



## Test Report

Product Name	WIRELESS HAND WRITE TOUCHPAD DEVICES
Model No.	RF YO-PAD
FCC ID	Y5E-RF-YO-PAD001

Applicant	YOMORE TECHNOLOGY CO.,LTD.
Address	12F-1, No.151, Chung Cheng 4 Road Cianjin District, Kaohsiung City

Date of Receipt	Jan. 12, 2011
Issued Date	Jan. 31, 2011
Report No.	111336R-RFUSP30V01
Report Version	V1.0

The test results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

# Test Report Certification

Issued Date: Jan. 31, 2011

Report No.: 111336R-RFUSP30V01



Product Name	WIRELESS HAND WRITE TOUCHPAD DEVICES
Applicant	YOMORE TECHNOLOGY CO.,LTD.
Address	12F-1, No.151, Chung Cheng 4 Road Cianjin District, Kaohsiung City
Manufacturer	5TOUCH TECHNOLOGY CO., LTD.
Model No.	RF YO-PAD
EUT Rated Voltage	DC 3V(Power by battery) or DC 5V (Power by USB)
EUT Test Voltage	DC 3V(Power by battery)
Trade Name	Yomore
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2009
Test Result	Complied



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( Engineer / Sabrina Tsai )



Approved By : Vincent Lin  
( Manager / Vincent Lin )

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	WIRELESS HAND WRITE TOUCHPAD DEVICES
Trade Name	Yomore
Model No.	RF YO-PAD
FCC ID	Y5E-RF-YO-PAD001
Frequency Range	2402~2475MHz
Channel Control	Auto
Channel Separation	3,16MHz
Antenna Type	Chip
Channel Number	21
Type of Modulation	QPSK
USB Cable	Non-Shielded, 0.7m

#### Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	ACX	AT5020 -B2R8HAA_	0 dBi for 2.4 GHz

Note: The antenna of EUT is conform to FCC 15.203

#### Frequency of Each Channel

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00:	2402 MHz	Channel 01:	2418 MHz	Channel 02:	2421 MHz	Channel 03:	2424 MHz
Channel 04:	2427 MHz	Channel 05:	2430 MHz	Channel 06:	2433 MHz	Channel 07:	2436 MHz
Channel 08:	2439 MHz	Channel 09:	2442 MHz	Channel 10:	2445 MHz	Channel 11:	2448 MHz
Channel 12:	2451 MHz	Channel 13:	2454 MHz	Channel 14:	2457 MHz	Channel 15:	2460 MHz
Channel 16:	2463 MHz	Channel 17:	2466 MHz	Channel 18:	2469 MHz	Channel 19:	2472 MHz
Channel 20:	2475 MHz						

Note:

1. The EUT is a WIRELESS HAND WRITE TOUCHPAD DEVICES with a built-in 2.4GHz transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.249 for spread spectrum devices.

## 1.2. Operational Description

The EUT is WIRELESS HAND WRITE TOUCHPAD DEVICES built-in 2.4GHz transceiver. The operation frequency is from 2402MHz to 2475MHz with QPSK modulation. The signal will be transmitted through 2.4GHz RF signal from the Chip antenna. DC 3V-5V shall be provided for EUT operation.

The design of Yo-pad aims for solving the burden caused by the growing usage of computers, and it integrates and applies various sensing functions to provide users products that are simpler and closer to humanity. In brief, Yo-pad expects to bring computer users the most easy and convenient operation.

Mouse Board : Yo-pad adopts capacitive sensing technology, and it is connected with Windows system through USB. Thus it can replace the standard mouse when using either Desktop computer or Notebook. Furthermore, it also possesses extended functions of horizontal scrolling, vertical scrolling and dragging

Multi-touch : Multi-finger gesture application refers to drawing recognizable tracks on the finger Sensing Pad by fingers as a shortcut for carrying out commands when users execute the application programs. Multifarious operation modes can be reduced, which makes it get up to fast, simple, convenient and humanized operation interface. Functions like scrolling, zoom-in/out, paging and rotation can be the illustrations.

Handwriting Input : As for non-English speaking (single-key input) countries, there are naturally some difficulties for keyboard input. But this product allows users to write on the touch board as the input tool directly to achieve the purpose of smoothness and swiftness. It supports Multilanguage handwriting input, in which traditional Chinese, simplified Chinese, Cantonese character set, Japanese, Korean, English characters, numeric symbols are included.

Numeric Pad : The dimension of the sensing area of Yo-pad is equivalent to the average Key-pad, and through the printing and tactile vibration or voice feedback function of the board, correct input efficiency of operating numeric and directional keys can be provided to users.

Wireless Transmission : Yo-pad can carry out information transmission with the host through three different interfaces: 1. USB Cable Wire Transmission 2. RF 2.4G Radio Frequency Transmission. Users can easily select any of them according to the installation or operating distance of the host.

Test Mode	Mode 1: Transmit
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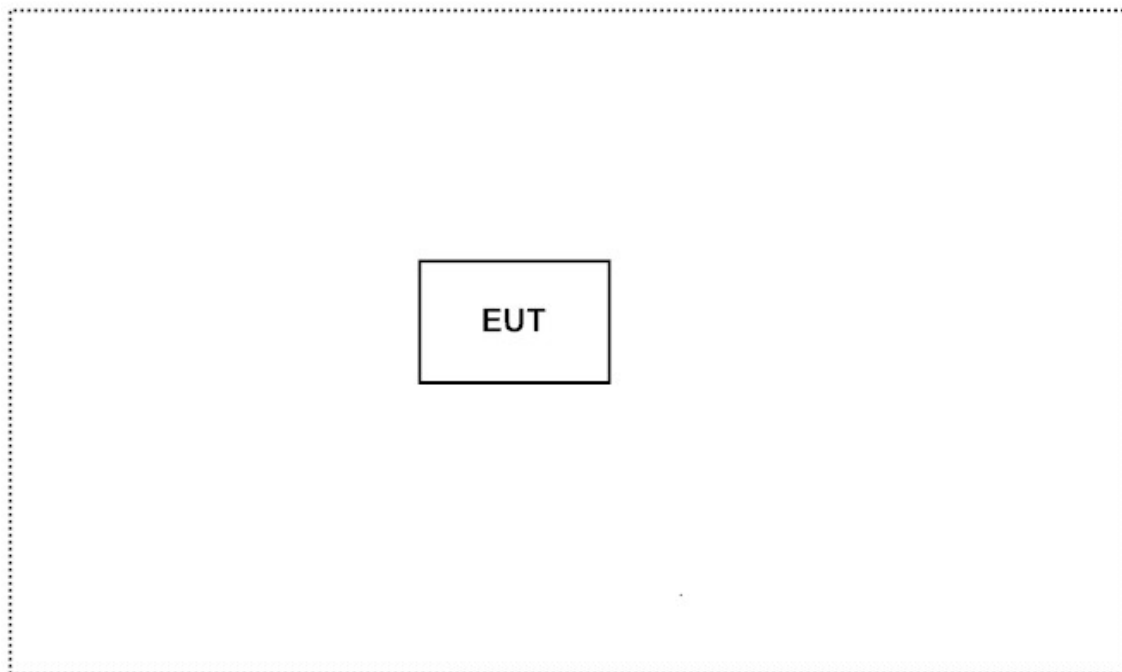
### 1.3. Tested System Details

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

	Product	Manufacturer	Model No.	Serial No.	Power Cord
(1)	N/A	N/A	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A. N/A	N/A

### 1.4. Configuration of Test System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4.
- (2) Execute “Presenter Test..exe” program on the EUT.
- (3) Configure the test mode and the test channel
- (4) Press “RF Send” to start the continuous Transmit.
- (5) Verify that the EUT works properly.

## 1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from Quietek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>The address and introduction of Quietek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

Site Description: File on  
Federal Communications Commission  
FCC Engineering Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046  
Registration Number: 92195



Accreditation on NVLAP  
NVLAP Lab Code: 200533-0



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FCC Accreditation Number: TW1014



## 2. Conducted Emission

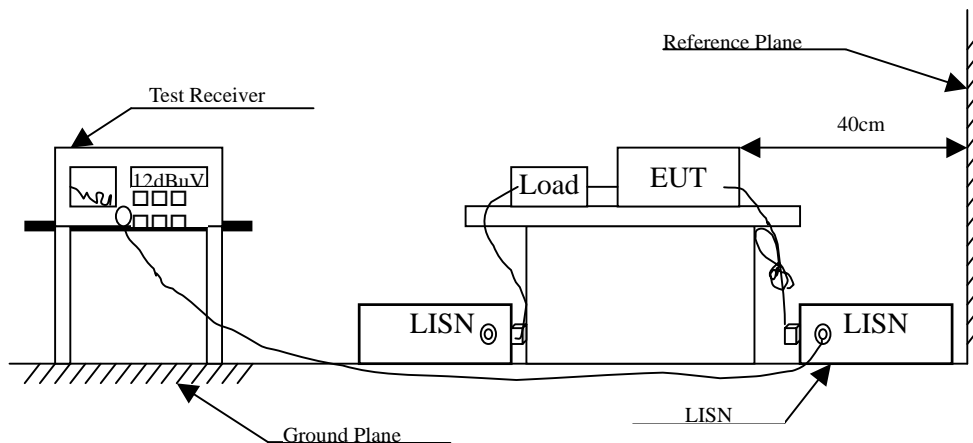
### 2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2010	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2010	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2010	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2010	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

### 2.2. Test Setup



### 2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	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: 2009 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

## 2.5. Uncertainty

$\pm 2.26$  dB

## **2.6. Test Result of Conducted Emission**

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

### 3. Radiated Emission

#### 3.1. Test Equipment

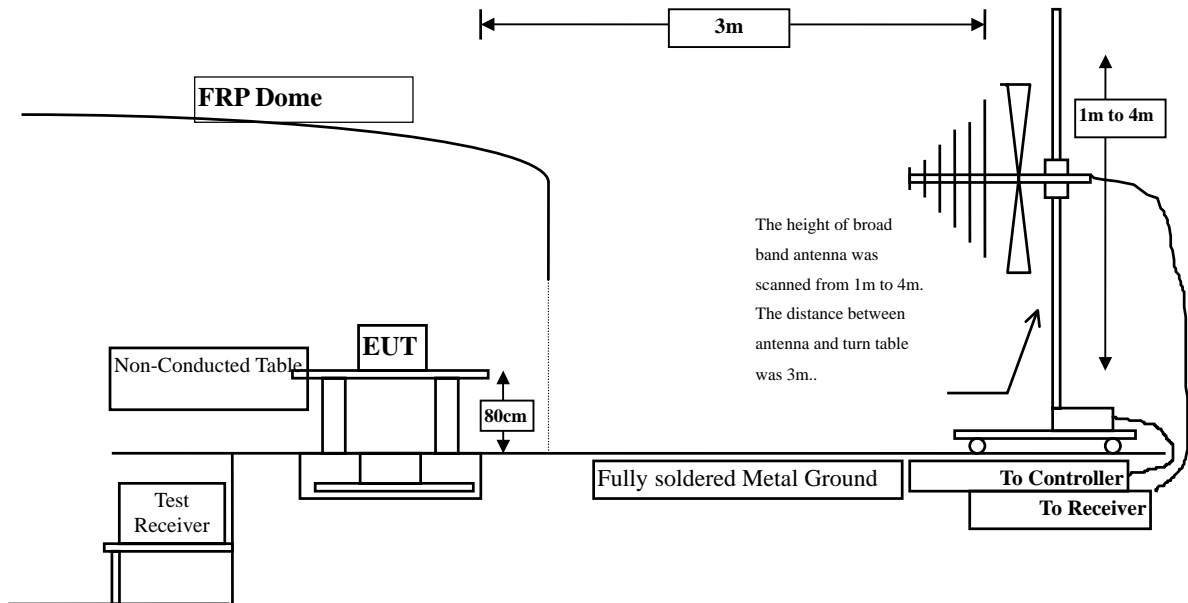
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
<input checked="" type="checkbox"/> Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2010
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2010
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2010
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2010
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2010
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

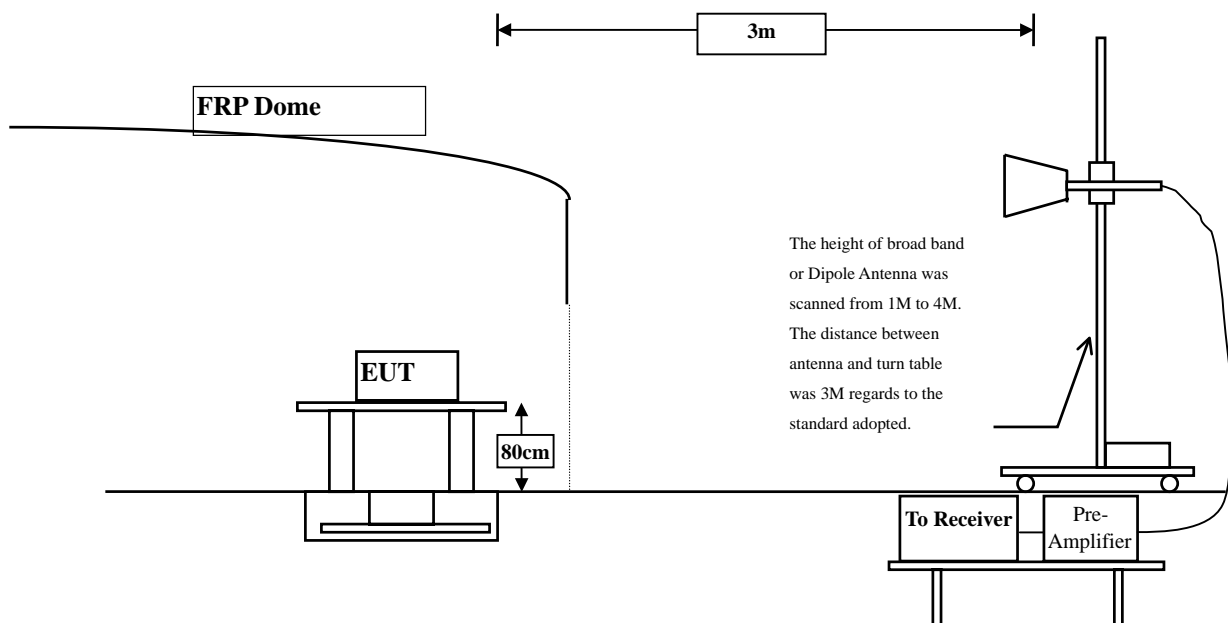
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with "X" are used to measure the final test results.

### 3.2. Test Setup

#### Radiated Emission Below 1GHz



#### Radiated Emission Above 1GHz



### 3.3. Limits

#### ➤ Fundamental and Harmonics Emission Limits

FCC Part 15 Subpart C Paragraph 15.249 Limits				
Frequency MHz	Field Strength of Fundamental		Field Strength of Harmonics	
	(mV/m @3m)	(dBuV/m @3m)	(uV/m @3m)	(dBuV/m @3m)
902-928	50	94	500	54
2400-2483.5	50	94	500	54
5725-5875	50	94	500	54

Remarks : 1. RF Voltage (dBuV/m) = 20 log RF Voltage (uV/m)  
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.

#### ➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

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

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

### 3.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested compliance to FCC 47CFR 15.249 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 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 is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4: 2009 on radiated measurement.

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

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured on the Final Measurement.

The measurement frequency range from 30MHz - 10th Harmonic of fundamental was investigated.

### **3.5. Uncertainty**

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

### 3.6. Test Result of Radiated Emission

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Fundamental Radiated Emission  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmit

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
2402.000	-1.073	73.380	72.308	-41.692	114.000
2445.000	-0.804	72.530	71.726	-42.274	114.000
2475.000	-0.612	73.840	73.228	-40.772	114.000
<b>Average</b>					
<b>Detector:</b>					
2402.000	-1.073	46.720	45.648	-48.352	94.000
2445.000	-0.804	46.610	45.806	-48.194	94.000
2475.000	-0.612	45.248	44.636	-49.364	94.000

Note:

1. Measurement Level = Reading Level + Correct Factor.
2. Correct Factor = Antenna Factor + Cable Loss – PreAMP.
3. 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.

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Fundamental Radiated Emission  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmit

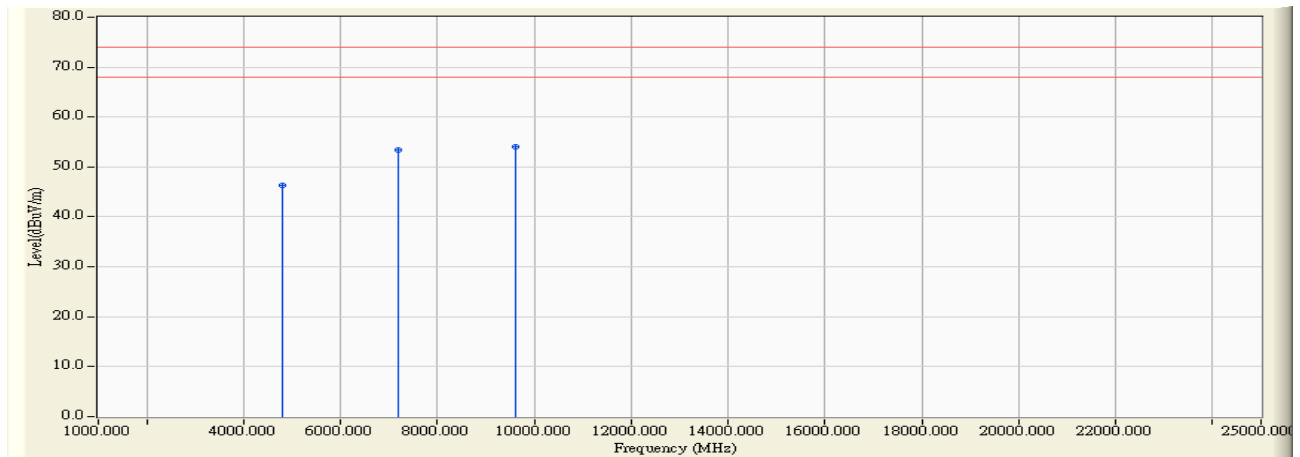
Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Vertical</b>					
<b>Peak Detector:</b>					
2402.000	-1.729	77.500	75.771	-38.229	114.000
2445.000	-1.521	78.860	77.339	-36.661	114.000
2475.000	-1.352	79.680	78.328	-35.672	114.000
<b>Average</b>					
<b>Detector:</b>					
2402.000	-1.729	49.630	47.901	-46.099	94.000
2445.000	-1.521	50.230	48.709	-45.291	94.000
2475.000	-1.352	50.400	49.048	-44.952	94.000

Note:

1. Measurement Level = Reading Level + Correct Factor.
2. Correct Factor = Antenna Factor + Cable Loss – PreAMP.
3. 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.



Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (2402MHz)



Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4804.000	3.327	43.080	46.407	-27.593	74.000
7206.000	10.136	43.210	53.346	-20.654	74.000
9608.000	13.706	40.260	53.966	-20.034	74.000

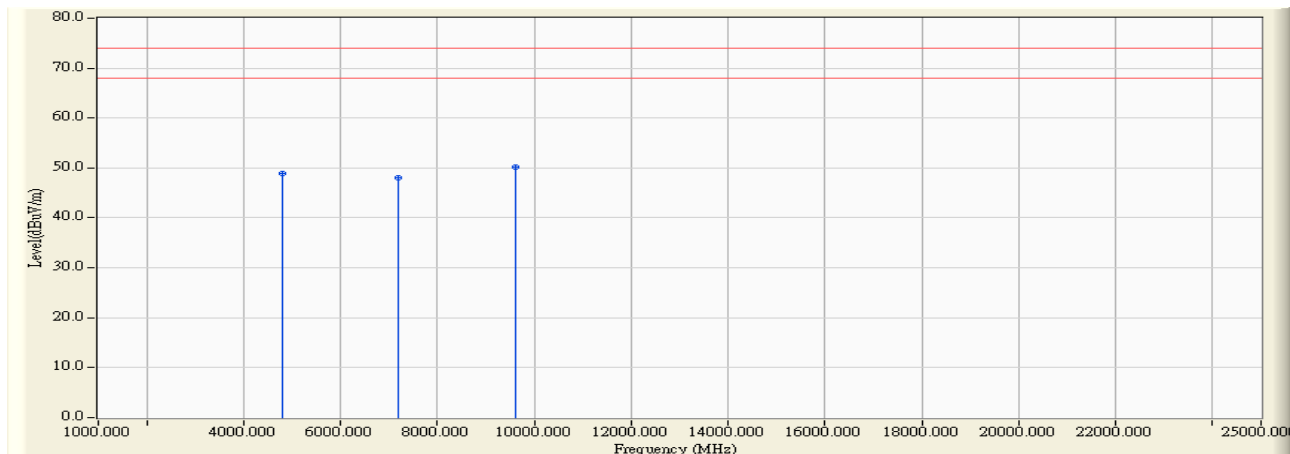
**Average Detector:**

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**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (2402MHz)



Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m

**Vertical**

**Peak Detector:**

4804.000	6.638	42.210	48.847	-25.153	74.000
7206.000	11.005	37.110	48.115	-25.885	74.000
9608.000	14.103	36.020	50.123	-23.877	74.000

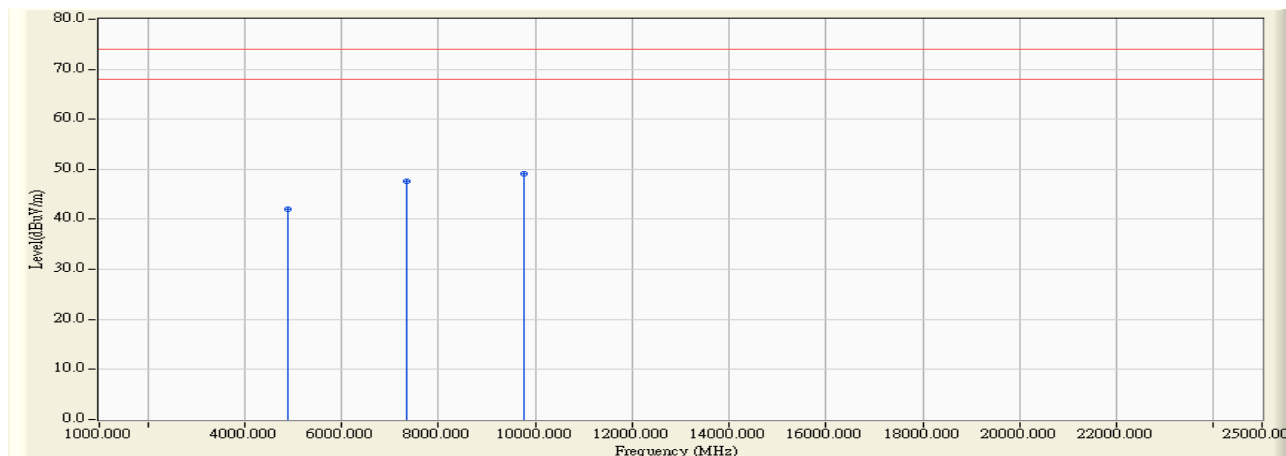
**Average Detector:**

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**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (2445 MHz)



Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4890.000	2.967	39.120	42.087	-31.913	74.000
7335.000	11.899	35.810	47.710	-26.290	74.000
9780.000	12.490	36.660	49.150	-24.850	74.000

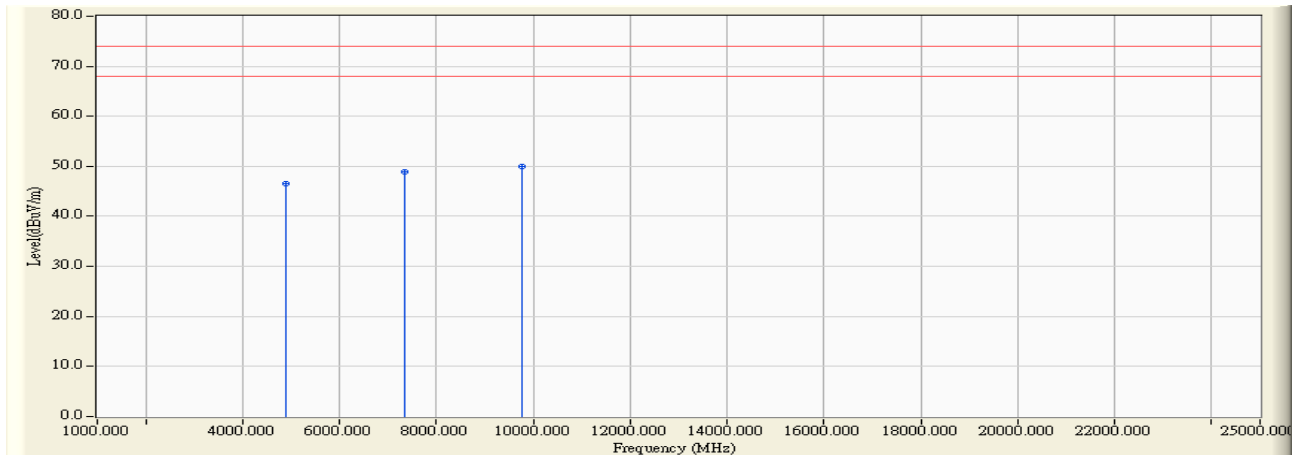
**Average Detector:**

--

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (2445MHz)



Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Vertical</b>					
<b>Peak Detector:</b>					
4890.000	5.617	40.950	46.567	-27.433	74.000
7335.000	12.827	36.110	48.937	-25.063	74.000
9780.000	12.930	36.940	49.870	-24.130	74.000

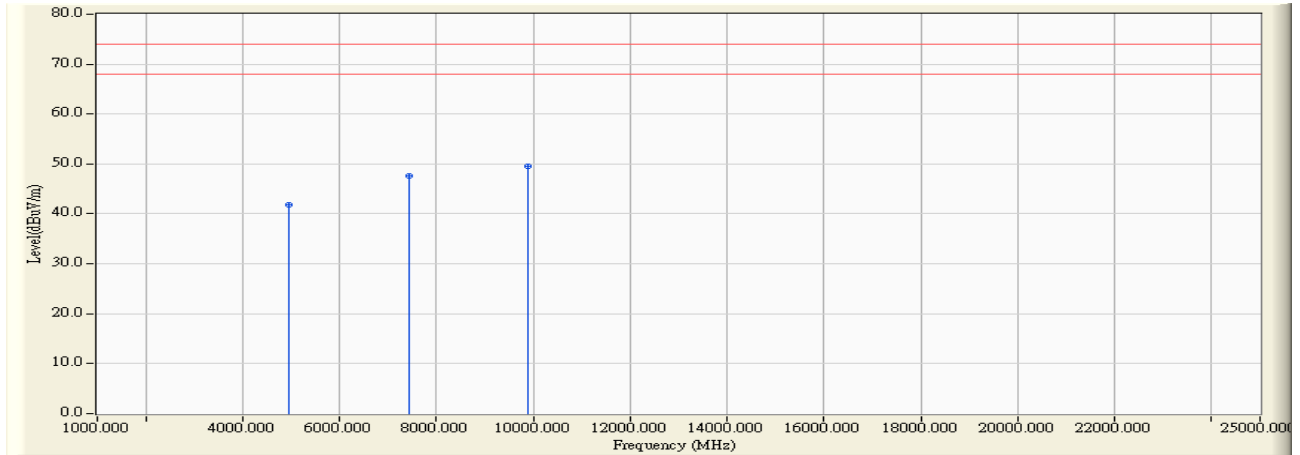
**Average Detector:**

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**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (2475 MHz)



Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

**Horizontal**

**Peak Detector:**

4950.000	2.789	39.110	41.898	-32.102	74.000
7425.000	12.425	35.240	47.665	-26.335	74.000
9900.000	13.328	36.240	49.568	-24.432	74.000

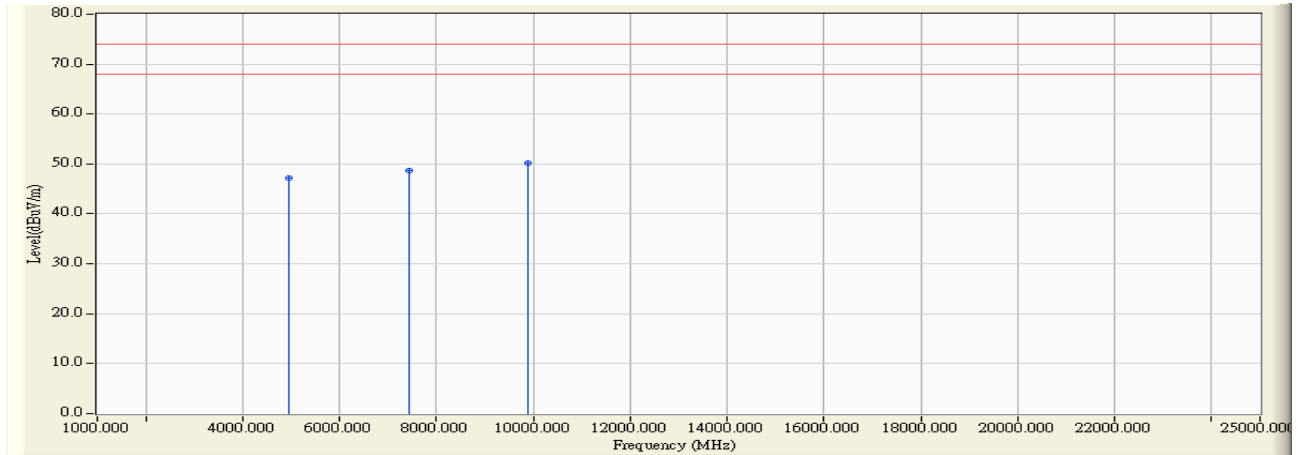
**Average Detector:**

--

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (2475MHz)



Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m

**Vertical**

**Peak Detector:**

4950.000	5.557	41.570	47.127	-26.873	74.000
7425.000	13.405	35.270	48.675	-25.325	74.000
9900.000	13.921	36.290	50.211	-23.789	74.000

**Average Detector:**

--

**Note:**

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
Test Item : General Radiated Emission Data  
Test Site : No.3 OATS  
Test Mode : Mode 1: Transmit (2445 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
<b>Horizontal</b>					
97.900	-7.650	30.818	23.167	-20.333	43.500
227.880	-8.969	37.407	28.439	-17.561	46.000
311.300	-4.026	40.337	36.311	-9.689	46.000
408.300	-2.866	40.589	37.723	-8.277	46.000
600.360	3.977	31.877	35.854	-10.146	46.000
732.280	3.082	28.550	31.632	-14.368	46.000
<b>Vertical</b>					
109.540	-0.418	25.600	25.182	-18.318	43.500
311.300	-6.856	33.966	27.110	-18.890	46.000
408.300	-6.606	31.979	25.373	-20.627	46.000
544.100	-0.688	24.605	23.917	-22.083	46.000
693.480	2.168	24.785	26.953	-19.047	46.000
967.020	8.071	23.475	31.546	-22.454	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 4. Band Edge

### 4.1. Test Equipment

#### RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2010
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2010
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2010

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

The following test equipments are used during the band edge tests:

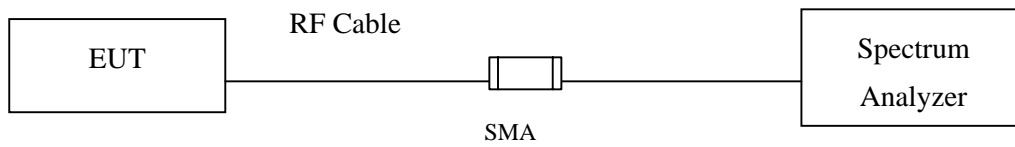
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2010
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2010
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2010
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2010
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2010
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2010
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2010
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

- Note:
1. All equipments are calibrated every one year.
  2. The test equipments marked by “X” are used to measure the final test results.

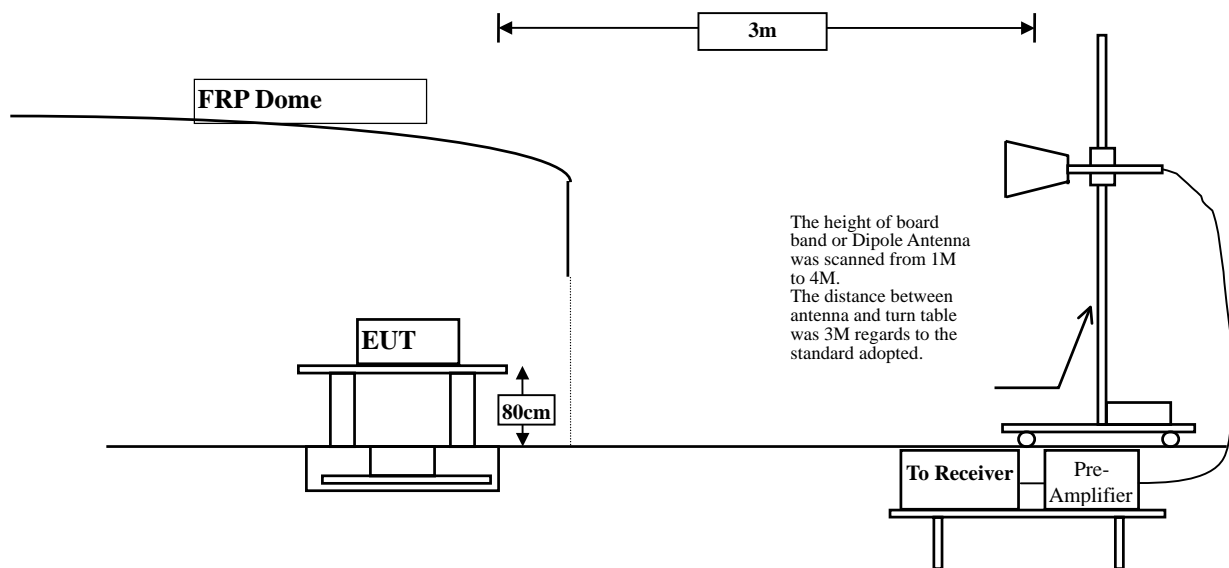


## 4.2. Test Setup

### 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: 2009 on radiated measurement.

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

### 4.5. Uncertainty

Conducted is  $\pm 1.27$  dB

Radiated is  $\pm 3.9$  dB

#### 4.6. Test Result of Band Edge

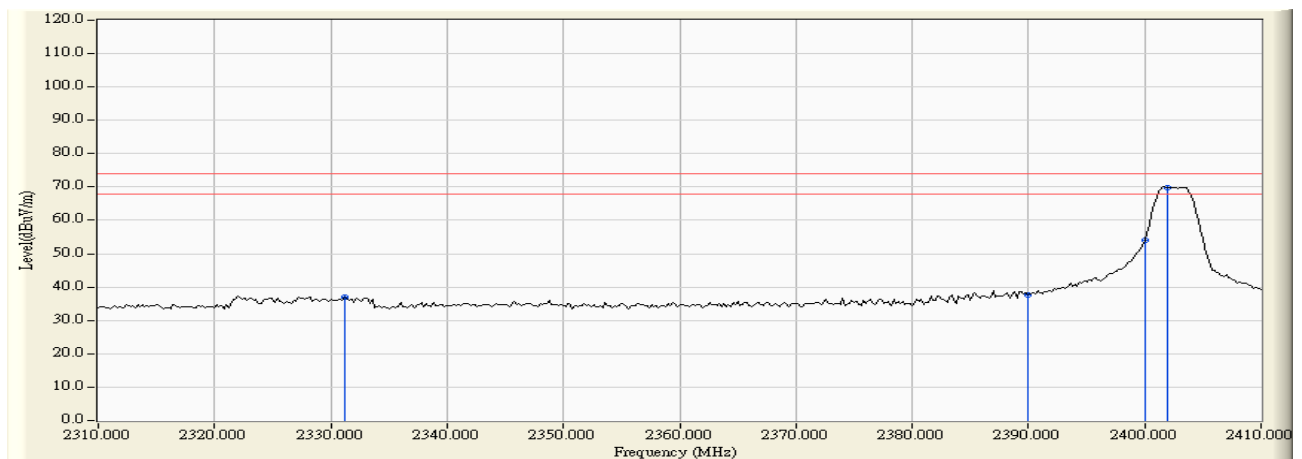
Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit

##### RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2331.200	-1.361	38.330	36.969	74.00	54.00	Pass
00 (Peak)	2390.000	-1.131	38.816	37.685	74.00	54.00	Pass
00 (Peak)	2400.000	-1.084	55.221	54.138	74.00	54.00	Pass
00 (Peak)	2402.000	-1.073	70.882	69.810	--	--	--

Figure Channel 00:

Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

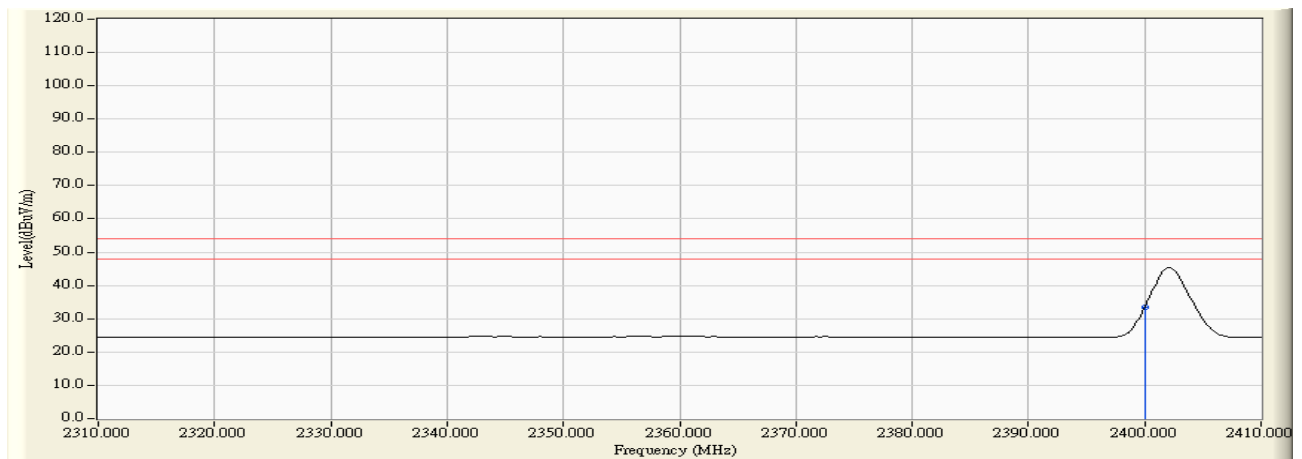
Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00( Average)	2400.000	-1.084	34.447	33.364	74.00	54.00	Pass

**Figure Channel 00:**

**Horizontal (Average)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

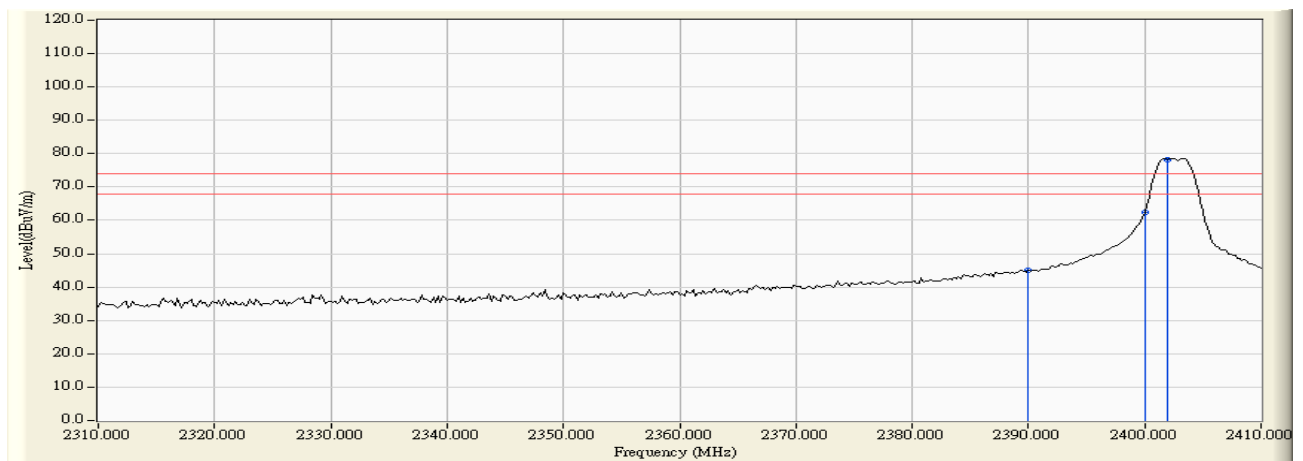
Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2390.000	-1.725	46.824	45.099	74.00	54.00	Pass
00 (Peak)	2400.000	-1.733	64.144	62.412	74.00	54.00	Pass
00 (Peak)	2402.000	-1.729	80.025	78.296	--	--	--

**Figure Channel 00:**

**Vertical (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

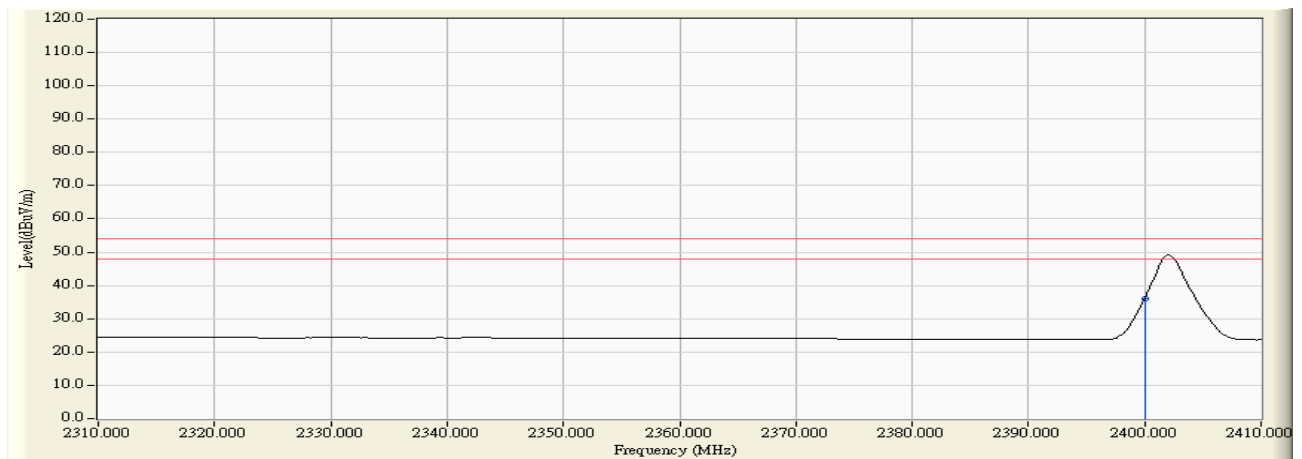
Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Average)	2400.000	-1.733	37.894	36.162	74.00	54.00	Pass

**Figure Channel 00:**

**Vertical (Average)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

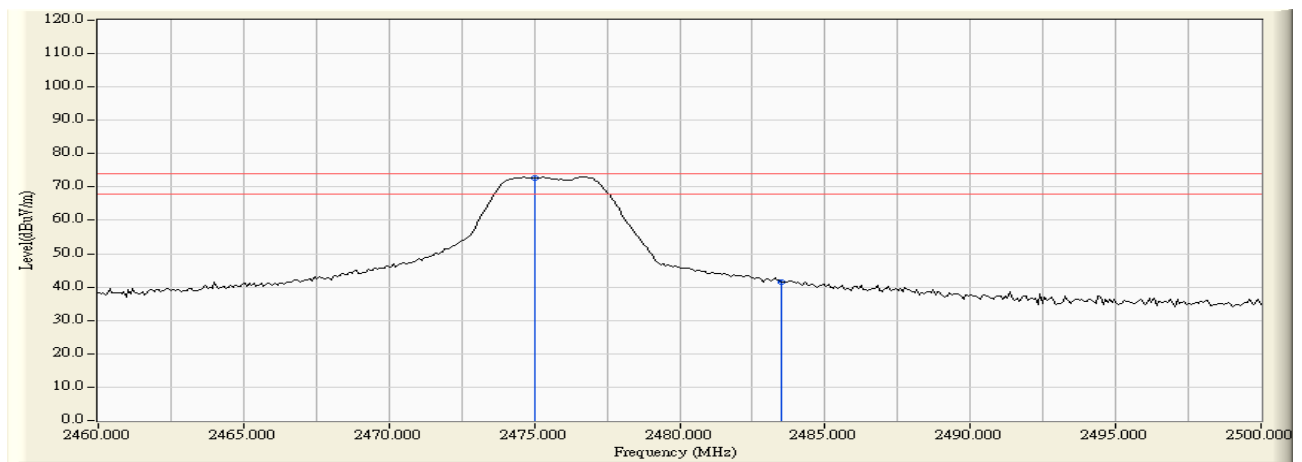
Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit

**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2475.000	-0.612	73.286	72.674	--	--	--
00 (Peak)	2483.500	-0.558	42.194	41.636	74.00	54.00	Pass

**Figure Channel 00:**

**Horizontal (Peak)**



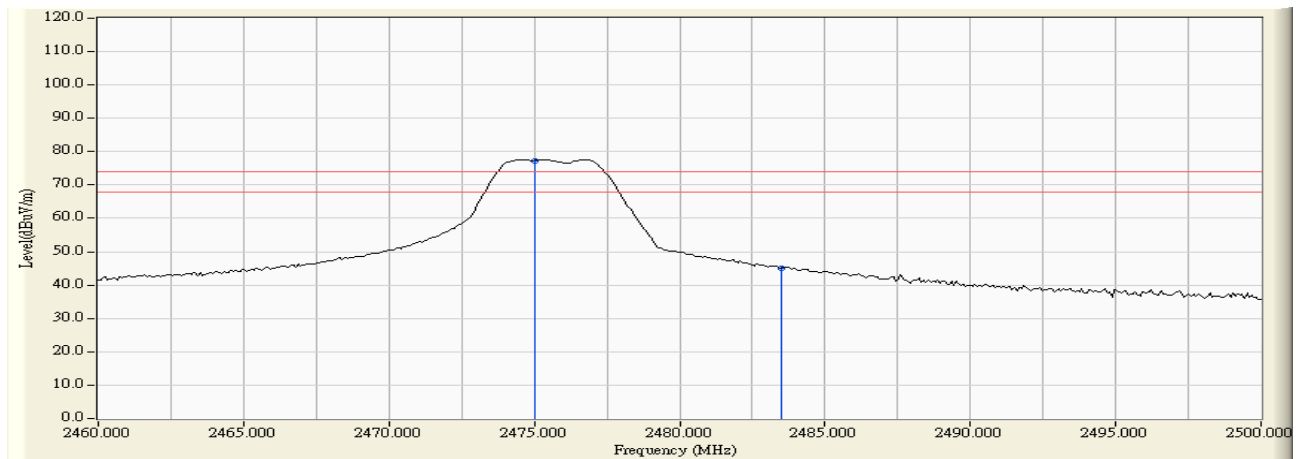
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : WIRELESS HAND WRITE TOUCHPAD DEVICES  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit

**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
00 (Peak)	2475.000	-1.352	78.710	77.358	--	--	--
00 (Peak)	2483.500	-1.305	46.496	45.191	74.00	54.00	Pass

**Figure Channel 00: Vertical (Peak)**



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms



## **5. EMI Reduction Method During Compliance Testing**

No modification was made during testing.

## Attachment 1: EUT Test Photographs

## Attachment 2: EUT Detailed Photographs