FCC TEST REPORT

CATEGORY : Mobile End Product

PRODUCT NAME : Wireless PCI adapter

FCC ID. : RC6AWI-926W

FILING TYPE : Certification

BRAND NAME : Amigo, PTI

MODEL NAME : 1. AWI-926W
2. Wireless PCI Adapter
3. PTI-620G

APPLICANT : **Amigo Technology Co., Ltd.**
No.6, Lane35, Jihu Rd., Neihu, Taipei, Taiwan 114, R.O.C.

MANUFACTURER : **FAIR WAY ELECTRONICS FACTORY**
Huang Chong No.3 Ind Area, Zhong Tang Town, Dong Guan City, Guang Dong, P.R. China

ISSUED BY : **SPORTON INTERNATIONAL INC.**
6F, No. 106, Hsin Tai Wu Rd., Sec. 1, His Chih, Taipei Hsien, Taiwan, R.O.C.

Statements:

The test result in this report refers exclusively to the presented test model / sample.

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Certificate or Test Report could not be used by the applicant to claim the product endorsement by CNLA, NVLAP or any agency of U.S. government.

The test equipment used to perform the test are calibrated and traceable to NML/ROC or NIST/USA.

Dr. Alan Lane
Vice General Manager
Sporton International Inc.

1190
ILAC MRA

Lab Code: 200079-0

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Appendix A. Photographs of EUT ..... A1 ~ A5

History of this test report

■ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

1. General Description of Equipment under Test

1.1. Applicant

Amigo Technology Co., Ltd.
No.6, Lane35, Jihu Rd., Neihu, Taipei, Taiwan 114, R.O.C.

1.2. Manufacturer

FAIR WAY ELECTRONICS FACTORY
Huang Chong No.3 Ind Area, Zhong Tang Town, Dong Guan City, Guang Dong, P.R. China

1.3. Basic Description of Equipment under Test

This product is a PCI card with IEEE 802.11b/g wireless solution. The technical data has been listed on section " Features of Equipment under Test ". And it can be used for host equipment with PCI interface

1.4. Features of Equipment under Test

ITEM	DESCRIPTION
Type of Modulation	DSSS (CCK / DQPSK / DBPSK), OFDM (10QAM, 64QAM)
Number of Channels	11
Frequency Band	2400MHz ~ 2483.5MHz
Carrier Frequency of Each Channel	Please reference table below.
Channel Bandwidth	20 MHz
Output Power	CCK : 18.50 dBm (peak) OFDM : 15.40 dBm (peak)
Antenna Type / Gain	Monopole Antenna / 2.5dBi *
Function Type	Transceiver
Data Rate	CCK : 1, 2, 5, 11M OFDM : 9, 18, 24, 36, 48, 54M
Duty Cycle	100 %
Power Rating (DC/AC , Voltage)	3.3 VDC from host
Temperature Range (Operating)	0 ~ 65℃

*Note: 3 monopole antennas are filed in this project. 2.5dBi gain is the maximum one.

1.5. Table for Carrier Frequencies

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

1.6. Table of Antenna List

Model	Antenna Type	Antenna Gain	Antenna Cable Loss
Amigo 1-1	Monopole Antenna	2.5dBi	0.3 dB
Amigo 1-2	Monopole Antenna	2 dBi	Without cable
Amigo 1-3	Monopole Antenna	2 dBi	Without cable

2. Test Configuration of the Equipment under Test

2.1. Description of the Test

a. During testing, the equipment was placed on a non-conducting support.
b. The following test modes were performed:
   Mode 1 : CH 01 2412MHz
   Mode 2 : CH 06 2437MHz
   Mode 3 : CH 11 2462MHz
c. Spurious emission below 1GHz is independent of channel selection, so only Channel 11 with OFDM modulation was tested.
d. For spurious emission above 1GHz, lowest, middle and highest channel with 11Mbps and 54Mbps data rate was tested.
e. The EUT has been programmed to continuously transmit or receive during testing. The used peripherals as well as the configuration fulfill the requirements of ANSI C63.4:2001.
f. The configuration is operated in a manner which tends to maximize its emission characteristics in a typical application.
g. 3 meters measurement distance in semi-anechoic chamber was used in this test.

2.2. Frequency Range Investigated

a. Conducted power line test: from 150 kHz to 30 MHz
b. Radiated emission test: from 30 MHz to 25000 MHz

2.3. Description of Test Supporting Units

Support Unit 1. – Personal Computer (COMPAQ)

FCC ID	: N/A
Model No.	: D380Mx
Serial No.	: SP0003
Remark	: This support device was tested to comply with FCC standards and authorized under Declaration of Conformity.

Support Unit 2. -- Monitor (VIEWSOINC)

FCC ID	: N/A
Model No.	: VCDTS21553-3P
Power Supply Type	: Switching
Power Cord	: Non-Shielded
Serial No.	: SP0007
Data Cable	: Shielded, 360 degree via metal backshells, 1.7m
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

Support Unit 3. – PS/2 Keyboard (LOGITECH)

FCC ID	: N/A
Model No.	: Y-S117
Serial No.	: SP0010
Data Cable	: Shielded, 360 degree via metal backshells, 1.7m
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

Support Unit 4. – PS/2 Mouse (LOGITECH)

FCC ID	: DZL211029
Model No.	: M-S34
Serial No.	: SP0014
Data Cable	: Shielded, 1.7m
Remark	: This support device was tested to comply with FCC standards and authorized under a declaration of conformity.

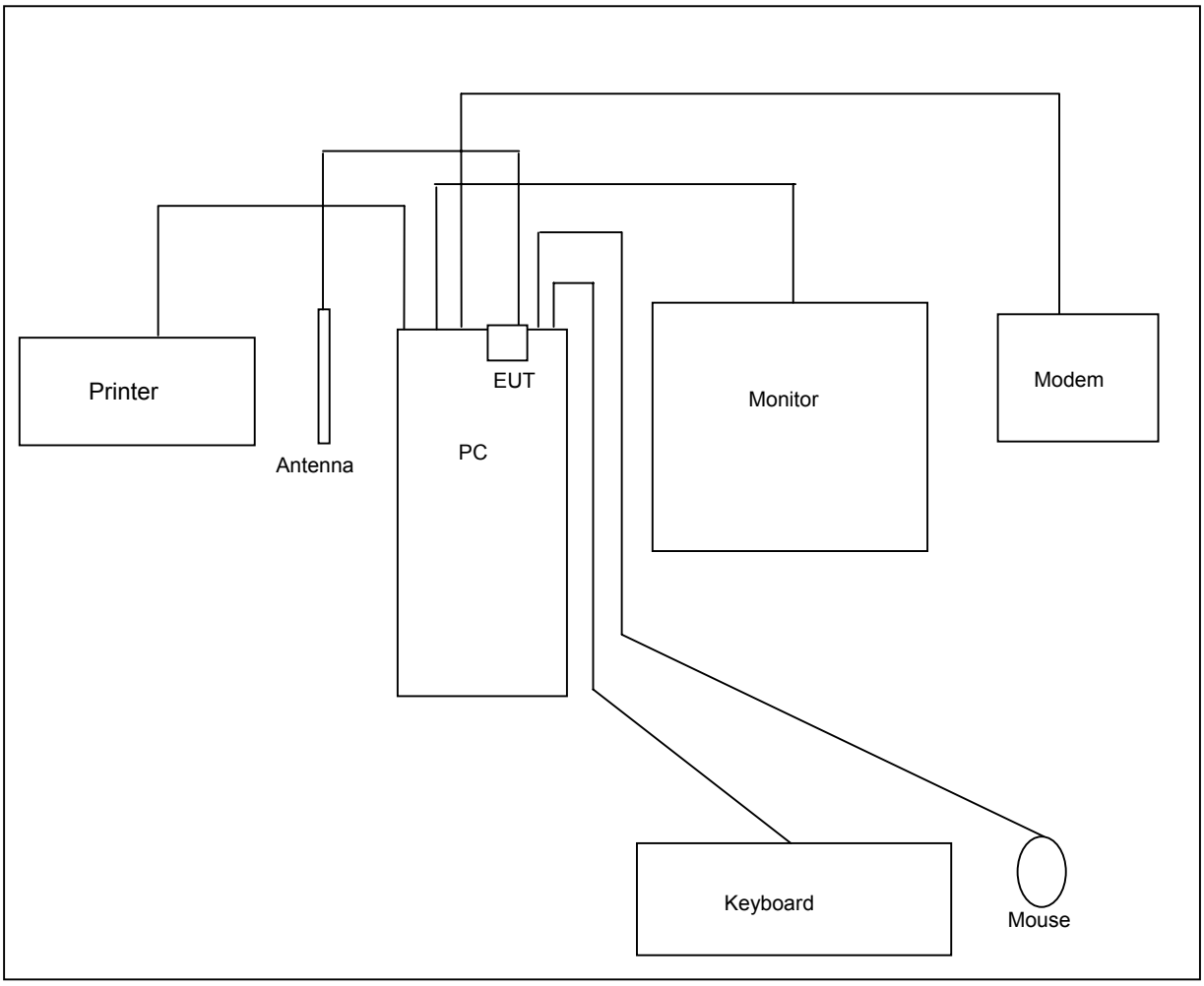
Support Unit 5. – Printer (EPSON)

FCC ID	: N/A
Model No.	: Stylus Color 680
Serial No.	: SP0016
Remark	: This support device was tested to comply with FCC standards and authorized under Declaration of Conformity and data cable is 1.35m of the shielded.

Support Unit 6. -- Modem (ACEEX)

Model No.	: DM1414
Power Supply Type	: Linear
Power Cord	: Non-Shielded
Serial No.	: SP0015
Data Cable	: Shielded, 1.15m

2.4. Connection Diagram of Test System



2.5. Test Software

There are 2 software may be used in the testing.

a. Channel & Power Controlling Software: This was provided by the manufacturer and is able to let the test engineer select the operating channel as well as the RF output power. The parameters for channel selection is trying to offer the test engineer the ability to fix the operating channel for testing, both normal data and continuously transmitting modes are allowed, and that for RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

b. “H” Pattern Generator: Except Access Point, the supporting equipment such as monitor or printer is always available. Under testing, these supporting equipment has to also under working condition. “H” Pattern Generator is able to continuously transmitting “H” character to those supporting equipments.

3. Test Location and Standards

3.1. Test Location

Test Location : Sporton Hwa Ya Testing Building

Address : 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

3.2. Test Conditions

Normal Voltage	: 120V/60Hz (host equipment)
Extreme Voltage	: 138V and 102V (host equipment)
Normal Temperature	: 20 ℃
Extreme Temperature	: 0 ℃ and 60 ℃

3.3. Standards for Methods of Measurement

Here is the list of the standards followed in this test report.

ANSI C63.4-2001

47 CFR Part 15 Subpart C (Section 15.247)

3.4. DoC Statement

This EUT is also classified as a device of computer peripheral Class B which DoC has to be followed. It has been verified according to the rule of 47 CFR part 15 Subpart B, and found that all the requirements has been fulfilled.

4. List of Measurements

4.1. Summary of the Test Results

Applied Standard: 47 CFR Part 15 and Part 2			
Paragraph	**FCC Rule**	**Description of Test**	**Result**
5.1	15.247(a)(2)	6dB Spectrum Bandwidth (DSSS System)	Pass
5.2	15.247(b)	Maximum Peak Output Power	Pass
5.3	15.247(d)	Peak Power Spectral Density	Pass
5.4	15.247(c)	Band Edges Emission	Pass
5.5	15.107/15.207	AC Power Line Conducted Emission	Pass
5.6	15.209/15.247(c)	Spurious Radiated Emission	Pass
5.7	15.203	Antenna Requirement	Pass

5. Test Result

5.1. Test of 6dB Spectrum Bandwidth

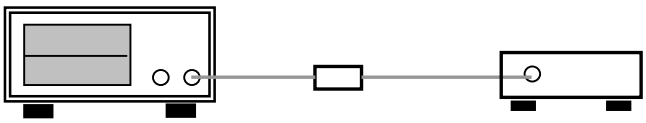
5.1.1. Measuring Instruments

Item 9 of the table on section 6.

5.1.2. Test Procedures

1. The transmitter output was connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 100KHz and VBW to 100KHz.
3. The 6dB bandwidth is defined as the spectrum width with level higher than 6dB below the peak level.
4. Repeat above 1~3 points for the middle and highest channel of the EUT.

5.1.3. Test Setup Layout



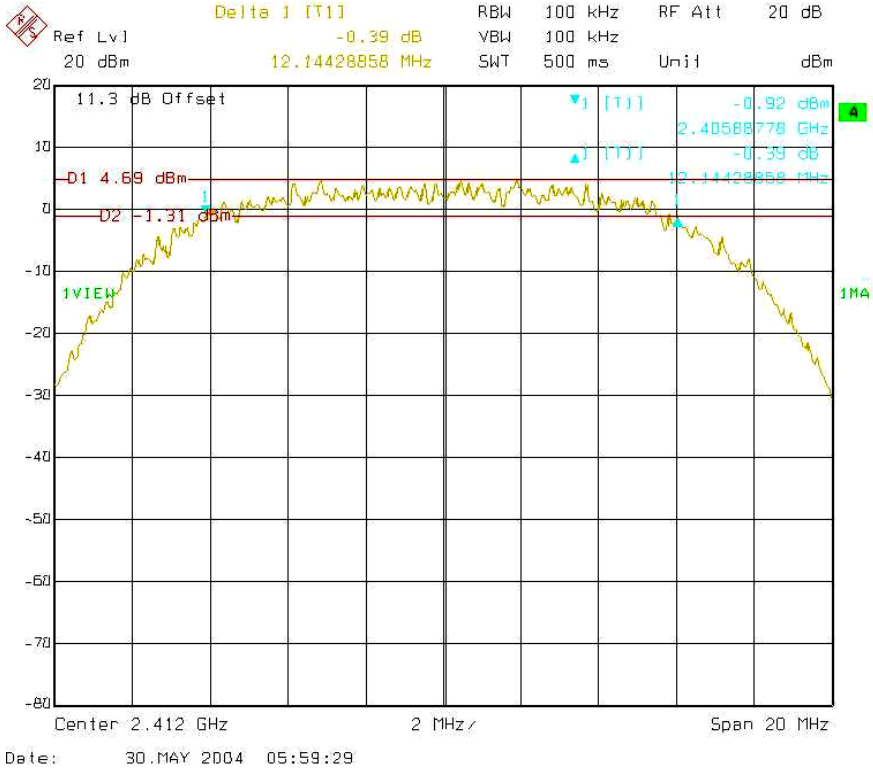
Spectrum analyzer **EUT**

5.1.4. Test Result

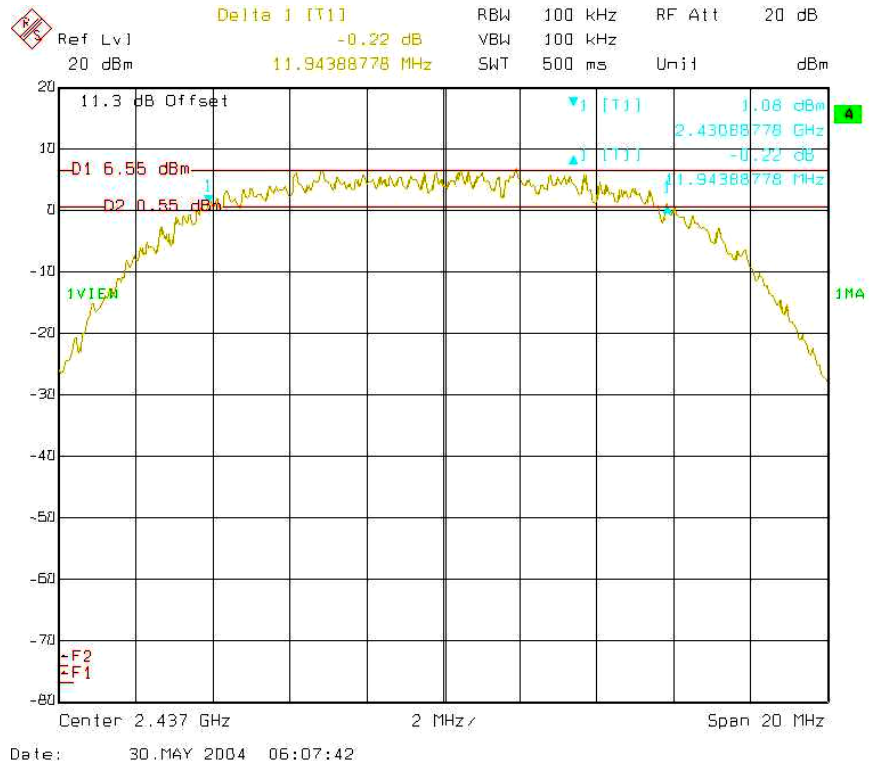
- Modulation Type: CCK
- Temperature: 25°C
- Relative Humidity: 55%
- Duty Cycle of the Equipment During the Test: 100%
- Test Engineer: Wayne Hsu

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Min. Limit (MHz)
01	2412	12.14	0.5
06	2437	11.94	0.5
11	2462	11.94	0.5

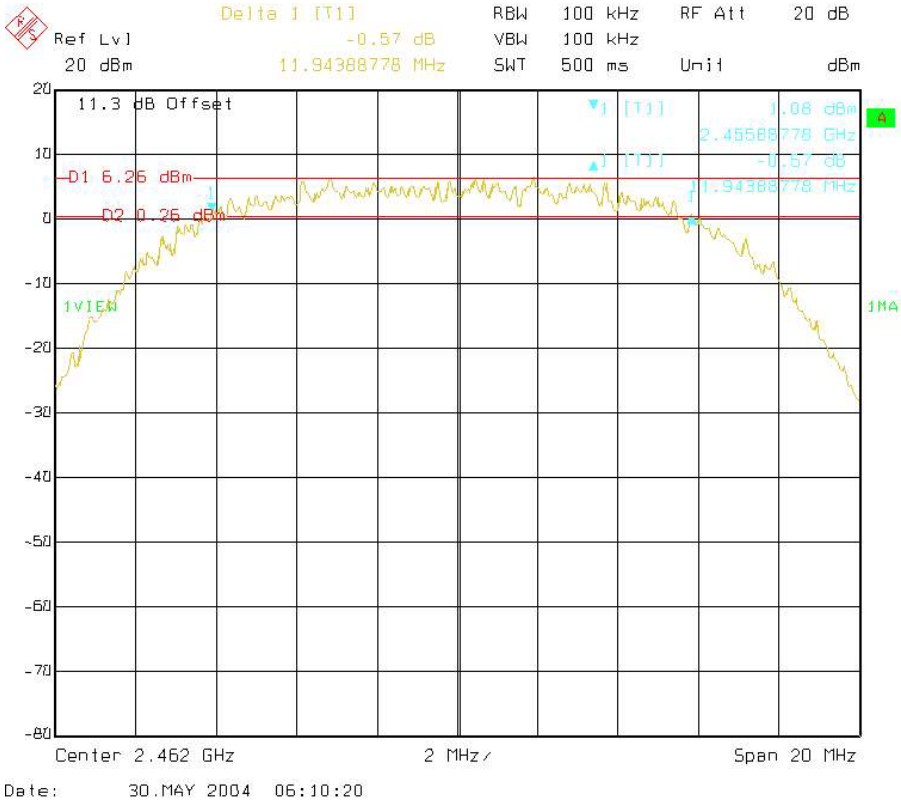
Modulation Type: CCK (Channel 01) :



Modulation Type: CCK (Channel 06) :



Modulation Type: CCK (Channel 11)：

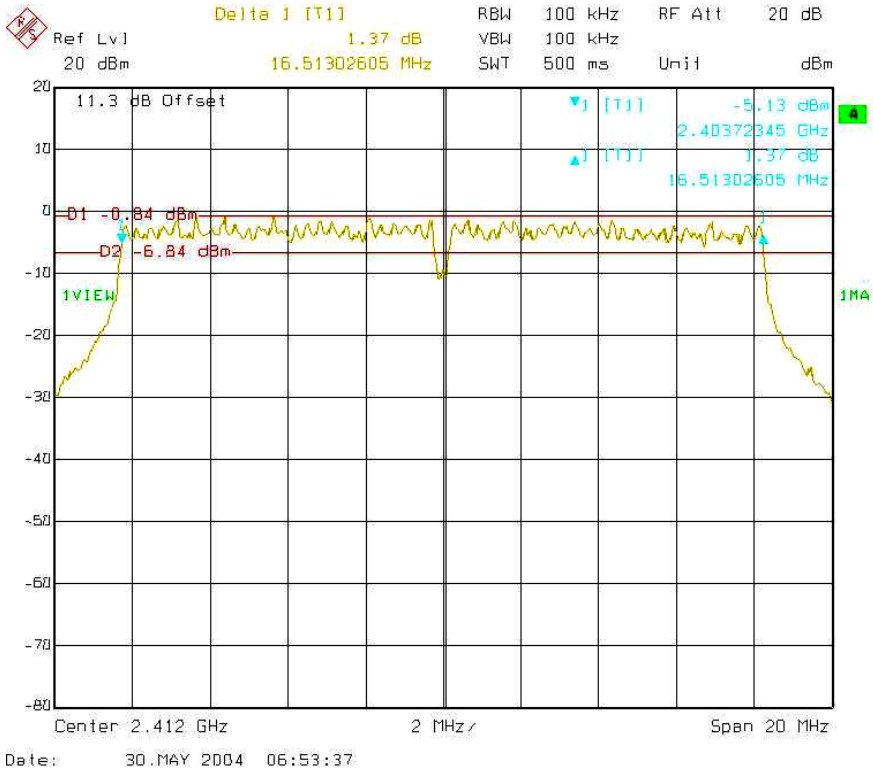


5.1.5. Test Result

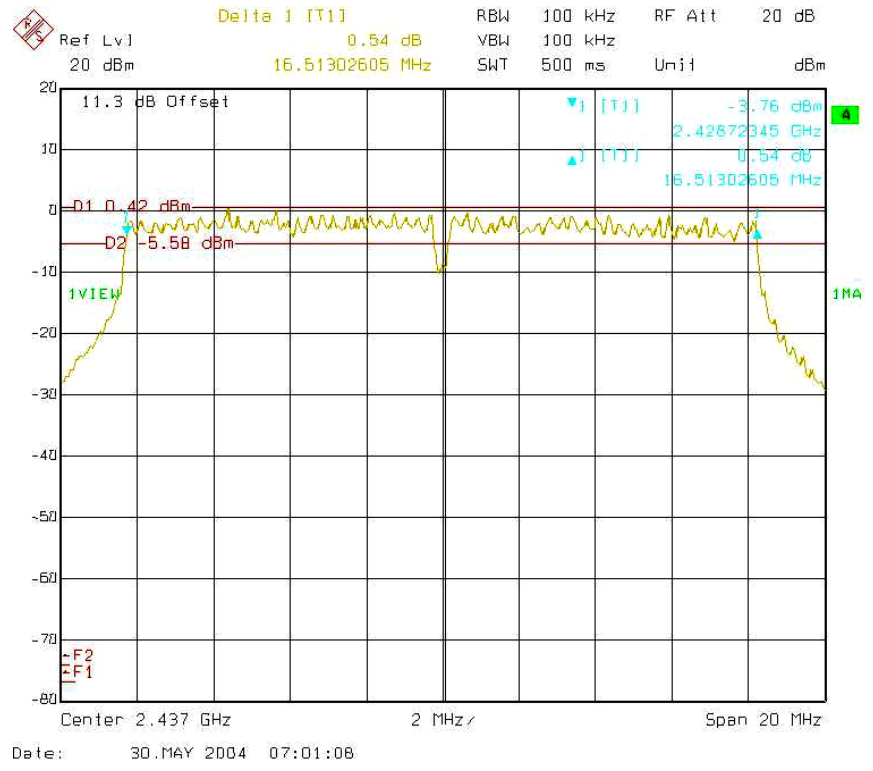
- Modulation Type: OFDM
- Temperature: 25°C
- Relative Humidity: 55 %
- Duty Cycle of the Equipment During the Test: 100%
- Test Engineer: Wayne Hsu

Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Min. Limit (MHz)
01	2412	16.51	0.5
06	2437	16.51	0.5
11	2462	16.51	0.5

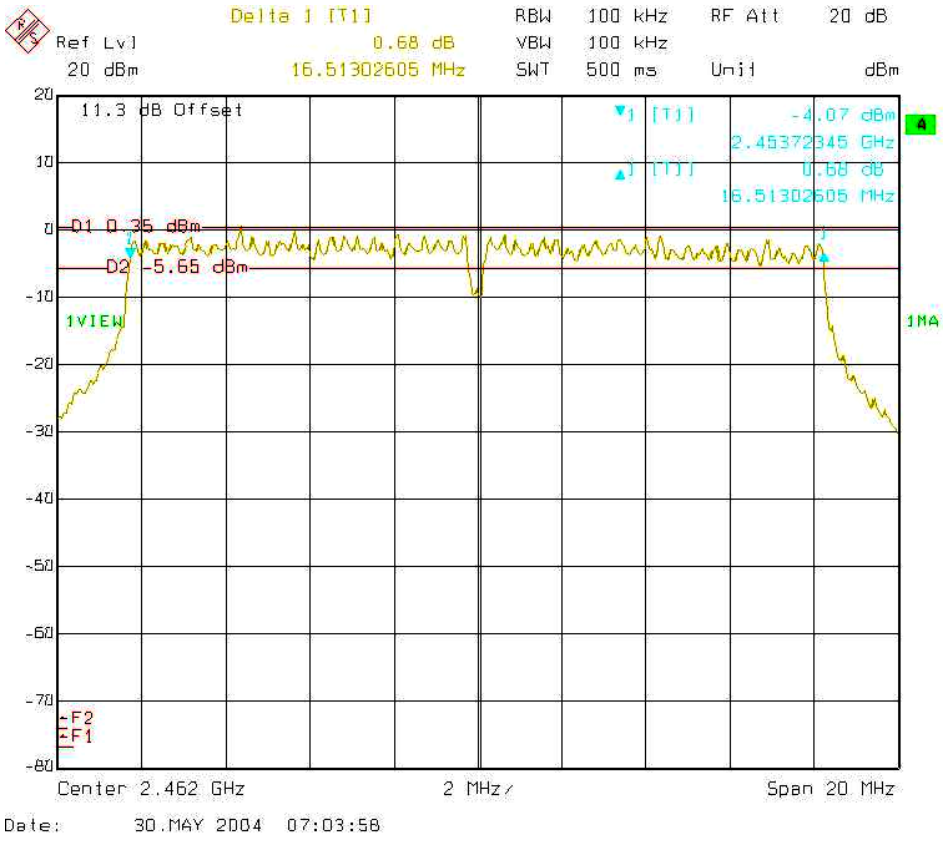
Modulation Type: OFDM (Channel 01)：



Modulation Type: OFDM (Channel 06)：



Modulation Type: OFDM (Channel 11) :



5.2. Test of Maximum Peak Output Power

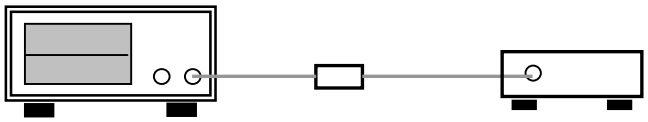
5.2.1. Measuring Instruments

Item 9 of the table on section 6.

5.2.2. Test Procedures

1. The transmitter output was connected to the vertical channel of the oscilloscope through a detector.
2. Observe the duty cycle X from the oscilloscope and the record the detected voltage level A.
3. Replace the EUT via the signal generator, calibrate the reading via the carrier frequency.
4. The duty cycle X has to be calibrated on the output power of the signal generator.
5. Repeated the 1~4 for the middle and highest channel of the EUT.

5.2.3. Test Setup Layout



5.2.4. Test Result

- Modulation Type: CCK
- Temperature: 25°C
- Relative Humidity: 55 %
- Duty Cycle of the Equipment During the Test: 100%
- Test Engineer: Wayne Hsu

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mWatt)	Limits (dBm)
01	2412	17.62	57.809	30 dBm
06	2437	18.50	70.794	30 dBm
11	2462	18.50	70.794	30 dBm

5.2.5. Test Result

- Modulation Type: OFDM
- Temperature: 25°C
- Relative Humidity: 55 %
- Duty Cycle of the Equipment During the Test: 100%
- Test Engineer: Wayne Hsu

Channel	Frequency (MHz)	Output Power (dBm)	Output Power (mWatt)	Limits (dBm)
01	2412	15.12	32.508	30 dBm
06	2437	15.40	34.674	30 dBm
11	2462	15.27	33.651	30 dBm

5.3. Test of Peak Power Spectral Density

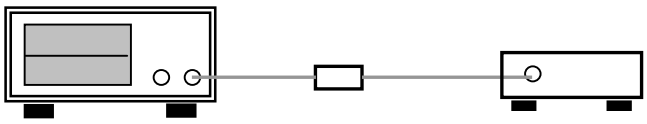
5.3.1. Measuring Instruments

Item 9 of the table on section 6.

5.3.2. Test Procedures

1. The transmitter output is connected to the spectrum analyzer through an attenuator.
2. Set RBW of spectrum analyzer to 3kHz and VBW to 30kHz.
3. Mark the frequency with maximum peak power as the center of the display of the spectrum
4. Set the span to 1.5MHz and the sweep time to 500s and record the maximum peak value.
5. Repeated the 1~4 for the middle and highest channel of the EUT.

5.3.3. Test Setup Layout



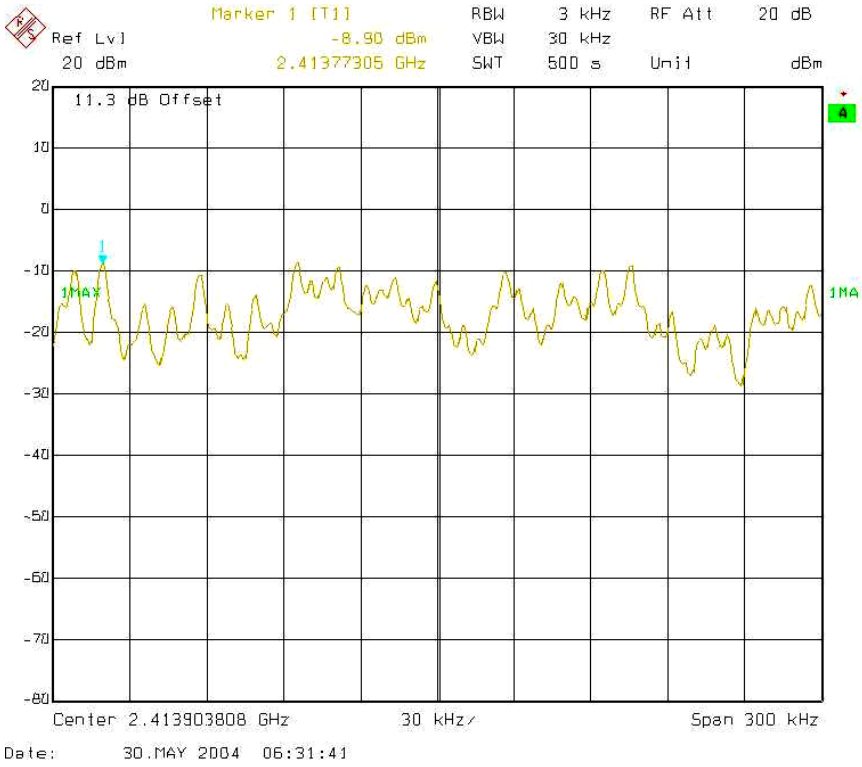
Spectrum analyzer **EUT**

5.3.4. Test Result

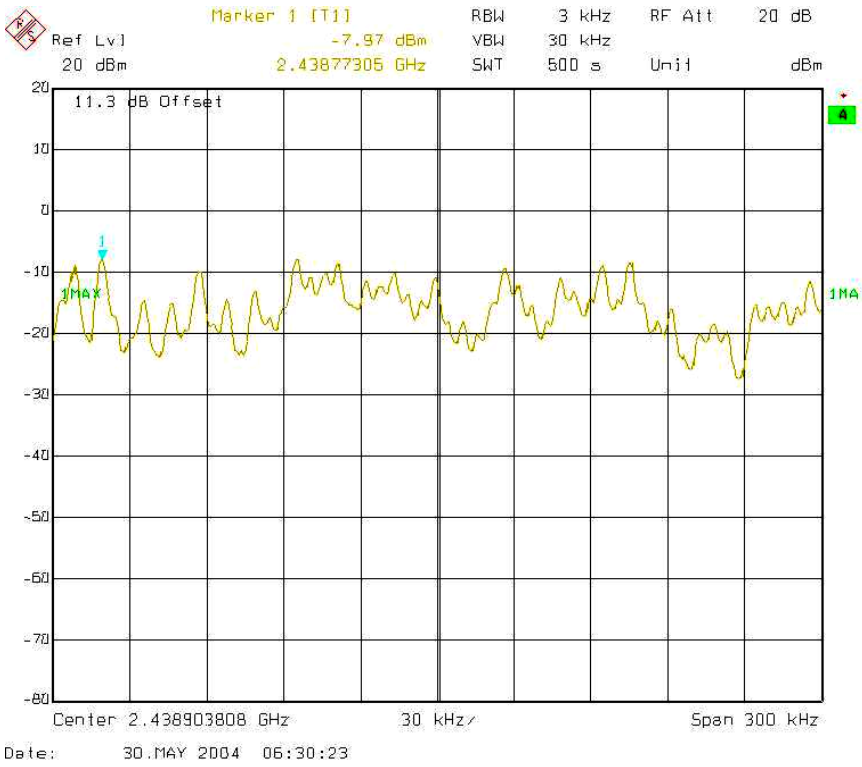
- Modulation Type: CCK
- Temperature: 25°C
- Relative Humidity: 55 %
- Duty Cycle of the Equipment During the Test: 100%
- Test Engineer: Wayne Hsu

Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
01	2412	-8.90	8
06	2437	-7.79	8
11	2462	-8.35	8

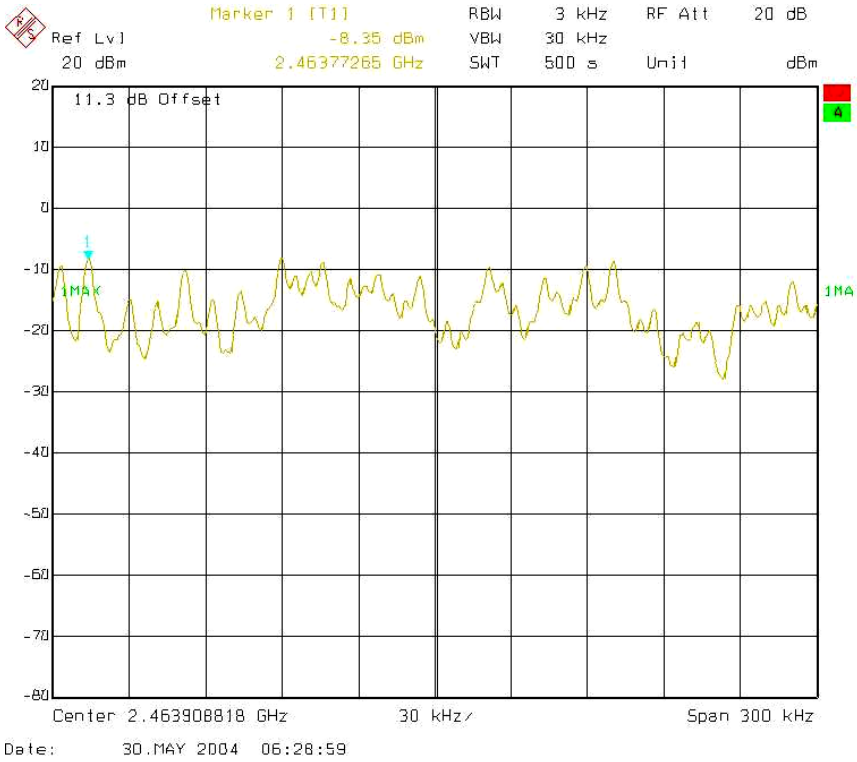
Modulation Type: CCK (Channel 01) :



Modulation Type: CCK (Channel 06) :



Modulation Type: CCK (Channel 11)：

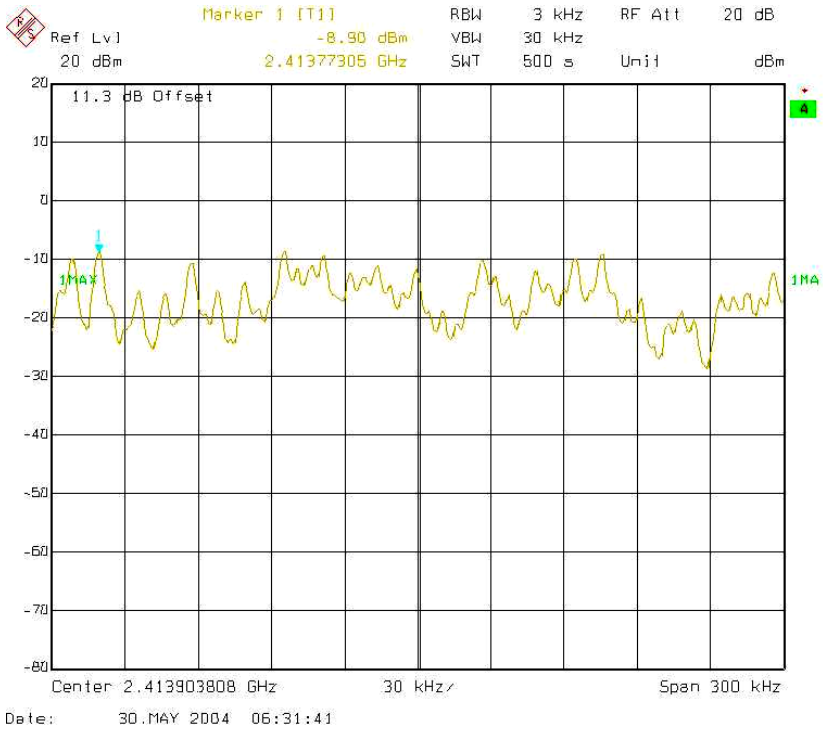


5.3.5. Test Result

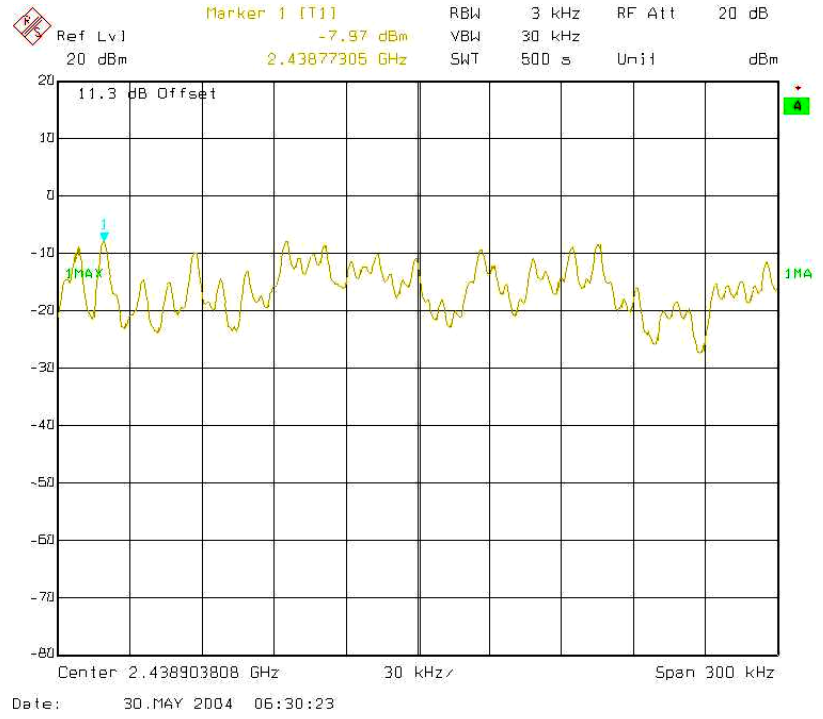
- Modulation Type: OFDM
- Temperature: 25°C
- Relative Humidity: 55 %
- Duty Cycle of the Equipment During the Test: 100%
- Test Engineer: Wayne Hsu

Channel	Frequency (MHz)	Power Density (dBm)	Limits (dBm)
01	2412	-16.49	8
06	2437	-15.36	8
11	2462	-15.43	8

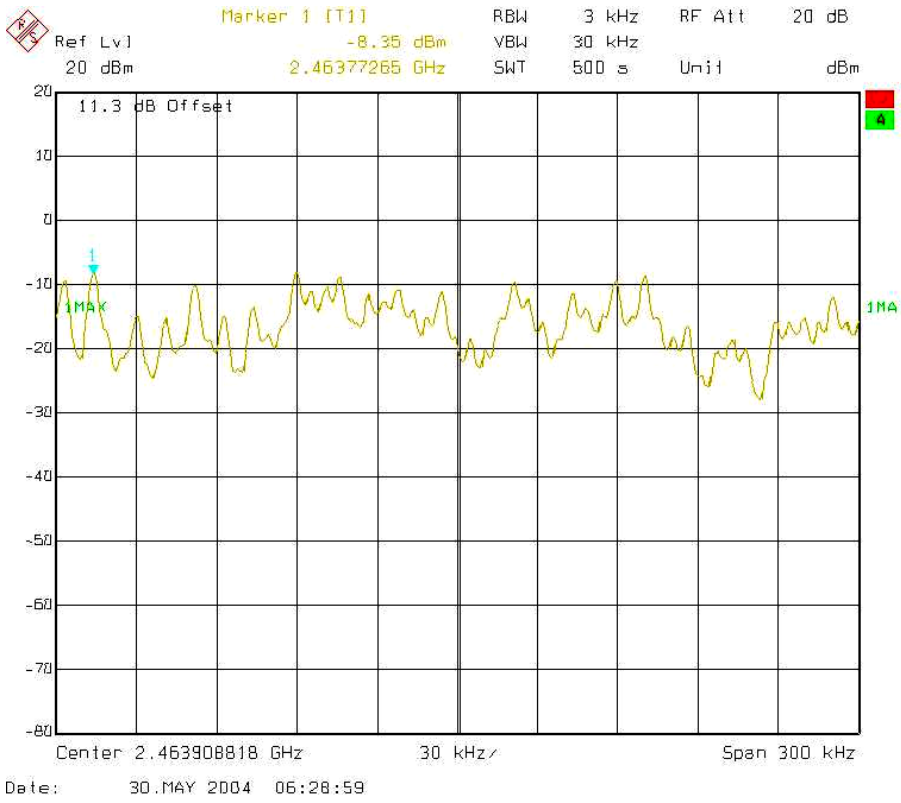
Modulation Type: OFDM (Channel 01)：



Modulation Type: OFDM (Channel 06)：



Modulation Type: OFDM (Channel 11) :



5.4. Test of Band Edges Emission

5.4.1. Measuring Instruments

Item 9 of the table on section 6.

5.4.2. Test Procedures

1. The transmitter is set to the lowest channel.
2. The transmitter output was connected to the spectrum analyzer via a cable and cable loss is used as the offset of the spectrum analyzer.
3. Set both RBW and VBW of spectrum analyzer to 100KHz with convenient frequency span including 100MHz bandwidth from lower band edge.
4. The lowest band edges emission was measured and recorded.
5. The transmitter set to the highest channel and repeated 2~4.

5.4.3. Test Result

- Modulation Type: CCK
- Test Engineer: Wayne Hsu

(A) Left Edge

The band edge emission plot shows 56.71dB delta between carrier maximum power and local maximum emission in the restricted band.

CH01 Carrier Power Strength (dBuV/m)	Delta (dB)	The Maximum Field Strength in Restrict Band (dBuV/m)	Limit (dBuV/m)	Margin (dB)
94.98	56.71	38.27	54.00	-15.73