



## Test Report

Product Name : Ergo 825 Laser

Model No. : GM-070007/T

FCC ID. : FSUGMZHY

Applicant : KYE SYSTEMS CORP. (Genius)

Address : No. 492, Sec. 5, Chung Hsin Rd., San Chung,  
Taipei Hsien, 24160, Taiwan, R. O. C.

Date of Receipt : 2007/04/14

Issued Date : 2007/05/16

Report No. : 074L150-RFUSP07V01-A

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

# Test Report Certification

Issued Date : 2007/05/16

Report No. : 074L150-RFUSP07V01-A



Product Name : Ergo 825 Laser

Applicant : KYE SYSTEMS CORP. (Genius)

Address : No. 492, Sec. 5, Chung Hsin Rd., San Chung, Taipei Hsien,  
24160, Taiwan, R. O. C.

Manufacturer : KYE SYSTEMS CORP. (Genius)

Model No. : GM-070007/T

FCC ID. : FSUGMZHY

Rated Voltage : AC 120 V / 60 Hz

EUT Voltage : DC 3V (Power by Battery)

Trade Name : Genius

Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.249: 2006

Test Result : Complied

The test results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

Documented By : Carol Tsai

( Carol Tsai )

Tested By : Sheena Huang

( Sheena Huang )

Approved By : Roy Wang

( Roy Wan )

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## 1. General Information

### 1.1. EUT Description

Product Name	Ergo 825 Laser
Trade Name	Genius
Model No.	GM-070007/T
Frequency Range	2400~2483.50MHz
Antenna Gain	-3dBi
Channel Number	16
Type of Modulation	GFSK
Channel Control	Auto
Antenna Type	Printed

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00	2402MHz	Channel 04	2405MHz	Channel 08	2408MHz	Channel 12	2411MHz
Channel 01	2425MHz	Channel 05	2428MHz	Channel 09	2431MHz	Channel 13	2434MHz
Channel 02	2448MHz	Channel 06	2451MHz	Channel 10	2454MHz	Channel 14	2457MHz
Channel 03	2471MHz	Channel 07	2474MHz	Channel 11	2477MHz	Channel 15	2480MHz

#### Note:

1. This device is a Ergo 825 Laser included a 2.4GHz receiving function, and 2.4GHz transmitting function.
2. The variation of model number is for different housing. The circuit of each model is identical.
3. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249.
4. Regards to the frequency band operation; the lowest 、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
5. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 074L150-RFUSP01V02 under Declaration of Conformity.

### 1.3. Test Mode

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode	
EMI	Mode 1: Transmitter
Final Test Mode	
TX	Mode 1: Transmitter

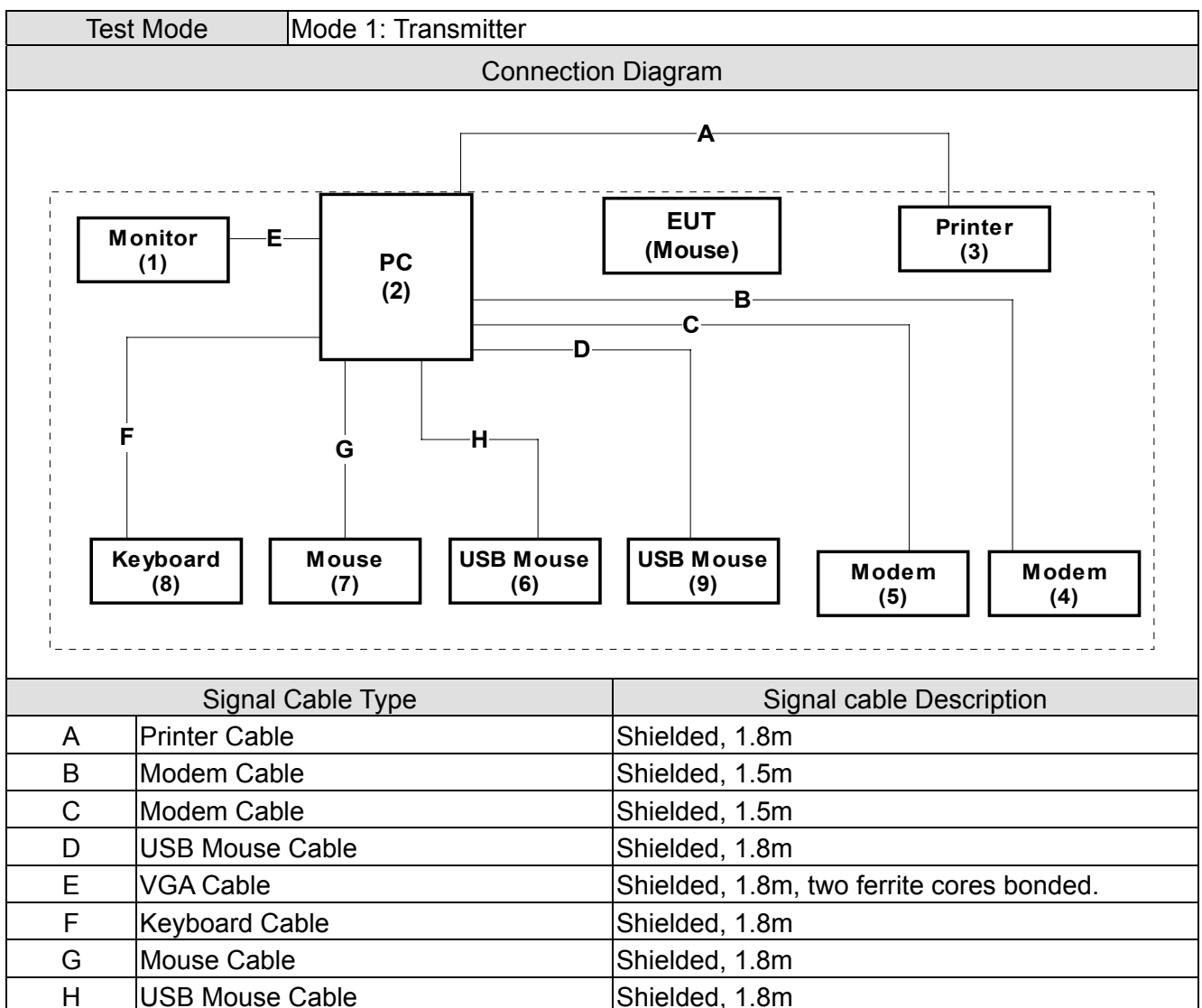
Emission	Mode 1	
Performed Item	Test Performed	Deviation
Conducted Emission	No	No
Radiated Emission	Yes	No
Band Edge	Yes	No

## 1.4. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Monitor	CHI MEI	A170E1-09	3UC120955SA1249	DoC	Non-Shielded, 1.8m
2	PC	HP	DTPC27	SG21200950	DoC	Non-Shielded, 1.8m
3	Printer	HP	C2642A	MY75L1D2XN	DoC	Non-Shielded, 0.7m
4	Modem	ACEEX	DM-1414	980033038	DoC	Non-Shielded, 1.6m
5	Modem	ACEEX	DM-1414	0102027545	DoC	Non-Shielded, 1.6m
6	USB Mouse	Logitech	M-UV83	LZE35006034	DoC	--
7	Mouse	Logitech	M-SBF83	HCA52200209	DoC	--
8	Keyboard	Logitech	Y-SM46	SY525U17998	DoC	--

## 1.5. Configuration of tested System



**1.6. EUT Exercise Software**

1	Setup the EUT and display as shown on 1.5.
2	Turn on the power of all equipment.
3	The EUT will start to operate.
4	The EUT will continuously transmit the radio signal.
5	Repeat the above procedure (3) to (4)

## 1.7. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.249 Band Edge	15 - 35	25
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.209 Radiated Emission	15 - 35	25
Humidity (%RH)		25 - 75	65
Barometric pressure (mbar)		860 - 1060	950-1000

### Site Description:

January 24, 2005 File on  
Federal Communications Commission  
Laboratory Division  
7435 Oakland Mills Road  
Columbia, MD 21046  
Registration Number: 365520



Accredited by CNLA  
Accreditation Number: 1313  
Effective through: September 27, 2007



1313  
ILAC MRA

Accredited by NVLAP  
NVLAP Lab Code: 200347-0  
Effective through: September 30, 2007



Site Name: Quietek Corporation

Site Address: No.75-1, Wang-Yeh Valley, Yung-Hsing,  
Chiung-Lin, Hsin-Chu County,  
Taiwan, R.O.C.  
TEL : 886-3-592-8858 / FAX : 886-3-592-8859  
E-Mail : [service@quietek.com](mailto:service@quietek.com)



## 2. Conducted Emission

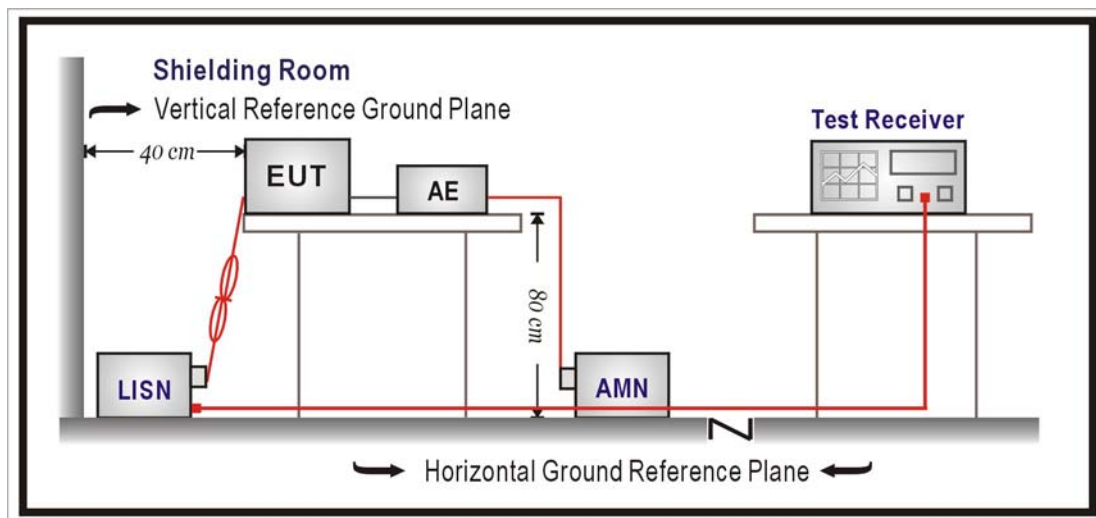
### 2.1. Test Equipment

The following test equipment are used during the test:

Item	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
1	4-Wire ISN	R & S	ENY 41 / 837032/001	Feb., 2007	
2	Double 2-Wire ISN	R & S	ENY 22 / 835354/008	Feb., 2007	Peripherals
3	LISN	R&S	ESH3-Z5 / 836679/022	Jun., 2006	EUT
4	LISN	R & S	ESH3-Z5 / 836679/013	Dec., 2006	
5	Pulse Limiter	R & S	ESH3-Z2 / 100411	Oct., 2006	
6	Test Receiver	R & S	ESCS 30 / 100149	Oct., 2006	
7	No.3 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

### 2.2. Test Setup



### 2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks : In the above table, the tighter limit applies at the band edges.

### 2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.) Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement. Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

### 2.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.207: 2006

### 2.6. Uncertainty

The measurement uncertainty is defined as  $\pm 2.26$  dB.

## 2.7. Test Result

Product	Ergo 825 Laser		
Test Item	Conducted Emission		
Test Mode	Mode 1: Transmitter		
Date of Test	--	Test Site	No.1 OATS

Owing to the DC operation of EUT, this test item is not performed.

### 3. Radiated Emission

#### 3.1. Test Equipment

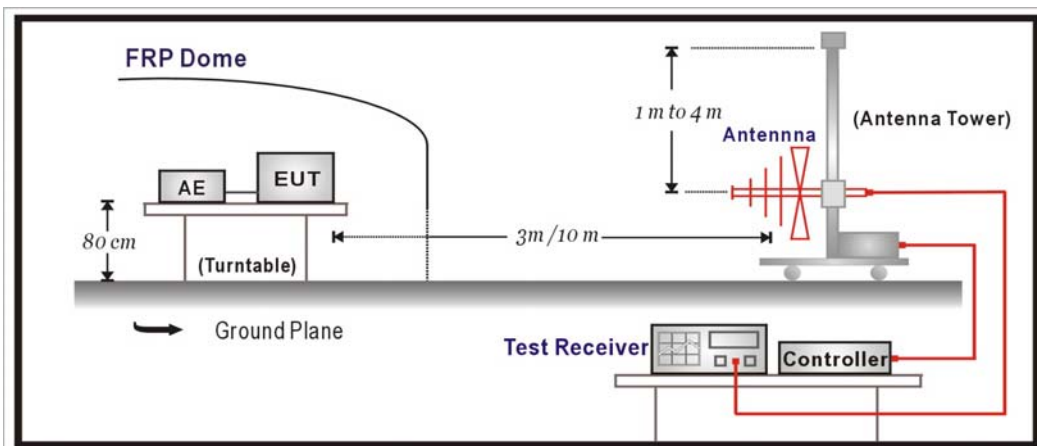
The following test equip

Item		Equipment	Manufacturer	Model No. / Serial No.	Last Cal.
1	X	Test Receiver	R & S	ESCS 30 / 825442/017	Jan., 2007
2	X	Spectrum Analyzer	Advantest	R3261C / 81720266	N/A
3	X	Pre-Amplifier	HP	8447D / 2944A09276	N/A
4	X	Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2006
5	X	Spectrum Analyzer	R & S	FSP40 / 100005	Aug., 2006
6	X	Pre-Amplifier	HP	8449B / 3008A01123	Feb., 2007
7	X	Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Jul., 2006
8		No.1 OATS			Sep., 2006

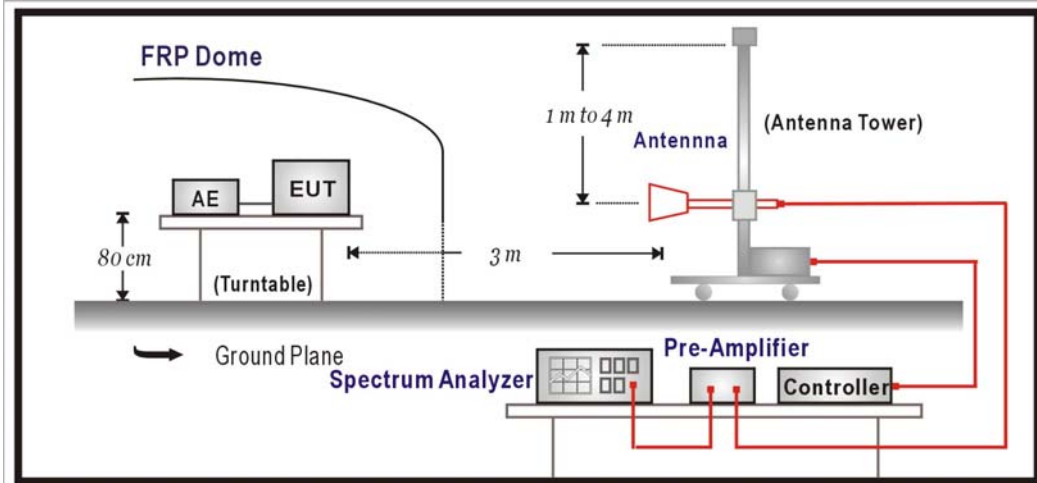
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.  
2. "N/A" Ca1.Date is used to Pre-test, not final test.

#### 3.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



### 3.3. Limits

#### ➤ Fundamental and Harmonics Emission Limits

FCC Part 15 Subpart C Paragraph 15.249 Limits				
Fundamental Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonics	
	mV/m	dBuV/m	uV/m	dBuV/m
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
  2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
  3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

#### ➤ Spurious electric field strength limits

FCC Part 15 Subpart C Paragraph 15.209 Limits			
Frequency MHz	uV/m	dBuV/m	Measurement distance (meter)
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

- Remarks :
1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
  2. In the Above Table, the tighter limit applies at the band edges.
  3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

### **3.4. Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

### **3.5. Test Specification**

According to FCC Part 15 Subpart C Paragraph 15.209 and Paragraph 15.249: 2006

### **3.6. Uncertainty**

The measurement uncertainty

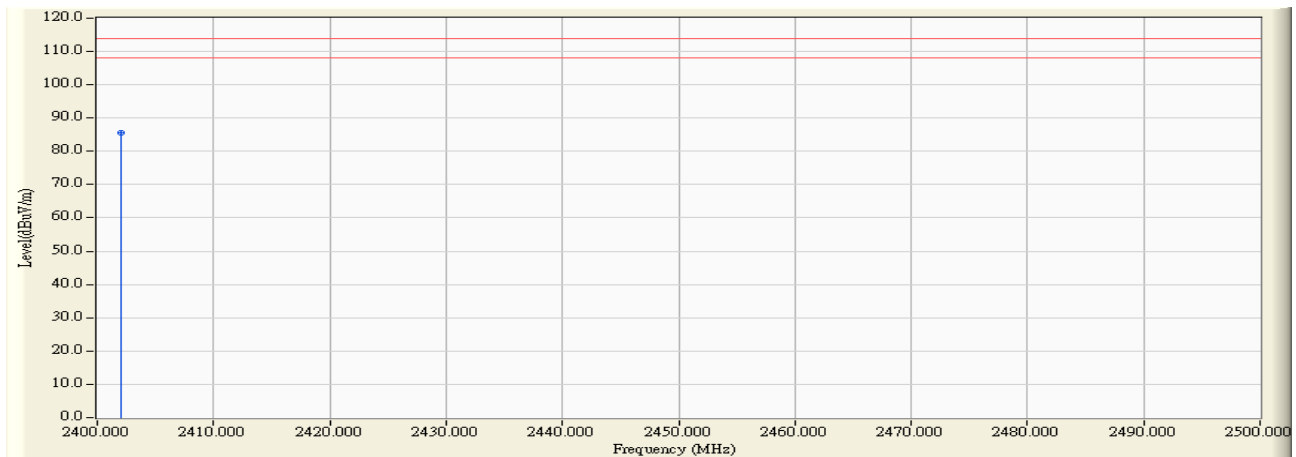
30MHz~1GHz as  $\pm 3.19\text{dB}$

1GHz~26.5Ghz as  $\pm 3.9\text{dB}$

### 3.7. Test Result

#### Fundamental :

Site : Site 1	Time : 2007/05/10 - 22:57
Limit : FCC_SpartC_15.249_F_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : DC 3V (Power by Battery)	Note: 2402-Mouse

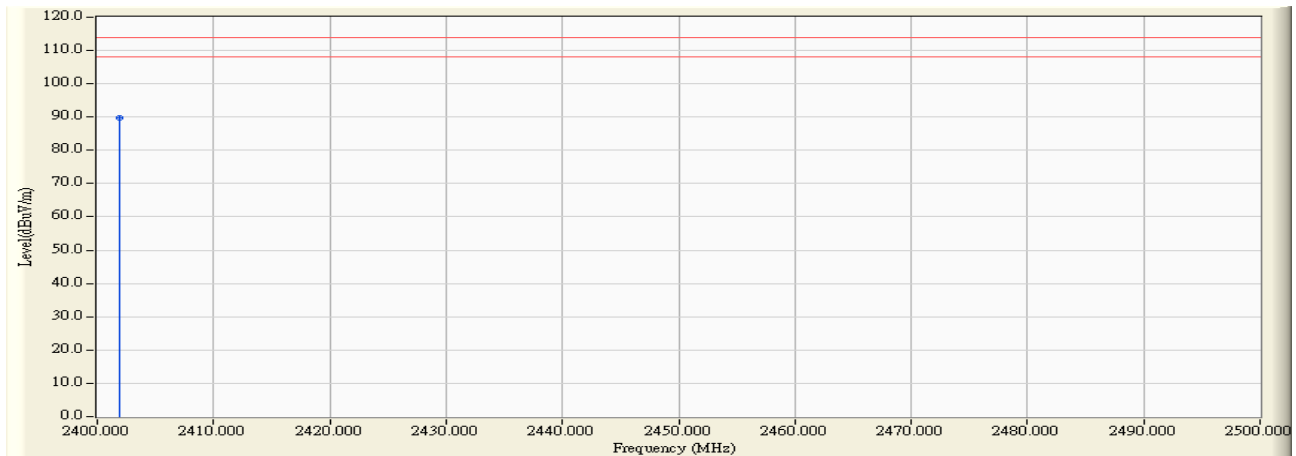


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	2401.980	29.028	56.700	85.728	-28.272	114.000	94.000	PEAK

#### Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/05/10 - 23:01
Limit : FCC_SpartC_15.249_F_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : DC 3V (Power by Battery)	Note: 2402-Mouse



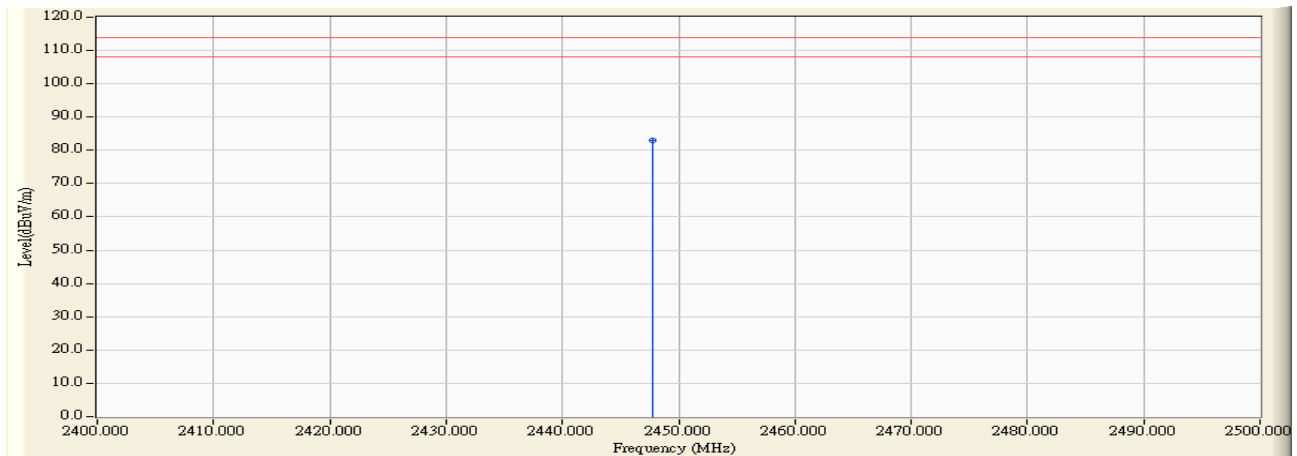
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	2401.950	27.428	62.380	89.808	-24.192	114.000	94.000	PEAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.



Site : Site 1	Time : 2007/05/10 - 23:07
Limit : FCC_SpartC_15.249_F_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : DC 3V (Power by Battery)	Note: 2448-Mouse

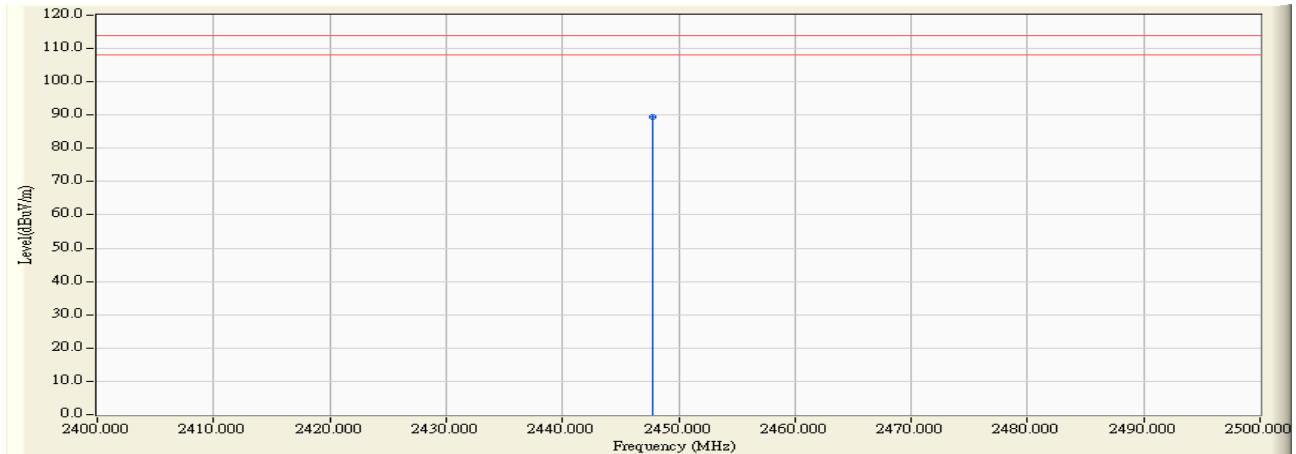


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	2447.800	29.170	53.800	82.970	-31.030	114.000	94.000	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/05/10 - 23:10
Limit : FCC_SpartC_15.249_F_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : DC 3V (Power by Battery)	Note: 2448-Mouse

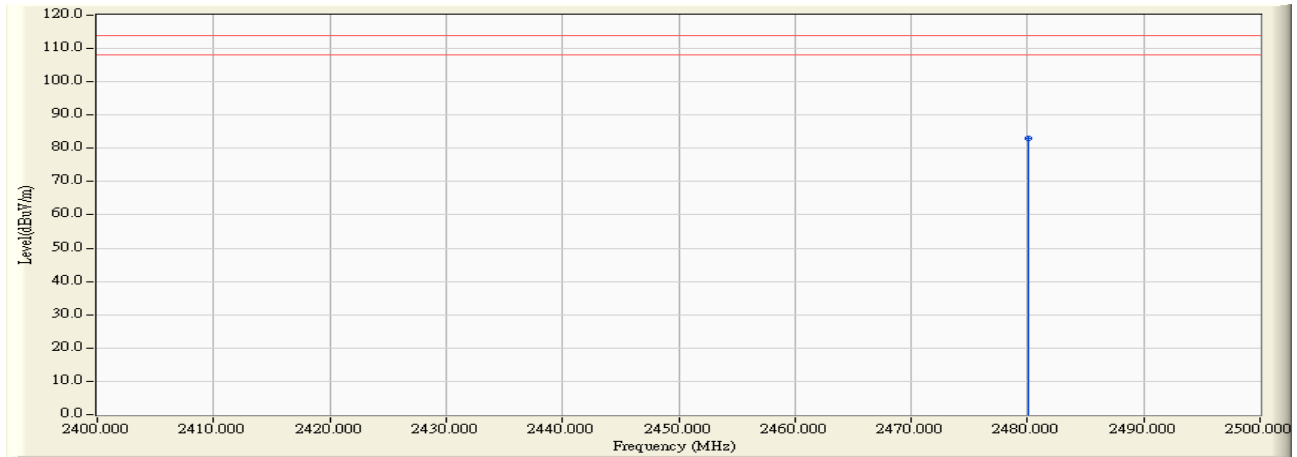


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	2447.800	27.570	62.020	89.590	-24.410	114.000	94.000	PEAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/05/10 - 23:13
Limit : FCC_SpartC_15.249_F_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : FCC_RF_1G-18G(2005-3) - HORIZONTAL
Power : DC 3V (Power by Battery)	Note: 2480-Mouse

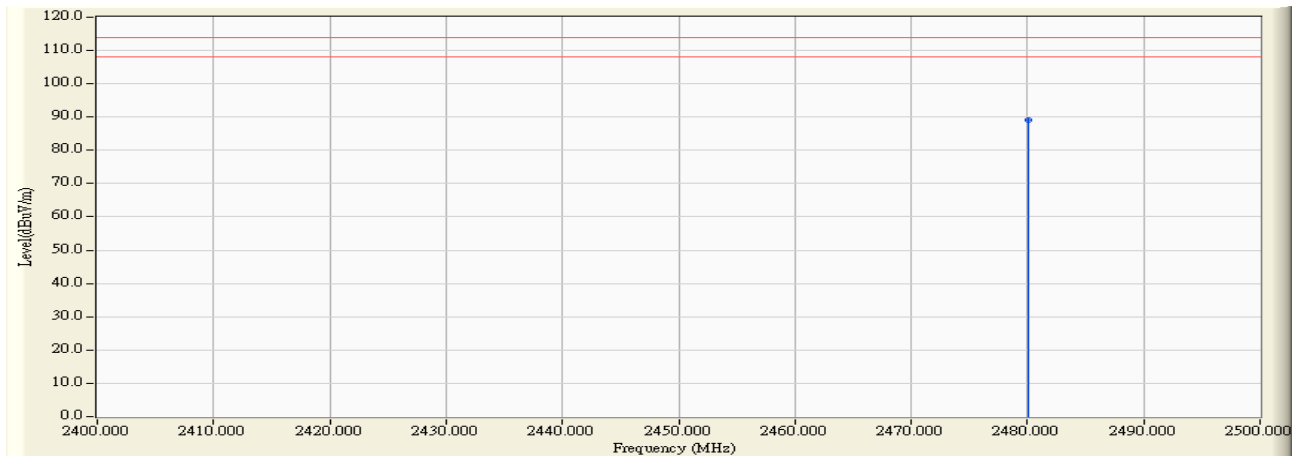


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	2480.070	29.284	53.720	83.003	-30.997	114.000	94.000	PEAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/05/10 - 23:16
Limit : FCC_SpartC_15.249_F_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : FCC_RF_1G-18G(2005-3) - VERTICAL
Power : DC 3V (Power by Battery)	Note: 2480-Mouse



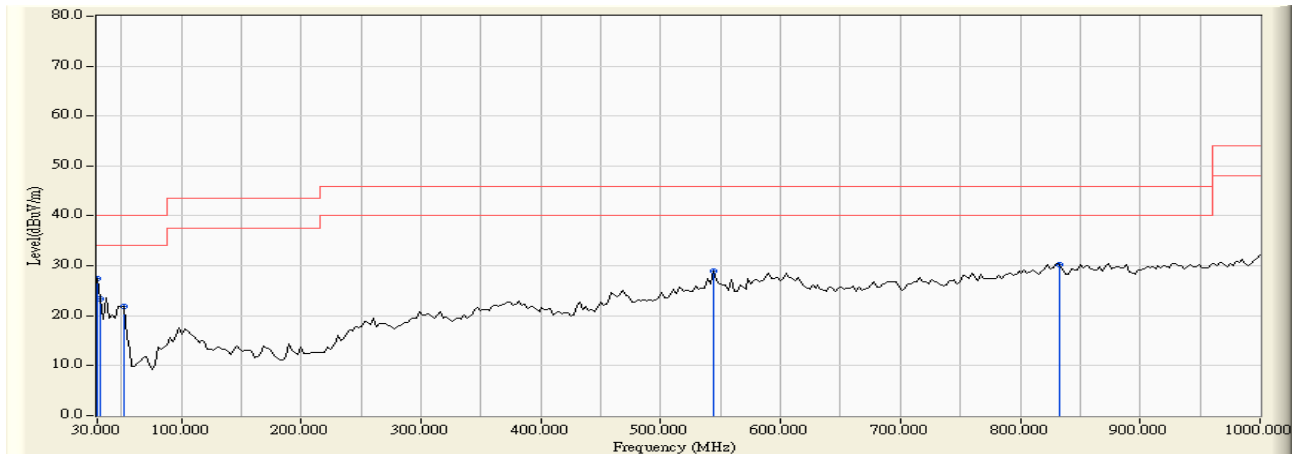
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	2480.070	27.684	61.290	88.973	-25.027	114.000	94.000	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

### 30 MHz-1 GHz Spurious:

Site : Site 1	Time : 2007/04/14 - 21:50
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : Ergo 825 Laser	Probe : PRBforS3/2005-08 - HORIZONTAL
Power : DC 3V (Power by Battery)	Note : TX 2448MHz-Mouse

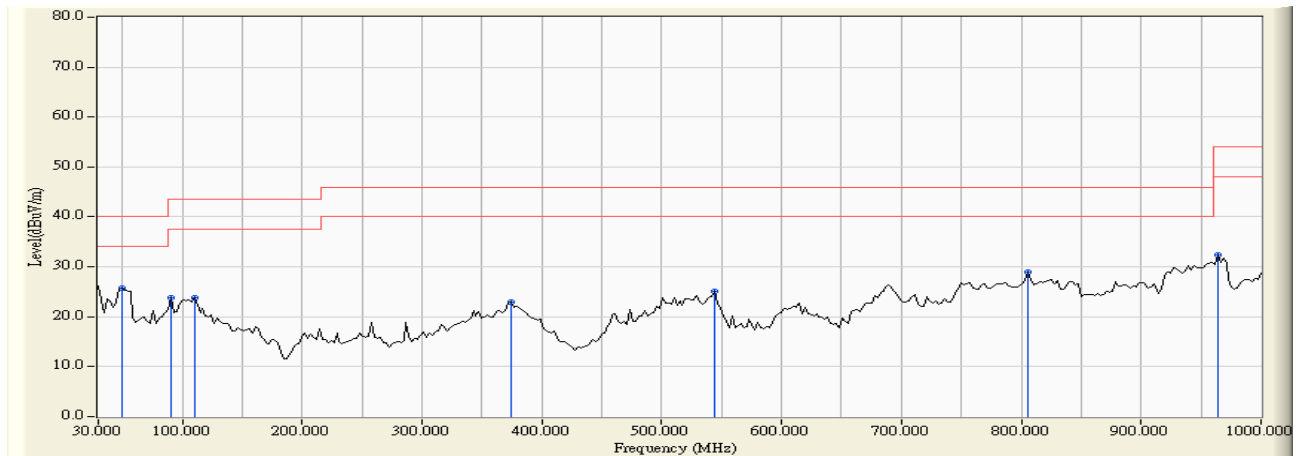


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	30.000	1.712	25.750	27.462	-12.538	40.000	QUASIPeAK
2		32.425	-1.411	24.686	23.276	-16.724	40.000	QUASIPeAK
3		51.825	-12.706	34.618	21.911	-18.089	40.000	QUASIPeAK
4		544.100	2.992	26.050	29.042	-16.958	46.000	QUASIPeAK
5		832.675	5.408	24.807	30.215	-15.785	46.000	QUASIPeAK

### Note:

1. All Reading Levels are Quasi-Peak value.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : Site 1	Time : 2007/04/14 - 21:52
Limit : FCC_CLASS_B_03M_QP	Margin : 6
EUT : Ergo 825 Laser	Probe : PRBforS3/2005-08 - VERTICAL
Power : DC 3V (Power by Battery)	Note : TX 2448MHz-Mouse



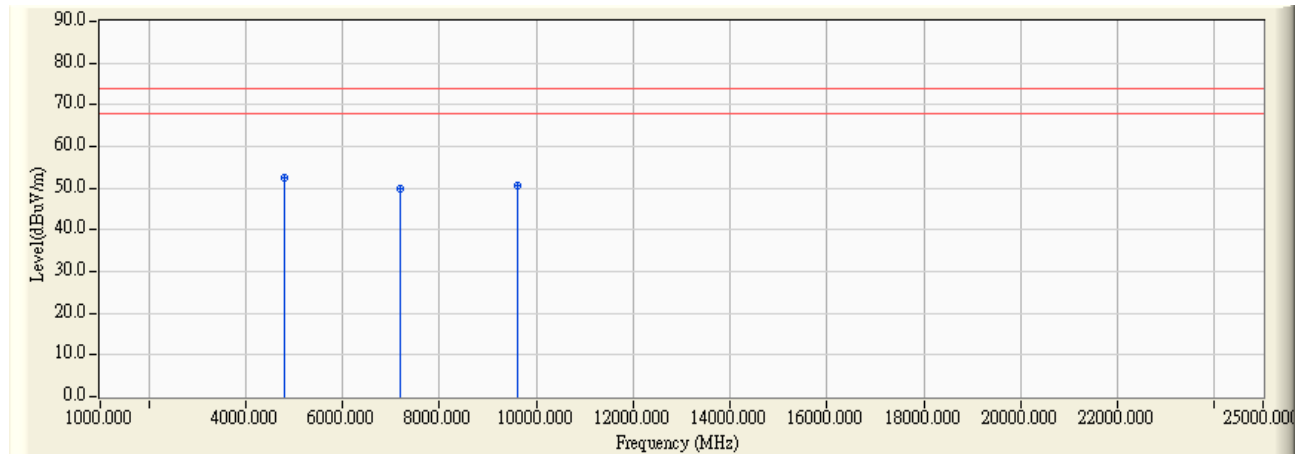
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	49.400	-7.522	33.268	25.746	-14.254	40.000	QUASIPeAK
2		90.625	-3.423	27.131	23.707	-19.793	43.500	QUASIPeAK
3		110.025	-0.925	24.832	23.907	-19.593	43.500	QUASIPeAK
4		374.350	-2.753	25.622	22.869	-23.131	46.000	QUASIPeAK
5		544.100	-1.208	26.368	25.160	-20.840	46.000	QUASIPeAK
6		806.000	3.567	25.420	28.987	-17.013	46.000	QUASIPeAK
7		963.625	7.157	25.260	32.418	-21.582	54.000	QUASIPeAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

# Spurious and Harmonics Emission :

Site : Site 1	Time : 2007/04/19 - 11:51
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - HORIZONTAL
Power : DC 3V (Power by Battery)	Note : TX 2402MHz-Mouse

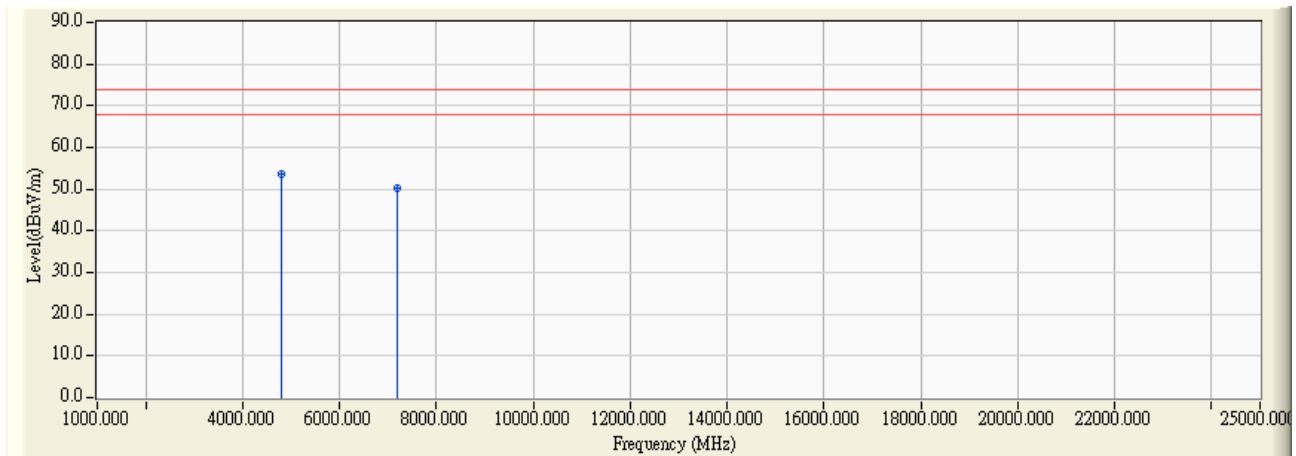


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4804.000	3.663	48.761	52.423	-21.547	74.000	54.00	PEAK
2		7206.000	9.357	40.456	49.812	-24.158	74.000	54.00	PEAK
3		9608.000	11.842	38.604	50.446	-23.524	74.000	54.00	PEAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/19 - 11:56
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - VERTICAL
Power : DC 3V (Power by Battery)	Note :;TX 2402MHz-Mouse



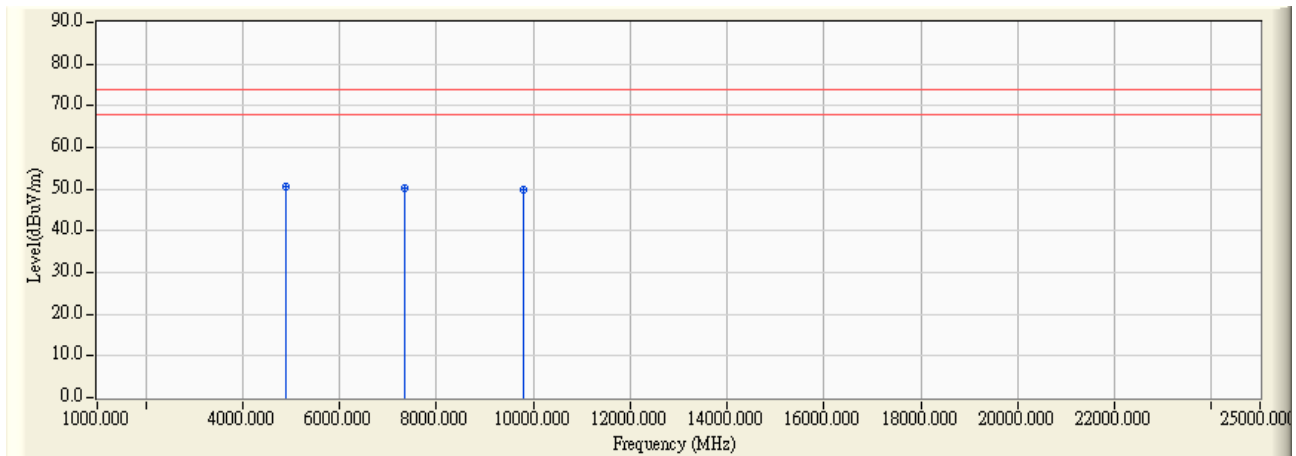
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4804.000	3.663	50.075	53.737	-20.233	74.000	54.00	PEAK
2		7206.000	9.357	40.931	50.287	-23.683	74.000	54.00	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.



Site : Site 1	Time : 2007/04/19 - 12:04
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - HORIZONTAL
Power : DC 3V (Power by Battery)	Note : TX 2448MHz-Mouse

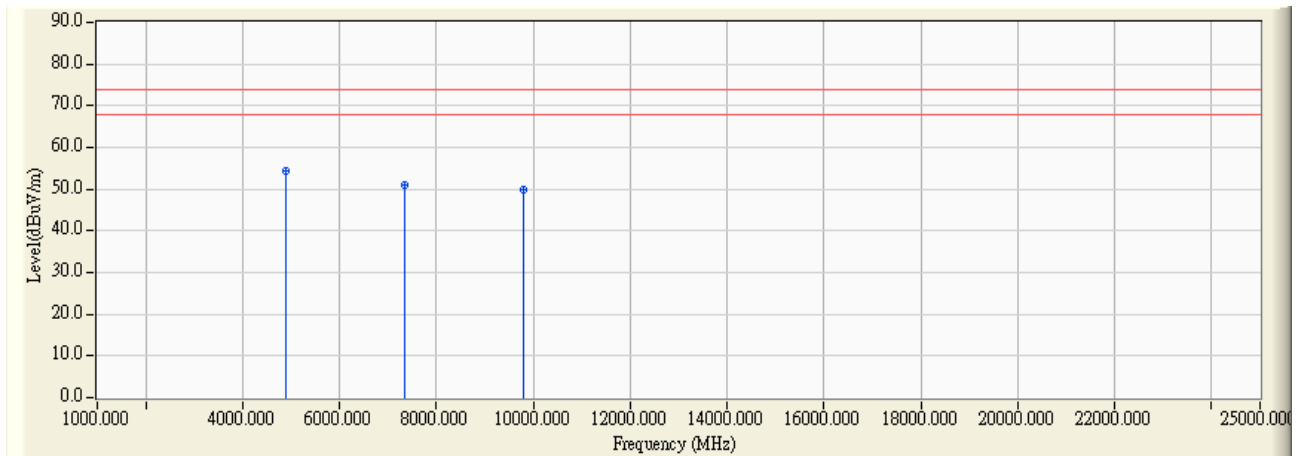


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4896.000	3.972	46.480	50.452	-23.518	74.000	54.00	PEAK
2		7344.000	9.715	40.698	50.412	-23.558	74.000	54.00	PEAK
3		9792.000	11.795	38.194	49.988	-23.982	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/19 - 12:07
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - VERTICAL
Power : DC 3V (Power by Battery)	Note : TX 2448MHz-Mouse

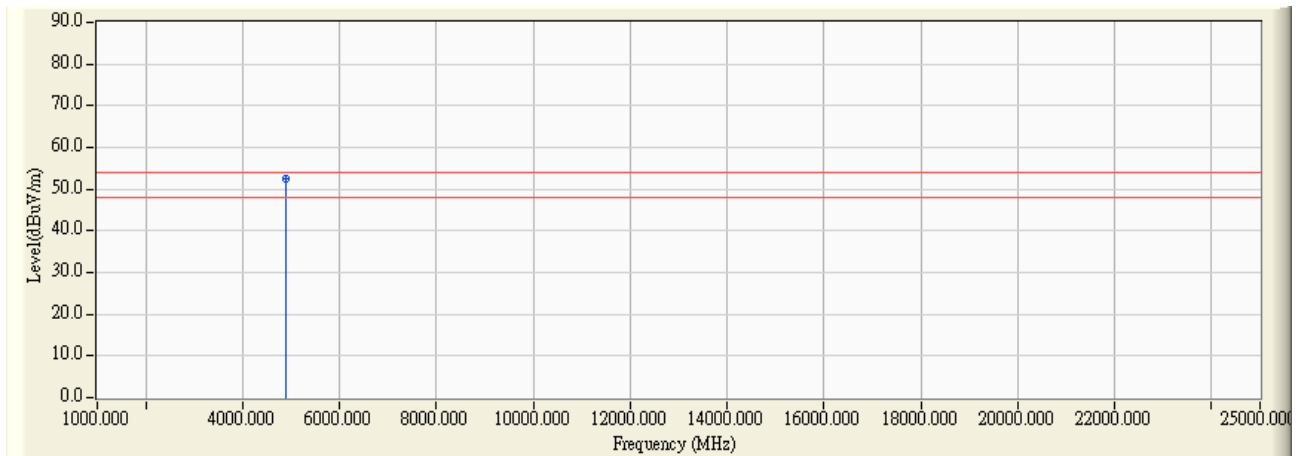


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4896.000	3.972	50.418	54.390	-19.580	74.000	54.00	PEAK
2		7344.000	9.715	41.389	51.103	-22.867	74.000	54.00	PEAK
3		9792.000	11.795	38.108	49.902	-24.068	74.000	54.00	PEAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/19 - 12:07
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - VERTICAL
Power : DC 3V (Power by Battery)	Note : TX 2448MHz-Mouse

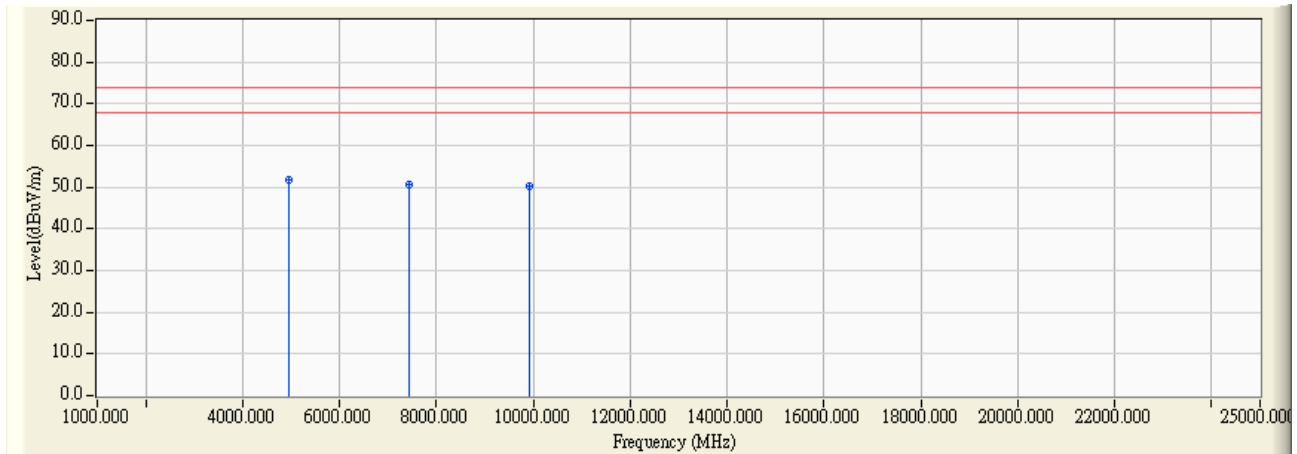


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4896.000	3.972	48.703	52.675	-1.295	74.000	54.00	Average

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/19 - 13:06
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - HORIZONTAL
Power : DC 3V (Power by Battery)	Note : TX 2480MHz-Mouse

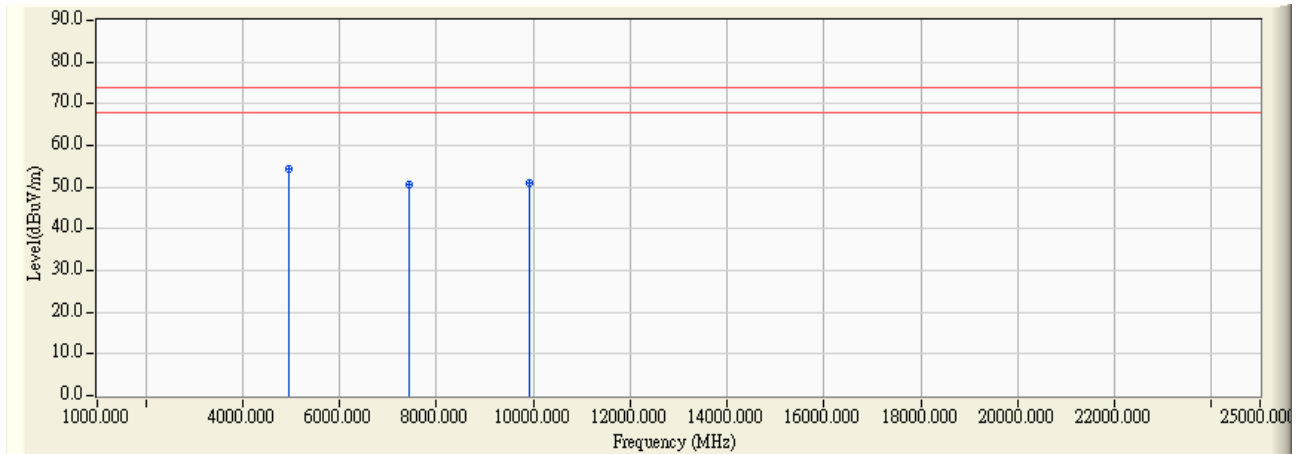


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4960.000	4.197	47.522	51.718	-22.252	74.000	54.00	PEAK
2		7440.000	9.951	40.599	50.550	-23.420	74.000	54.00	PEAK
3		9920.000	11.856	38.279	50.135	-23.835	74.000	54.00	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/19 - 13:10
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - VERTICAL
Power : DC 3V (Power by Battery)	Note : TX 2480MHz-Mouse

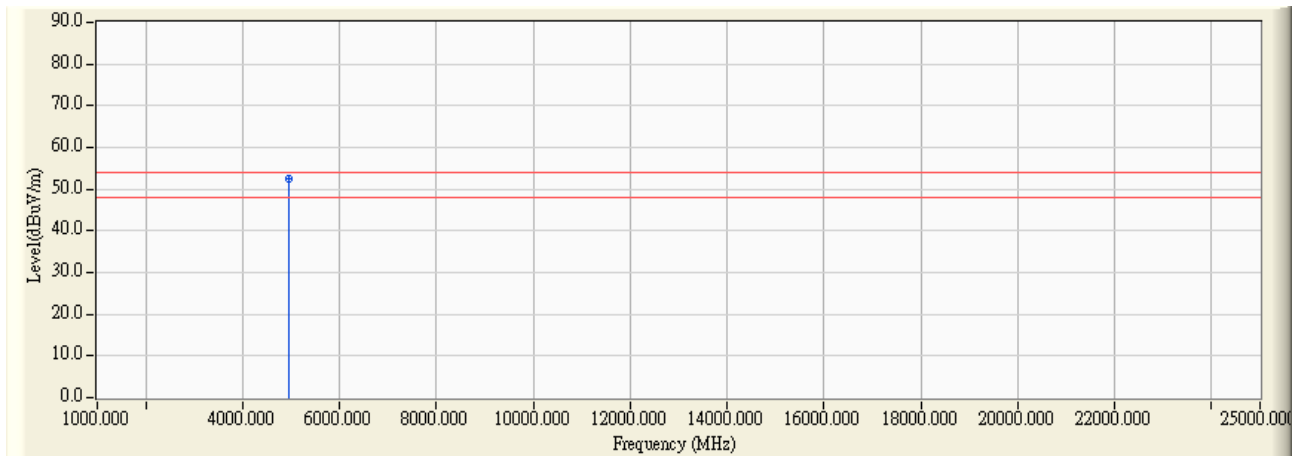


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4960.000	4.197	50.202	54.398	-19.572	74.000	54.00	PEAK
2		7440.000	9.951	40.560	50.511	-23.459	74.000	54.00	PEAK
3		9920.000	11.856	39.048	50.904	-23.066	74.000	54.00	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/19 - 13:11
Limit : FCC_SpartC_15.209_03M_AV	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - VERTICAL
Power : DC 3V (Power by Battery)	Note : TX 2480MHz-Mouse



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	4960.000	4.197	48.476	52.672	-1.298	74.000	54.00	Average

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

#### 4. Band Edge

##### 4.1. Test Equipment

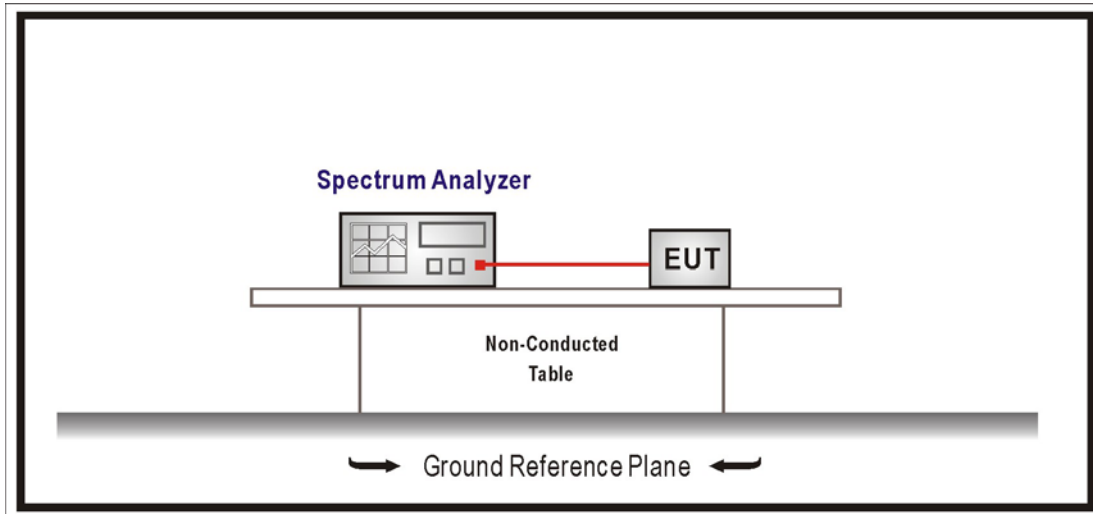
The following test equipment are used during the test:

RF Conducted Measurement:					
Item	Equipment		Manufacturer	Model No. / Serial No.	Last Cal.
1	Spectrum Analyzer		R & S	FSP / 100561	Mar., 2007
2	No.1 OATS				Sep., 2006
RF Radiated Measurement:					
Item	Equipment		Manufacturer	Model No. / Serial No.	Last Cal.
1	X	Spectrum Analyzer	R & S	FSP40 / 100005	Aug., 2006
2	X	Pre-Amplifier	HP	8449B / 3008A01123	Feb., 2007
3		Loop Antenna	R & S	HFH2-Z2 / 833799/004	Sep., 2006
4		BiconiLog Antenna	Schwarzbeck	VULB 9166 / 1061	Sep., 2006
5		Bilog Antenna	Chase	CBL6112B / 2455	Sep., 2006
6	X	Horn Antenna	Schwarzbeck	BBHA 9120D / BBHA9120D312	Sep., 2006
7	No.1 OATS				Sep., 2006

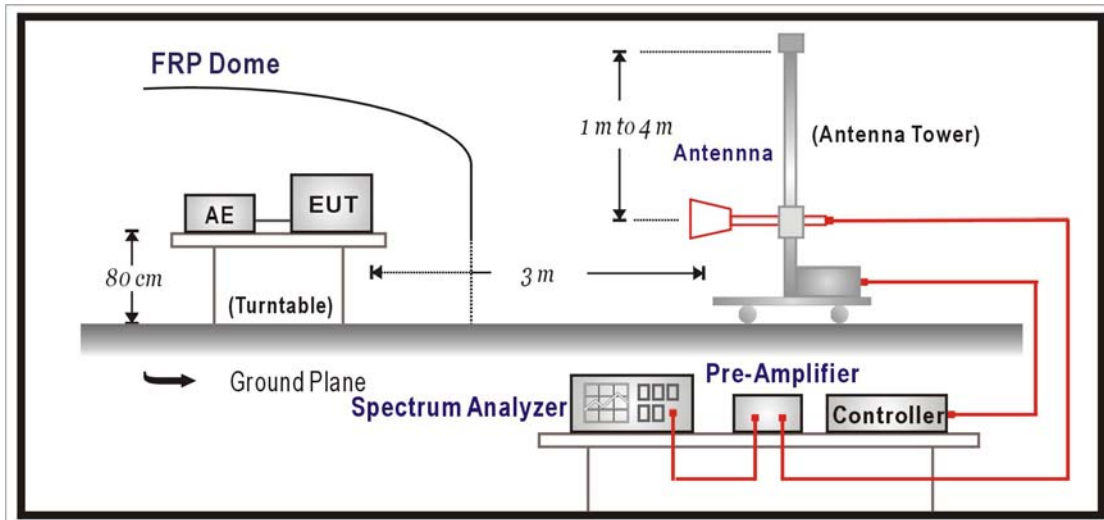
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.  
2. Mark "X" test instruments are used to measure the final test results.

## 4.2. Test Setup

RF Conducted Measurement:



RF Radiated Measurement:





### **4.3. Limits**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 50 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

### **4.4. Test Procedure**

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2003 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

### **4.5. Test Specification**

According to FCC Part 15 Subpart C Paragraph 15.249: 2006

### **4.6. Uncertainty**

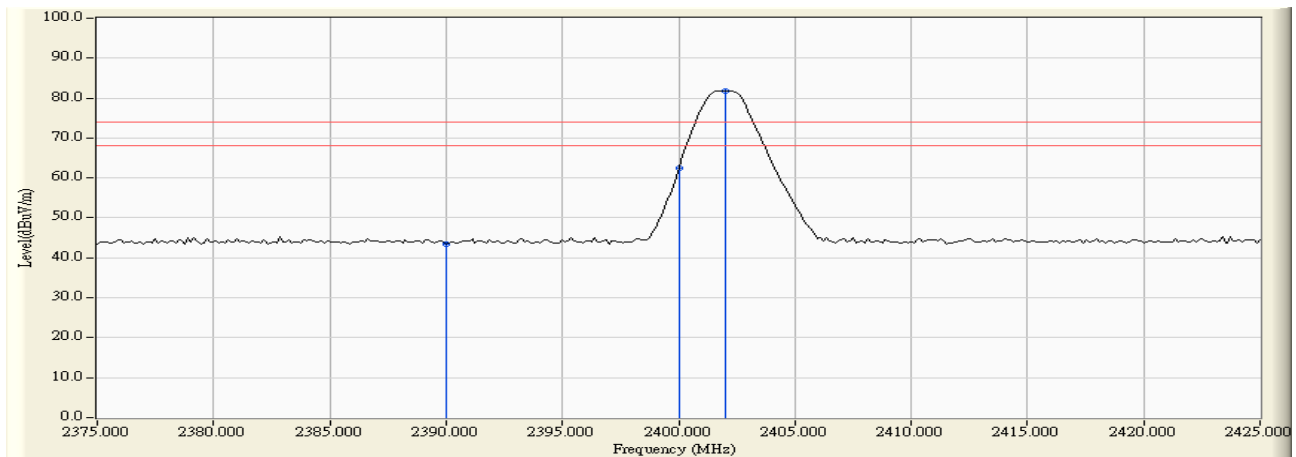
The measurement uncertainty

Conducted is defined as  $\pm 1.27\text{dB}$

Radiated is defined as  $\pm 3.9\text{dB}$

#### 4.7. Test Result

Site : Site 1	Time : 2007/04/14 - 13:12
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - HORIZONTAL
Power : DC 3V (Power by Battery)	Note : 2402( Mouse)

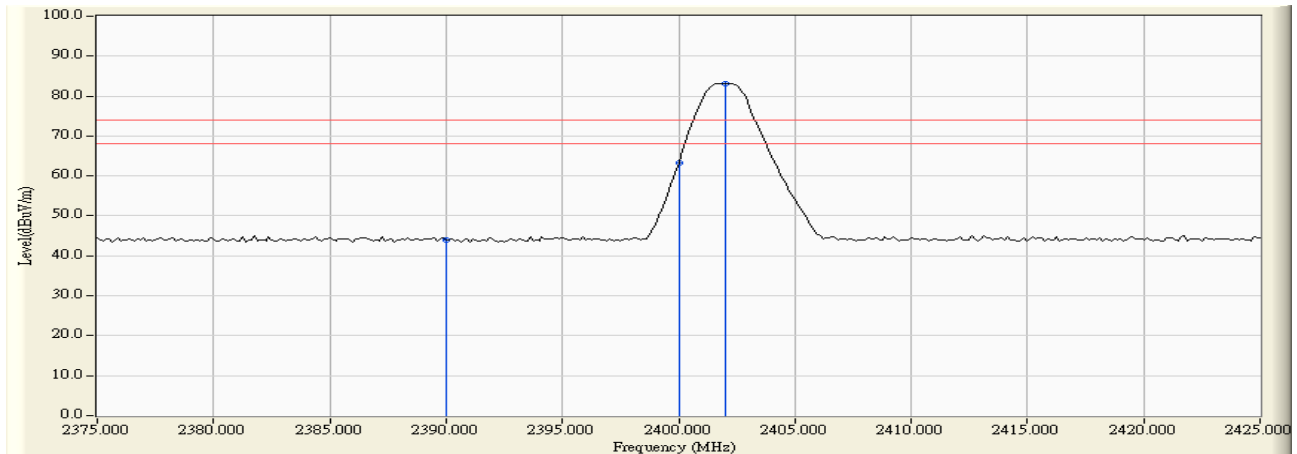


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		2390.000	-2.378	45.789	43.412	-30.558	74.000	54.00	PEAK
2		2400.000	-2.328	64.873	62.545	-11.425	74.000	54.00	PEAK
3	*	2402.000	-2.318	84.079	81.761	7.791	74.000	54.00	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " \* ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/14 - 13:15
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - VERTICAL
Power : DC 3V (Power by Battery)	Note : 2402( Mouse)

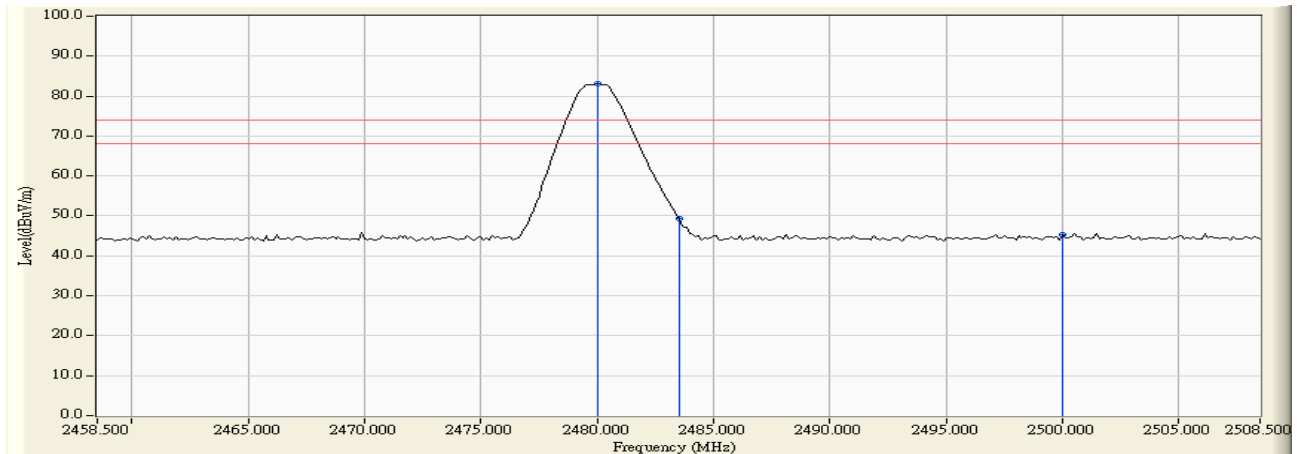


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1		2390.000	-2.378	46.411	44.034	-29.936	74.000	54.00	PEAK
2		2400.000	-2.328	65.609	63.281	-10.689	74.000	54.00	PEAK
3	*	2402.000	-2.318	85.419	83.101	9.131	74.000	54.00	PEAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/14 - 13:32
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - HORIZONTAL
Power : DC 3V (Power by Battery)	Note : 2480( Mouse)

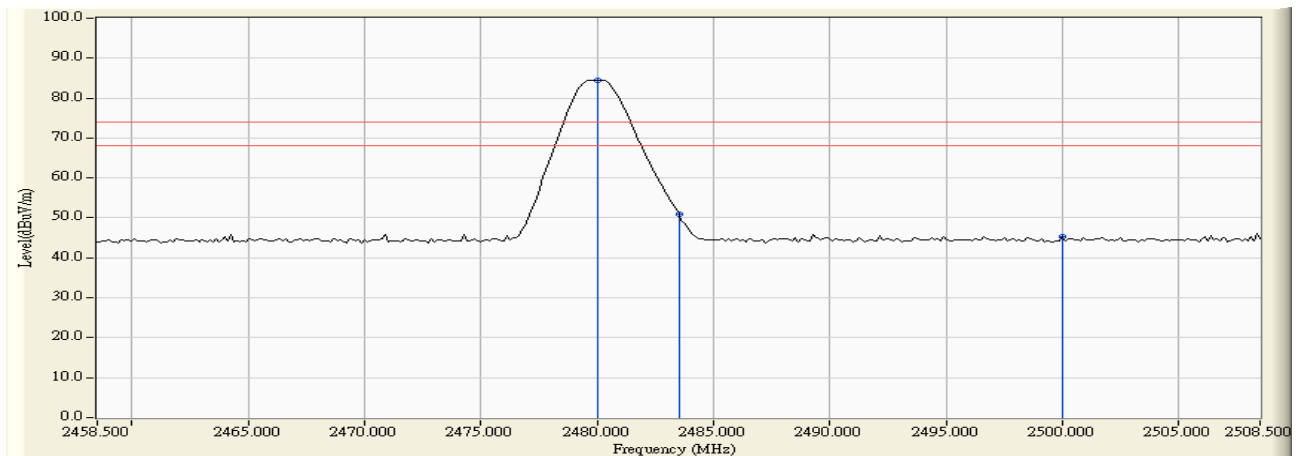


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	2480.000	-1.952	84.957	83.006	9.036	74.000	54.00	PEAK
2		2483.500	-1.937	51.337	49.400	-24.570	74.000	54.00	PEAK
3		2500.000	-1.886	47.106	45.220	-28.750	74.000	54.00	PEAK

## Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : Site 1	Time : 2007/04/14 - 13:34
Limit : FCC_SpartC_15.209_03M_PK	Margin : 6
EUT : Ergo 825 Laser	Probe : HORN9120D+9170D(1~40G) - VERTICAL
Power : DC 3V (Power by Battery)	Note : 2480( Mouse)



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Detector Type
1	*	2480.000	-1.952	86.445	84.494	10.524	74.000	54.00	PEAK
2		2483.500	-1.937	52.794	50.857	-23.113	74.000	54.00	PEAK
3		2500.000	-1.886	47.323	45.437	-28.533	74.000	54.00	PEAK

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. “ \* ”, means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.