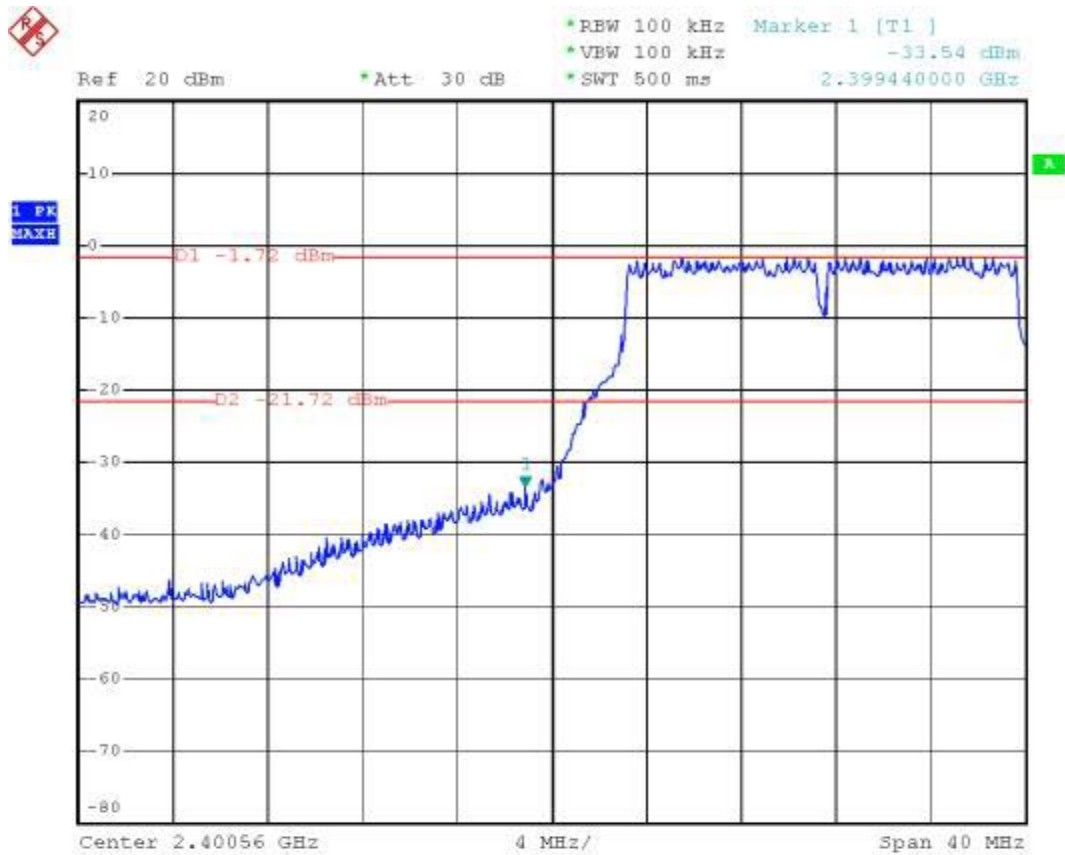
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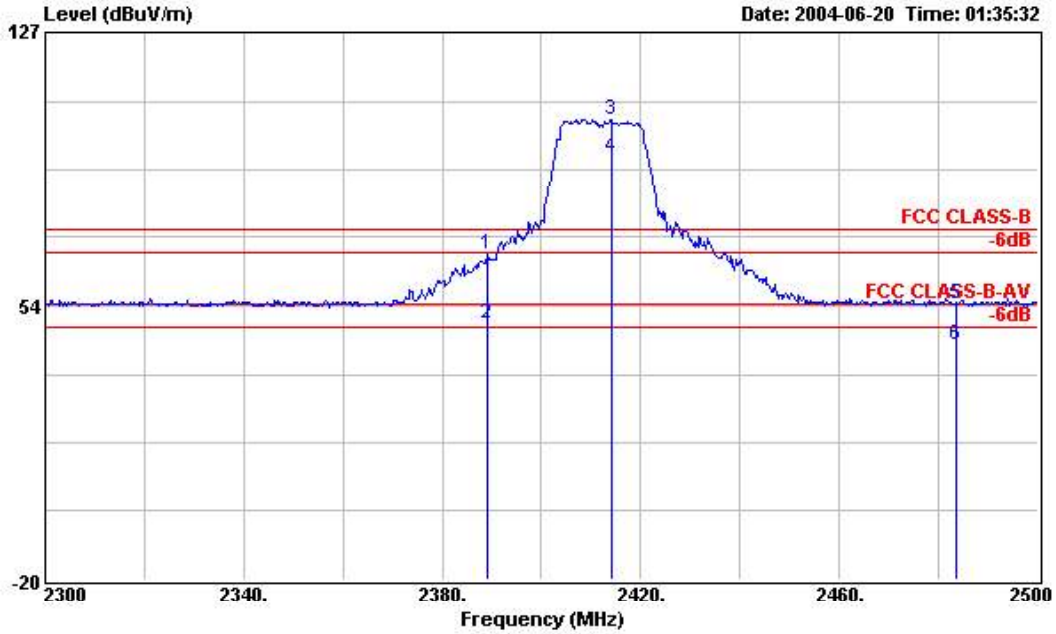
Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11b TX_CH:11;2462MHz

Line	Freq	Level	Over Limit	Limit	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
5	2489.400	66.78	-7.22	74.00	36.59	28.40	1.79	0.00	Peak	---	---
6 !	2489.400	53.12	-0.88	54.00	22.93	28.40	1.79	0.00	Average	100	158

Mode 4 : 802.11g CH01 (2412MHz)



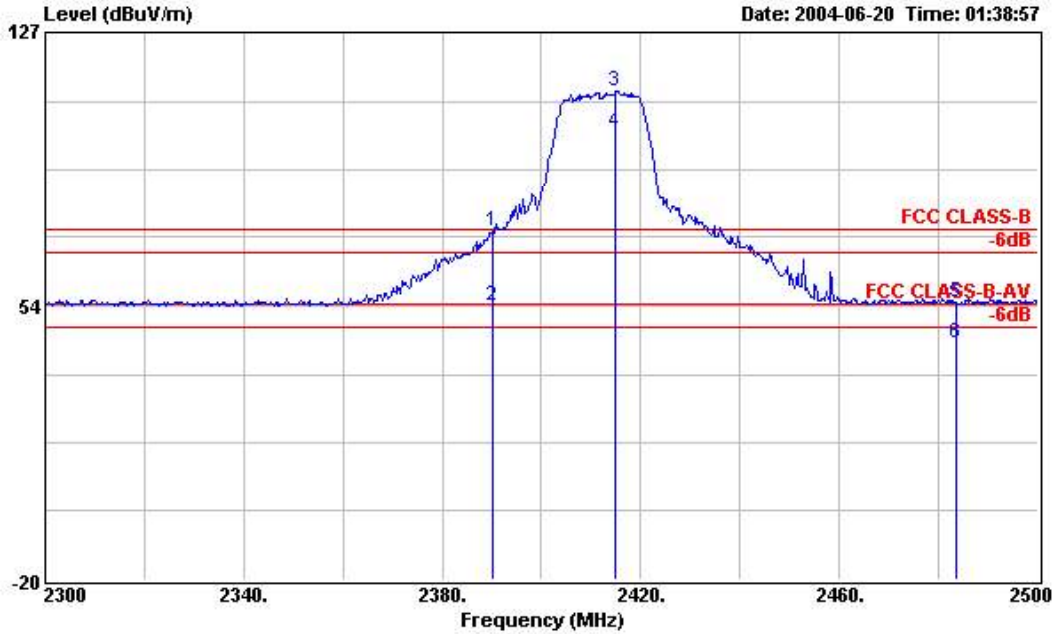
Horizontal



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11g TX_CH:01;2412MHz

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	2389.200	67.34	-6.66	74.00	37.48	28.14	1.72	0.00	Peak	---	---
2	2389.200	48.92	-5.08	54.00	19.06	28.14	1.72	0.00	Average	100	265

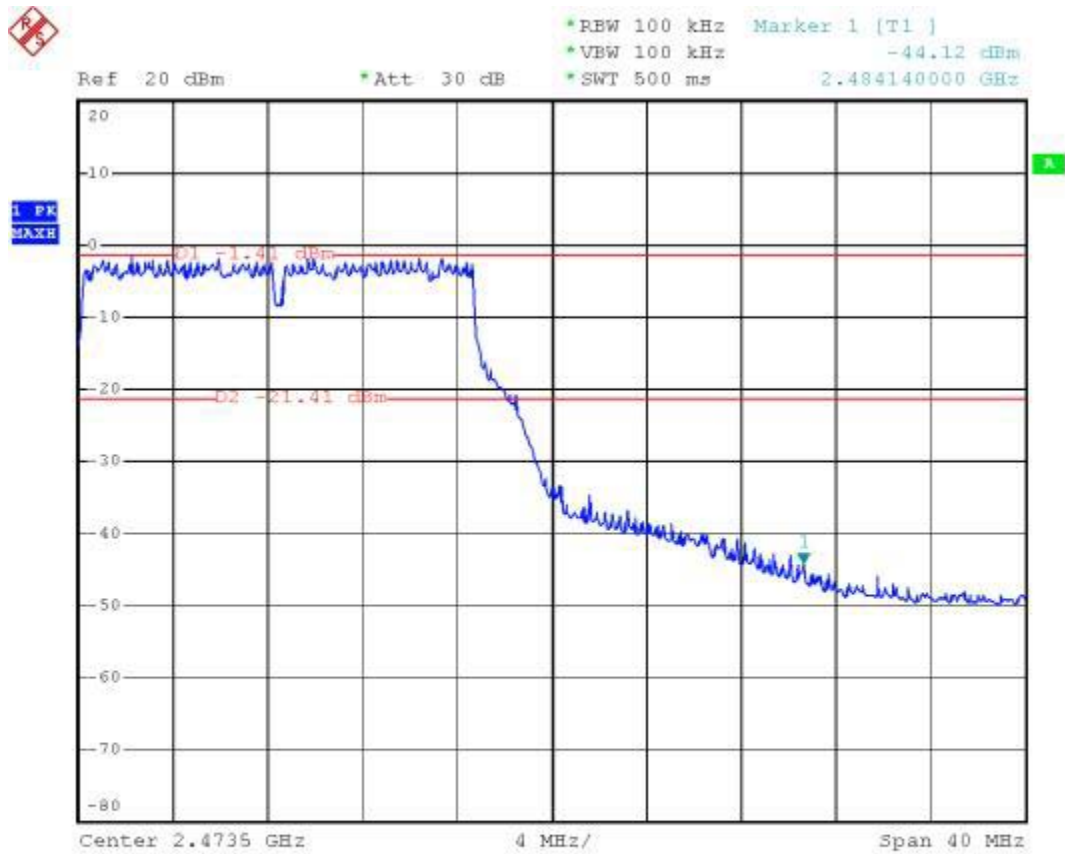
Vertical



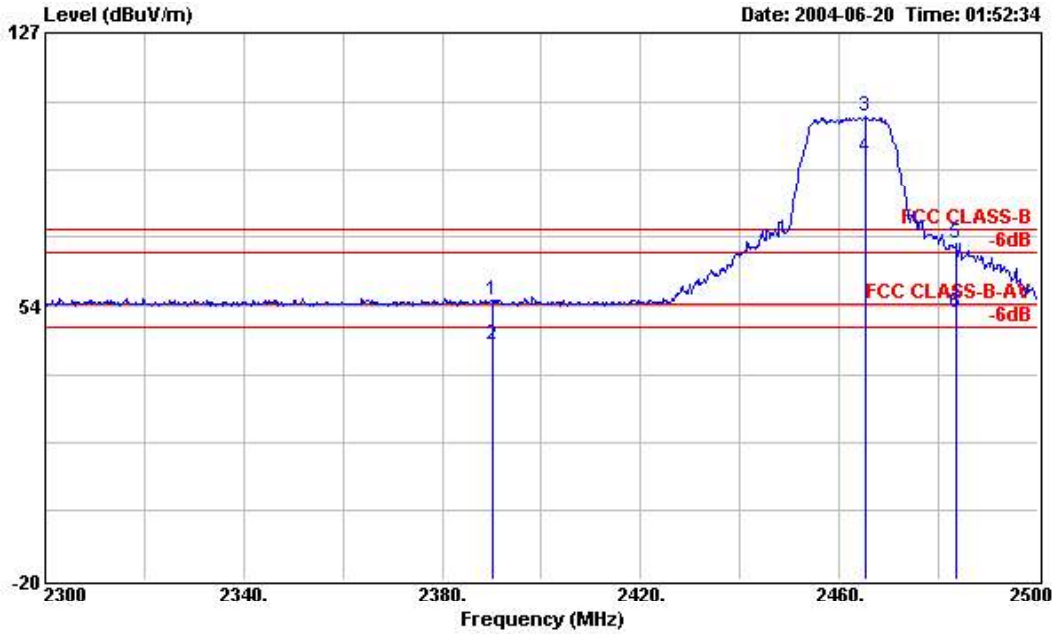
Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11g TX_CH:01;2412MHz

Line	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	2390.000	73.42	-0.58	74.00	43.56	28.14	1.72	0.00	Peak	---	---
2	2390.000	53.39	-0.61	54.00	23.53	28.14	1.72	0.00	Average	100	163

Mode 6 : 802.11g CH11 (2462MHz)



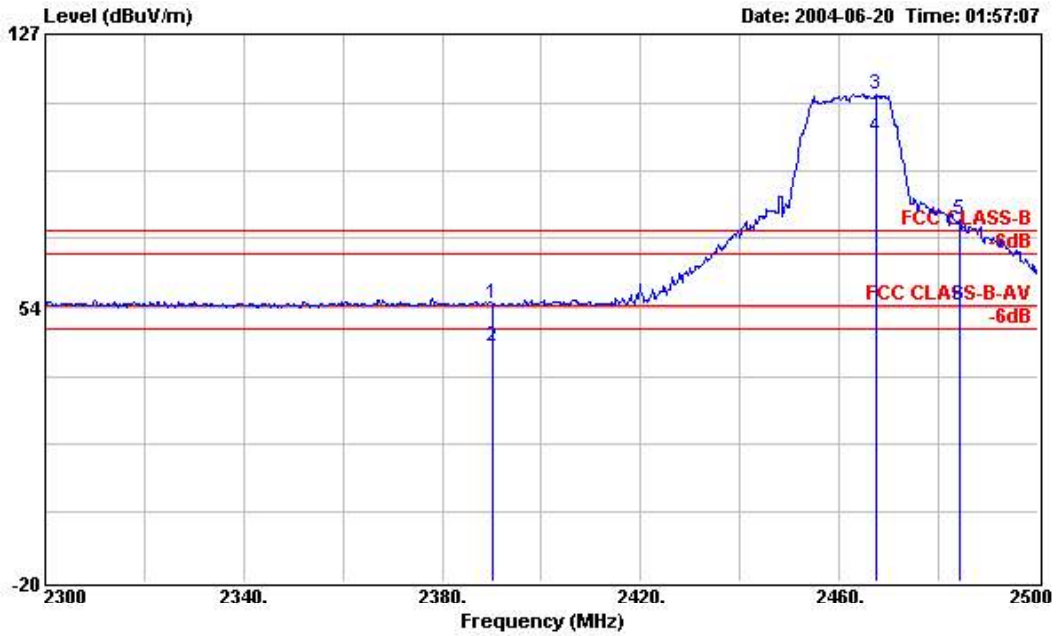
Horizontal



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11g TX_CH:11;2462MHz

Over	Limit	Read	Probe	Cable	Preamp	Ant	Table					
Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Remark				
dB	dBuV/m	dBuV	dB	dB	dB	cm	deg					
5	!	2483.600	70.20	-3.80	74.00	40.02	28.39	1.79	0.00	Peak	---	---
6	!	2483.600	51.46	-2.54	54.00	21.28	28.39	1.79	0.00	Average	100	266

Vertical



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 VERTICAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11g TX_CH:11;2462MHz

Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg

5	2484.400	76.79	2.79	74.00	46.61	28.39	1.79	0.00	Peak	---	---
6	2484.400	53.86	-0.14	54.00	23.68	28.39	1.79	0.00	Average	100	234

5.5 Peak Output Power

5.5.1 Measuring Instruments :

As described in chapter 7 of this test report.

5.5.2 Test Procedure :

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter.
The power is equal to the reading level on power meter plus cable loss at the EUT antenna terminal.

5.5.3 Test Setup Layout :



5.5.4 Test Result :

- Mode 1~3 : WLAN 802.11b
- Temperature : 26°C
- Relative Humidity : 53%

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	15.6	1W/30 dBm
06	2437	15.4	1W/30 dBm
11	2462	15.1	1W/30 dBm

5.5.5 Test Result :

- Mode 4~6 : WLAN 802.11g
- Temperature : 26°C
- Relative Humidity : 53%

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (Watt/dBm)
01	2412	15.5	1W/30 dBm
06	2437	15.2	1W/30 dBm
11	2462	15.3	1W/30 dBm

6. Test of Conducted Emission

Conducted emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in ANSI C63.4-2001 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

6.1. Major Measuring Instruments

● Test Receiver	(R&S ESCS 30)
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

6.2. Test Procedures

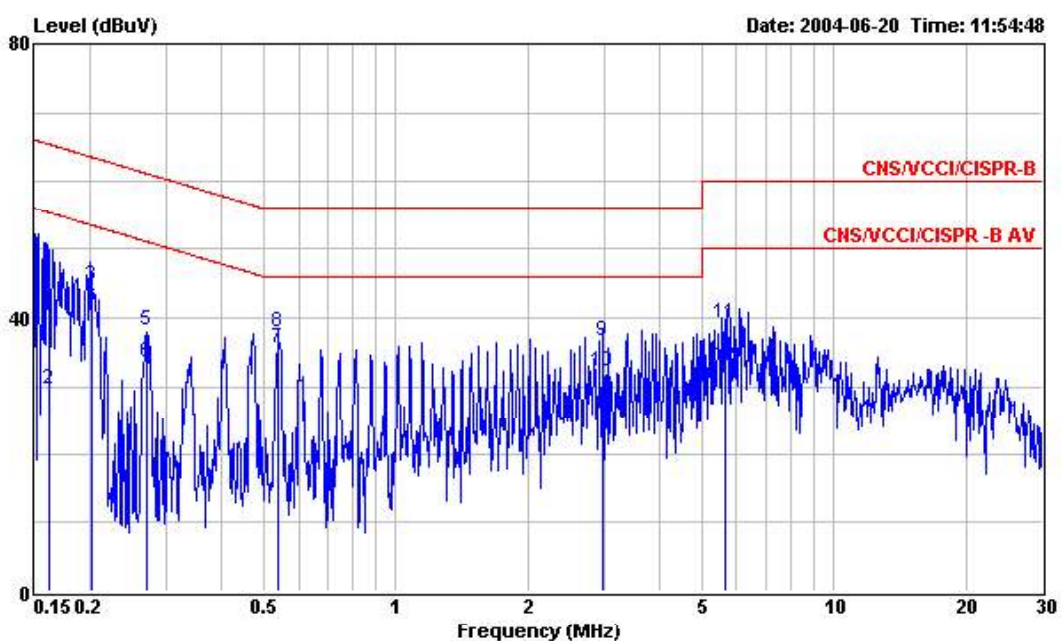
- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power port of the line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- 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.

6.3. Test Result of Conducted Emission

6.3.1 Frequency Range of Test : 150kHz to 30 MHz

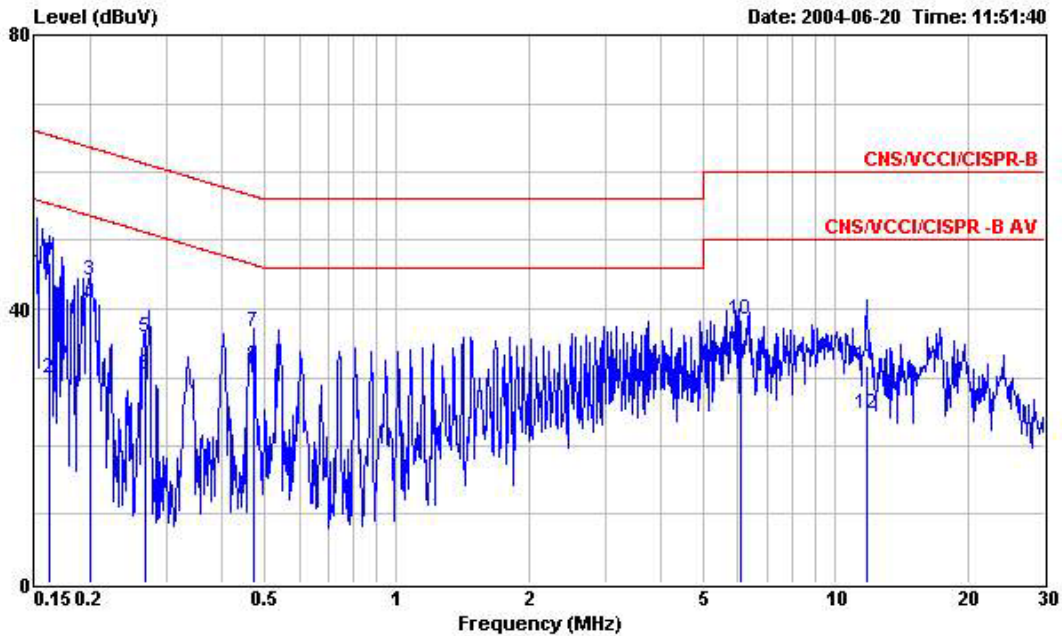
- Test Mode : Mode 1 Operating
- Temperature : 26°C
- Relative Humidity : 53%

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



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE
 EUT : EW7317UHG,GWU-07HG
 Power : 120V/60Hz
 Model : EW-7317UHG,GWU-07HG
 Memo : Link Mode

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.161	46.75	-18.64	65.39	46.64	0.10	0.01	QP
2	0.161	29.57	-25.82	55.39	29.46	0.10	0.01	Average
3	0.202	44.59	-18.92	63.51	44.49	0.10	0.00	QP
4	0.202	42.72	-10.79	53.51	42.62	0.10	0.00	Average
5	0.270	38.06	-23.07	61.13	37.93	0.10	0.03	QP
6	0.270	33.64	-17.49	51.13	33.51	0.10	0.03	Average
7	0.541	35.51	-10.49	46.00	35.34	0.10	0.07	Average
8	0.541	37.90	-18.10	56.00	37.73	0.10	0.07	QP
9	2.974	36.58	-19.42	56.00	36.39	0.10	0.09	QP
10	2.974	32.28	-13.72	46.00	32.09	0.10	0.09	Average
11	5.673	39.29	-20.71	60.00	39.03	0.14	0.12	QP
12	5.673	33.03	-16.97	50.00	32.77	0.14	0.12	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 NEUTRAL
 EUT : EW7317UHG,GWU-07HG
 Power : 120V/60Hz
 Model : EW7317UHG,GWU-07HG
 Memo : Link Mode

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.161	46.77	-18.65	65.42	46.66	0.10	0.01	QP
2	0.161	29.79	-25.63	55.42	29.68	0.10	0.01	Average
3	0.201	44.05	-19.51	63.56	43.95	0.10	0.00	QP
4	0.201	40.44	-13.12	53.56	40.34	0.10	0.00	Average
5	0.268	35.89	-25.28	61.17	35.76	0.10	0.03	QP
6	0.268	30.38	-20.79	51.17	30.25	0.10	0.03	Average
7	0.471	36.52	-19.98	56.50	36.36	0.10	0.06	QP
8	0.471	31.64	-14.86	46.50	31.48	0.10	0.06	Average
9	6.060	32.24	-17.76	50.00	31.92	0.20	0.12	Average
10	6.060	38.52	-21.48	60.00	38.20	0.20	0.12	QP
11	11.810	31.78	-28.22	60.00	31.37	0.24	0.17	QP
12	11.810	24.72	-25.28	50.00	24.31	0.24	0.17	Average

Test Engineer : Jay
 Jay

7. Test of Radiated Emission

Radiated emissions from 30 MHz to 25 GHz were measured according to the methods defined in ANSI C63.4-2001. The EUT was placed, 0.8 meter above the ground plane, as shown in section 5.6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions

7.1. Major Measuring Instruments

- Amplifier (MITEQ AFS44)
 - RF Gain 40 dB
 - Signal Input 100 MHz to 26.5 GHz

- Amplifier (HP8447D)
 - RF Gain 30 dB
 - Signal Input 100 MHz to 1.3 GHz

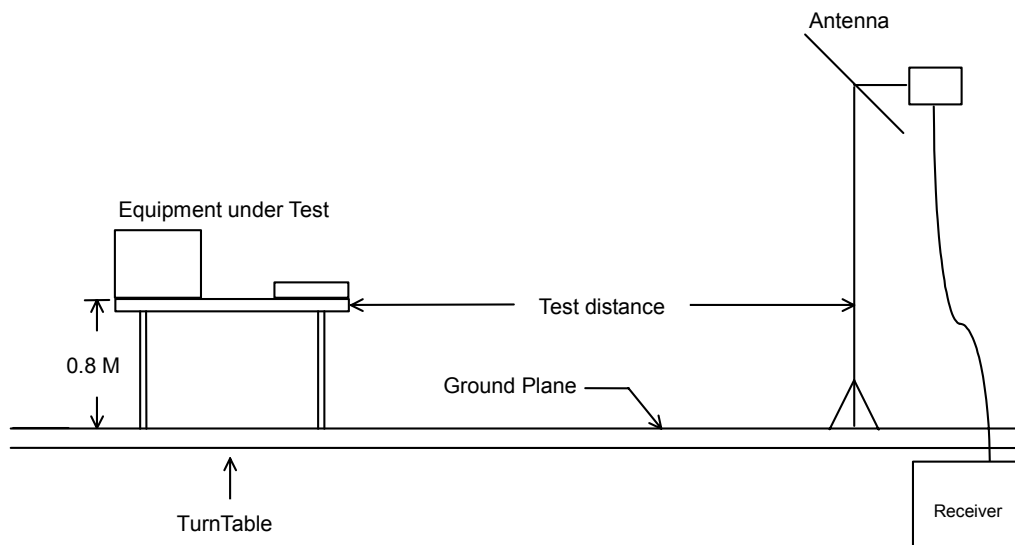
- Spectrum analyzer (R&S FSP40)
 - Attenuation 10 dB
 - Start Frequency 1 GHz
 - Stop Frequency 25 GHz
 - Resolution Bandwidth 1 MHz
 - Video Bandwidth 1 MHz
 - Signal Input 9 kHz to 40 GHz

- Spectrum analyzer (R&S FSP40)
 - Attenuation 10 dB
 - Start Frequency 30MHz
 - Stop Frequency 1 GHz
 - Resolution Bandwidth 120 KHz
 - Video Bandwidth 300KHz
 - Signal Input 9 kHz to 40 GHz

7.2. Test Procedures

1. The EUT was placed on a rotatable table top 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. 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.
5. 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.
6. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. 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.
8. 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.

7.3. Typical Test Setup Layout of Radiated Emission

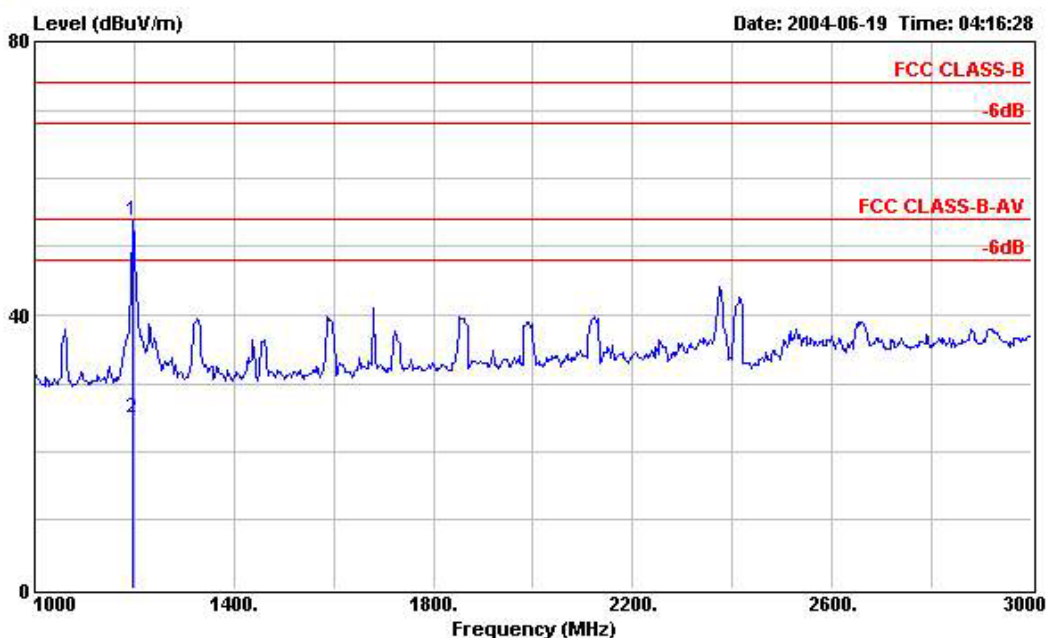


7.4. Test Result of Radiated Emission

7.4.1 Test Mode: Mode 1 (11b TX CH01)

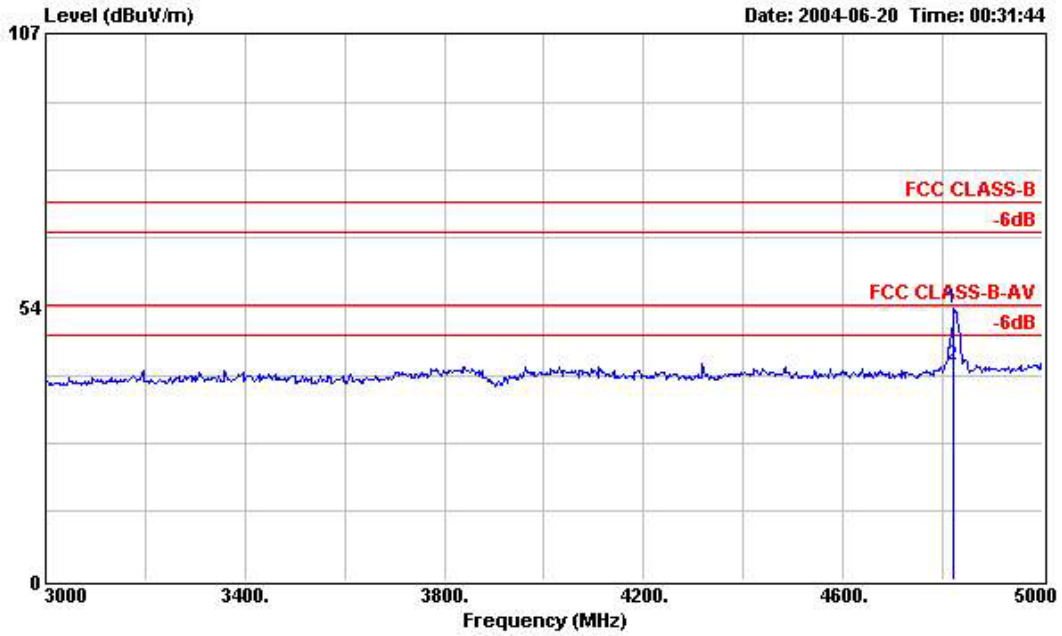
- Test Distance : 3 m
- Temperature : 26°C
- Relative Humidity :53%
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

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



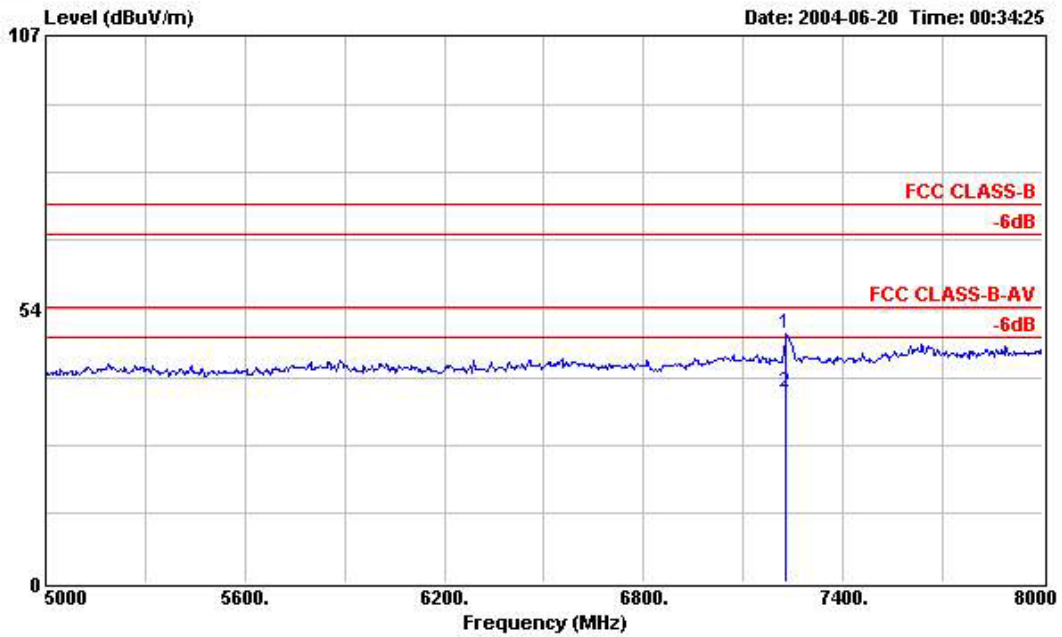
Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11b TX_CH:01;2412MHz
 : Gain:18;Data rate:11M

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	1198.000	53.86	-20.14	74.00	68.53	24.38	1.26	40.31	Peak	---	---
2	1198.000	24.87	-29.13	54.00	39.54	24.38	1.26	40.31	Average	100	105



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11b TX_CH:01;2412MHz

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	4822.000	53.12	-20.88	74.00	59.79	33.23	2.47	42.37	Peak	---	---
2	4822.000	42.05	-11.95	54.00	48.72	33.23	2.47	42.37	Average	100	83



Site : 03CH03-HY
 Condition : FCC CLASS-B 3m HORN-ANT-6821 HORIZONTAL
 EUT : EW-7317UHG, GWU-07HG
 Power : 120Vac/60Hz
 Model : EW-7317UHG, GWU-07HG
 Memo : 11b TX_CH:01;2412MHz

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB		cm	deg
1	7229.000	48.65	-25.35	74.00	52.42	36.07	2.87	42.71	Peak	---	---
2	7229.000	37.02	-16.98	54.00	40.79	36.07	2.87	42.71	Average	100	202