# APPLICATION CERTIFICATION FCC Part 15C On Behalf of Shenzhen Sungworld Electronics Co., Ltd.

MID Model No.: M7000XX

FCC ID: WI3-M7000XX1

Prepared for : Shenzhen Sungworld Electronics Co., Ltd.

Address : 4#, North District, Shangxue Industrial Park, Bantian,

Long Gang District, Shenzhen, China

Prepared by : ACCURATE TECHNOLOGY CO., LTD

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Report Number : ATE20112629
Date of Test : Dec. 6-16, 2011
Date of Report : Dec. 16, 2011

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# **Test Report Certification**

Applicant : Shenzhen Sungworld Electronics Co., Ltd.

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

**EUT Description**: MID

(A) MODEL NO.: M7000XX

(B) SERIAL NO.: N/A

(C) POWER SUPPLY: DC 3.7V (Li-polymer battery);

AC 120V/60Hz (Adaptor input)

Measurement Procedure Used:

#### FCC Rules and Regulations Part 15 Subpart C Section 15.247 ANSI C63.4: 2003

The device described above is tested by ACCURATE TECHNOLOGY CO. LTD to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C Section 15.247 limits. The measurement results are contained in this test report and ACCURATE TECHNOLOGY CO. LTD is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of ACCURATE TECHNOLOGY CO. LTD.

Date of Test :	Dec. 6-16, 2011	
Prepared by :	Apple Lu	
	(Engineer)	
Approved & Authorized Signer :	Lemb	
	(Manager)	

### 1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT : MID

Model Number : M7000XX

Frequency Band : 2412-2462MHz

Number of Channels : 11

Antenna Gain : 1dBi

Power Supply : DC 3.7V (Li-polymer battery);

AC 120V/60Hz (Adaptor input)

Adapter : Model number: SY9W01-5V

Input: AC 100-240V; 50/60Hz 0.3A

Output: DC 5V; 2A

Output line: Non-shielded, Non-detachable, 1.4m

Data Rate : IEEE 802.11b: 11Mbps

IEEE 802.11g: 54Mbps IEEE 802.11n: 150Mbps

Applicant : Shenzhen Sungworld Electronics Co., Ltd.

Address : 4#, North District, Shangxue Industrial Park, Bantian,

Long Gang District, Shenzhen, China

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

Address : 4#, North District, Shangxue Industrial Park, Bantian,

Long Gang District, Shenzhen, China

Date of sample received: Dec. 6, 2011

Date of Test : Dec. 6-16, 2011

# 1.2.Description of Test Facility

EMC Lab : Accredited by TUV Rheinland Shenzhen

Listed by FCC

The Registration Number is 752051

Listed by Industry Canada

The Registration Number is 5077A-2

Accredited by China National Accreditation Committee

for Laboratories

The Certificate Registration Number is L3193

Name of Firm : ACCURATE TECHNOLOGY CO. LTD

Site Location : F1, Bldg. A, Changyuan New Material Port, Keyuan Rd.

Science & Industry Park, Nanshan, Shenzhen, Guangdong

P.R. China

### 1.3. Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty = 3.08dB, k=2

(9kHz-30MHz)

Radiated emission expanded uncertainty = 4.42dB, k=2

(30MHz-1000MHz)

Radiated emission expanded uncertainty = 4.06dB, k=2

(Above 1GHz)

# 2. MEASURING DEVICE AND TEST EQUIPMENT

**Table 1: List of Test and Measurement Equipment** 

Kind of equipment	Manufacturer	Type	S/N	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 15, 2012
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 15, 2012
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 15, 2012
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 15, 2012
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2012
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2012
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2012
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 15, 2012
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 15, 2012
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 15, 2012

# 3. OPERATION OF EUT DURING TESTING

# 3.1. Operating Mode

The mode is used: 802.11b Transmitting mode

Low Channel: 2412MHz Middle Channel: 2437MHz High Channel: 2462MHz

#### **802.11g Transmitting mode**

Low Channel: 2412MHz Middle Channel: 2437MHz High Channel: 2462MHz

#### 802.11n Transmitting mode

Low Channel: 2412MHz Middle Channel: 2437MHz High Channel: 2462MHz

## 3.2. Configuration and peripherals

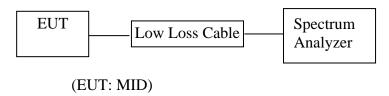
EUT
Figure 1 Setup: Transmitting mode

# 4. TEST PROCEDURES AND RESULTS

FCC Rules	<b>Description of Test</b>	Result
Section 15.247(a)(2)	6dB Bandwidth Test	Compliant
Section 15.247(e)	Power Spectral Density Test	Compliant
Section 15.247(b)(3)	Maximum Peak Output Power Test	Compliant
Section 15.247(d)	Band Edge Compliance Test	Compliant
Section 15.247(d) Section 15.209	Radiated Spurious Emission Test	Compliant
Section 15.247(d)	Conducted Spurious Emission Test	Compliant
Section 15.207	AC Power Line Conducted Emission Test	Compliant
Section 15.203	Antenna Requirement	Compliant

### 5. 6DB BANDWIDTH MEASUREMENT

### 5.1.Block Diagram of Test Setup



### 5.2. The Requirement For Section 15.247(a)(2)

Section 15.247(a)(2): Systems using digital modulation techniques may operate in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

## 5.3.EUT Configuration on Measurement

The following equipment are installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 5.3.1.MID (EUT)

Model Number : M7000XX Serial Number : N/A

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

#### 5.4. Operating Condition of EUT

- 5.4.1. Setup the EUT and simulator as shown as Section 5.1.
- 5.4.2. Turn on the power of all equipment.
- 5.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz, 2462MHz TX frequency to transmit.

#### 5.5.Test Procedure

- 5.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 5.5.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.
- 5.5.3.The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

#### 5.6.Test Result

#### PASS.

Date of Test:Dec. 10, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:TXTest Engineer:Pei

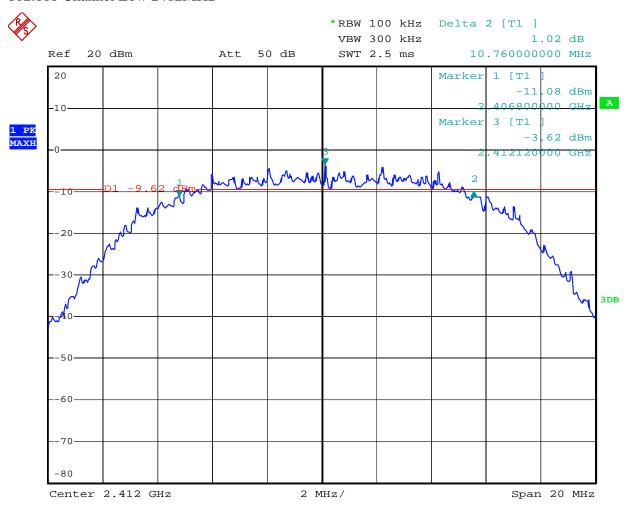
The test was performed with 802.11b						
Channel	Channel Frequency (MHz) 6dB Bandwidth Limit (MHz) (MHz)					
Low	2412	10.76	> 0.5MHz			
Middle	2437	10.60	> 0.5MHz			
High	2462	10.48	> 0.5MHz			

The test was performed with 802.11g						
Channel	Channel Frequency (MHz) 6dB Bandwidth Limit (MHz) (MHz)					
Low	2412	16.60	> 0.5MHz			
Middle	2437	16.56	> 0.5MHz			
High	2462	16.56	> 0.5MHz			

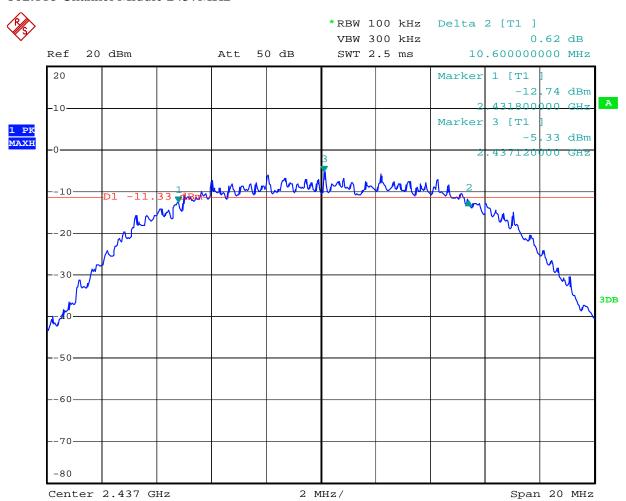
The test was performed with 802.11n				
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)	
Low	2412	17.76	> 0.5MHz	
Middle	2437	17.72	> 0.5MHz	
High	2462	17.76	> 0.5MHz	

The spectrum analyzer plots are attached as below.

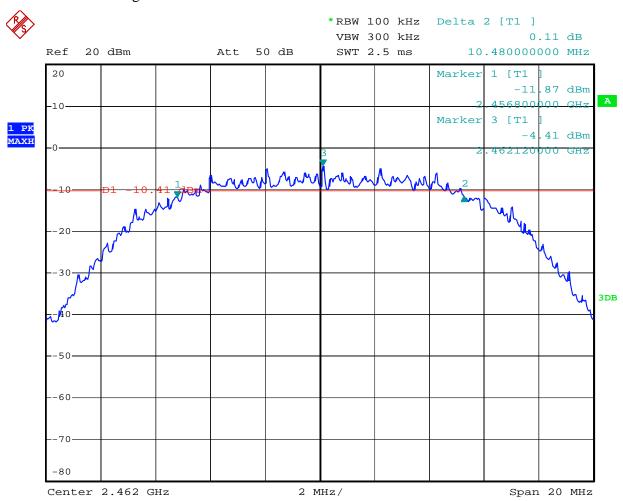
#### 802.11b Channel Low 2412MHz



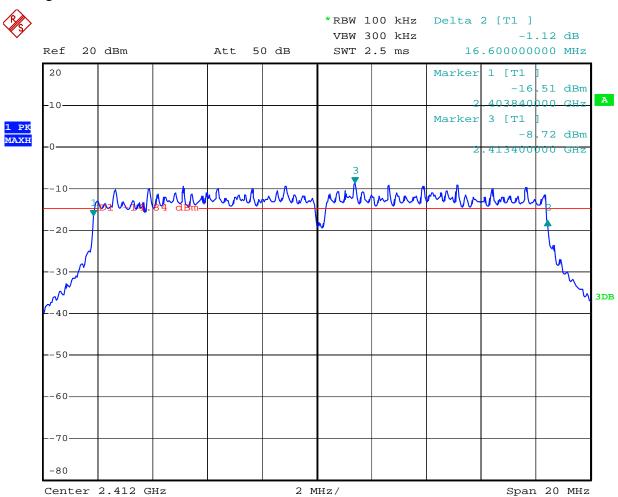
#### 802.11b Channel Middle 2437MHz



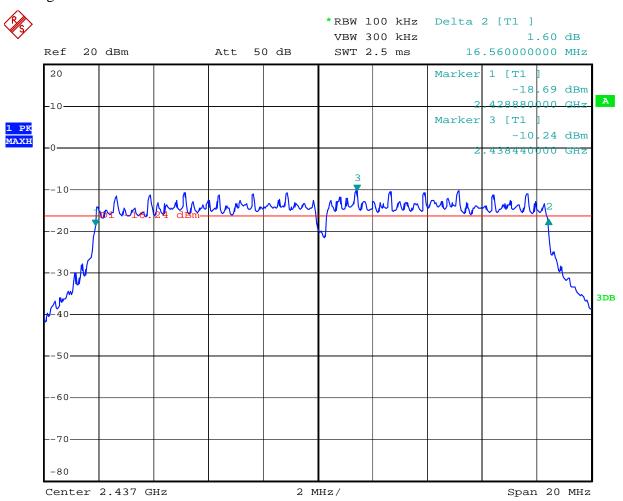
# 802.11b Channel High 2462MHz



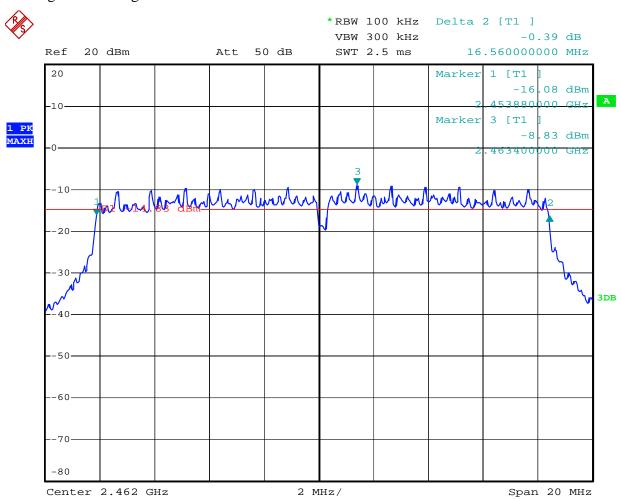
# 802.11g Channel Low 2412MHz



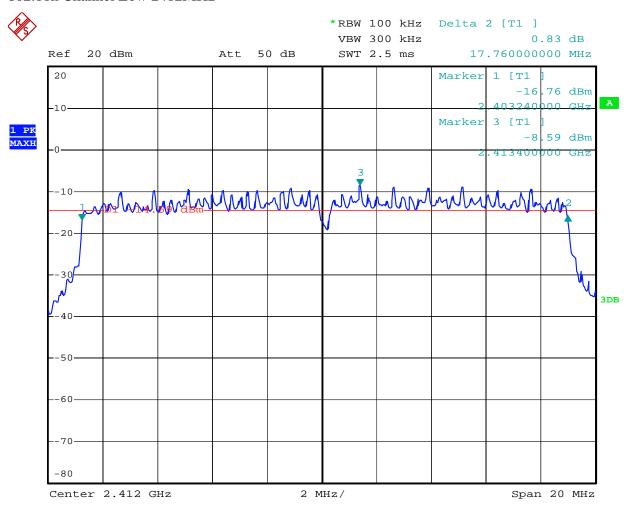
# 802.11g Channel Middle 2437MHz



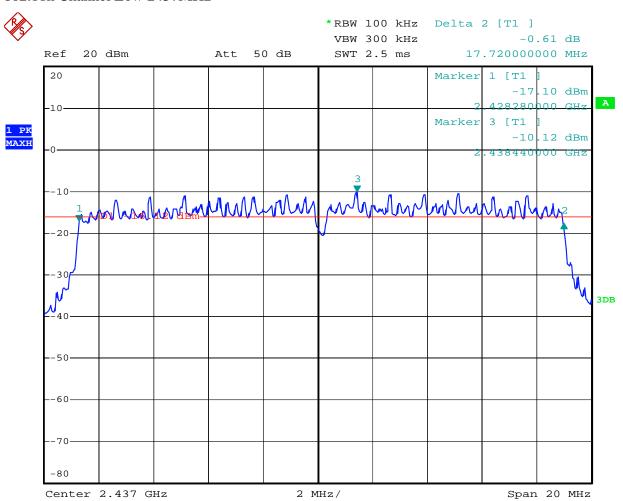
# 802.11g Channel High 2462MHz



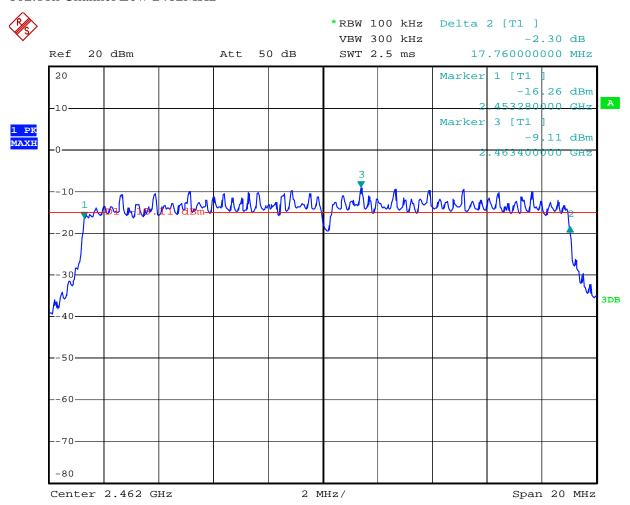
#### 802.11n Channel Low 2412MHz



#### 802.11n Channel Low 2437MHz

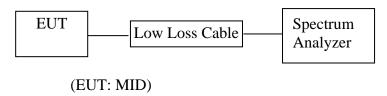


#### 802.11n Channel Low 2462MHz



### 6. MAXIMUM PEAK OUTPUT POWER

### 6.1.Block Diagram of Test Setup



### 6.2. The Requirement For Section 15.247(b)(3)

Section 15.247(b)(3): For systems using digital modulation in the 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz bands: 1 Watt.

### 6.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 6.3.1.MID (EUT)

Model Number : M7000XX

Serial Number : N/A

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

### 6.4. Operating Condition of EUT

- 6.4.1. Setup the EUT and simulator as shown as Section 6.1.
- 6.4.2. Turn on the power of all equipment.
- 6.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz, 2462MHz TX frequency to transmit.

### 6.5.Test Procedure

- 6.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- 6.5.2.Set RBW of spectrum analyzer to 1MHz and VBW to 3MHz.
- 6.5.3. Measurement the maximum peak output power.

### 6.6.Test Result

PASS.

Date of Test:Dec. 10, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:TXTest Engineer:Pei

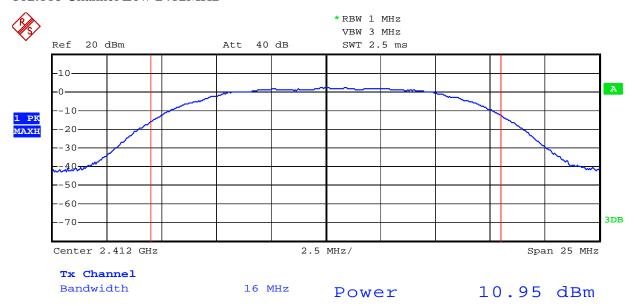
The test was performed with 802.11b						
Channel	Channel Frequency (MHz) Peak Output Power (dBm) Peak Output Power (mW) Limits dBm / W					
Low	2412	10.95	12.45	30 dBm / 1 W		
Middle	2437	9.68	9.29	30 dBm / 1 W		
High	2462	10.58	11.43	30 dBm / 1 W		

The test was performed with 802.11g						
Channel	Channel Frequency (MHz) Peak Output Power (dBm) Peak Output Power (mW) Limits dBm / W					
Low	2412	10.10	10.23	30 dBm / 1 W		
Middle	2437	9.00	7.94	30 dBm / 1 W		
High	2462	10.01	10.02	30 dBm / 1 W		

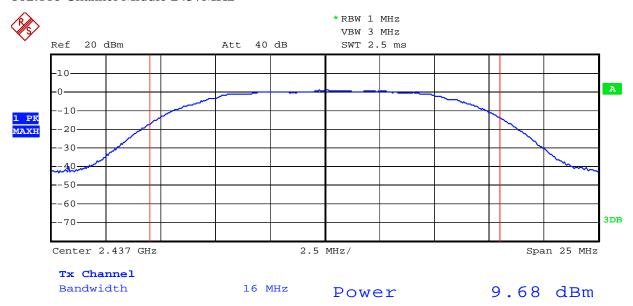
The test was performed with 802.11n							
Channel	Frequency (MHz)	Peak Output Power (dBm)	Peak Output Power (mW)	Limits dBm/W			
Low	2412	9.67	9.27	30 dBm / 1 W			
Middle	2437	8.65	7.33	30 dBm / 1 W			
High	2462	9.63	9.18	30 dBm / 1 W			

The spectrum analyzer plots are attached as below.

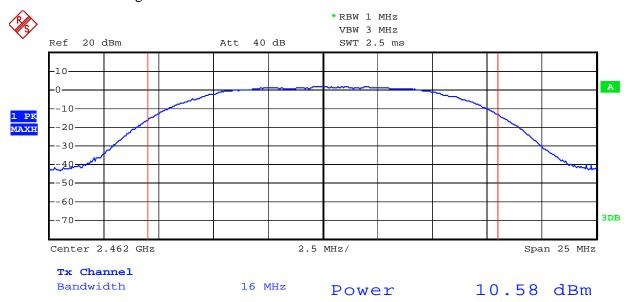
# 802.11b Channel Low 2412MHz



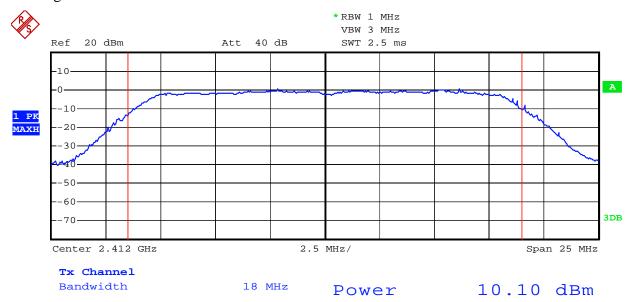
# 802.11b Channel Middle 2437MHz



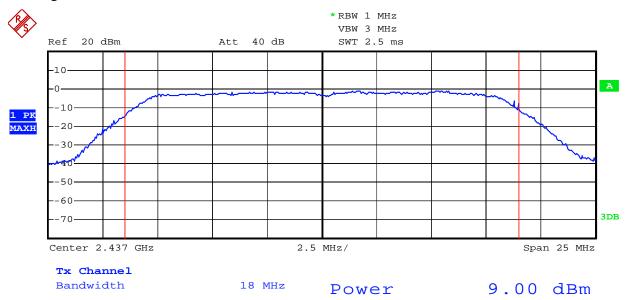
# 802.11b Channel High 2462MHz



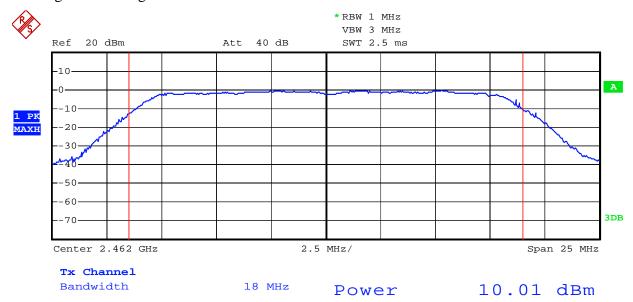
# 802.11g Channel Low 2412MHz



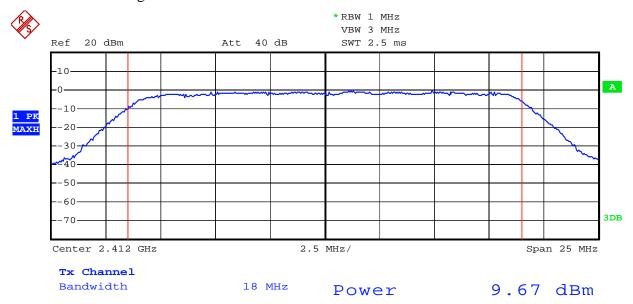
# 802.11g Channel Middle 2437MHz



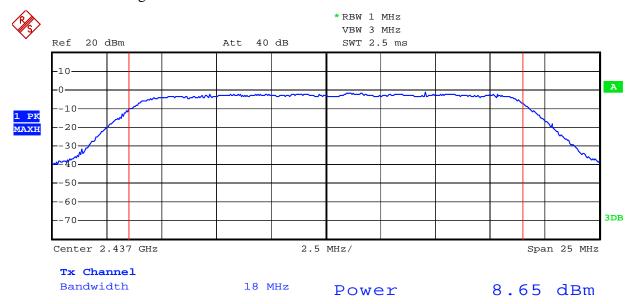
# 802.11g Channel High 2462MHz



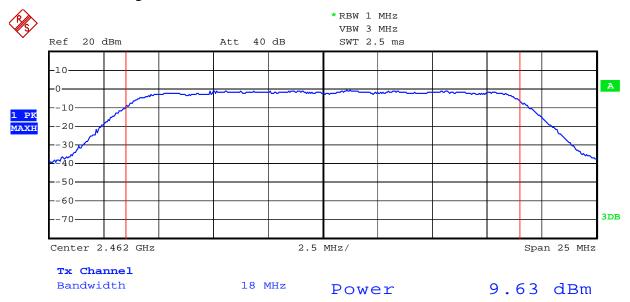
# 802.11n Channel High 2412MHz



# 802.11n Channel High 2437MHz

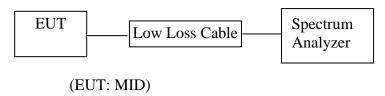


# 802.11n Channel High 2462MHz



### 7. POWER SPECTRAL DENSITY MEASUREMENT

## 7.1.Block Diagram of Test Setup



### 7.2. The Requirement For Section 15.247(e)

Section 15.247(e): For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

## 7.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 7.3.1.MID (EUT)

Model Number : M7000XX Serial Number : N/A

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

#### 7.4. Operating Condition of EUT

- 7.4.1. Setup the EUT and simulator as shown as Section 7.1.
- 7.4.2. Turn on the power of all equipment.
- 7.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz, 2462MHz TX frequency to transmit.

### 7.5.Test Procedure

- 7.5.1.The transmitter output was connected to the spectrum analyzer through a low loss cable.
- $7.5.2.Set\ RBW\ of\ spectrum\ analyzer\ to\ 3kHz\ and\ VBW\ to\ 10kHz,\ sweep\ time = Span/3kHz.$
- 7.5.3. Measurement the maximum power spectral density.

### 7.6.Test Result

#### PASS.

Date of Test:Dec. 10, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:TXTest Engineer:Pei

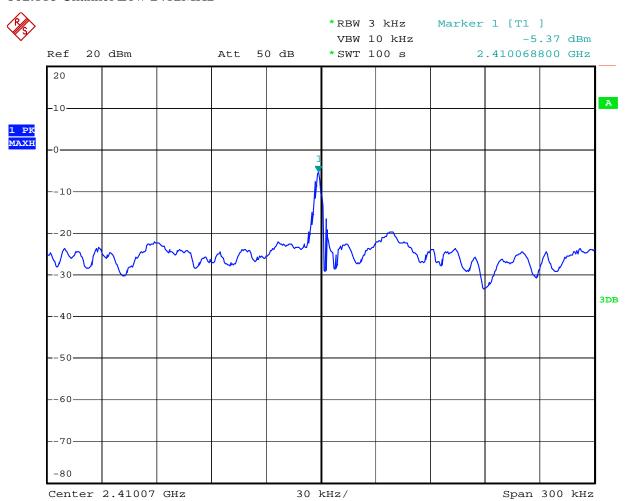
The test was performed with 802.11b					
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)		
Low	2412	-5.37	8 dBm		
Middle	2437	-6.61	8 dBm		
High	2462	-5.08	8 dBm		

The test was performed with 802.11g					
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)		
Low	2412	-24.95	8 dBm		
Middle	2437	-26.77	8 dBm		
High	2462	-24.99	8 dBm		

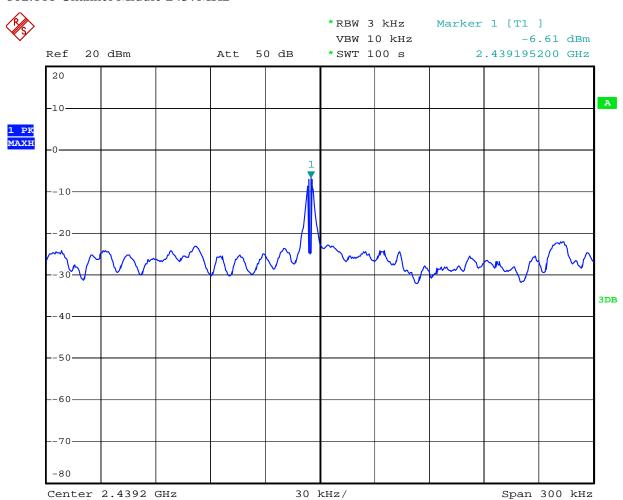
The test was performed with 802.11n					
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)		
Low	2412	-24.06	8 dBm		
Middle	2437	-26.16	8 dBm		
High	2462	-25.30	8 dBm		

The spectrum analyzer plots are attached as below.

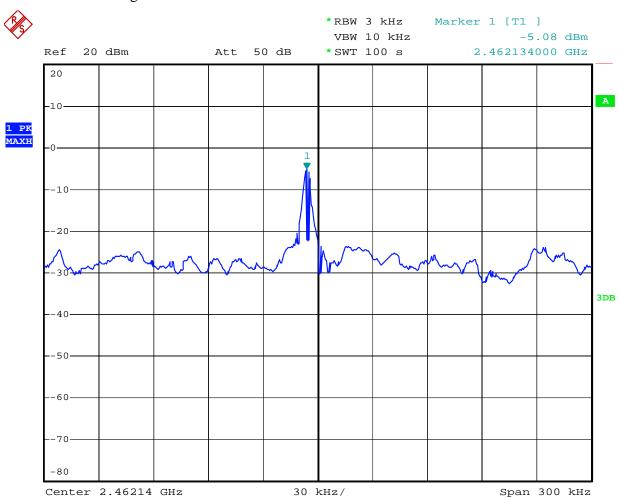
# 802.11b Channel Low 2412MHz



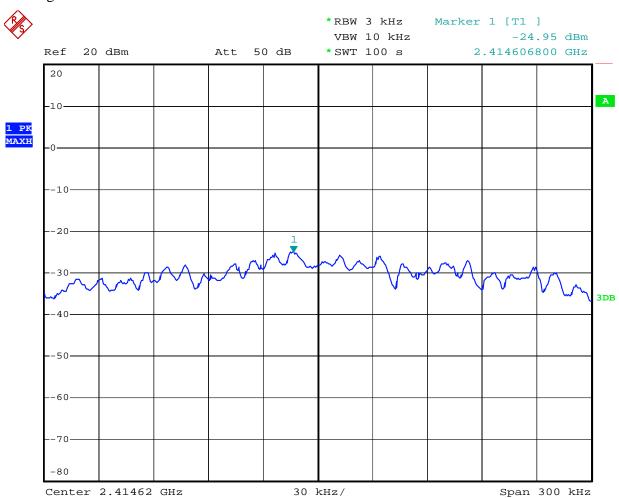
## 802.11b Channel Middle 2437MHz



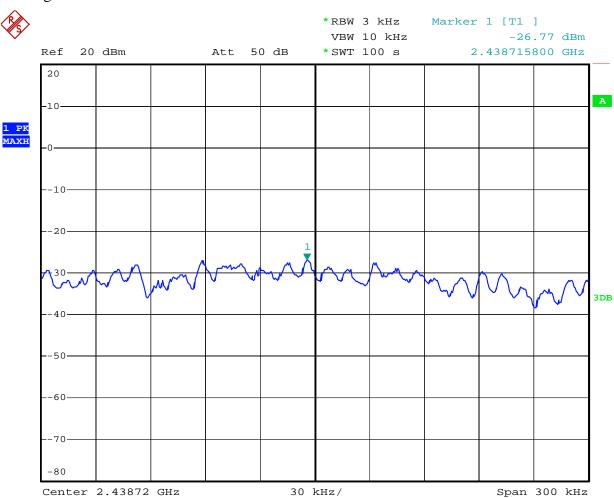
# 802.11b Channel High 2462MHz



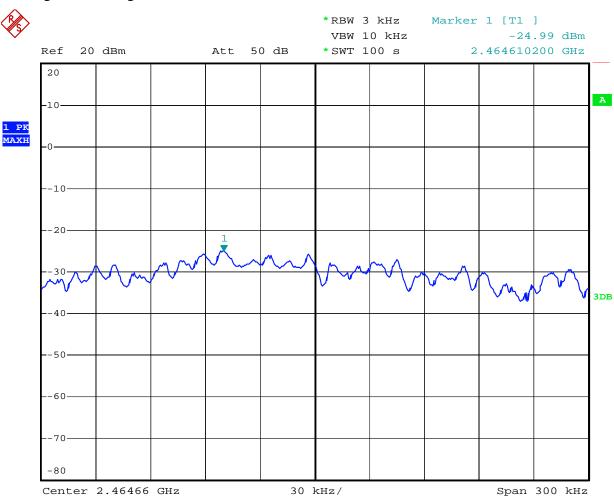
# 802.11g Channel Low 2412MHz



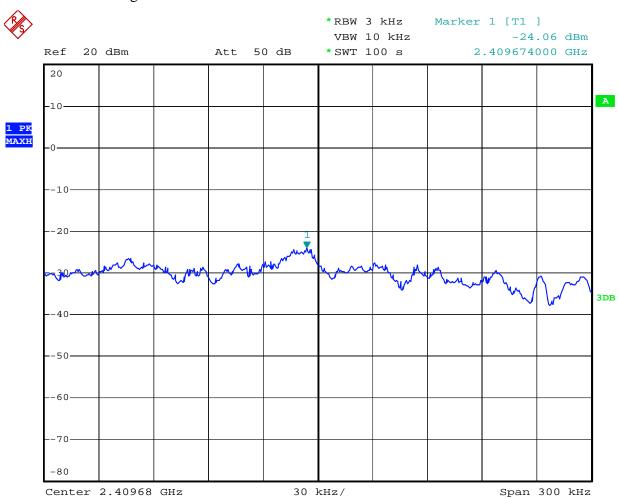
# 802.11g Channel Middle 2437MHz



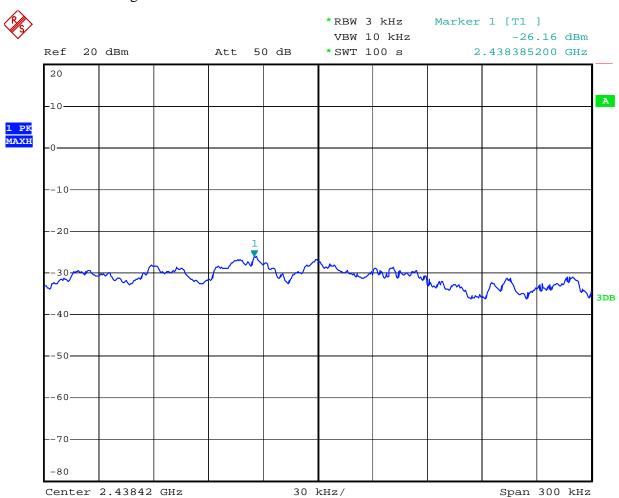
# 802.11g Channel High 2462MHz



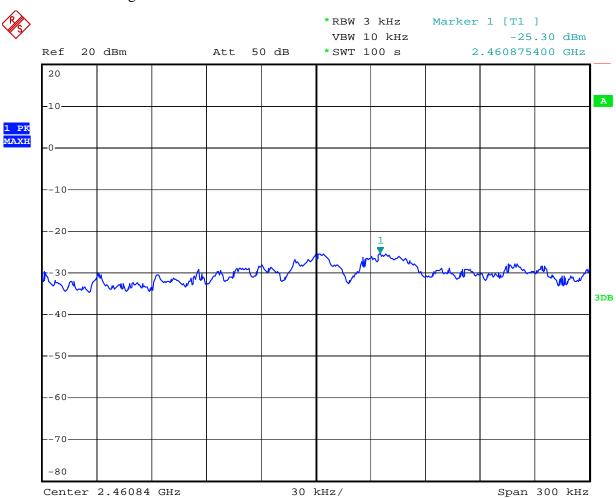
# 802.11n Channel High 2412MHz



# 802.11n Channel High 2437MHz

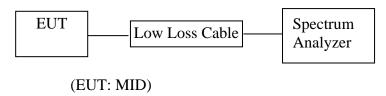


# 802.11n Channel High 2462MHz



### 8. BAND EDGE COMPLIANCE TEST

### 8.1.Block Diagram of Test Setup



## 8.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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).

### 8.3.EUT Configuration on Measurement

The following equipment are installed on the emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 8.3.1.MID (EUT)

Model Number : M7000XX

Serial Number : N/A

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

## 8.4. Operating Condition of EUT

- 8.4.1. Setup the EUT and simulator as shown as Section 8.1.
- 8.4.2.Turn on the power of all equipment.
- 8.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2462MHz TX frequency to transmit.

### 8.5.Test Procedure

## Conducted Band Edge:

- 8.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 8.5.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.

### Radiate Band Edge:

- 8.5.3. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
- 8.5.4. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
- 8.5.5. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 8.5.6. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

8.5.7. The band edges was measured and recorded.

## 8.6.Test Result

### Pass

## **Conducted test**

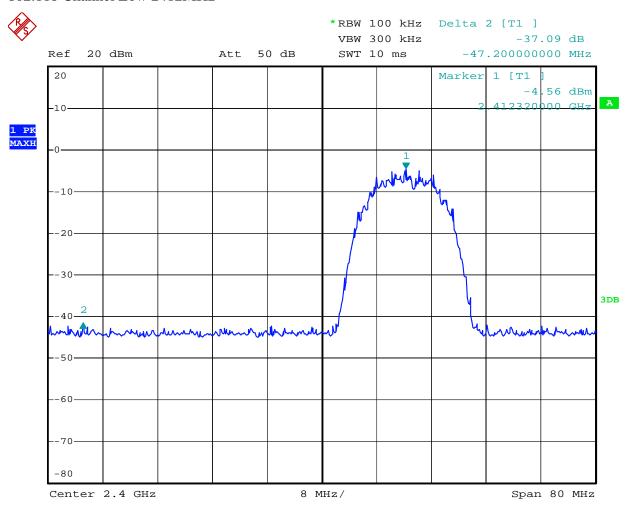
Date of Test:Dec. 10, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:TXTest Engineer:Pei

The test was performed with 802.11b									
Frequency	Result of Band Edge (dBc)	Limit of Band Edge (dBc)							
(MHz)	, ,								
2412	37.09	> 20dBc							
2462	36.84	> 20dBc							

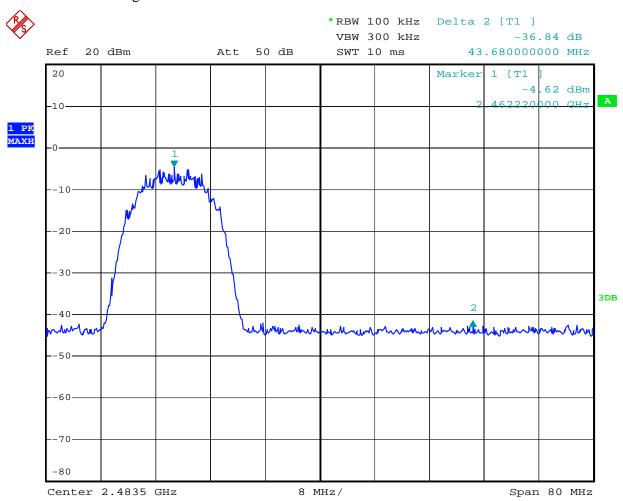
The test was performed with 802.11g									
Frequency	Result of Band Edge (dBc)	Limit of Band Edge (dBc)							
(MHz)	, , ,	, ,							
2412	33.04	> 20dBc							
2462	32.23	> 20dBc							

The test was performed with 802.11n									
Frequency	Result of Band Edge (dBc)	Limit of Band Edge (dBc)							
(MHz)		, , ,							
2412	32.45	> 20dBc							
2462	32.76	> 20dBc							

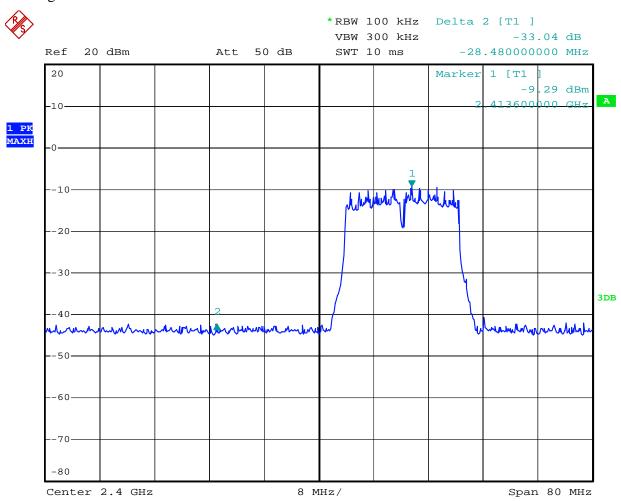
### 802.11b Channel Low 2412MHz



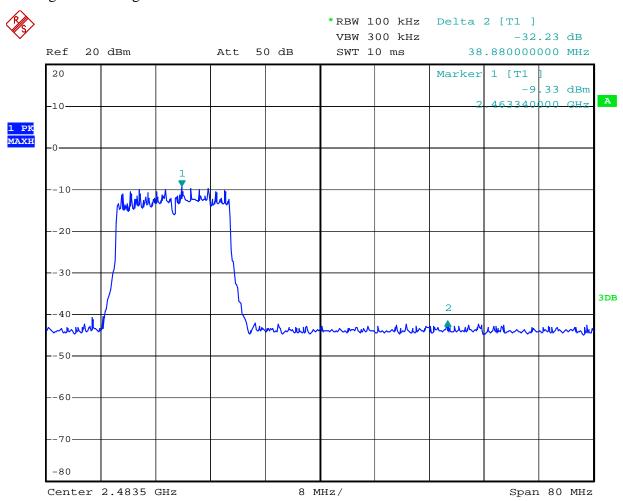
# 802.11b Channel High 2462MHz



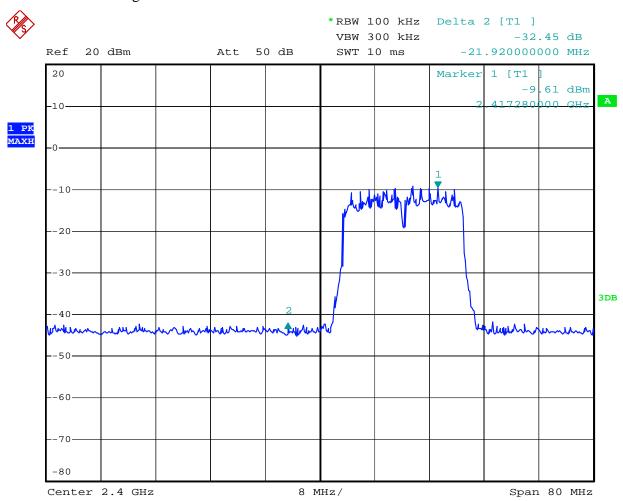
# 802.11g Channel Low 2412MHz



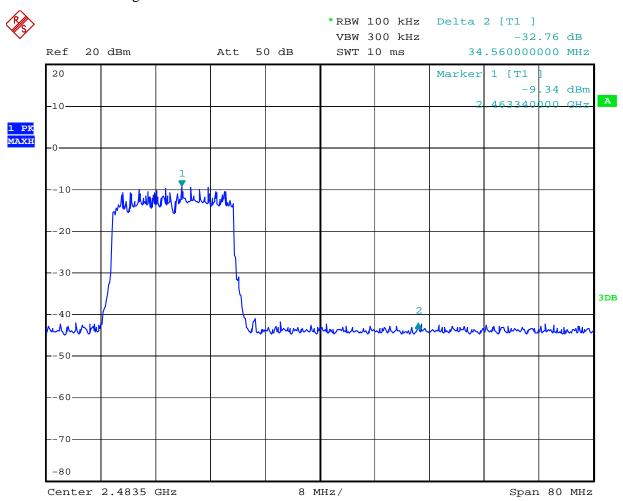
# 802.11g Channel High 2462MHz



## 802.11n Channel High 2412MHz



# 802.11n Channel High 2462MHz



## **Radiated Band Edge Result**

Date of Test:	December 15, 2011	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	M7000XX	Power Supply:	DC 3.7V
Test Mode:	802.11b Channel Low 2412MHz	Test Engineer:	Pei

Frequency	Reading(	(dBµV/m)	Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
-	-	-	-	-	-	-	-	-	-	Vertical
-	-	-	-	-	-	-	-	-	-	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11b Channel High 2462MHzTest Engineer:Pei

Frequency	Reading	(dBµV/m)	Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
-	_	-	-	-	_	-	-	-	-	Vertical
-	_	-	-	_	_	-	-	-	-	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

  Result = Reading + Corrected Factor
- 3. Display the measurement of peak values.

Date of Test:	December 15, 2011	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	M7000XX	Power Supply:	DC 3.7V
Test Mode:	802.11g Channel Low 2412MHz	Test Engineer:	Pei

Frequency	Reading	(dBµV/m)	Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
-	_	-	-	-	_	-	-	ı	-	Vertical
-	_	-	-	_	-	_	-	-	-	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11g Channel High 2462MHzTest Engineer:Pei

Frequency	Reading	(dBµV/m)	Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
-	-	_	-	-	-	-	-	ı	-	Vertical
-	-	_	-	-	-	-	-	-	-	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

  Result = Reading + Corrected Factor
- 3. Display the measurement of peak values.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11n Channel Low 2412MHzTest Engineer:Pei

Frequency	Reading	(dBµV/m)	Factor(dB)	Factor(dB) Result(dB\(\mu\begin{center} Result(dB\(\mu\begin{center} U/m) \end{center} \]		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
-	_	_	-	-	_	-	-	ı	-	Vertical
-	_	-	-	-	_	-	-	-	-	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

3. Display the measurement of peak values.

Date of Test:	December 15, 2011	Temperature:	25°C
EUT:	MID	Humidity:	50%
Model No.:	M7000XX	Power Supply:	DC 3.7V
Test Mode:	802.11n Channel High 2462MHz	Test Engineer:	Pei

Frequency	Reading(	(dBµV/m)	Factor(dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dB)		Polarization
(MHz)	AV	PEAK	Corr.	AV	PEAK	AV	PEAK	AV	PEAK	
-	_	-	-	-	_	-	-	-	_	Vertical
-	_	-	-	-	_	-	-	-	_	Horizontal

#### Note:

- 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
- 2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is as follows:

  Result = Reading + Corrected Factor
- 3. Display the measurement of peak values.



Freq.

(MHz)

No.

Factor

(dBuV/m)

Result

(dBuV/m)

(dBuV/m)

Height (cm)

Detector

Degree (deg.)

Remark

### ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1533 Polarization: Horizontal Standard: FCC Part 15 PEAK 2.4G Power Source: DC 3.7V Test item: Radiation Test Date: 2011/12/15 Temp.( C)/Hum.(%) 24 C / 48 % Time: 23:15:17 EUT: MID Engineer Signature: Kai Mode: TX Channel 1 (802.11b) Distance: Model: M7000XX Manufacturer: Sungworld Report No.:ATE2011269 120.0 dBuV/m 100 80 60 30 20.0 2430.0 MHz 2390.000 Reading Limit Margin



30 20.0 2390.000

(MHz)

No.

### ACCURATE TECHNOLOGY CO., LTD.

F1.Bldg.A,Changyuan New Material Port Keyuan Rd.

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

2430.0 MHz

Remark

Degree

(deg.)

(cm)

Polarization: Vertical

Date: 2011/12/15

Time: 23:11:09

Distance:

Power Source: DC 3.7V

Engineer Signature: Kai

Science & Industry Park, Nanshan Shenzhen, P.R.China Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 % EUT: MID TX Channel 1 (802.11b) Mode: Model: M7000XX Manufacturer: Sungworld Report No.:ATE2011269 120.0 dBuW/m 110 100 90 80 70

Reading

(dBuV/m)

Factor

(dB)

Result

(dBuV/m)

Limit

(dBuV/m)

Margin

(dB)

Detector



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1530 Standard: FCC Part 15 PEAK 2.4G

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

CUT: MID

Mode: TX Channel 11 (802.11b)

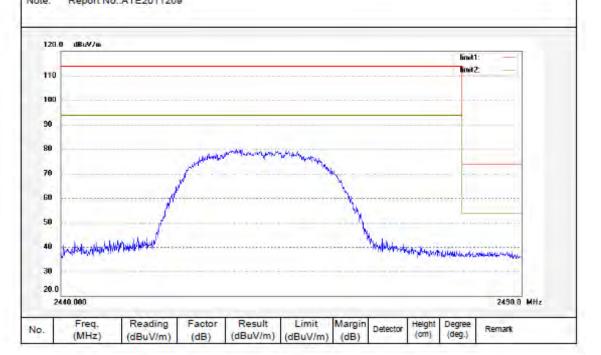
Model: M7000XX Manufacturer: Sungworld

Note: Report No.:ATE2011269

Polarization: Horizontal Power Source: DC 3.7V Date: 2011/12/15 Time: 23:05:45

Engineer Signature: Kai

Distance:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1531 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

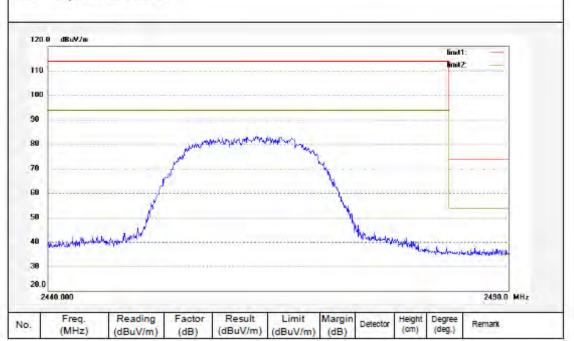
Mode: TX Channel 11 (802.11b)

Model: M7000XX Manufacturer: Sungworld

ote: Report No.:ATE2011269

Polarization: Vertical Power Source: DC 3.7V Date: 2011/12/15 Time: 23:07:21 Engineer Signature: Kai

Distance:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1526 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 % EUT:

Mode:

Model: M7000XX Manufacturer: Sungworld

TX Channel 1 (802.11g)

Report No.:ATE2011269

Engineer Signature: Kai

Distance:

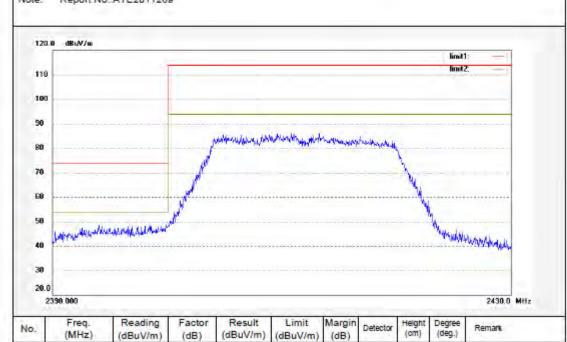
Polarization: Horizontal

Power Source: DC 3.7V

Date: 2011/12/15

Time: 22:55:09







F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1527 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11g)

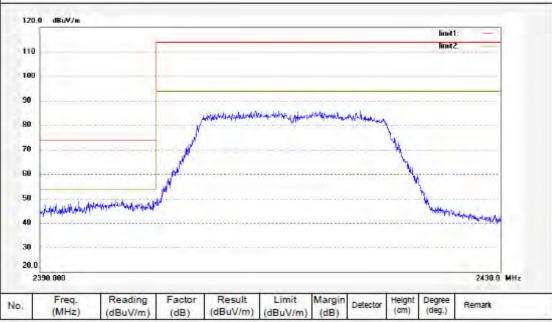
Model: M7000XX Manufacturer: Sungworld Polarization: Vertical Power Source: DC 3.7V

Date: 2011/12/15 Time: 22:56:35

Engineer Signature: Kai

Distance:







F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Tel:+86-0755-26503290 Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Fax:+86-0755-26503396

Job No.: Kai #1529 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11g)

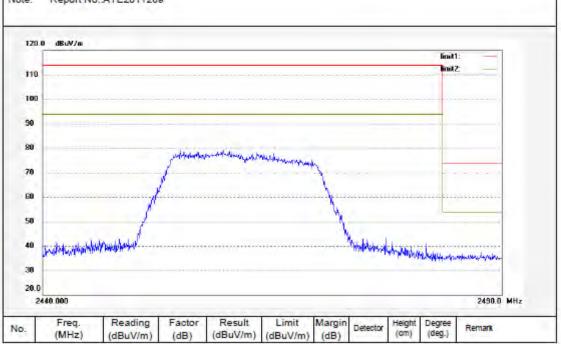
Model: M7000XX Manufacturer: Sungworld

Note: Report No.:ATE2011269

Polarization: Horizontal Power Source: DC 3.7V Date: 2011/12/15 Time: 23:01:23

Engineer Signature: Kai

Distance:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1528 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

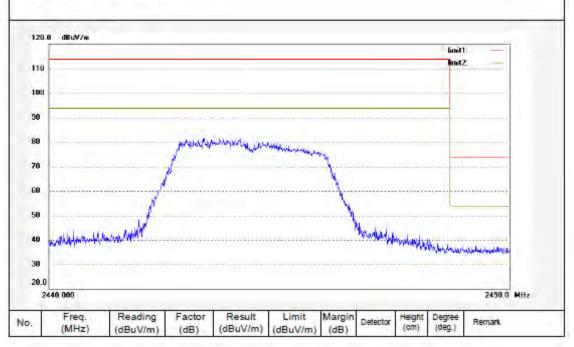
Model: M7000XX Manufacturer: Sungworld

Mode: TX Channel 11 (802.11g)

Polarization: Vertical Power Source: DC 3.7V Date: 2011/12/15 Time: 23:00:19 Engineer Signature: Kai

Distance:

Note: Report No.:ATE2011269





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1522 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

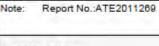
EUT: MID

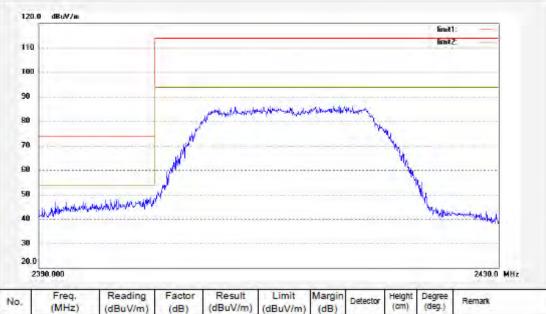
Mode: TX Channel 1 (802.11n)

Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V Date: 2011/12/15 Time: 22:42:51

Engineer Signature: Kai

Distance:







F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1523 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11n)

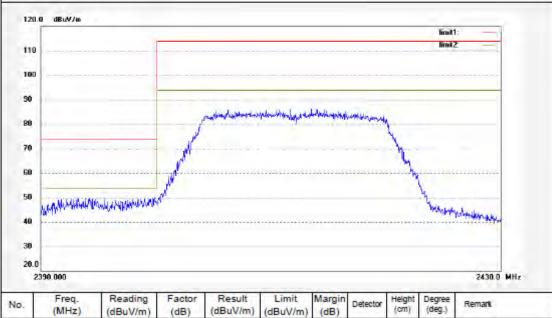
Model: M7000XX Manufacturer: Sungworld Polarization: Vertical Power Source: DC 3.7V

Date: 2011/12/15 Time: 22:44:01

Engineer Signature: Kai

Distance:







F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1525 Standard: FCC Part 15 PEAK 2.4G Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11n)

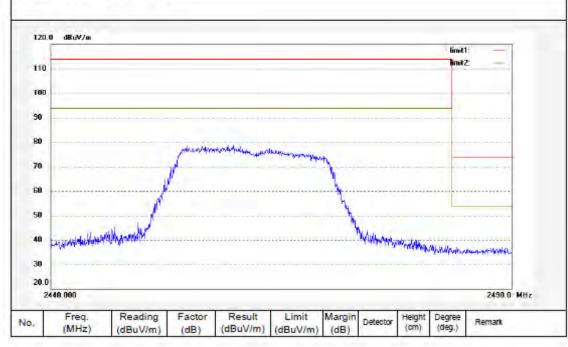
Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 22:50:06

Engineer Signature: Kai

Distance:

Note: Report No.:ATE2011269





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park Nanshan Shenzhen P.R. China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Science & Industry Park, Nanshan Shenzhen, P.R. China Polarization: Vertical Standard: FCC Part 15 PEAK 2.4G Power Source: DC 3.7V Test item: Radiation Test Date: 2011/12/15 Temp.( C)/Hum.(%) 24 C / 48 % Time: 22:48:57 EUT: Engineer Signature: Kai TX Channel 11 (802.11n) Mode: Distance: Model: M7000XX Manufacturer: Sungworld Report No.:ATE2011269 120.0 dBuW/m limet1: 110 100 90 80 70 50 30 20.0 2440.000 2490.0 MHz

Freq.

No.

Reading

(dBuV/m)

Factor

(dB)

Result

(dBuV/m)

Limit

(dBuV/m)

Margin

(dB)

Detector

Height Degree

(deg.)

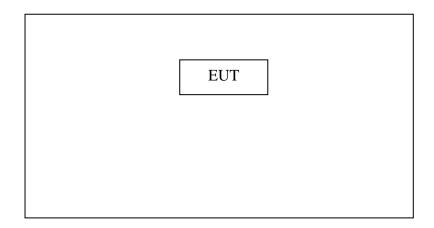
(cm)

Remark

# 9. RADIATED SPURIOUS EMISSION TEST

# 9.1.Block Diagram of Test Setup

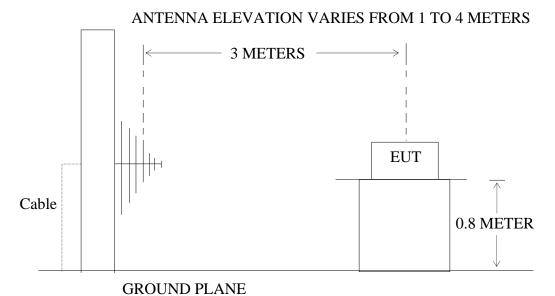
9.1.1.Block diagram of connection between the EUT and peripherals



Setup: Transmitting mode

(EUT: MID)

9.1.2.Semi-Anechoic Chamber Test Setup Diagram



(EUT: MID)

# 9.2. The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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).

# 9.3. Restricted bands of operation

#### 9.3.1.FCC Part 15.205 Restricted bands of operation

(a) Except as shown in paragraph (d) of this section, Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	$(^2)$
13.36-13.41			

Until February 1, 1999, this restricted band shall be 0.490-0.510

(b) Except as provided in paragraphs (d) and (e), the field strength of emission appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000MHz, Compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000MHz, compliance with the emission limits in Section15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

<sup>&</sup>lt;sup>2</sup>Above 38.6

# 9.4. Configuration of EUT on Measurement

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 9.4.1.MID (EUT)

Model Number : M7000XX

Serial Number : N/A

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

# 9.5. Operating Condition of EUT

9.5.1. Setup the EUT and simulator as shown as Section 9.1.

9.5.2. Turn on the power of all equipment.

9.5.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz, 2462MHz TX frequency to transmit.

#### 9.6.Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4: 2003 on radiated emission measurement. The EUT was tested in 3 orthogonal planes.

The worst-case data rate for this channel to be 1Mbps for 802.11b mode and 6Mbps for 802.11g mode, based on previous with 802.11 WLAN product design architectures.

The bandwidth of test receiver (R&S ESI26) is set at 120kHz in 30-1000MHz. and set at 1MHz in above 1000MHz.

The frequency range from 30MHz to 25000MHz is checked.

The final measurement in band 9-90kHz, 110-490kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.

The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading. The basic equation calculation is as follows:

Result = Reading + Corrected Factor

Where Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

# 9.7. The Field Strength of Radiation Emission Measurement Results **PASS.**

Date of Test: December 15, 2011 Temperature: 25°C

EUT: MID Humidity: 50%

Model No.: M7000XX Power Supply: DC 3.7V

Test Mode: 802.11b Channel Low 2412MHz Test Engineer: Pei

#### For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency	Reading	Factor	Result	Limit	Margin	Polarization
(MHz)	$(dB\mu V/m)$	Corr.	$(dB\mu V/m)$	$(dB\mu V/m)$	(dB)	
	QP	(dB)	QP	QP	QP	
153.9254	25.27	14.56	39.83	43.50	-3.67	Vertical
218.1194	24.12	16.63	40.75	46.00	-5.25	Vertical
500.1302	17.20	23.99	41.19	46.00	-4.81	Vertical
153.9254	24.19	14.56	38.75	43.50	-4.75	Horizontal
192.9837	22.62	16.04	38.66	43.50	-4.84	Horizontal
278.3546	21.98	18.28	40.26	46.00	-5.74	Horizontal

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain

	Time market actor and actor ac									
Frequency	Reading(dBµV/m)		Factor	Result(d	BμV/m)	Limit(d	BμV/m)	Margin(dBμV/m)		Polarizati
(MHz)	AV	PEAK	Corr. (dB)	AV	PEAK	AV	PEAK	AV	PEAK	on
2412.000	71.43	71.93	-7.43	64.00	34.53	-	-	-	-	Vertical
*4824.028	40.00	41.63	-0.19	39.81	41.44	54	74	-14.19	-32.56	Vertical
2412.000	71.54	71.72	-7.43	64.11	64.29	-	-	-	-	Horizontal
*4824.028	40.00	40.99	-0.19	39.81	40.80	54	74	-14.19	-33.20	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11b Channel Middle 2437MHzTest Engineer:Pei

#### For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain

Frequency	Reading	Factor	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP	(dB)	QP	QP	QP	
168.0540	24.53	14.70	39.23	43.50	-4.27	Vertical
182.9379	24.25	15.87	40.12	43.50	-3.38	Vertical
694.4763	15.08	26.44	41.52	46.00	-4.48	Vertical
208.4701	23.70	16.29	39.99	43.50	-3.51	Horizontal
218.1194	24.21	16.63	40.84	46.00	-5.16	Horizontal
236.3095	23.18	16.80	39.98	46.00	-6.02	Horizontal

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency	Reading(	dBμV/m)	Factor	Result(c	lBμV/m)	Limit(d	BμV/m)	Margin(	dBμV/m)	Polarizati
(MHz)	AV	PEAK	Corr. (dB)	AV	PEAK	AV	PEAK	AV	PEAK	on
2437.000	74.09	74.20	-7.36	66.73	66.84	-	-	-	-	Vertical
*4874.030	44.07	44.13	0.09	44.16	44.22	54	74	-9.84	-29.78	Vertical
2437.000	72.37	72.84	-7.36	65.01	65.48	-	-	-	-	Horizontal
*4874.030	41.59	41.96	0.09	41.68	42.05	54	74	-12.32	-31.95	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11b Channel High 2462MHzTest Engineer:Pei

#### For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency	Reading	Factor	Result	Limit	Margin	Polarization
(MHz)	$(dB\mu V/m)$	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP	(dB)	QP	QP	QP	
172.1887	23.26	15.17	38.43	43.50	-5.07	Vertical
236.3095	21.73	16.50	38.23	46.00	-7.77	Vertical
555.2269	14.27	25.33	39.60	46.00	-6.40	Vertical
183.9379	24.02	15.98	40.00	43.50	-3.50	Horizontal
218.1194	23.35	16.63	39.98	46.00	-6.02	Horizontal
694.4763	14.18	26.44	40.62	46.00	-5.38	Horizontal

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

	1		ı	1				1		ı
Frequency	Reading(	dBµV/m)	Factor	Result(c	lBμV/m)	Limit(d	BμV/m)	Margin(c	dBμV/m)	Polarizati
(MHz)	AV	PEAK	Corr. (dB)	AV	PEAK	AV	PEAK	AV	PEAK	on
2462.000	76.37	76.59	-7.35	69.02	69.24	-	-	-	-	Vertical
*4924.038	46.15	46.21	0.34	46.49	46.55	54	74	-7.51	-27.45	Vertical
2462.000	74.54	74.72	-7.35	67.19	67.37	-	-	-	-	Horizontal
*4924.038	42.16	42.27	0.34	42.50	42.61	54	74	-11.50	-31.39	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11g Channel Low 2412MHzTest Engineer:Pei

# For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain

Frequency	Reading	Factor	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP	(dB)	QP	QP	QP	
172.7878	25.16	15.30	40.46	43.50	-3.04	Vertical
193.7838	24.15	16.10	40.25	43.50	-3.25	Vertical
669.6023	16.23	26.13	42.36	46.00	-3.64	Vertical
192.7838	22.55	16.04	38.59	43.50	-4.91	Horizontal
209.9259	23.15	16.35	39.50	43.50	-4.00	Horizontal
646.4529	14.11	26.06	40.17	46.0	-5.83	Horizontal

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading	(dBμV/m	Factor Corr. (dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(dBμV/m)		Polarizati on
(1/112)	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2412.000	72.66	72.93	-7.43	65.23	65.50	-	-	-	-	Vertical
*4824.031	40.00	41.62	-0.19	39.81	41.43	54	74	-14.19	-32.57	Vertical
2412.000	74.55	79.58	-7.43	67.12	72.15	ı	ı	1	-	Horizontal
*4824.031	40.00	41.20	-0.19	39.81	41.01	54	74	-14.19	-32.99	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11g Channel Middle 2437MHzTest Engineer:Pei

# For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

				1	1	1
Frequency	Reading	Factor	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP	(dB)	QP	QP	QP	
169.2247	25.08	14.71	39.79	43.50	-3.71	Vertical
183.2379	24.16	15.87	40.03	43.50	-3.47	Vertical
622.2167	14.24	26.06	40.30	46.00	-5.70	Vertical
193.2838	23.22	16.04	39.26	43.50	-4.24	Horizontal
211.0924	23.25	16.39	39.64	43.50	-3.86	Horizontal
693.5763	15.23	26.43	41.66	46.00	-4.34	Horizontal

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency	Reading(	dBμV/m)	Factor	Result(c	lBμV/m)	Limit(d	BμV/m)	Margin(	dBμV/m)	Polarizati
(MHz)	AV	PEAK	Corr. (dB)	AV	PEAK	AV	PEAK	AV	PEAK	on
2437.000	72.62	72.82	-7.36	65.26	65.46	-	-	-	-	Vertical
*4874.110	44.17	44.31	0.09	44.26	44.40	54	74	-9.74	-29.60	Vertical
2437.000	75.06	81.23	-7.36	67.70	73.87	1	-	-	-	Horizontal
*4874.110	41.83	49.42	0.09	41.92	49.51	54	74	-12.08	-24.49	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11g Channel High 2462MHzTest Engineer:Pei

# For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain

Frequency	Reading	Factor	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP	(dB)	QP	QP	QP	
178.2744	24.02	15.77	39.79	43.50	-3.71	Vertical
279.3546	21.17	18.28	39.45	46.00	-6.55	Vertical
576.9882	15.09	25.38	40.47	46.00	-5.53	Vertical
163.3206	25.03	14.64	39.67	43.50	-3.83	Horizontal
218.1194	23.10	16.63	39.73	46.00	-6.27	Horizontal
683.8260	14.17	26.36	40.53	46.00	-5.47	Horizontal

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency	Reading(	dBμV/m)	Factor	Result(c	Result(dBµV/m)		Limit(dBµV/m)		Margin(dBμV/m)	
(MHz)	AV	PEAK	Corr. (dB)	AV	PEAK	AV	PEAK	AV	PEAK	on
2462.000	77.21	77.33	-7.35	69.86	69.98	-	-	-	-	Vertical
*4924.105	43.29	43.47	0.34	43.63	43.81	54	74	-10.37	-30.19	Vertical
2462.000	78.42	78.60	-7.35	71.07	71.25	-	-	-	-	Horizontal
*4924.105	44.83	45.05	0.34	45.17	45.39	54	74	-8.83	-28.61	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11n Channel Low 2412MHzTest Engineer:Pei

# For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain

Frequency	Reading	Factor	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP	(dB)	QP	QP	QP	
191.7732	23.27	16.06	39.33	43.50	-4.17	Vertical
214.3557	24.28	16.51	40.79	43.50	-2.71	Vertical
513.1487	18.0	24.09	42.09	46.00	-3.91	Vertical
154.6254	24.38	14.56	38.94	43.50	-4.56	Horizontal
193.7838	23.21	16.03	39.24	43.50	-4.26	Horizontal
710.6941	14.32	26.83	41.15	46.00	-4.85	Horizontal

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency (MHz)	Reading(dBμV/m		Factor Corr. (dB)	Result(dBµV/m)		Limit(dBµV/m)		Margin(	Polarizati on	
(1.1112)	AV	PEAK		AV	PEAK	AV	PEAK	AV	PEAK	
2412.000	71.52	71.73	-7.43	64.09	64.30	-	-	-	-	Vertical
*4824.101	40.00	41.01	-0.19	39.81	40.82	54	74	-14.19	-33.18	Vertical
2412.000	73.34	73.63	-7.43	65.91	66.20	1	-	-	-	Horizontal
*4824.101	41.40	41.64	-0.19	41.21	41.45	54	74	-12.79	-32.55	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11n Channel Middle 2437MHzTest Engineer:Pei

# For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

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Frequency	Reading	Factor	Result	Limit	Margin	Polarization					
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)						
	QP	(dB)	QP	QP	QP						
170.5919	25.11	14.84	39.95	43.50	-3.55	Vertical					
183.9379	24.24	15.90	40.14	43.50	-3.36	Vertical					
236.3095	25.16	16.50	41.66	46.00	-4.34	Vertical					
193.7838	23.17	16.03	39.20	43.50	-4.30	Horizontal					
218.1194	24.35	16.63	40.98	46.00	-5.02	Horizontal					
385.1960	19.22	21.72	40.94	46.00	-5.06	Horizontal					

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency	Reading(	dBμV/m)	Factor	Result(c	Result(dBμV/m)		Limit(dBµV/m)		Margin(dBµV/m)	
(MHz)	AV	PEAK	Corr. (dB)	AV	PEAK	AV	PEAK	AV	PEAK	on
2437.000	72.48	72.70	-7.43	65.05	65.27	-	-	-	-	Vertical
*4874.120	44.15	44.28	0.09	44.24	44.37	54	74	-9.76	-9.63	Vertical
2437.000	75.45	78.92	-7.36	68.09	71.29	-	-	-	-	Horizontal
*4874.120	42.31	44.57	0.09	42.40	44.66	54	74	-11.60	-31.60	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:DC 3.7VTest Mode:802.11n Channel High 2462MHzTest Engineer:Pei

# For 30MHz-1000MHz

Corrected Factor = Antenna Factor + Cable Loss - Amplifier Gain

Frequency	Reading	Factor	Result	Limit	Margin	Polarization
(MHz)	(dBµV/m)	Corr.	(dBµV/m)	(dBµV/m)	(dB)	
	QP	(dB)	QP	QP	QP	
153.9254	25.62	14.56	40.18	43.50	-3.32	Vertical
170.9919	25.46	14.93	40.39	43.50	-3.11	Vertical
465.2561	17.57	23.43	41.00	46.00	-5.00	Vertical
210.6579	24.10	16.37	40.47	43.50	-3.03	Horizontal
324.5896	21.14	19.53	40.67	46.00	-5.33	Horizontal
554.2269	16.20	25.32	41.52	46.00	-4.48	Horizontal

#### For 1GHz-25GHz

Corrected Factor = Antenna Factor + Cable Loss – Amplifier Gain

Frequency	Reading(	dBμV/m)	Factor	Result(c	lBμV/m)	Limit(dBµV/m)		Margin(c	Polarizati	
(MHz)	AV	PEAK	Corr. (dB)	AV	PEAK	AV	PEAK	AV	PEAK	on
2462.000	76.11	76.29	-7.35	68.76	68.94	-	-	-	-	Vertical
*4924.121	46.42	46.75	0.34	46.76	47.09	54	74	-7.24	-26.91	Vertical
2462.000	75.08	75.25	-7.35	67.73	67.90	-	-	-	-	Horizontal
*4924.121	40.00	40.16	0.34	40.34	40.50	54	74	-13.66	-33.50	Horizontal

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.



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Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1484 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Note:

Mode: TX Channel 1 (802.11b)

Model: M7000XX Manufacturer: Sungworld

Report No.:ATE20112829

Polarization: Horizontal Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/32/23

Engineer Signature: Kai

Distance: 3m

dBuW/m 70.0 limit1 60 50 40 30 20 10 0.0 60 70 80 600 700 1000.0 MHz Reading Factor Result Limit Margin Degree Detector Remark No. (MHz) (dBuV/m) (dBuV/m) (dBuV/m) (cm) (deg.) (dB) (dB) 1 153,9254 24.19 14.56 38.75 43.50 4.75 QP

43.50

46.00

-4.84

-5.74

QP

QP.

2

3

192.9837

278.3546

22.62

21.98

16.04

18.28

38.66



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11b)

Model: M7000XX Manufacturer: Sungworld Polarization: Vertical

Power Source: DC 3.7V Date: 11/12/15/

Time: 8/32/50

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112829

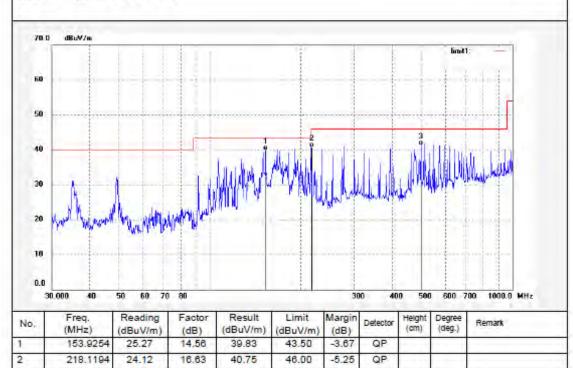
500.1302

3

17.20

23.99

41.19



46.00

4.81

QP



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1505 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11b)

Model: M7000XX Manufacturer: Sungworld

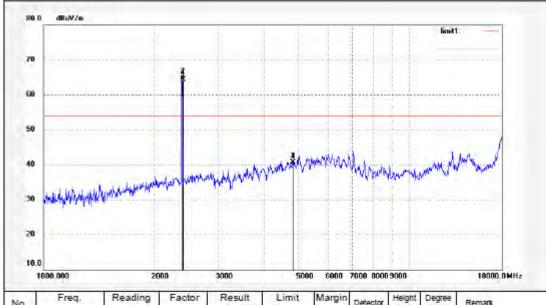
Polarization: Horizontal Power Source: DC 3,7V

Date: 2011/12/15 Time: 18:01:27

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE2011269



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2412.000	71.72	-7.43	64.29	-	14	peak			
2	2412.000	71.54	-7.43	64.11	-	4	AVG	0.0	-	
3	4824.028	40.99	-0.19	40,80	74.00	-33.20	peak	0.00		
4	4824.028	40.00	-0.19	39.81	54.00	-14.19	AVG	0.000		



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Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT:

TX Channel 1 (802.11b) Mode:

Model: M7000XX Manufacturer: Sungworld

Time: 17:55:38 Engineer Signature: Kai

Polarization: Vertical

Power Source: DC 3.7V

Distance: 3m

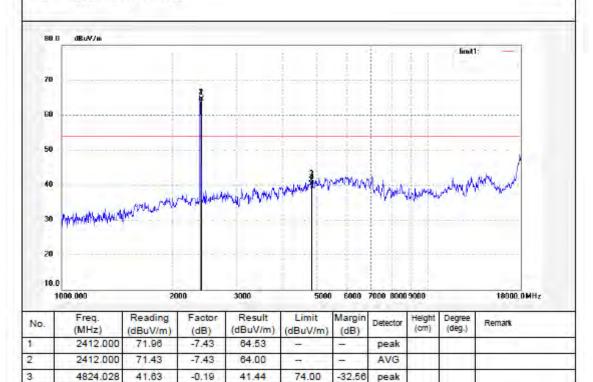
Date: 2011/12/15

Report No.:ATE2011269

4824.028

4

40.00



54.00

-14.19

AVG

-0.19

# ATC

#### ACCURATE TECHNOLOGY CO., LTD.

F1.Bldg.A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1545 Standard: FCC Class B 3M Radiated

Test item: Radiation Test
Temp.( C)/Hum.(%) 25 C / 50 %

EUT: MID

Mode: TX Channel 1 (802.11b)

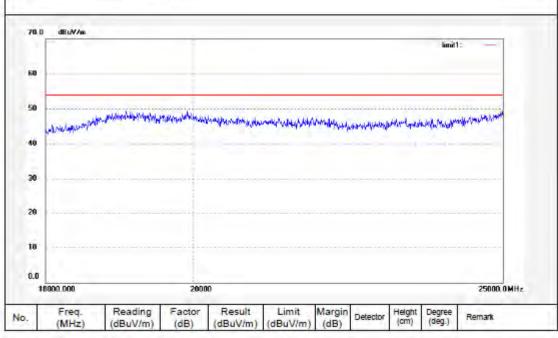
Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 14:57:50

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112829





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Fax:+88-0755-26503396 Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber

Job No.: Kai #1546 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 %

EUT: MID

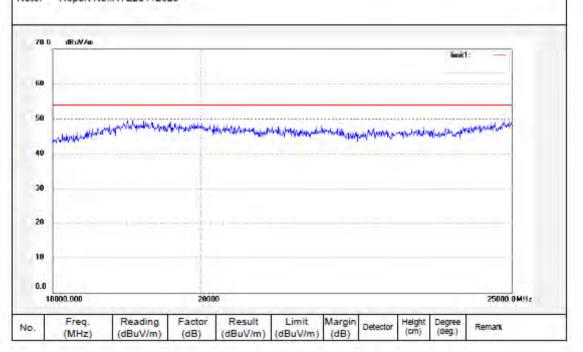
Mode: TX Channel 1 (802.11b)

Model: M7000XX Manufacturer: Sungworld

Note: Report No.:ATE20112629

Polarization: Vertical Power Source: DC 3.7V Date: 2011/12/15 Time: 15:01:26

Engineer Signature: Kai





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1487

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11b)

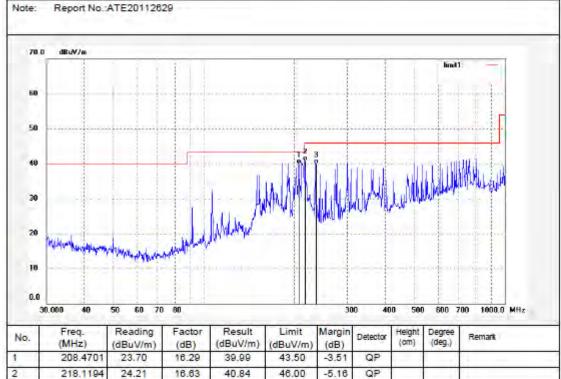
Model: M7000XX Manufacturer: Sungworld

Polarization: Horizontal Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/34/46

Engineer Signature: Kai

Distance: 3m



46.00

-6.02

QP

3

236.3095

23.18

16.80



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1486

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11b)

Model: M7000XX Manufacturer: Sungworld Polarization: Vertical

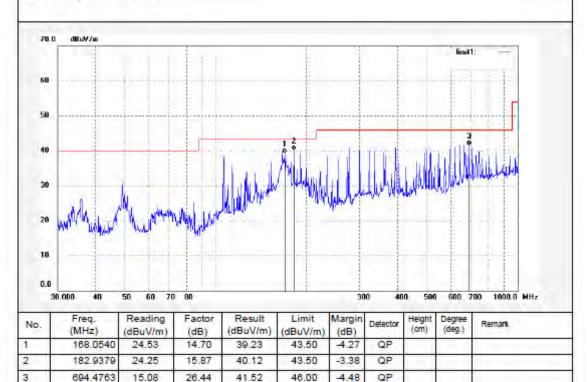
Power Source: DC 3.7V Date: 11/12/15/

Time: 8/34/00

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112629





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1506 Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11b)

Model: M7000XX Manufacturer: Sungworld

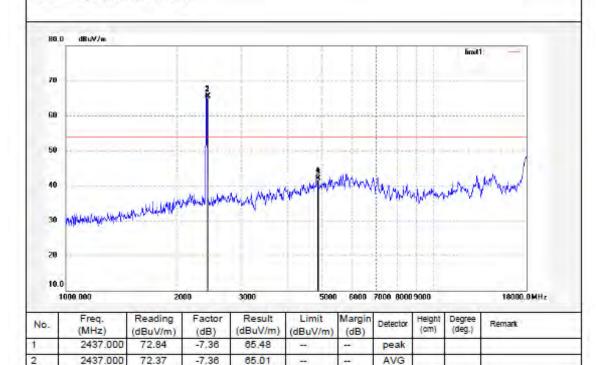
Note: Report No.:ATE2011289

Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:02:47

Engineer Signature: Kai

Distance: 3m



74.00

54.00

31.95

-12.32

peak

AVG

3

4

4874.030

4874.030

41.96

41.59

0.09

0.09

42.05



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1507

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11b)

M7000XX Model: Manufacturer: Sungworld

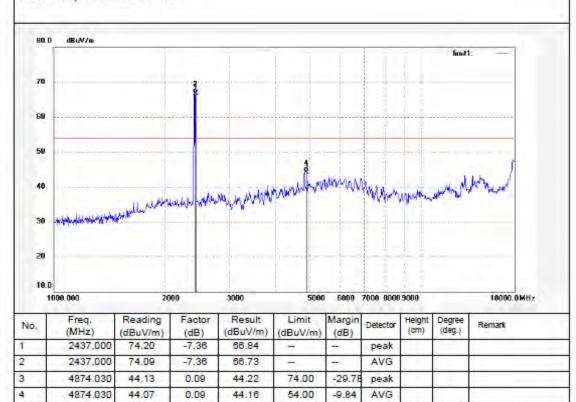
Report No.:ATE2011269

Polarization: Vertical

Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:03:59

Engineer Signature: Kai





F1.Bldg.A.Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1548 Standard: FCC Class B 3M Radiated Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 %

EUT: MID

Mode: TX Channel 6 (802.11b)

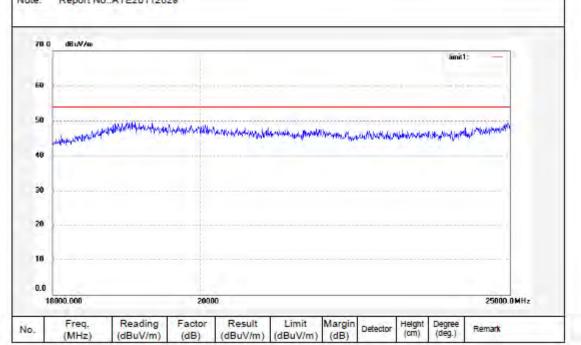
Model: M7000XX Manufacturer: Sungworld

Note: Report No.:ATE20112629

Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 15:09:14

Engineer Signature: Kai





F1.Bldg.A, Changyuan New Material Port Keyuan Rd. Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 %

EUT: MID

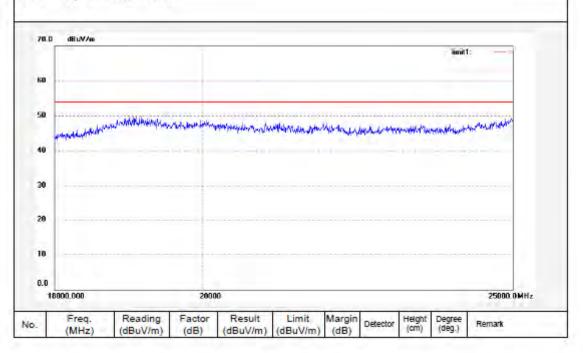
TX Channel 8 (802.11b) Mode: Model: M7000XX

Manufacturer: Sungworld

Report No.:ATE20112629

Polarization: Vertical Power Source: DC 3.7V Date: 2011/12/15 Time: 15:05:40

Engineer Signature: Kai





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1488

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11b)

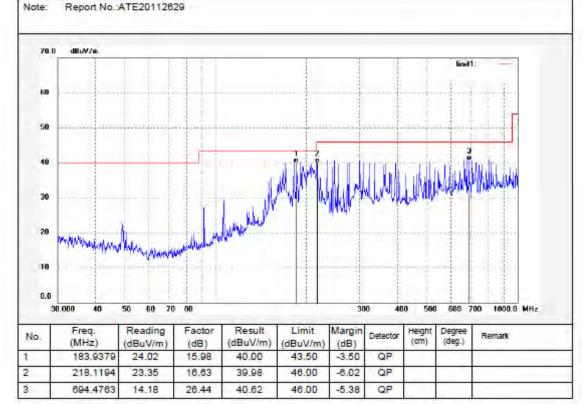
M7000XX Model: Manufacturer: Sungworld

Report No.:ATE20112629

Polarization: Horizontal Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/35/26

Engineer Signature: Kai





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R.China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT:

TX Channel 11 (802.11b) Mode:

Model: M7000XX Manufacturer: Sungworld

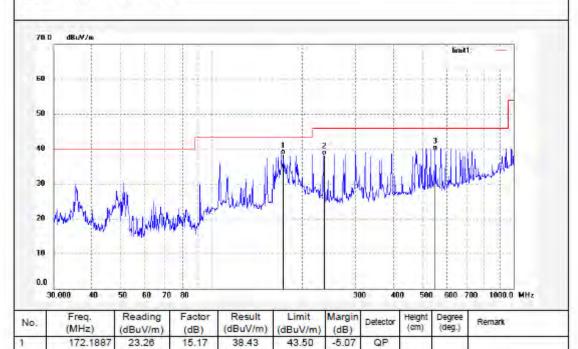
Polarization: Vertical Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/35/56

Engineer Signature: Kai

Distance: 3m

Report No.:ATE20112829



46.00

46.00

-7.77

-6.40

QP

QP

2

3

236,3095

555,2269

21.73

14.27

16,50

25.33

38.23



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT:

Mode: TX Channel 11 (802.11b)

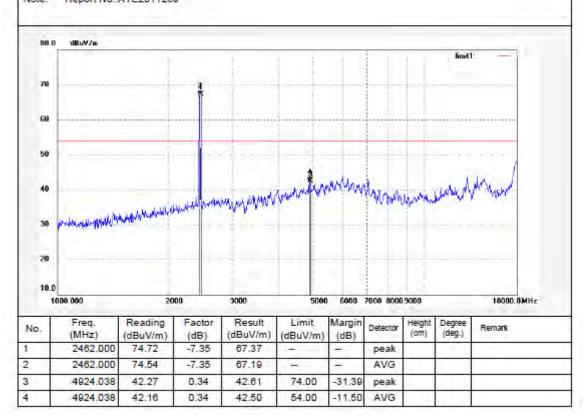
Model: M7000XX Manufacturer: Sungworld

Report No.:ATE2011269

Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:06:23

Engineer Signature: Kai





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1508

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11b)

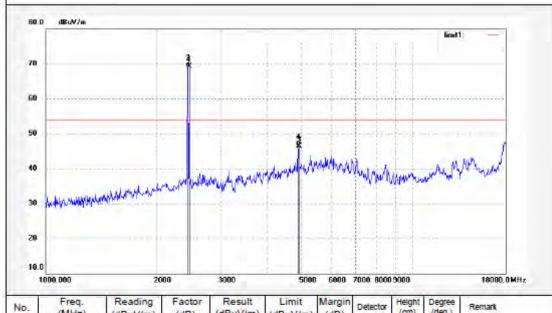
Model: M7000XX Manufacturer: Sungworld Polarization: Vertical

Power Source: DC 3.7V Date: 2011/12/15

Time: 18:05:15 Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE2011269



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2462.000	76.59	-7.35	69.24	-	H+C II	peak	11:15	1		
2	2462.000	76.37	-7.35	69.02	3 <b>-</b> -		AVG	1111	1		
3	4924,038	46.21	0.34	46.55	74.00	-27.45	peak	11-11	-		
4	4924,038	46.15	0.34	46.49	54.00	-7.51	AVG	1	1 1		



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1549 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 %

EUT: MID

Mode: TX Channel 11 (802.11b)

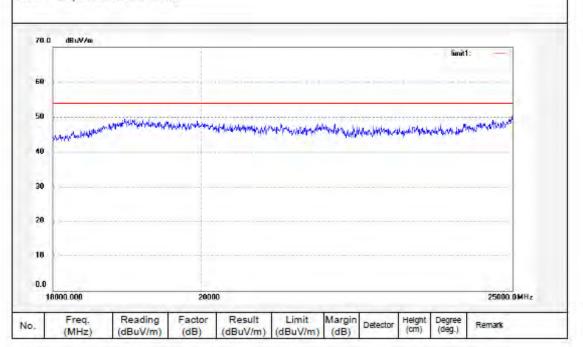
Model: M7000XX Manufacturer: Sungworld

Note: Report No.:ATE20112629

Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 15:13:25

Engineer Signature: Kai





18000.000

No.

Freq.

(MHz)

Reading

(dBuV/m)

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25000.0MHz

Remark

Degree (deg.)

Height (cm)

Detector

Science & Industry Park, Nanshan Shenzhen, P.R. China Polarization: Vertical Job No.: Kai #1550 Standard: FCC Class B 3M Radiated Power Source: DC 3.7V Test item: Radiation Test Date: 2011/12/15 Temp.( C)/Hum.(%) 25 C / 50 % Time: 15:16:58 EUT: MID Engineer Signature: Kai Mode: TX Channel 11 (802.11b) Distance: 3m Model: M7000XX Manufacturer: Sungworld Note: Report No.:ATE20112629 dBuW/m 70 D imit1: 50 30 20 18 0.0

20000

Result

(dBuV/m)

Limit

(dBuV/m)

Margin

(dB)

Factor

(dB)



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1495

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11g)

Model: M7000XX Manufacturer: Sungworld

3M Radiated Power Source: DC 3.7V est Date: 11/12/15/

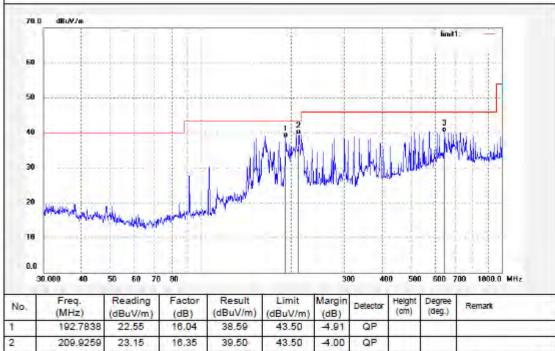
Date: 11/12/15/ Time: 8/39/44

Engineer Signature: Kai

Polarization: Horizontal

Distance: 3m

Note: Report No.:ATE20112829



46.00

-5.83

QP

3

646.4529

14.11

26.06



F1,Bldg.A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1494

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11g)

Model: M7000XX Manufacturer: Sungworld Polarization: Vertical

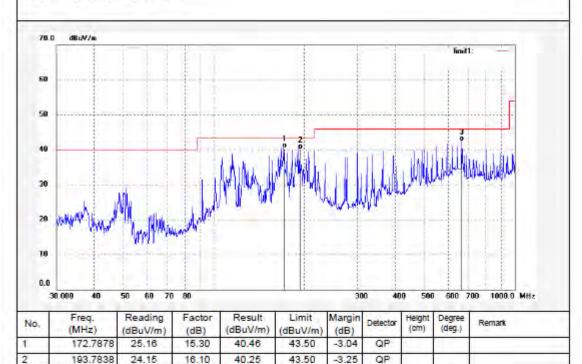
Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/39/04

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112829



46.00

-3.64

QP

3

669.6023

16.23

26.13



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1514

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11g)

Model: M7000XX Manufacturer: Sungworld

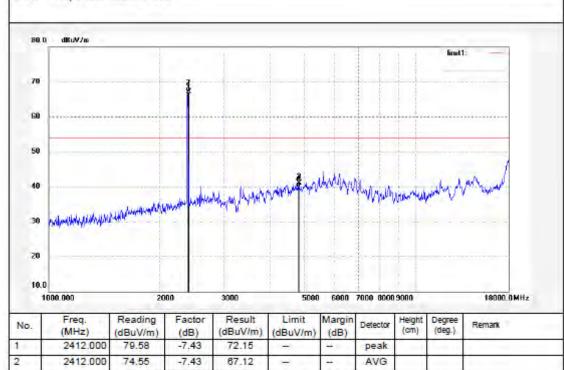
Note: Report No.:ATE2011269

Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:23:18

Engineer Signature: Kai

Distance: 3m



74.00

54.00

-32.99

-14.19

peak

AVG

3

4

4824.031

4824.031

41.20

40.00

-0.19

-0.19

41.01



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1515

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11g)

Model: M7000XX Manufacturer: Sungworld Polarization: Vertical

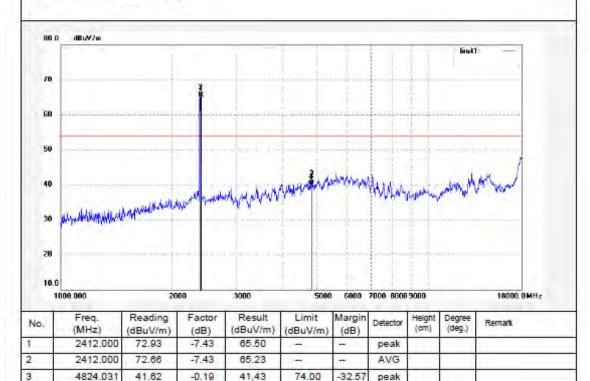
Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:24:19

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE2011269



54.00

-14.19

AVG

4

4824.031

40.00

-0.19



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R.China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503398

Job No.: Kai #1552 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 %

EUT: MID

Mode: TX Channel 1 (802.11g)

Reading

(dBuV/m)

Factor

(dB)

Result

(dBuV/m)

Model: M7000XX Manufacturer: Sungworld

Power Source: DC 3.7V Date: 2011/12/15 Time: 15:26:21

Engineer Signature: Kai

Polarization: Horizontal

Distance: 3m

Note: Report No.:ATE20112629 dBuW/m limit1: 50 المعارض والمستعمل والمستران والمتعارض والمستران والمتعارض والمتعار 10 0.0 18000.000 20000 25000.0MHz Degree (deg.)

Limit

(dBuV/m)

Margin

(dB)

Detector

Helght

Remark

No.

(MHz)



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated
Test item: Radiation Test

Temp.( C)/Hum.(%) 25 C / 50 %

EUT: MID

Mode: TX Channel 1 (802.11g)

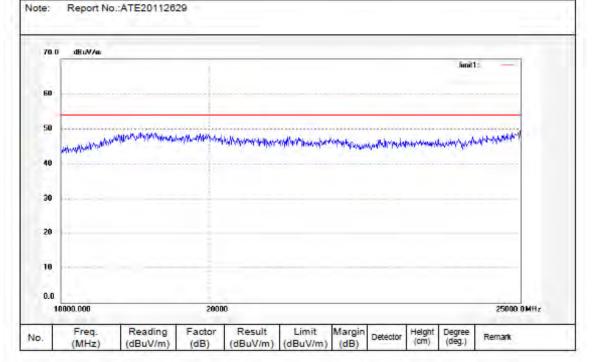
Model: M7000XX Manufacturer: Sungworld

Manufacturer. Sungwond

Polarization: Vertical Power Source: DC 3.7V

Date: 2011/12/15 Time: 15:22:46

Engineer Signature: Kai





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1492

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11g)

Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

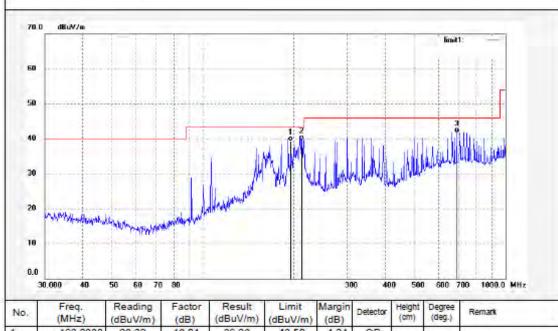
Date: 11/12/15/

Engineer Signature: Kai

Distance: 3m

Time: 8/38/06

Note: Report No.:ATE20112629





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT:

Mode:

M7000XX Model: Manufacturer: Sungworld

TX Channel 6 (802.11g)

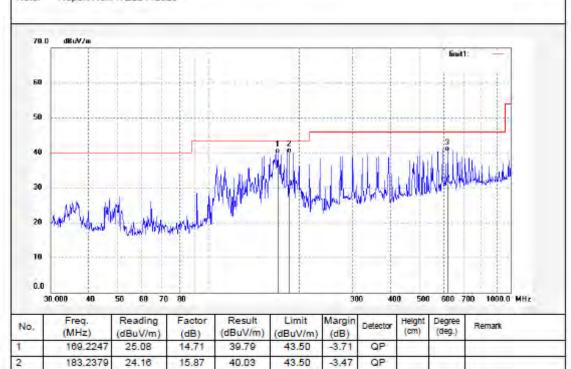
Report No.:ATE20112629 Note:

Polarization: Vertical Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/38/39

Engineer Signature: Kai

Distance: 3m



46.00

-5.70

QP

3

622.2167

14.24

26.06



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1513

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MII

Mode: TX Channel 6 (802.11g)

Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal

Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:21:53

Engineer Signature: Kai

Distance: 3m

AVG

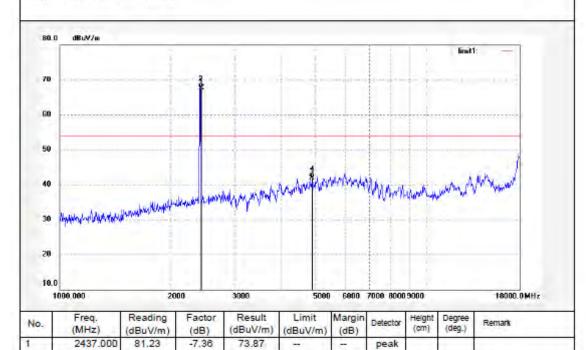
peak

AVG

-24.49

-12.08

Note: Report No.:ATE2011269



74.00

54.00

2

3

4

2437.000

4874.110

4874.110

75.08

49.42

41.83

-7,36

0.09

0.09

67,70

49.51



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1512

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11g)

Model: M7000XX Manufacturer: Sungworld Polarization: Vertical

Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:20:45

Engineer Signature: Kai

Distance: 3m

AVG

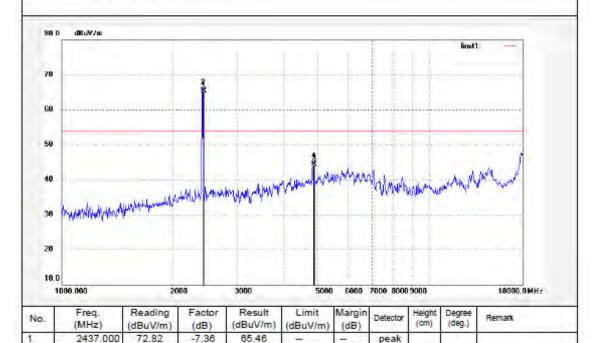
peak

AVG

-29.60

-9.74

Note: Report No.:ATE2011269



74.00

54.00

2

3

2437.000

4874.110

4874.110

72.62

44.31

44.17

-7.36

0.09

0.09

65.26

44.40



F1,Bidg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1553 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 %

EUT: MID

Mode: TX Channel 6 (802.11g)

Model: M7000XX Manufacturer: Sungworld

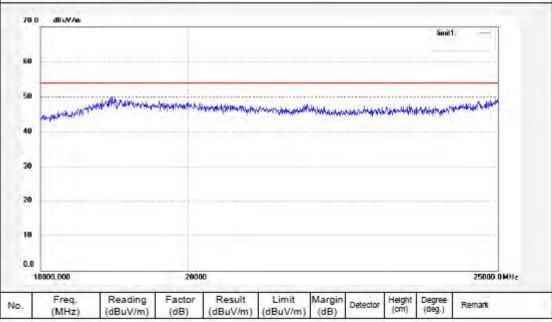
Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 15:30:38

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112629





18000.000

No.

Freq.

(MHz)

Reading

(dBuV/m)

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F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

25000.0MHz

Remark

Degree (deg.)

Height (cm)

Detector

Polarization: Vertical Job No.: Kai #1554 Standard: FCC Class B 3M Radiated Power Source: DC 3.7V Date: 2011/12/15 Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 % Time: 15:34:11 EUT: MID Engineer Signature: Kai TX Channel 6 (802.11g) Distance: 3m Model: M7000XX Manufacturer: Sungworld Note: Report No.:ATE20112629 dBuW/m 70.0 limit1: 60 50 30 20 18 0.0

20000

Result

(dBuV/m)

Limit

(dBuV/m)

Margin

(dB)

Factor

(dB)



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated

Test item: Radiation Test
Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11g)

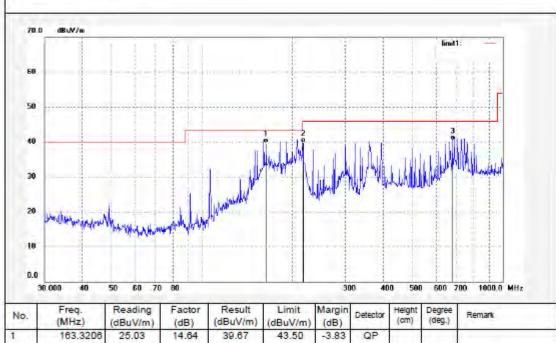
Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/37/27

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112829



46.00

46.00

-6.27

-5.47

QP

QP

2

3

218,1194

683.8260

23.10

14.17

16.63

26.36

39.73



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1490

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11g)

Model: M7000XX Manufacturer: Sungworld Polarization: Vertical

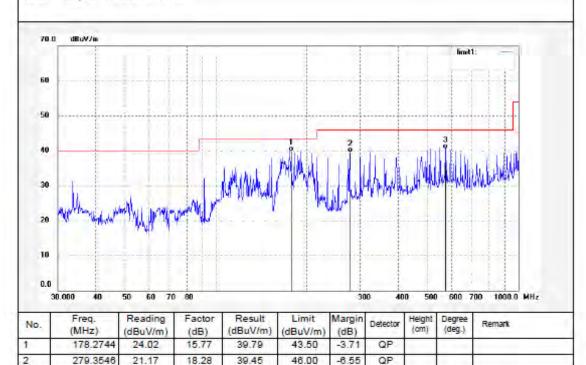
Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/38/41

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112629



46.00

-5.53

QP

3

576.9882

15.09

25.38



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1510

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11g)

Model: M7000XX Manufacturer: Sungworld

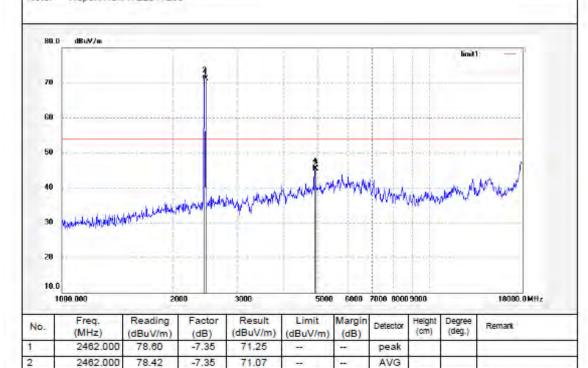
e: Report No.:ATE2011269

Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:18:02

Engineer Signature: Kai

Distance: 3m



74.00

54.00

-28.61

-8.83

peak

AVG

3

4

4924.105

4924.105

45.05

44.83

0.34

0.34

45.39



F1,Bldg.A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1511

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11g)

Model: M7000XX Manufacturer: Sungworld

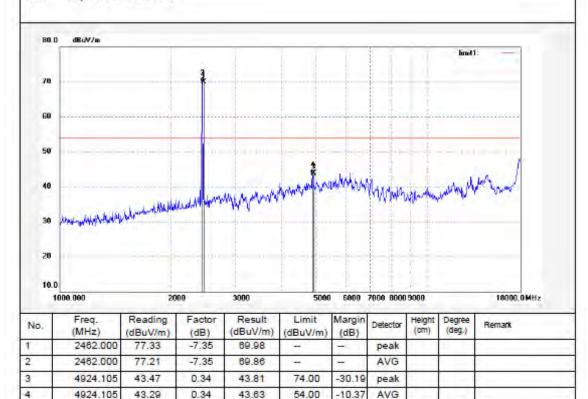
ote: Report No.:ATE2011269

Polarization: Vertical Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:19:00

Engineer Signature: Kai

Distance: 3m

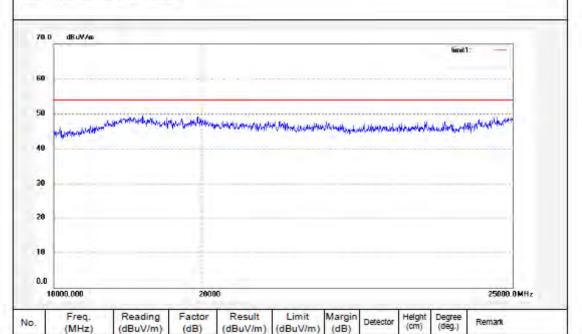




F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Polarization: Horizontal Standard: FCC Class B 3M Radiated Power Source: DC 3.7V Date: 2011/12/15 Test item: Radiation Test Temp.( C)/Hum.(%) 25 C / 50 % Time: 15:41:59 EUT: Engineer Signature: Kai Mode: Distance: 3m TX Channel 11 (802.11g) Model: M7000XX Manufacturer: Sungworld Report No.:ATE20112629 Note:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Remark

Polarization: Vertical Job No.: Kai #1555 Standard: FCC Class B 3M Radiated Power Source: DC 3.7V Test item: Radiation Test Date: 2011/12/15 Temp.( C)/Hum.(%) 25 C / 50 % Time: 15:38:24 EUT: MID Engineer Signature: Kai Mode: TX Channel 11 (802.11g) Distance: 3m Model: M7000XX Manufacturer: Sungworld Report No.:ATE20112629 Note: dBuV/m 70.0 limit1: 60 50 30 20 18 0.0 18000.000 20000 25000.0MHz Degree (deg.) Freq. Reading Factor Result Limit Margin Height (cm) Detector

(dBuV/m)

(dB)

(dBuV/m)

(dB)

No.

(MHz)

(dBuV/m)



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1496 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

TX Channel 1 (802.11n) Mode:

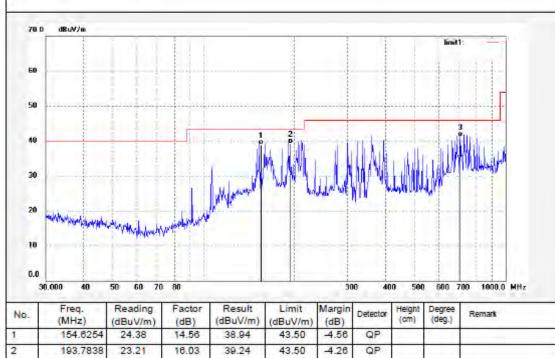
Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/40/36

Engineer Signature: Kai

Distance: 3m

Report No.:ATE20112629 Note:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 986 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1497

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11n)

Model: M7000XX Manufacturer: Sungworld

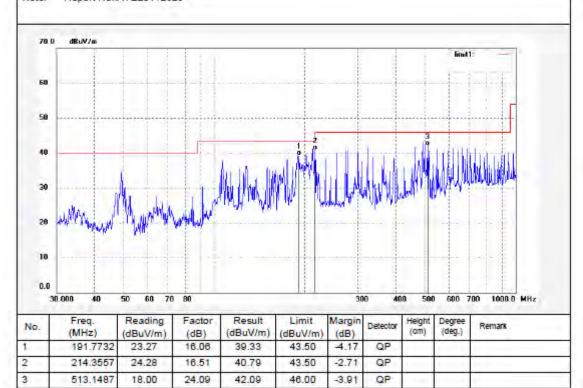
Note: Report No.:ATE20112629

Polarization: Vertical Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/41/24

Engineer Signature: Kai

Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 968 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1517 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11n)

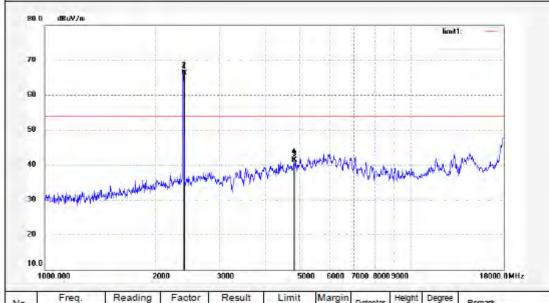
Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:26:12

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE2011269



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2412.000	73.63	-7.43	66.20	- <del></del>	+	peak				
2	2412.000	73.34	-7.43	65.91	11.00	<del></del>	AVG				
3	4824.101	41.64	-0.19	41.45	74.00	-32.55	peak				
4	4824.101	41.40	-0.19	41.21	54.00	-12.79	AVG	-	-		



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1516

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode:

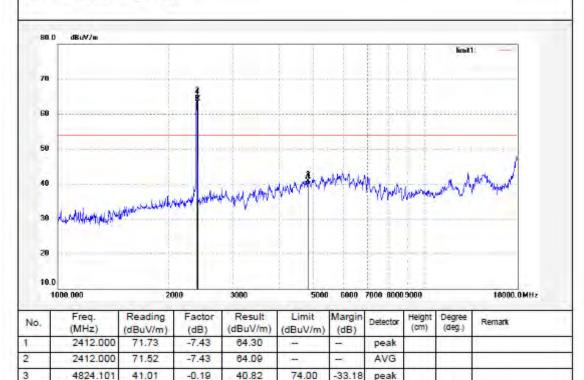
Model: M7000XX Manufacturer: Sungworld

TX Channel 1 (802.11n)

Polarization: Vertical Power Source: DC 3.7V Date: 2011/12/15 Time: 18:25:17 Engineer Signature: Kai

Distance: 3m

Report No.:ATE2011269



54.00

-14.19

AVG

4

4824.101

40.00

-0.19



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503398

Job No.: Kai #1562 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 1 (802.11n)

Model: M7000XX Manufacturer: Sungworld

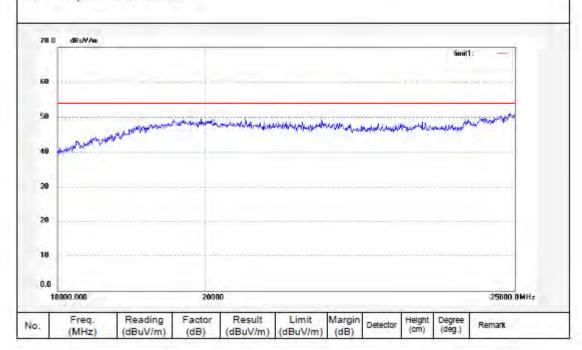
Note: Report No.:ATE20112629

Polarization: Horizontal Power Source: DC 3.7V Date: 2011/12/15

Time: 15:55:57

Engineer Signature: Kai

Distance:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

25000 0MHz

Remark.

Degree (deg.)

Job No.: Kai #1563 Polarization: Vertical Standard: FCC Class B 3M Radiated Power Source: DC 3.7V Date: 2011/12/15 Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 % Time: 15:57:43 EUT: MID Engineer Signature: Kai Mode: TX Channel 1 (802.11n) Distance: Model: M7000XX Manufacturer: Sungworld Report No.:ATE20112629 Note: dBuW/m limit1: 50 48 10

Margin

(dB)

Detector

Limit

(dBuV/m)

20000

Result

(dBuV/m)

Factor

(dB)

Reading

(dBuV/m)

FCC ID: WI3-M7000XX1

0.0

No.

18000.000

(MHz)



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R.China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1499

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode:

Model: M7000XX Manufacturer: Sungworld

TX Channel 6 (802.11n)

Report No.:ATE20112629

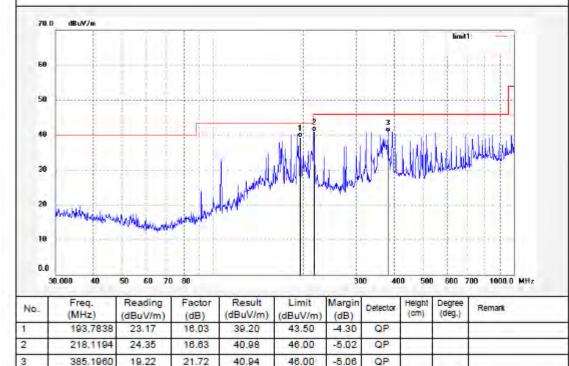
Polarization: Horizontal Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/43/12

Engineer Signature: Kai

Distance: 3m

Note:





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1498 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11n)

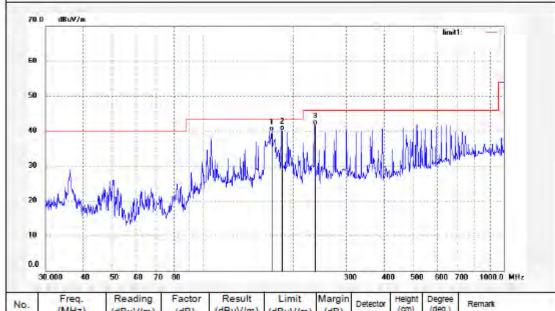
Model: M7000XX Manufacturer: Sungworld Polarization: Vertical Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/41/47

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112629





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1518 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11n)

Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:27:31

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE2011269

44.57

42.31

4874.120

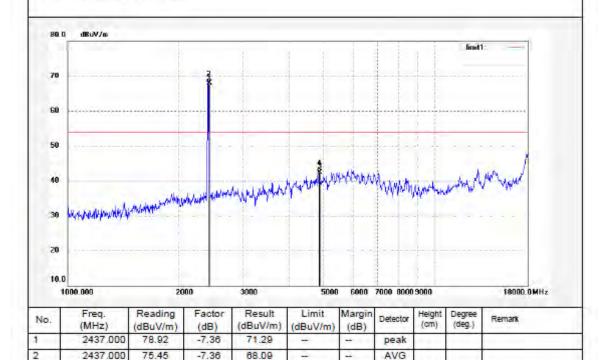
4874.120

0.09

0.09

44.66

42.40



74.00

54.00

-29.34

-11.60

peak

AVG

3

4



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1519

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 6 (802.11n)

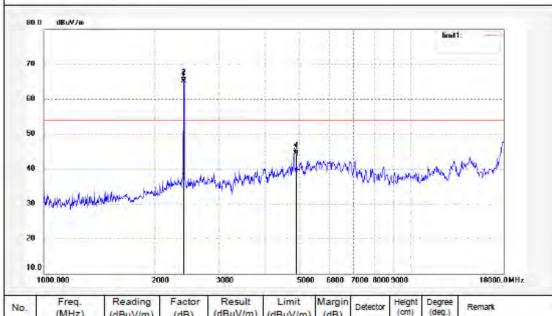
Model: M7000XX Manufacturer: Sungworld Polarization: Vertical Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:28:35

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE2011269



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark	
1	2412.000	72.70	-7.43	65.27	188	+	peak	-			
2	2412.000	72.48	-7.43	65.05	-	+ -	AVG				
3	4874.120	44.28	0.09	44.37	74.00	-9.63	peak	-			
4	4874.120	44.15	0.09	44.24	54.00	-9.76	AVG				



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1581 Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MIE

Mode: TX Channel 6 (802.11n)

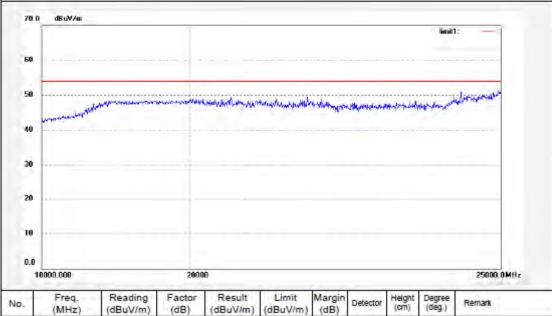
Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 15:53:01

Engineer Signature: Kai

Distance:

Note: Report No.:ATE20112629





Freq.

(MHz)

No.

Reading

(dBuV/m)

Factor

Result

(dBuV/m)

Limit

(dBuV/m

Margin

Detector

## ACCURATE TECHNOLOGY CO., LTD.

F1,Bldg,A,Changyuan New Material Port Keyuan Rd,

Site: 966 chamber Tel:+86-0755-26503290

Fax:+86-0755-26503396 Science & Industry Park, Nanshan Shenzhen, P.R. China Polarization: Vertical Standard: FCC Class B 3M Radiated Power Source: DC 3.7V Test item: Radiation Test Date: 2011/12/15 Temp.( C)/Hum.(%) 24 C / 48 % Time: 15:51:02 EUT: MID Engineer Signature: Kai Mode: TX Channel 6 (802.11n) Distance: Model: M7000XX Manufacturer: Sungworld Report No.:ATE20112629 limit1: 40 18 0.0 18000,000 20000 25000.0MHz



F1,Bldg.A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1500

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11n)

Model: M7000XX Manufacturer: Sungworld

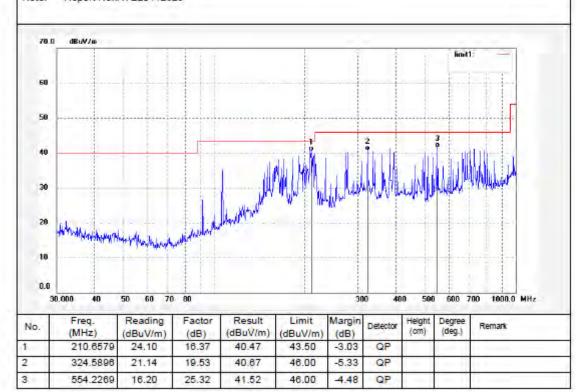
Note: Report No.:ATE20112629

Polarization: Horizontal Power Source: DC 3.7V

Date: 11/12/15/ Time: 8/43/35

Engineer Signature: Kai

Distance: 3m





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1501

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11n)

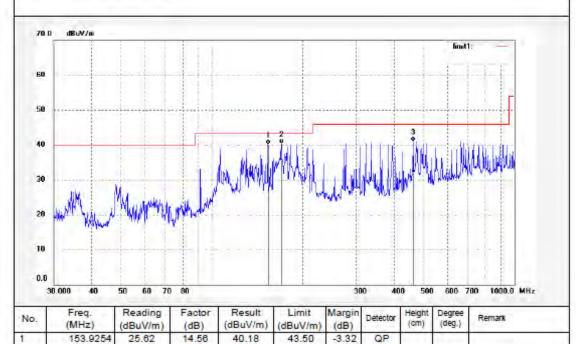
M7000XX Model: Manufacturer: Sungworld Polarization: Vertical Power Source: DC 3,7V

Date: 11/12/15/ Time: 8/44/12

Engineer Signature: Kai

Distance: 3m

Note: Report No.:ATE20112629



43.50

46.00

-3.11

-5.00

QP

QP

2

3

170.9919

465.2561

25.46

17.57

14.93

23,43

40.39



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11n)

Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 18:30:10

Engineer Signature: Kai

Distance: 3m

AVG

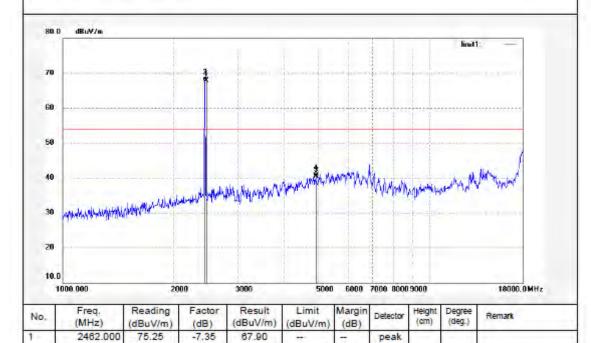
peak

AVG

-33.50

-13.66

Note: Report No.:ATE2011269



74.00

54.00

-7.35

0.34

0.34

67.73

40.50

40.34

2

3

4

2482.000

4924,121

4924.121

75.08

40.16



F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Polarization: Vertical

Date: 2011/12/15

Time: 18:29:40

Power Source: DC 3.7V

Engineer Signature: Kai

Job No.: Kai #1520

Standard: FCC Class B 3M Radiated

Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

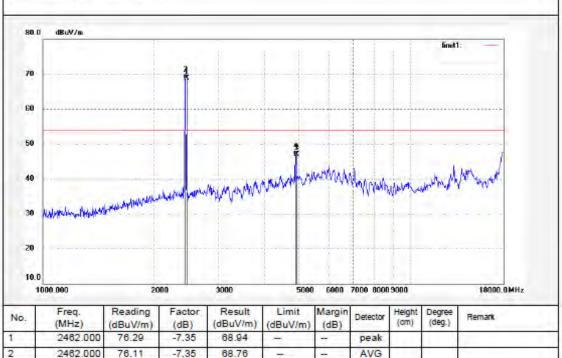
Mode:

Model: M7000XX Manufacturer: Sungworld

TX Channel 11 (802.11n)

Distance: 3m

Note: Report No.:ATE2011269



74.00

54.00

-26.9

-7.24

peak

AVG

3

4

4924.121

4924.121

48.75

46.42

0.34

0.34

47.09



F1.Bldg.A,Changyuan New Material Port Keyuan Rd, Science & Industry Park,Nanshan Shenzhen,P.R.China Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Standard: FCC Class B 3M Radiated

Test item: Radiation Test Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11n)

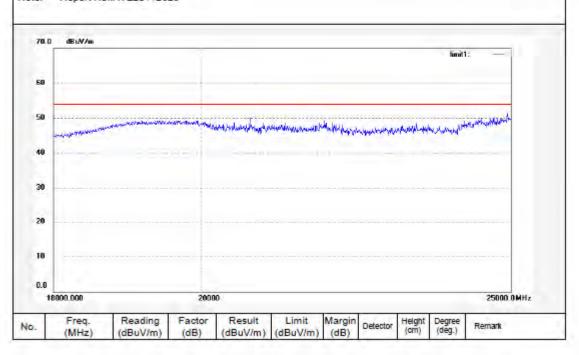
Model: M7000XX Manufacturer: Sungworld Polarization: Horizontal Power Source: DC 3.7V

Date: 2011/12/15 Time: 15:47:15

Engineer Signature: Kai

Distance:

Note: Report No.:ATE20112629





F1,Bldg,A,Changyuan New Material Port Keyuan Rd, Science & Industry Park, Nanshan Shenzhen, P.R. China

Site: 966 chamber Tel:+86-0755-26503290 Fax:+86-0755-26503396

Job No.: Kai #1559 Standard: FCC Class B 3M Radiated Test item: Radiation Test

Temp.( C)/Hum.(%) 24 C / 48 %

EUT: MID

Mode: TX Channel 11 (802.11n)

Model: M7000XX Manufacturer: Sungworld

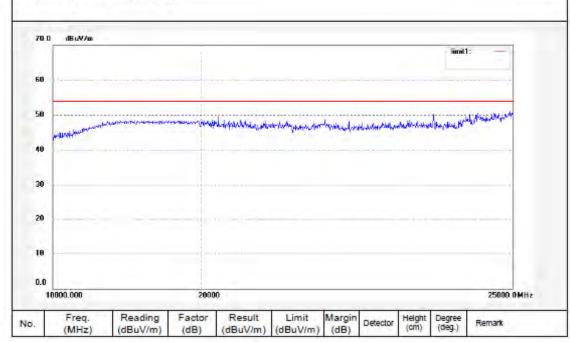
Power Source: DC 3.7V Date: 2011/12/15 Time: 15:49:05

Polarization: Vertical

Engineer Signature: Kai

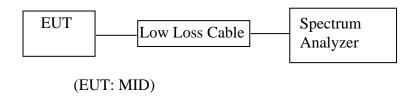
Distance:

Note: Report No.:ATE20112629



# 10. CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST

# 10.1.Block Diagram of Test Setup



# 10.2. The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. 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).

# 10.3.EUT Configuration on Measurement

The following equipment is installed on the emission measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

#### 10.3.1.MID (EUT)

Model Number : M7000XX

Serial Number : N/A

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

# 10.4. Operating Condition of EUT

- 10.4.1. Setup the EUT and simulator as shown as Section 10.1.
- 10.4.2. Turn on the power of all equipment.
- 10.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2412-2462MHz. We select 2412MHz, 2437MHz, 2462MHz TX frequency to transmit.

# 10.5.Test Procedure

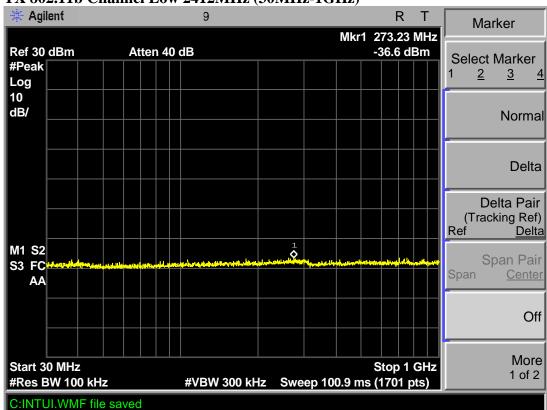
- 10.5.1. The transmitter output was connected to the spectrum analyzer via a low loss cable.
- 10.5.2.Set RBW of spectrum analyzer to 100kHz and VBW to 300kHz.
- 10.5.3. The Conducted Spurious Emission was measured and recorded.

# 10.6.Test Result

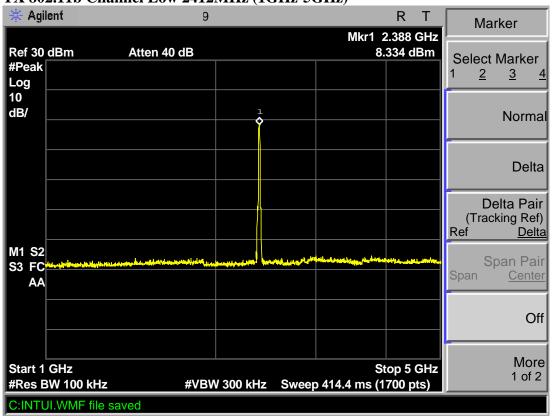
Pass.

The spectrum analyzer plots are attached as below.

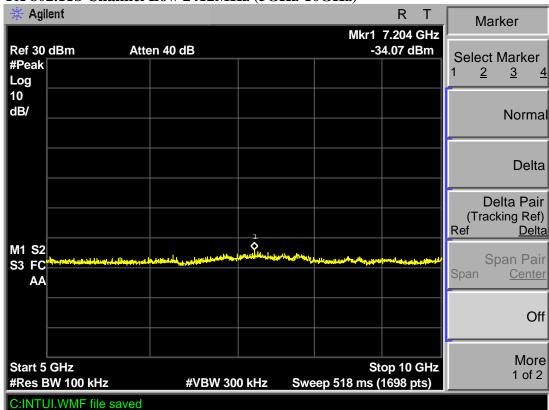




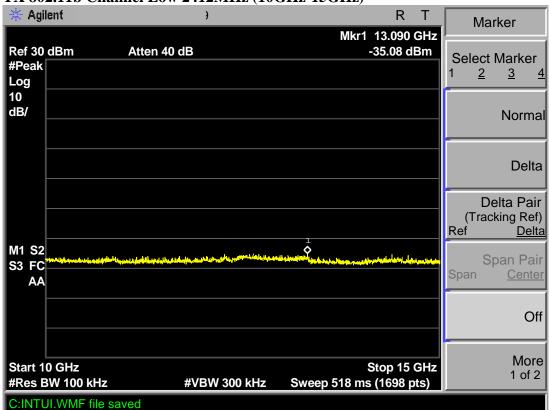
### **TX 802.11b Channel Low 2412MHz (1GHz-5GHz)**



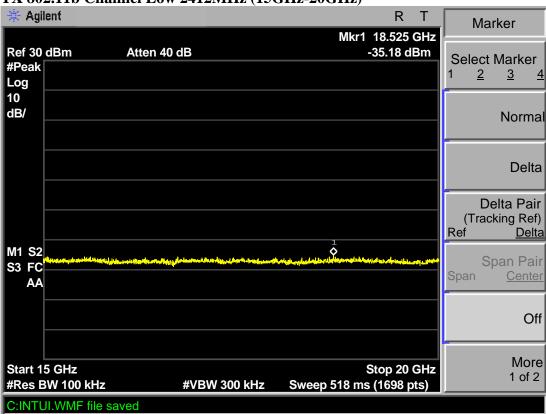




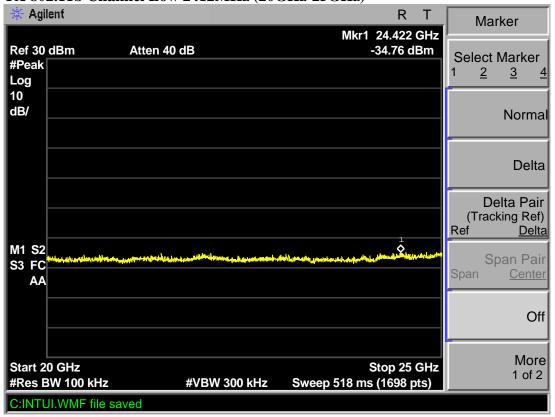
# **TX 802.11b Channel Low 2412MHz (10GHz-15GHz)**



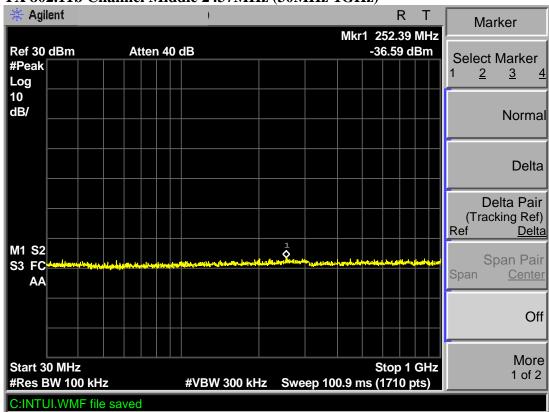




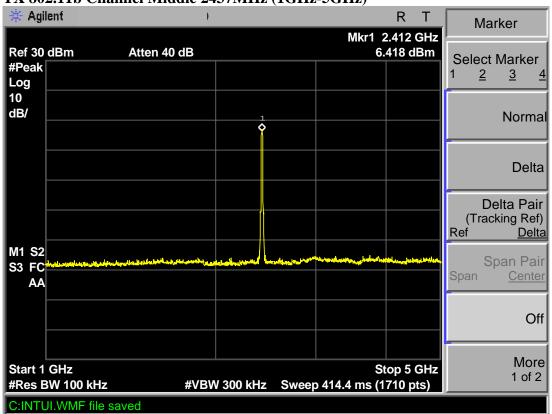
#### **TX 802.11b Channel Low 2412MHz (20GHz-25GHz)**



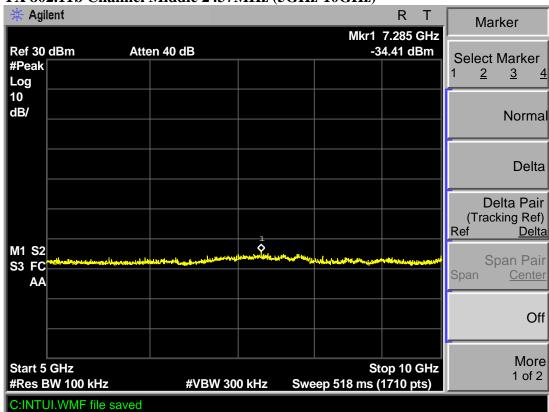




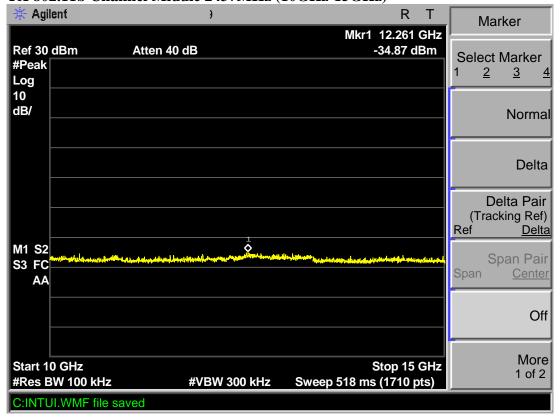
#### TX 802.11b Channel Middle 2437MHz (1GHz-5GHz)



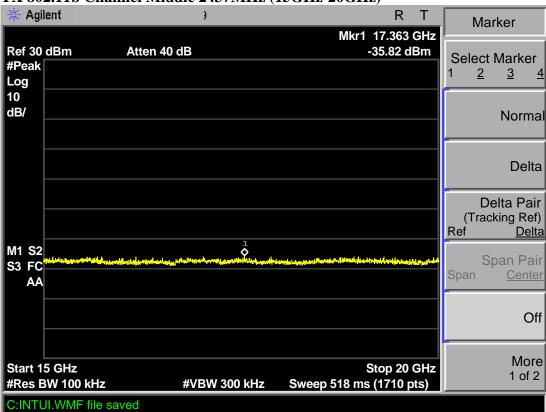




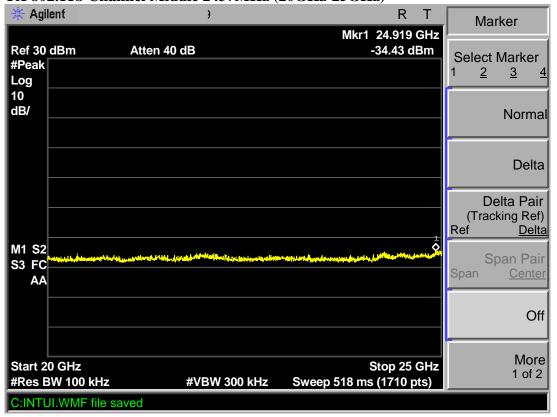
# TX 802.11b Channel Middle 2437MHz (10GHz-15GHz)

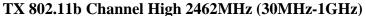


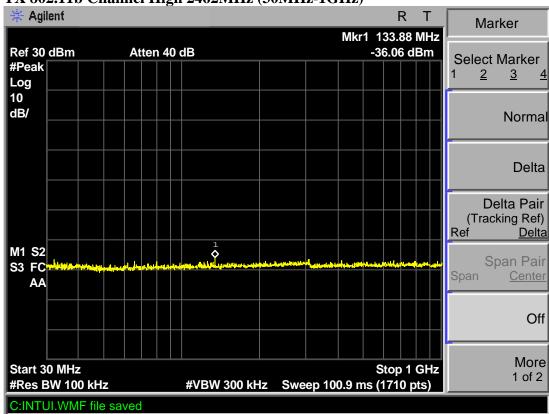




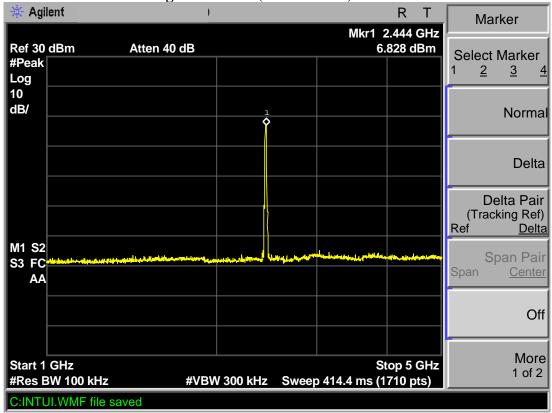
### TX 802.11b Channel Middle 2437MHz (20GHz-25GHz)

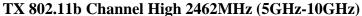


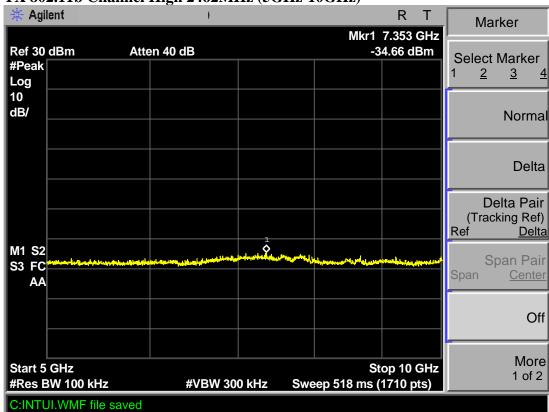




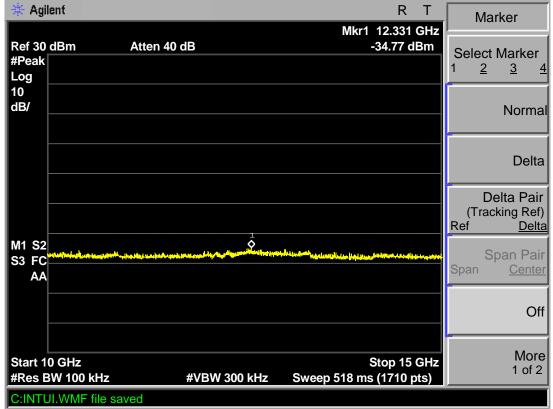
# TX 802.11b Channel High 2462MHz (1GHz-5GHz)

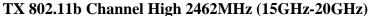


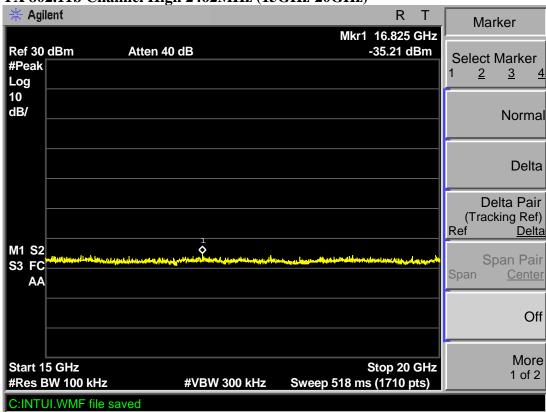




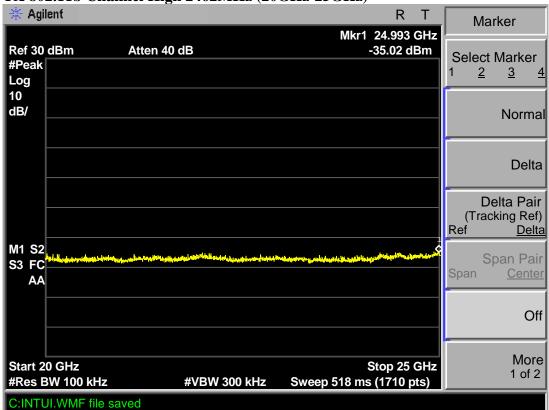
# **TX 802.11b Channel High 2462MHz (10GHz-15GHz)**

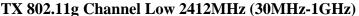


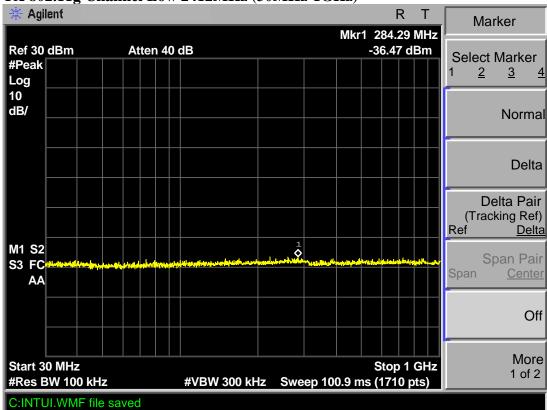




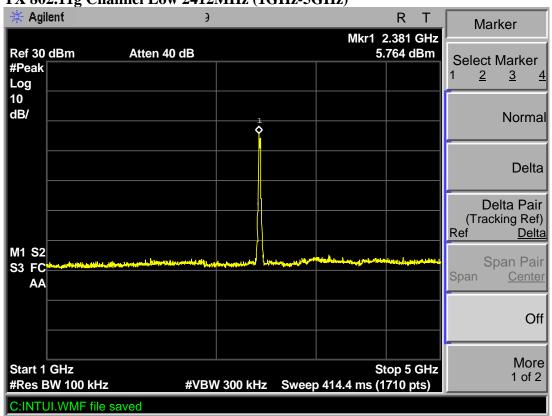
# **TX 802.11b Channel High 2462MHz (20GHz-25GHz)**

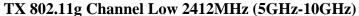


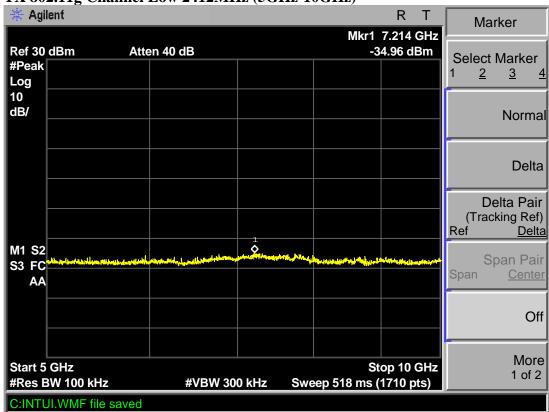




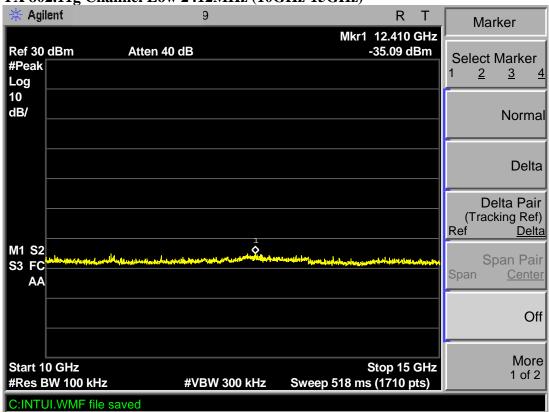
# TX 802.11g Channel Low 2412MHz (1GHz-5GHz)

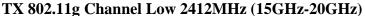


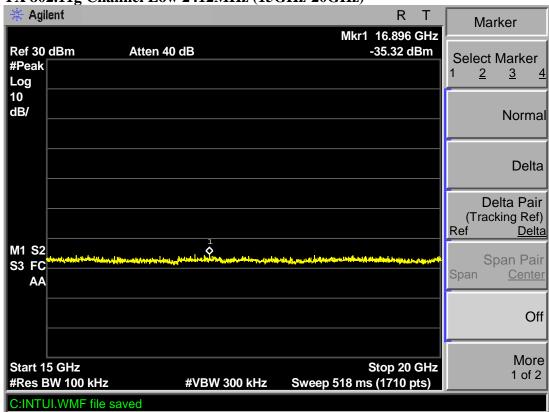




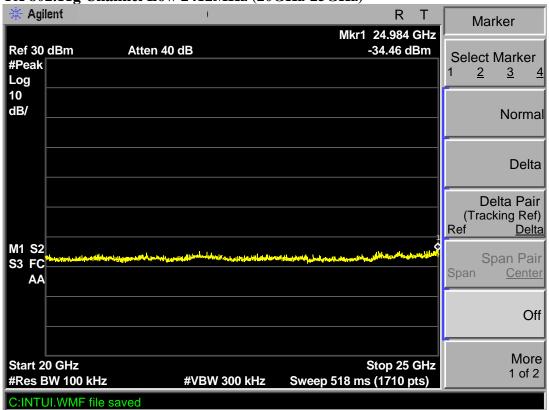
# **TX 802.11g Channel Low 2412MHz (10GHz-15GHz)**



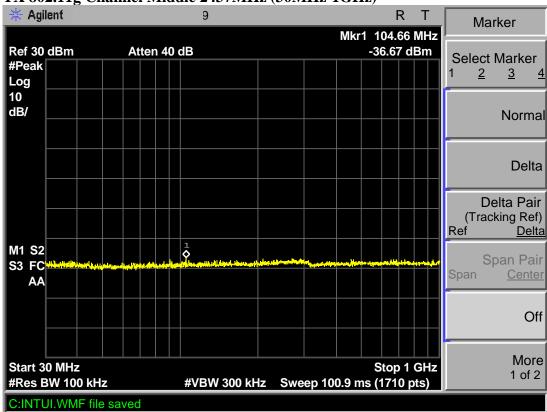




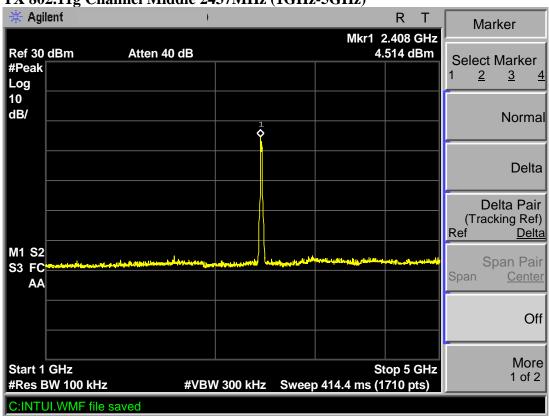
# **TX 802.11g Channel Low 2412MHz (20GHz-25GHz)**



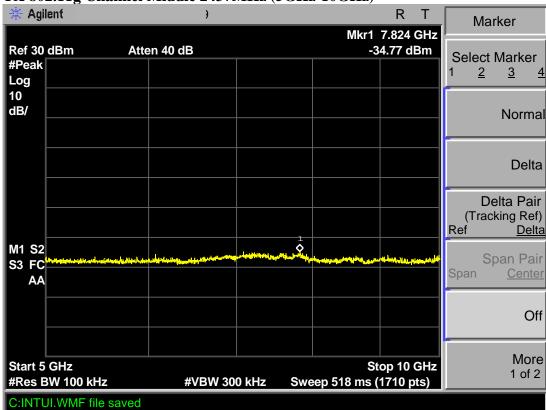




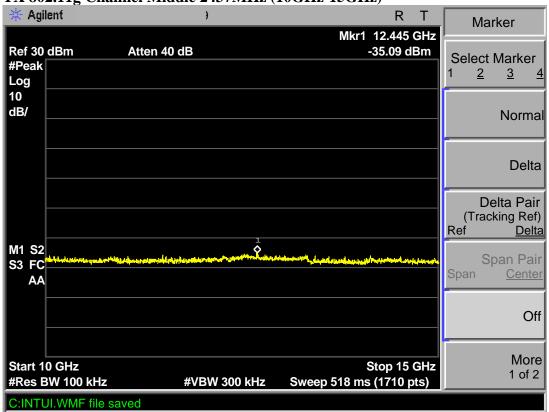
# TX 802.11g Channel Middle 2437MHz (1GHz-5GHz)



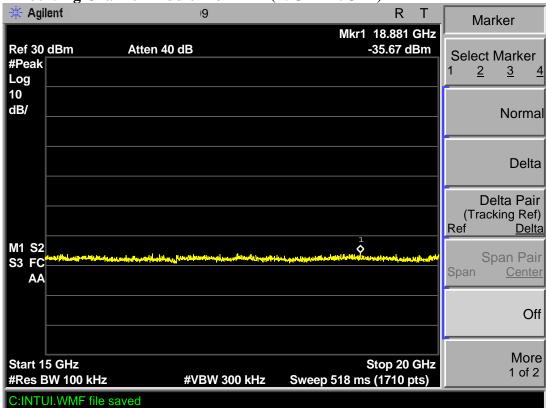




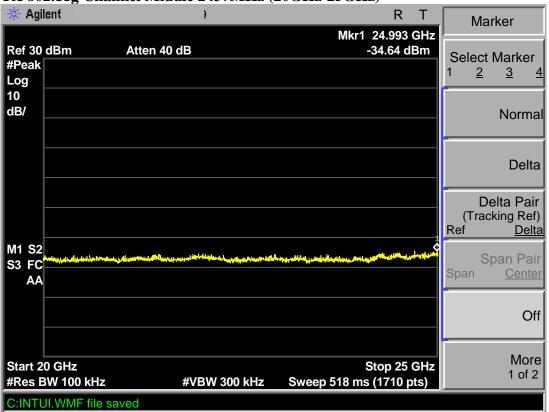
# TX 802.11g Channel Middle 2437MHz (10GHz-15GHz)

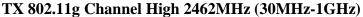


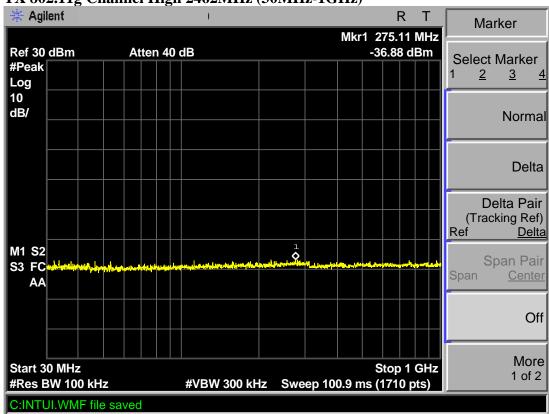




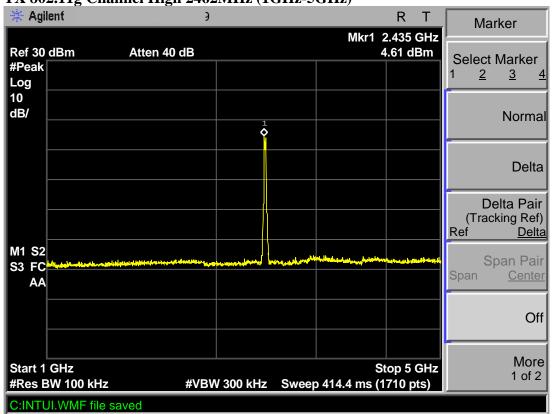
# TX 802.11g Channel Middle 2437MHz (20GHz-25GHz)

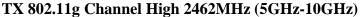


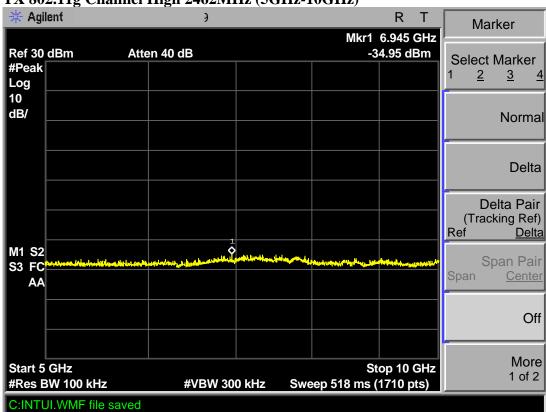




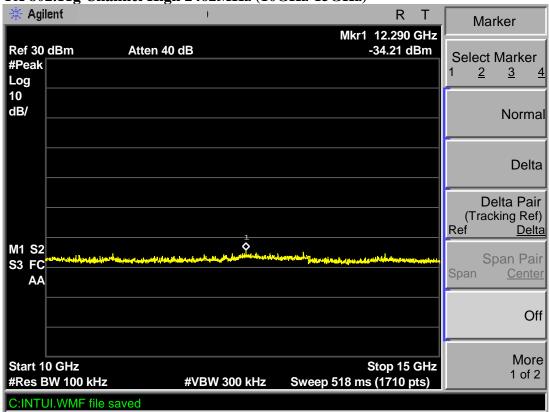
# TX 802.11g Channel High 2462MHz (1GHz-5GHz)

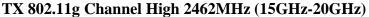


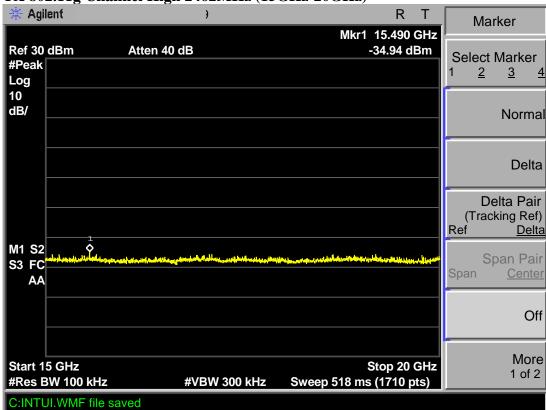




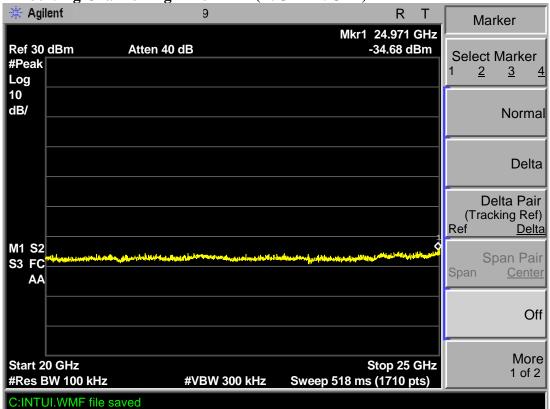
# **TX 802.11g Channel High 2462MHz (10GHz-15GHz)**



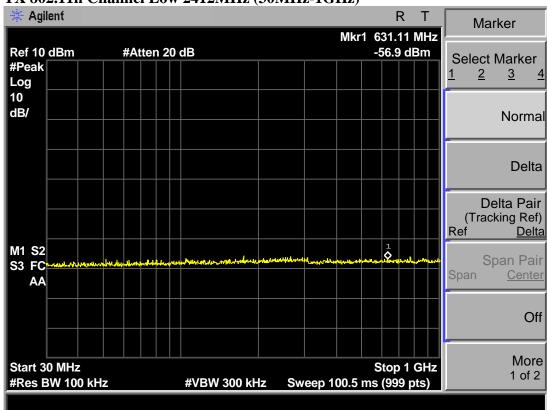




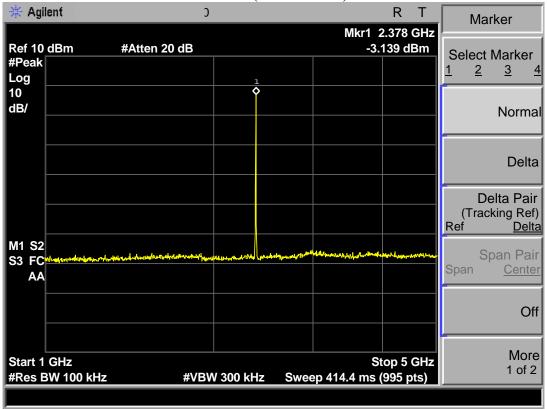
# **TX 802.11g Channel High 2462MHz (20GHz-25GHz)**



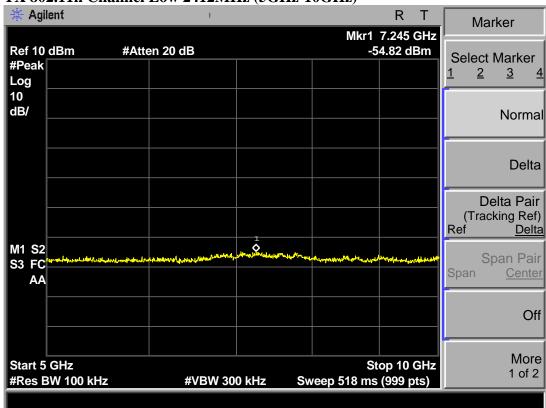




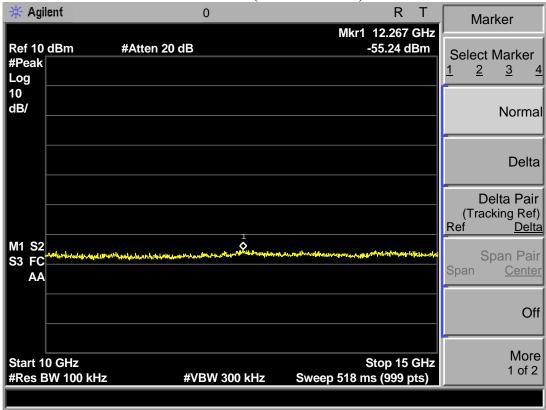
### **TX 802.11n Channel Low 2412MHz (1GHz-5GHz)**



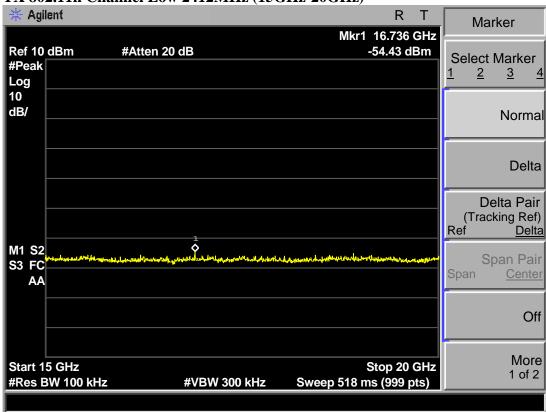
### **TX 802.11n Channel Low 2412MHz (5GHz-10GHz)**



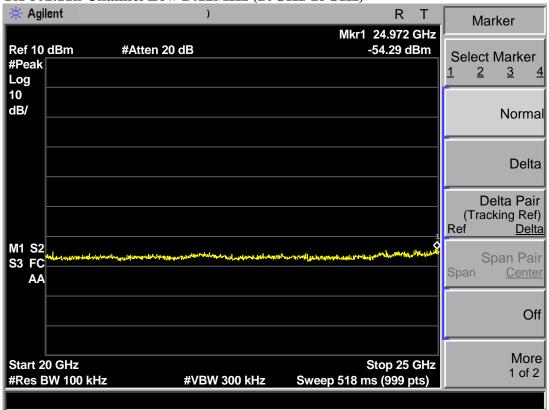
### **TX 802.11n Channel Low 2412MHz (10GHz-15GHz)**



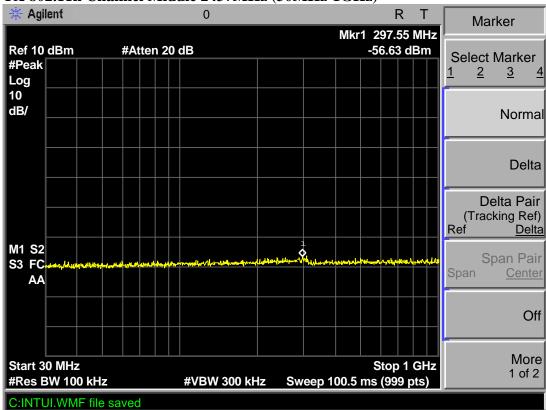
### **TX 802.11n Channel Low 2412MHz (15GHz-20GHz)**



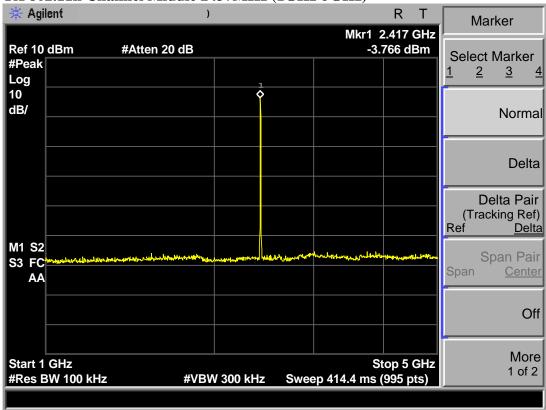
# **TX 802.11n Channel Low 2412MHz (20GHz-25GHz)**



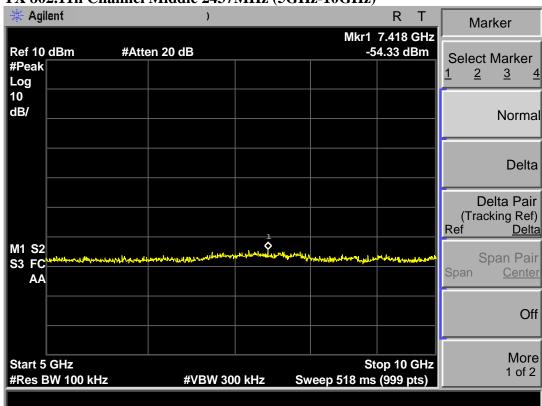
### TX 802.11n Channel Middle 2437MHz (30MHz-1GHz)



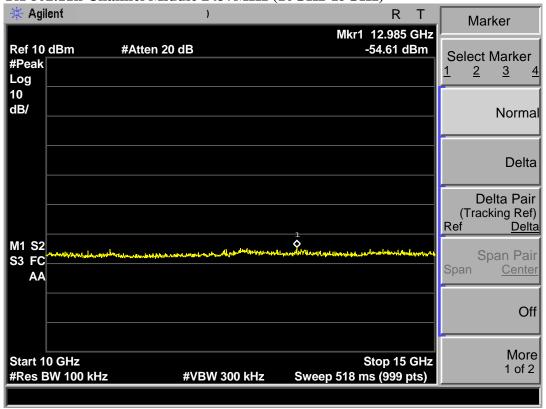
# TX 802.11n Channel Middle 2437MHz (1GHz-5GHz)



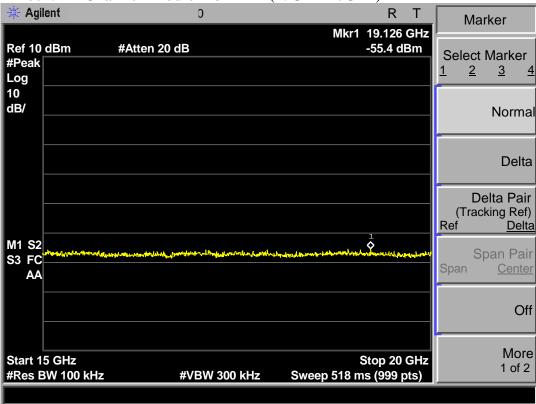
### TX 802.11n Channel Middle 2437MHz (5GHz-10GHz)



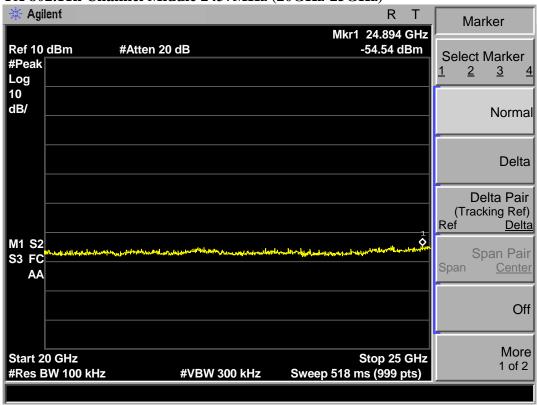
# TX 802.11n Channel Middle 2437MHz (10GHz-15GHz)



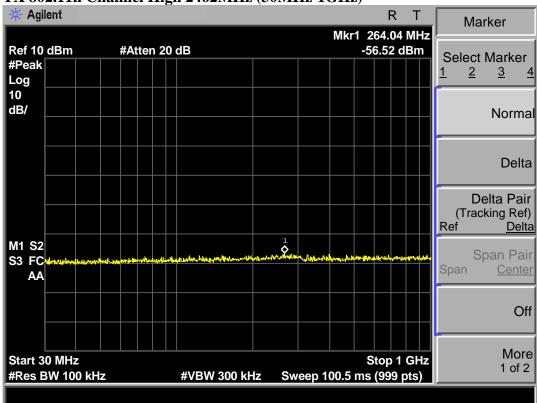
### TX 802.11n Channel Middle 2437MHz (15GHz-20GHz)



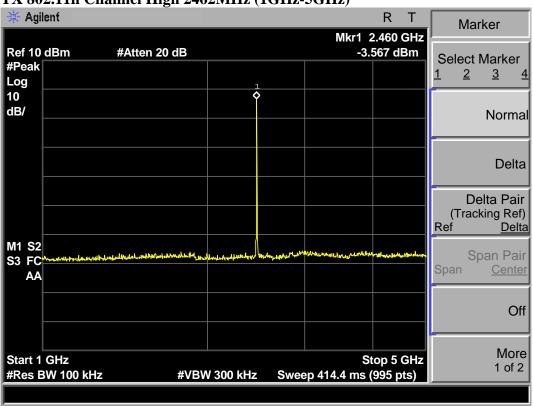
### TX 802.11n Channel Middle 2437MHz (20GHz-25GHz)

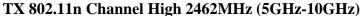


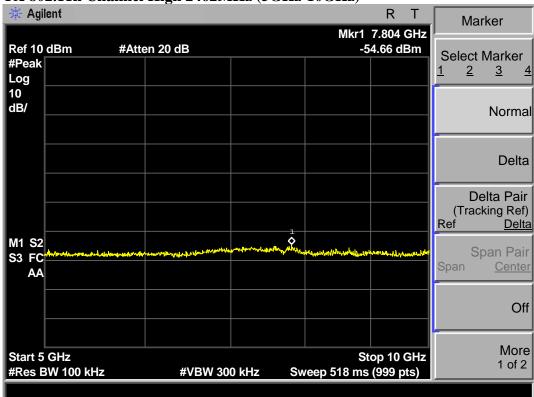




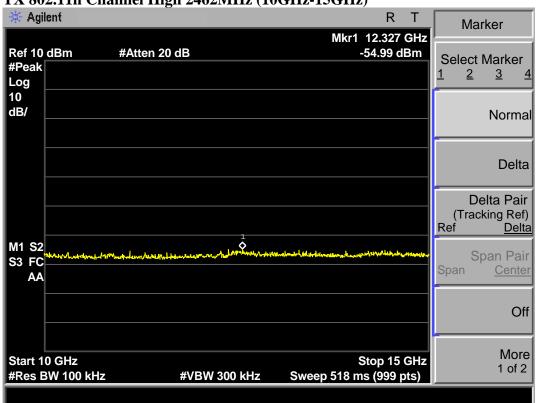
# TX 802.11n Channel High 2462MHz (1GHz-5GHz)



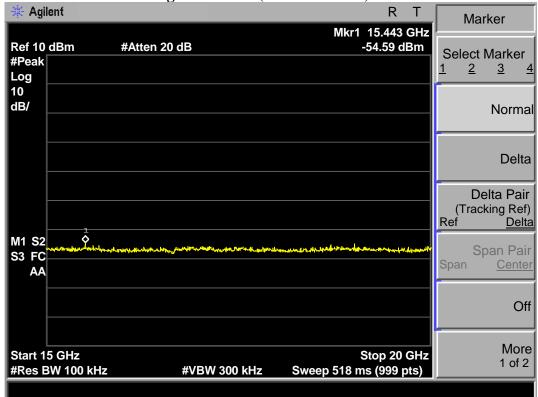




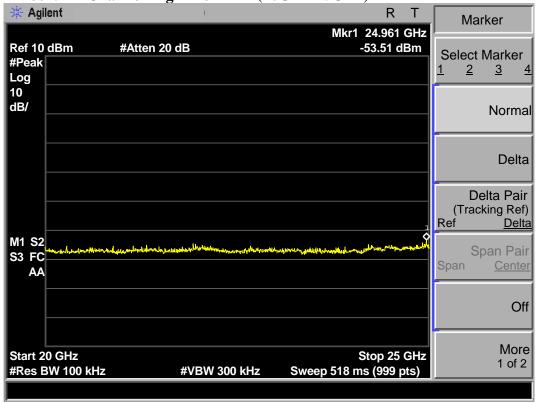
# **TX 802.11n Channel High 2462MHz (10GHz-15GHz)**







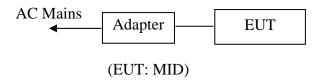
# **TX 802.11n Channel High 2462MHz (20GHz-25GHz)**



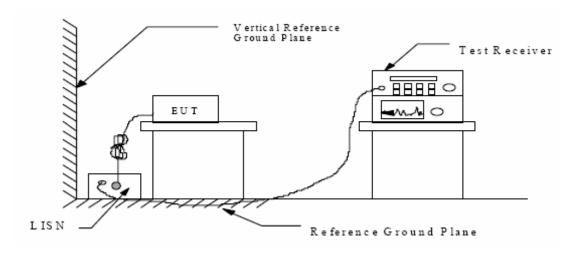
# 11.AC POWER LINE CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.207(A)

# 11.1.Block Diagram of Test Setup

# 11.1.1.Block diagram of connection between the EUT and simulators



# 11.1.2.Shielding Room Test Setup Diagram



(EUT: MID)

# 11.2. The Emission Limit

# 11.2.1.Conducted Emission Measurement Limits According to Section 15.207(a)

Frequency	Limit dB(μV)					
(MHz)	Quasi-peak Level	Average Level				
0.15 - 0.50	66.0 - 56.0 *	56.0 – 46.0 *				
0.50 - 5.00	56.0	46.0				
5.00 - 30.00	60.0	50.0				

<sup>\*</sup> Decreases with the logarithm of the frequency.

# 11.3. Configuration of EUT on Measurement

The following equipment are installed on the Conducted Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.

### 11.3.1.MID (EUT)

Model Number : M7000XX Serial Number : N/A

Manufacturer : Shenzhen Sungworld Electronics Co., Ltd.

# 11.4. Operating Condition of EUT

- 11.4.1. Setup the EUT and simulator as shown as Section 11.1.
- 11.4.2. Turn on the power of all equipment.
- 11.4.3.Let the EUT work in TX (802.11b Channel Middle, 802.11g Channel Middle, 802.11n Channel Middle) mode measure it.

### 11.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 500hm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4: 2003 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

The frequency range from 150kHz to 30MHz is checked.

# 11.6.Power Line Conducted Emission Measurement Results **PASS.**

The frequency range from 150kHz to 30MHz is checked.

Date of Test: December 15, 2011 Temperature: 25°C

EUT: MID Humidity: 50%

Model No.: M7000XX Power Supply: AC 120V/60Hz

Test Mode: TX 802.11b Channel Middle Test Engineer: Pei

Test Mode. 12	1 A 602.110 Chamlet Middle 1 est Engineer. Fel				
Frequency	Result	Limit	Margin	Detector	Line
(MHz)	(dBµV)	(dBµV)	(dB)		
0.613500	32.70	56	-23.3	QP	
1.563000	34.10	56	-21.9	QP	
12.646500	47.00	60	-13.0	QP	NT 4 1
12.574500	42.30	50	-7.7	AV	Neutral
12.579000	45.20	50	-4.8	AV	
12.849000	44.20	50	-5.8	AV	
0.613500	32.70	56	-23.3	QP	
1.356000	35.30	56	-20.7	QP	
12.763500	47.20	60	-12.8	QP	<b>T</b> .
1.356000	30.70	46	-15.3	AV	Live
12.493500	45.80	50	-4.2	AV	
12.768000	47.30	50	-2.7	AV	

Emissions attenuated more than 20 dB below the permissible value are not reported. The spectral diagrams are attached as below.

Date of Test:December 15, 2011Temperature:25°CEUT:MIDHumidity:50%Model No.:M7000XXPower Supply:AC 120V/60HzTest Mode:TX 802.11g Channel MiddleTest Engineer:Pei

Line	Detector	Margin	Limit	Result	Frequency
	Beteetor	(dB)	(dBµV)	(dBµV)	(MHz)
	QP	-21.6	59	37.40	0.338664
-					
-	QP	-23.6	56	32.40	0.613892
Neutral	QP	-20.1	60	39.90	12.503887
- Troutium	AV	-7.1	50	42.90	11.966695
_	AV	-7.6	50	42.40	12.305810
	AV	-17.1	50	32.80	12.503887
	QP	-21.8	59	37.20	0.337314
	QP	-23.4	56	32.60	0.613892
<u>.</u>	QP	-12.7	60	47.30	12.705153
Live	AV	-7.3	50	42.70	11.683472
	AV	-5.0	50	45.00	12.159314
	AV	-3.1	50	46.90	12.705153

Emissions attenuated more than 20 dB below the permissible value are not reported. The spectral diagrams are attached as below.

Date of Test: December 15, 2011 25°C Temperature: Humidity: EUT: MID 50% Model No.: M7000XX Power Supply: AC 120V/60Hz TX 802.11n Channel Middle Test Engineer: Pei

Frequency (MHz)	Result (dBµV)	Limit (dBµV)	Margin (dB)	Detector	Line	
0.611446	34.00	56	-22.0	QP		
0.882795	31.90	56	-24.1	QP		
12.454071	46.10	60	-13.9	QP	N	
0.406930	35.50	48	-12.5	AV	Neutral	
2.107702	30.20	46	-15.8	AV		
12.454071	42.50	50	-7.5	AV		
0.338664	37.30	59	-21.7	QP		
4.835277	30.50	56	-25.5	QP		
12.654535	46.50	60	-13.5	QP	τ.	
0.406930	35.80	48	-12.2	AV	Live	
3.335693	31.20	46	-14.8	AV		
12.654535	44.70	50	-5.3	AV		

Emissions attenuated more than 20 dB below the permissible value are not reported. The spectral diagrams are attached as below.

Test Mode:

### CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: MID M/N:M7000XX

Manufacturer: Sungworld

Operating Condition: TX Channel 6 (802.11b)

Test Site: 1#Shielding Room

Operator: Kai

Test Specification: L 120V/60Hz Comment: Mains port

Report No.: ATE20112629

SCAN TABLE: "V 150K-30MHz fin"

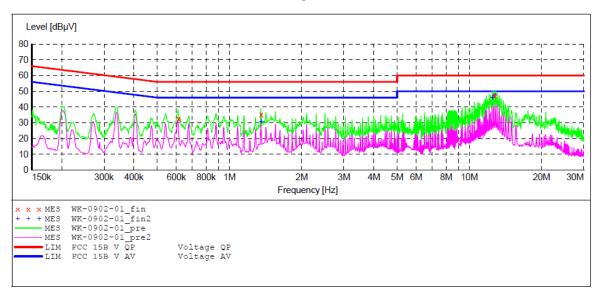
\_SUB\_STD\_VTERM2 1.70 Short Description:

Start Stop Step Detector Meas. ΙF Transducer

Width Time Bandw.

Frequency Frequency 150.0 kHz 30.0 MHz 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008

Average



### MEASUREMENT RESULT: "WK-0902-01 fin"

12/15/2011 10	:16AM						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PΕ
MHz	dΒμV	dB	dΒμV	dB			
0.613500	32.70	12.0	56	23.3	QP	L1	GND
1.356000	35.30	11.8	56	20.7	QP	L1	GND
12.763500	47.20	11.2	60	12.8	OP	T.1	GND

### MEASUREMENT RESULT: "WK-0902-01 fin2"

12/15/2011 1 Frequency MHz	Level		Margin dB	Detector	Line	PE
1.356000 12.493500 12.768000	30.70 45.80 47.30	11.2		AV	L1 L1 L1	GND GND GND

### CONDUCTED EMISSION STANDARD FCC PART 15 B

MID M/N:M7000XX

Manufacturer: Sungworld

Operating Condition: TX Channel 6 (802.11b)

1#Shielding Room Test Site:

Operator: Kai

Test Specification: N 120V/60Hz Comment:

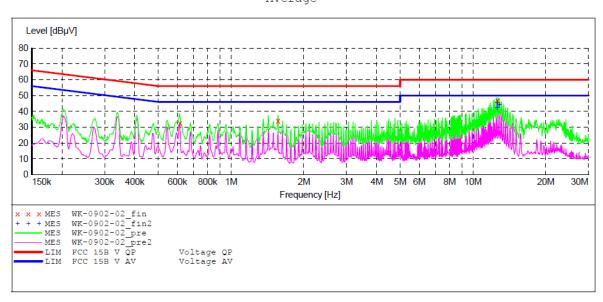
Mains port Report No.:ATE20112629

SCAN TABLE: "V 150K-30MHz fin"
Short Description: \_SUB\_S \_SUB\_STD\_VTERM2 1.70

Start Stop Step Detector Meas. ΙF Transducer

Frequency Frequency 150.0 kHz 30.0 MHz Bandw. Width Time QuasiPeak 1.0 s NSLK8126 2008 0.8 % 9 kHz

Average



### MEASUREMENT RESULT: "WK-0902-02 fin"

12/15/2011 10	:23AM						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
MHz	dΒμV	dB	dΒμV	dB			
0.613500	32.70	12.0	56	23 3	OP	N	GND
1.563000		11.7			~	N	GND
12.646500	47.00	11.2	60	13.0	ÕР	N	GND

### MEASUREMENT RESULT: "WK-0902-02 fin2"

12/	15/2011 10:	23AM						
	Frequency	Level	Transd	Limit	Margin	Detector	Line	PE
	MHz	dBµV	dB	dΒμV	dB			
	12.574500	42.30	11.2	50	7.7	AV	N	GND
	12.579000	45.20	11.2	50	4.8	AV	N	GND
	12.849000	44.20	11.2	50	5.8	AV	N	GND

### CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: MID M/N:M7000XX

Manufacturer: Sungworld

Operating Condition: TX Channel 6 (802.11g)

Test Site: 1#Shielding Room

Operator: Kai

Test Specification: L 120V/60Hz

Comment: Mains port

Report No.: ATE20112629

### SCAN TABLE: "V 150K-30MHz fin"

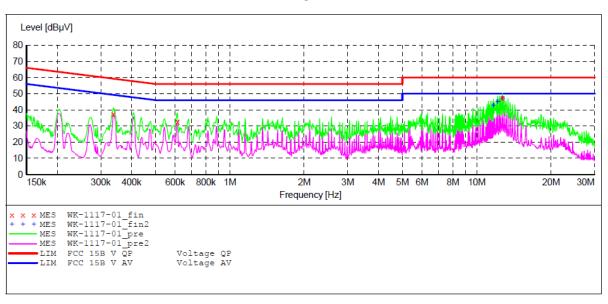
Short Description: SUB STD VTERM2 1.70

Start Step Detector Meas. IF Transducer Stop

Width Time Bandw.

Frequency Frequency 150.0 kHz 30.0 MHz QuasiPeak 1.0 s NSLK8126 2008 0.8 % 9 kHz

Average



### MEASUREMENT RESULT: "WK-1117-01 fin"

12/15/2	011 9:4	9AM						
Freq	uency	Level	Transd	Limit	Margin	Detector	Line	PΕ
	MHz	dΒμV	dB	dΒμV	dB			
0.3	37314	37.20	11.7	59	21.8	QP	L1	GND
0.6	13892	32.60	11.9	56	23.4	QP	L1	GND
12.7	05153	47.30	11.2	60	12.7	QP	L1	GND

### MEASUREMENT RESULT: "WK-1117-01 fin2"

12/15/2011	9:49AM						
Frequency MHz			Limit dBµV	Margin dB	Detector	Line	PE
11.683472	42.70	11.2	50	7.3	AV	L1	GND
12.159314	45.00	11.2	50	5.0	AV	L1	GND
12.705153	46.90	11.2	50	3.1	AV	L1	GND

### CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: MID M/N:M7000XX

Manufacturer: Sungworld

Operating Condition: TX Channel 6 (802.11g)

Test Site: 1#Shielding Room

Operator: Kai

Test Specification: N 120V/60Hz

Comment: Mains port

Report No.:ATE20112629

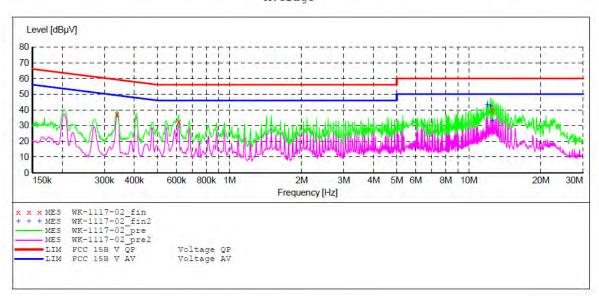
### SCAN TABLE: "V 150K-30MHz fin"

SUB STD VTERM2 1.70 Short Description:

Step Start Stop Detector Meas. IF Transducer

Frequency Frequency Width 150.0 kHz 30.0 MHz 0.8 % Time Bandw. QuasiPeak 1.0 s 9 kHz NSLK8126 2008

Average



### MEASUREMENT RESULT: "WK-1117-02 fin"

12/15/2011 9:	52AM						
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.338664	37.40	11.7	59	21.6	QP	N	GND
0.613892 12.503887	32.40	11.9 11.2	56 60	23.6 20.1	~	N N	GND GND

### MEASUREMENT RESULT: "WK-1117-02 fin2"

12/15/2011	9:52AM						
Frequenc MH	_	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
11.96669	5 42.90	11.2	50	7.1	AV	N	GND
12.30581	0 42.40	11.2	50	7.6	AV	N	GND
12.50388	7 32.90	11.2	50	17.1	AV	N	GND

### CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: MID M/N:M7000XX

Manufacturer: Sungworld

Operating Condition: TX Channel 6 (802.11n)

Test Site: 1#Shielding Room

Operator: Kai

Test Specification: L 120V/60Hz Comment: Mains port

Report No.: ATE20112629

# SCAN TABLE: "V 150K-30MHz fin"

Short Description:

SUB STD VTERM2 1.70

Start Stop Step Detector Meas. IF Transducer

Frequency Frequency Width Time Bandw.

150.0 kHz 30.0 MHz 0.8 % QuasiPeak 1.0 s 9 kHz NSLK8126 2008



### MEASUREMENT RESULT: "WK-1117-03 fin"

12/15/2011	10:56AM						
Frequenc	y Level			Margin	Detector	Line	PE
MH	z dBµV	dB	dΒμV	dB			
0.33866	A 37 30	11.7	50	21 7	OP	L1	GND
					~		GND
4.83527	7 30.50	11.4	56	25.5	QP	L1	GND
12.65453	5 46.50	11.2	60	13.5	QP	L1	GND

### MEASUREMENT RESULT: "WK-1117-03 fin2"

12	2/15/2011 10	:56AM						
	Frequency	Level	Transd	Limit	Margin	Detector	Line	PΕ
	MHz	dΒμV	dB	dΒμV	dB			
	0.406930	35.80	11.8	48	12.2	AV	L1	GND
	3.335693	31.20	11.5	46	14.8	AV	L1	GND
	12.654535	44.70	11.2	50	5.3	AV	L1	GND

### CONDUCTED EMISSION STANDARD FCC PART 15 B

M/N:M7000XX EUT: MID

Manufacturer: Sungworld

Operating Condition: TX Channel 6 (802.11n) Test Site: 1#Shielding Room

Operator: Kai

Test Specification: N 120V/60Hz Comment: Mains port

Report No.: ATE20112629

### SCAN TABLE: "V 150K-30MHz fin"

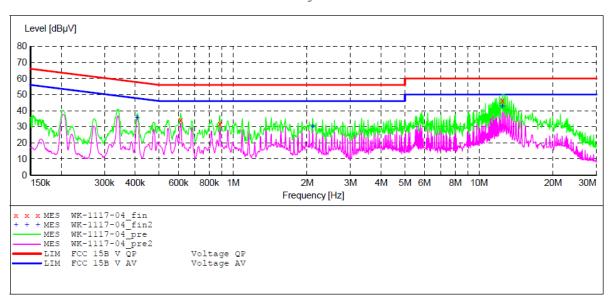
Short Description: SUB STD VTERM2 1.70

ΙF Transducer Start Stop Step Detector Meas.

Frequency Frequency Width 150.0 kHz 30.0 MHz 0.8 % Bandw. Time

QuasiPeak 1.0 s 9 kHz NSLK8126 2008

Average



### MEASUREMENT RESULT: "WK-1117-04 fin"

12/15/2011 11	1:00AM						
Frequency					Detector	Line	PΕ
MHz	dΒμV	dB	dΒμV	dB			
0.611446	34.00	12.0	56	22.0	OP	N	GND
0.882795				24.1	~	N	GND
12.454071	46.10	11.2	60	13.9	QP	N	GND

### MEASUREMENT RESULT: "WK-1117-04 fin2"

12/15/2011 11	:00AM						
Frequency	Level	Transd	Limit	Margin	Detector	Line	PΕ
MHz	dΒμV	dB	dΒμV	dB			
0.406930	35.50	11.8	48	12.5	AV	N	GND
2.107702	30.20	11.6	46	15.8	AV	N	GND
12.454071	42.50	11.2	50	7.5	AV	N	GND

# 12.ANTENNA REQUIREMENT

# 12.1.The Requirement

According to Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

# 12.2.Antenna Construction

Device is equipped with unique antenna, which isn't displaced by other antenna. Therefore, the equipment complies with the antenna requirement of Section 15.203.

