

APPLICATION CERTIFICATION FCC Part 15C  
On Behalf of  
Shenzhen Skyworth Digital Technology Co.,LTD

HD SMART TERMINAL STB  
Model No.: A8E, HPH9

FCC ID: WNA-HPH9

Prepared for : Shenzhen Skyworth Digital Technology Co.,LTD  
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Report Number : ATE20141378  
Date of Test : July 18-Aug 04,2014  
Date of Report : Aug 04,2014

## TABLE OF CONTENTS

Description	Page
Test Report Certification	
<b>1. GENERAL INFORMATION .....</b>	<b>5</b>
1.1. Description of Device (EUT).....	5
1.2. Carrier Frequency of Channels.....	6
1.3. Special Accessory and Auxiliary Equipment .....	6
1.4. Description of Test Facility .....	6
1.5. Measurement Uncertainty.....	7
<b>2. MEASURING DEVICE AND TEST EQUIPMENT .....</b>	<b>8</b>
<b>3. OPERATION OF EUT DURING TESTING .....</b>	<b>9</b>
3.1. Operating Mode.....	9
3.2. Configuration and peripherals .....	9
<b>4. TEST PROCEDURES AND RESULTS .....</b>	<b>10</b>
<b>5. 6DB BANDWIDTH MEASUREMENT.....</b>	<b>11</b>
5.1. Block Diagram of Test Setup.....	11
5.2. The Requirement For Section 15.247(a)(2).....	11
5.3. EUT Configuration on Measurement .....	11
5.4. Operating Condition of EUT .....	11
5.5. Test Procedure .....	11
5.6. Test Result .....	12
<b>6. MAXIMUM OUTPUT POWER.....</b>	<b>19</b>
6.1. Block Diagram of Test Setup.....	19
6.2. The Requirement For Section 15.247(b)(3).....	19
6.3. EUT Configuration on Measurement .....	19
6.4. Operating Condition of EUT .....	19
6.5. Test Procedure .....	19
6.6. Test Result .....	20
<b>7. POWER SPECTRAL DENSITY MEASUREMENT.....</b>	<b>27</b>
7.1. Block Diagram of Test Setup.....	27
7.2. The Requirement For Section 15.247(e).....	27
7.3. EUT Configuration on Measurement .....	27
7.4. Operating Condition of EUT .....	27
7.5. Test Procedure .....	27
7.6. Test Result .....	28
<b>8. BAND EDGE COMPLIANCE TEST .....</b>	<b>35</b>
8.1. Block Diagram of Test Setup.....	35
8.2. The Requirement For Section 15.247(d) .....	35
8.3. EUT Configuration on Measurement .....	35
8.4. Operating Condition of EUT .....	35
8.5. Test Procedure .....	35
8.6. Test Result .....	36
<b>9. RADIATED SPURIOUS EMISSION TEST .....</b>	<b>57</b>
9.1. Block Diagram of Test Setup.....	57
9.2. The Limit For Section 15.247(d) .....	57
9.3. Restricted bands of operation .....	58
9.4. Configuration of EUT on Measurement .....	58

- 9.5. Operating Condition of EUT ..... 59
- 9.6. Test Procedure ..... 59
- 9.7. The Field Strength of Radiation Emission Measurement Results ..... 59
- 10. CONDUCTED SPURIOUS EMISSION COMPLIANCE TEST ..... 86**
  - 10.1. Block Diagram of Test Setup..... 86
  - 10.2. The Requirement For Section 15.247(d) ..... 86
  - 10.3. EUT Configuration on Measurement ..... 86
  - 10.4. Operating Condition of EUT ..... 86
  - 10.5. Test Procedure ..... 87
  - 10.6. Test Result ..... 87
- 11. AC POWER LINE CONDUCTED EMISSION FOR FCC PART 15 SECTION 15.207(A) .. 94**
  - 11.1. Block Diagram of Test Setup..... 94
  - 11.2. The Emission Limit ..... 94
  - 11.3. Configuration of EUT on Measurement ..... 95
  - 11.4. Operating Condition of EUT ..... 95
  - 11.5. Test Procedure ..... 95
  - 11.6. Power Line Conducted Emission Measurement Results ..... 95
- 12. ANTENNA REQUIREMENT..... 98**
  - 12.1. The Requirement ..... 98
  - 12.2. Antenna Construction ..... 98

# Test Report Certification

Applicant : Shenzhen Skyworth Digital Technology Co.,LTD  
 Manufacturer : Shenzhen Skyworth Digital Technology Co.,LTD  
 EUT Description : HD SMART TERMINAL STB  
 (A) MODEL NO.: A8E, HPH9  
 (B) SERIAL NO.: N/A  
 (C) POWER SUPPLY: DC 12V (Power by Adapter)

Measurement Procedure Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247**  
**ANSI C63.4: 2009**

The EUT was tested according to DTS test procedure of Jun 05, 2014 KDB558074 D01 DTS Meas Guidance v03r02 for compliance to FCC 47CFR 15.247 requirements

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 : July 18-Aug 04,2014  
 Date of Report: Aug 04,2014

Prepared by :   
 (Engineer)

Approved & Authorized Signer :   
 (Manager)

# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

EUT	:	HD SMART TERMINAL STB
Model Number	:	A8E, HPH9 Note: These samples are same except for the model number is difference. So we prepare the A8E for test
Frequency Range	:	802.11b/g/n(20MHz): 2412-2462MHz 802.11n(40MHz): 2422-2452MHz
Number of Channels	:	802.11b/g/n (20MHz):11 802.11n (40MHz): 7
Antenna Gain	:	3.79dBi
Power Supply	:	DC 12V (Power by adapter)
Adapter	:	Model number: S-D120100U201 Input: AC 100-240V; 50/60Hz 0.5A Output: DC 12V/1.0A USB line: Non-shielded, Non-detachable, 1.5m
Modulation mode	:	DSSS,OFDM
Applicant	:	Shenzhen Skyworth Digital Technology Co.,LTD
Address	:	Unit A14/F.Skyworth Bldg.,Gaoxin Ave.1s., Nanshan District, Shenzhen,China
Manufacturer	:	Shenzhen Skyworth Digital Technology Co.,LTD
Address	:	Unit A14/F.Skyworth Bldg.,Gaoxin Ave.1s., Nanshan District, Shenzhen,China
Date of sample received	:	July 18, 2014
Date of Test	:	July 18-Aug 04,2014

## 1.2. Carrier Frequency of Channels

802.11b, 802.11g, 802.11n (20MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
01	2412	07	2442
02	2417	08	2447
03	2422	09	2452
04	2427	10	2457
05	2432	11	2462
06	2437	---	---

802.11n (40MHz)

Channel	Frequency(MHz)	Channel	Frequency(MHz)
---	---	07	2442
---	---	08	2447
03	2422	09	2452
04	2427	---	---
05	2432	---	---
06	2437	---	---

## 1.3. Special Accessory and Auxiliary Equipment

n.a.

## 1.4. 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

### 1.5.Measurement Uncertainty

Conducted Emission Expanded Uncertainty = 2.23dB, k=2

Radiated emission expanded uncertainty  
(9kHz-30MHz) = 3.08dB, k=2

Radiated emission expanded uncertainty  
(30MHz-1000MHz) = 4.42dB, k=2

Radiated emission expanded uncertainty  
(Above 1GHz) = 4.06dB, k=2

## 2. MEASURING DEVICE AND TEST EQUIPMENT

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

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 11, 2014	Jan. 10, 2015
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 11, 2014	Jan. 10, 2015
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 11, 2014	Jan. 10, 2015
Pre-Amplifier	Rohde&Schwarz	CBLU118354 0-01	3791	Jan. 11, 2014	Jan. 10, 2015
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 15, 2014	Jan. 14, 2015
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 15, 2014	Jan. 14, 2015
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 15, 2014	Jan. 14, 2015
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-1067	Jan. 15, 2014	Jan. 14, 2015
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 11, 2014	Jan. 10, 2015
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 11, 2014	Jan. 10, 2015
Highpass Filter	Wainwright Instruments	WHKX3.6/18 G-10SS	N/A	Jan. 11, 2014	Jan. 10, 2015
Band Reject Filter	Wainwright Instruments	WRCG2400/2 485-2375/2510 -60/11SS	N/A	Jan. 11, 2014	Jan. 10, 2015



### 3. OPERATION OF EUT DURING TESTING

#### 3.1.Operating Mode

The mode is used: **1.802.11b Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

**2.802.11g Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

**3.802.11n (20MHz) Transmitting mode**

Low Channel: 2412MHz

Middle Channel: 2437MHz

High Channel: 2462MHz

**4.802.11n (40MHz) Transmitting mode**

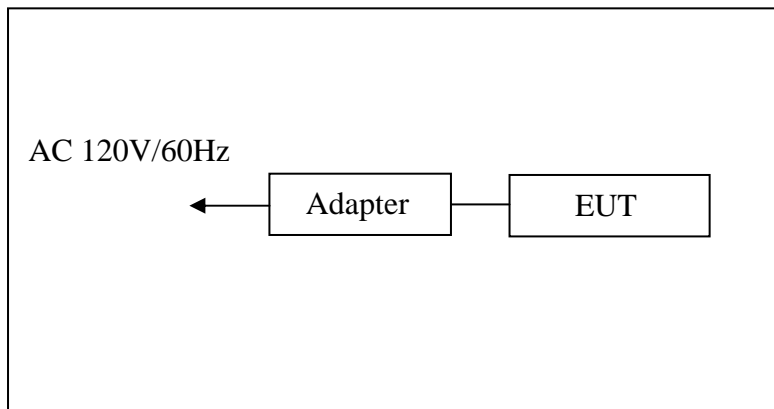
Low Channel: 2422MHz

Middle Channel: 2437MHz

High Channel: 2452MHz

#### 5. Charging

#### 3.2.Configuration and peripherals

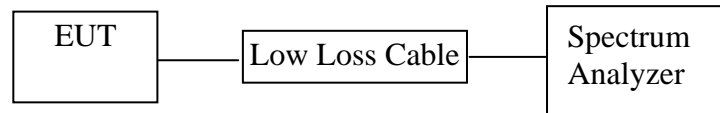


#### 4. TEST PROCEDURES AND RESULTS

<b>FCC Rules</b>	<b>Description of Test</b>	<b>Result</b>
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 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.

### 5.4. 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 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

### 5.5. Test Procedure

1. Set resolution bandwidth (RBW) = 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

## 5.6. Test Result

The test was performed with 802.11b			
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	10.16	> 0.5MHz
Middle	2437	10.16	> 0.5MHz
High	2462	10.16	> 0.5MHz

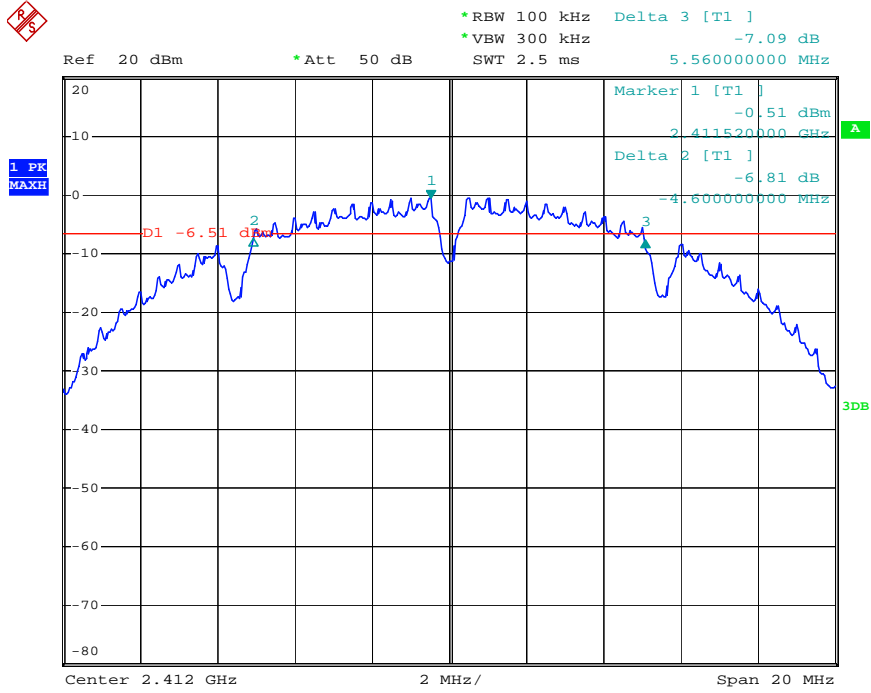
The test was performed with 802.11g			
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	16.64	> 0.5MHz
Middle	2437	16.64	> 0.5MHz
High	2462	16.68	> 0.5MHz

The test was performed with 802.11n (Bandwidth: 20 MHz)			
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2412	17.88	> 0.5MHz
Middle	2437	17.92	> 0.5MHz
High	2462	17.88	> 0.5MHz

The test was performed with 802.11n (Bandwidth: 40 MHz)			
Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
Low	2422	36.40	> 0.5MHz
Middle	2437	36.56	> 0.5MHz
High	2452	36.64	> 0.5MHz

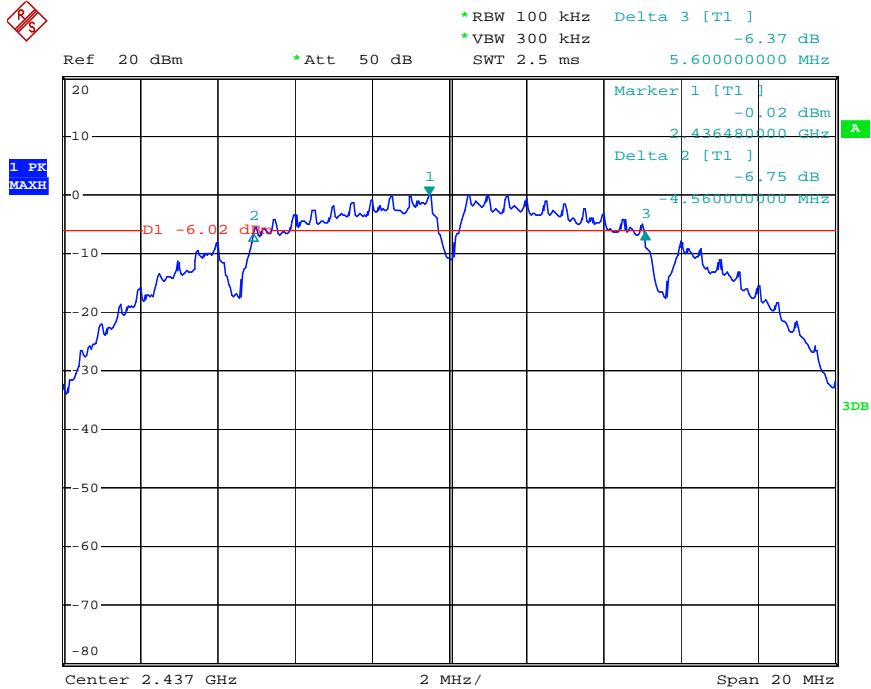
The spectrum analyzer plots are attached as below.

### 802.11b Channel Low 2412MHz



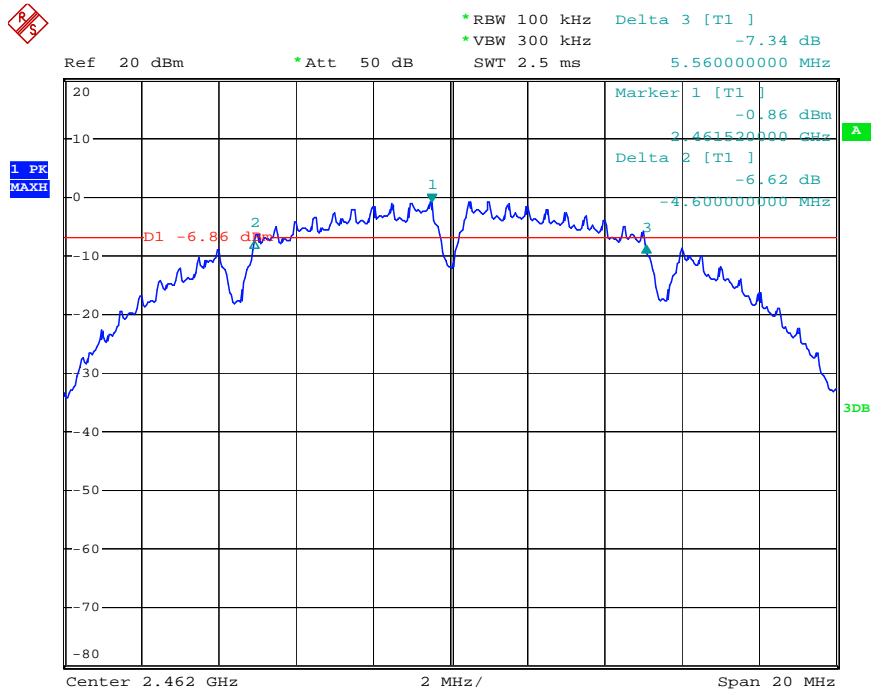
Date: 30.JUL.2014 08:56:50

### 802.11b Channel Middle 2437MHz



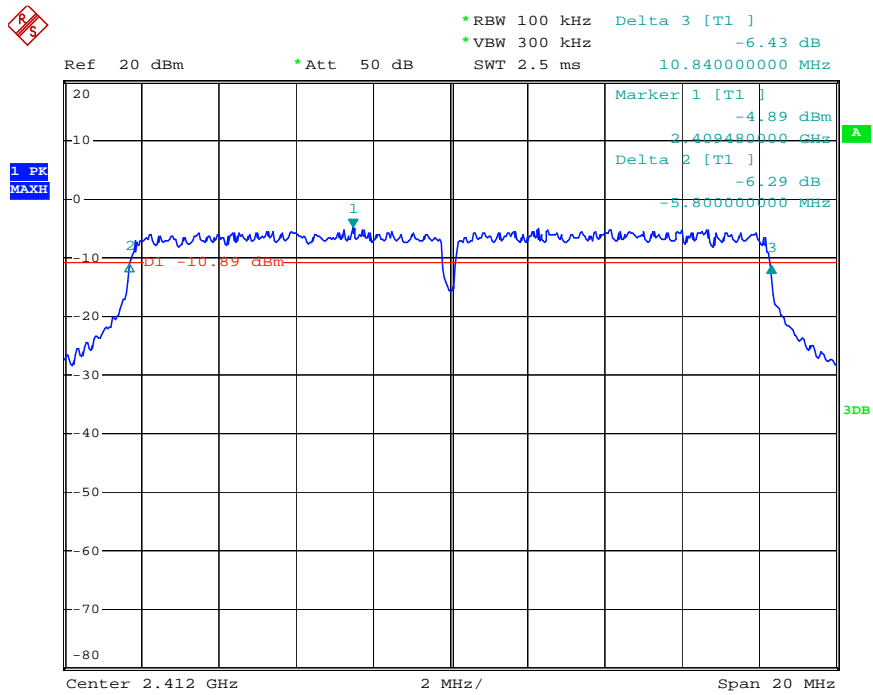
Date: 30.JUL.2014 09:00:46

### 802.11b Channel High 2462MHz



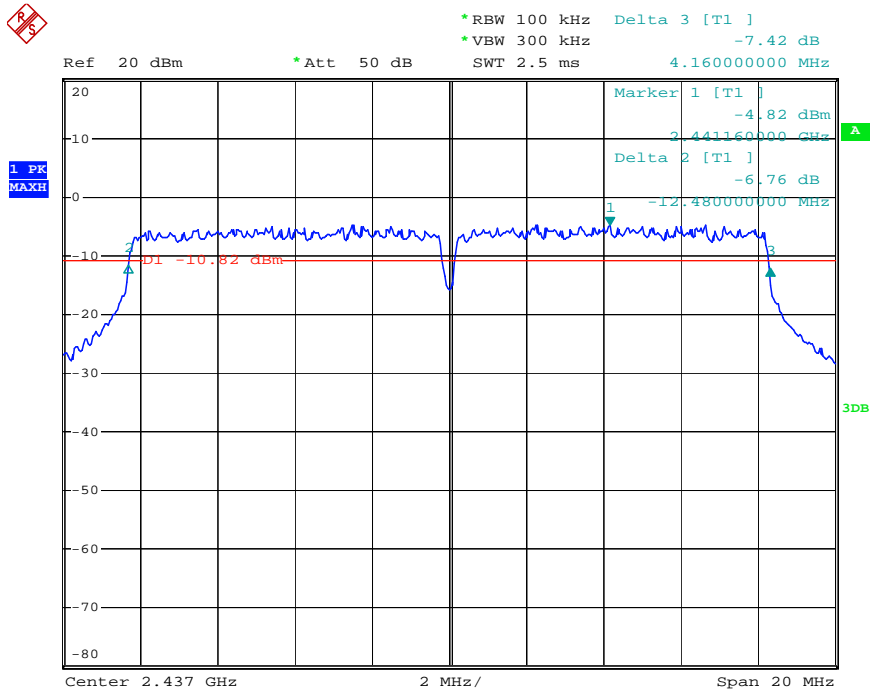
Date: 30.JUL.2014 09:04:02

### 802.11g Channel Low 2412MHz



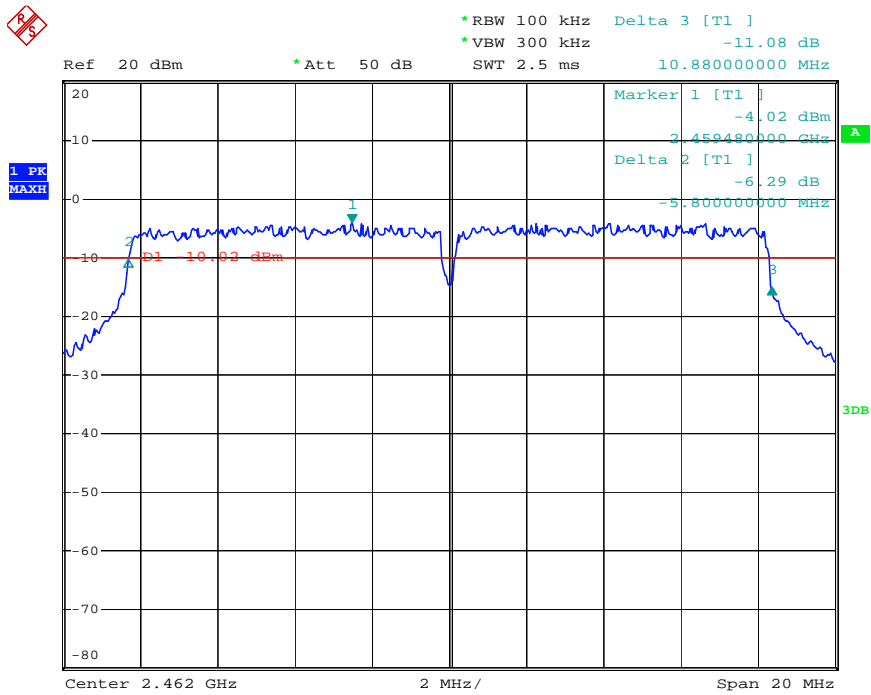
Date: 30.JUL.2014 09:16:17

### 802.11g Channel Middle 2437MHz



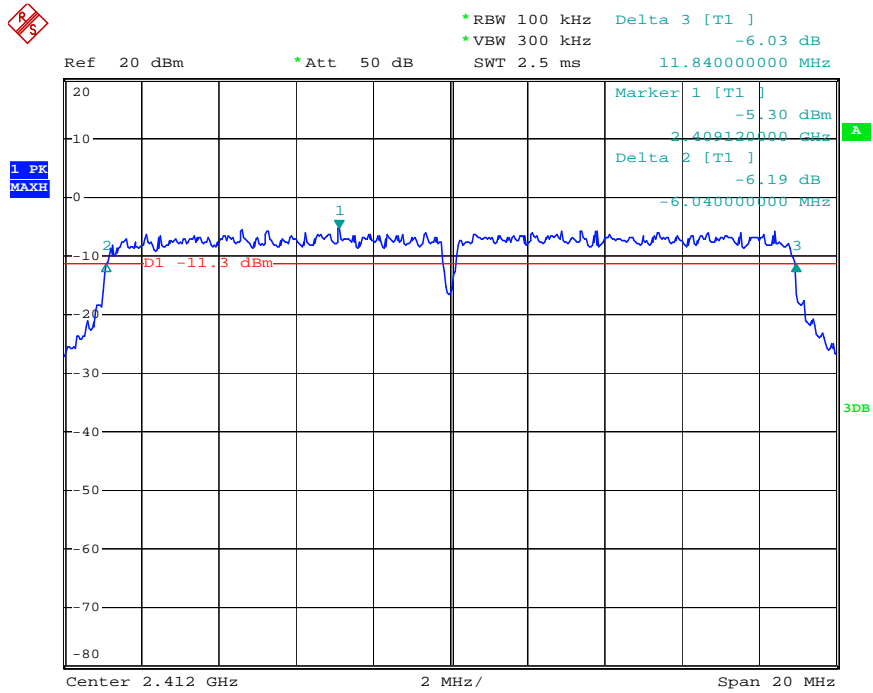
Date: 30.JUL.2014 09:13:41

### 802.11g Channel High 2462MHz



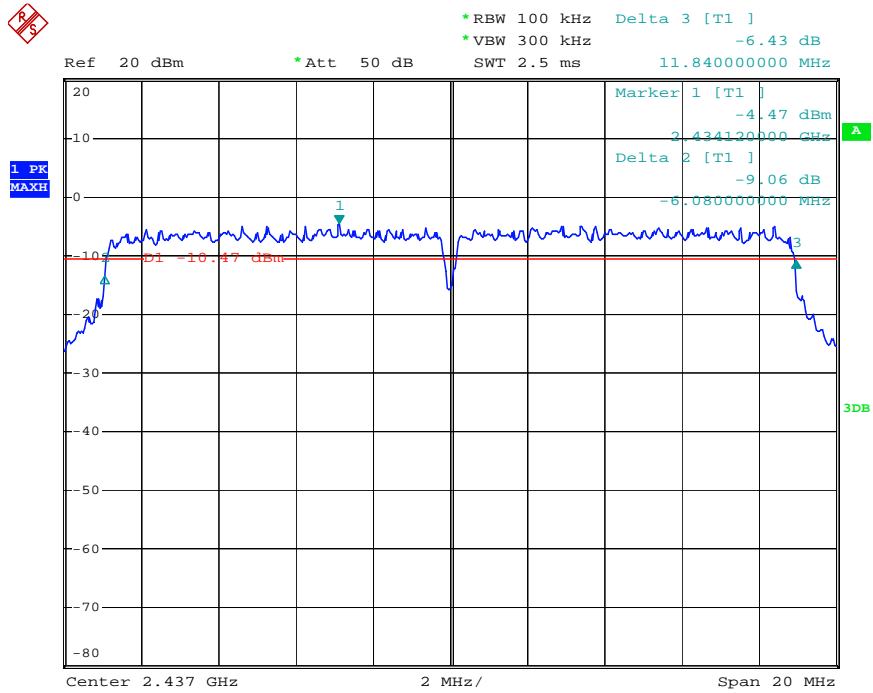
Date: 30.JUL.2014 09:11:26

### 802.11n Channel Low 2412MHz (20MHz)



Date: 30.JUL.2014 09:19:27

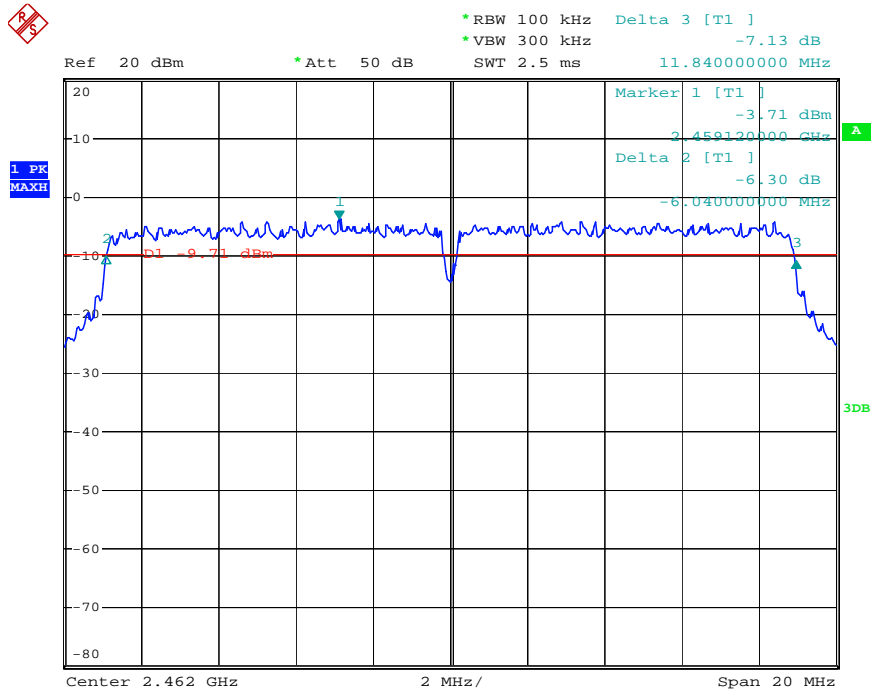
### 802.11n Channel Middle 2437MHz(20MHz)



Date: 30.JUL.2014 09:21:34

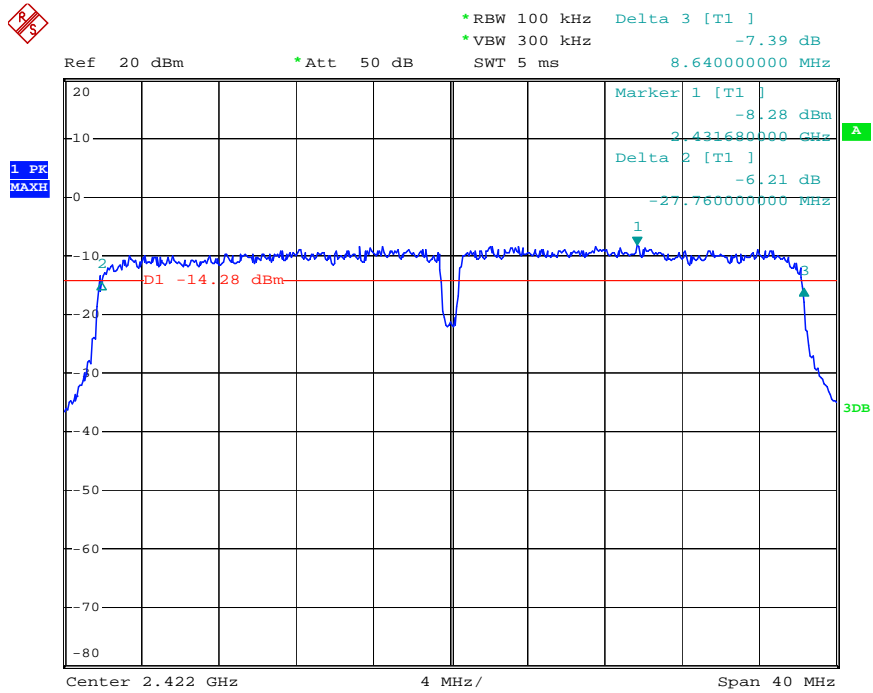


### 802.11n Channel High 2462MHz(20MHz)



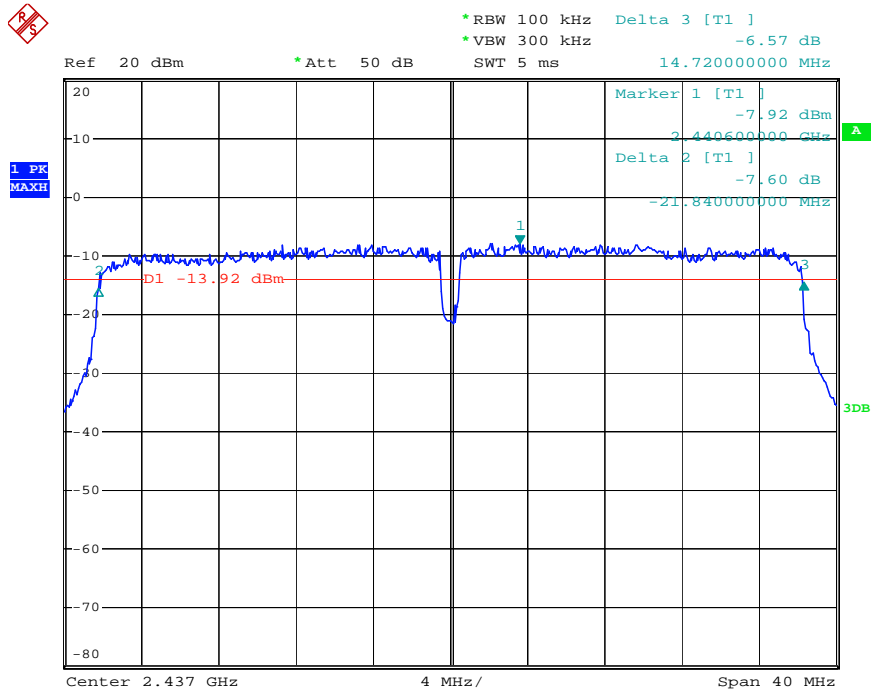
Date: 30.JUL.2014 09:23:40

### 802.11n Channel Low 2422MHz (40MHz)



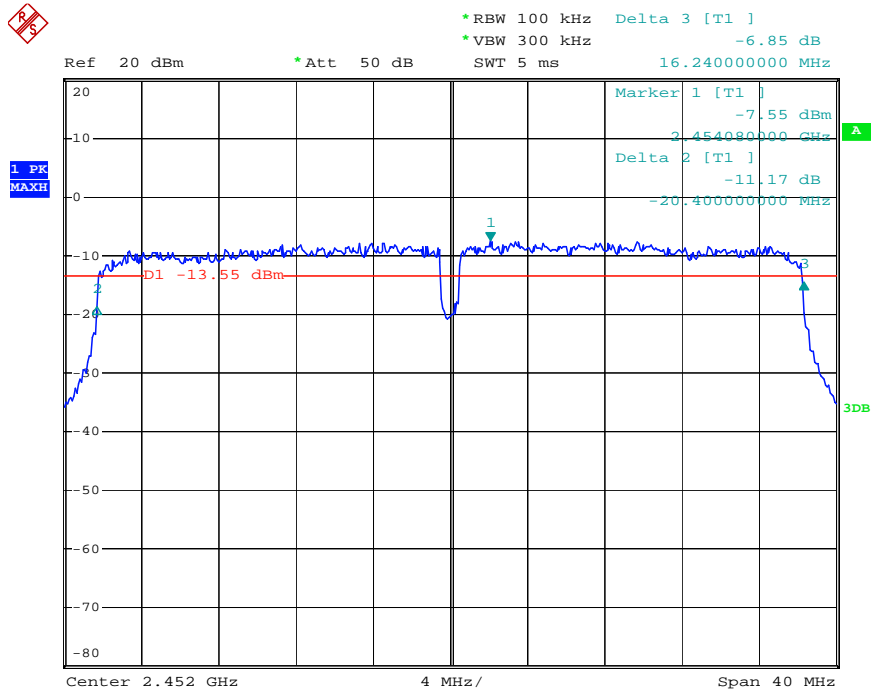
Date: 30.JUL.2014 09:26:38

### 802.11n Channel Middle 2437MHz(40MHz)



Date: 30.JUL.2014 09:28:50

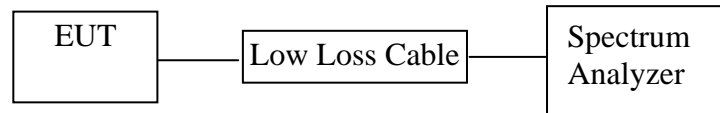
### 802.11n Channel High 2452MHz(40MHz)



Date: 30.JUL.2014 09:31:08

## 6. MAXIMUM 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 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.

### 6.4. 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 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz TX frequency to transmit.

### 6.5. Test Procedure

6.5.1. The EUT was tested according to DTS test procedure of Jun 05, 2014 KDB558074 D01 DTS Meas Guidance v03r02 for compliance to FCC 47CFR 15.247 requirements.

6.5.2. The transmitter output was connected to the spectrum analyzer through a low loss cable.

6.5.3. Set RBW of spectrum analyzer to 1-5% of the OBW, not to exceed 1 MHz and  $VBW \geq 3 \times RBW$ .

6.5.4. Measurement the maximum Average output power.

## 6.6.Test Result

The test was performed with 802.11b				
Channel	Frequency (MHz)	Average Output Power(dBm)	Average Output Power(mW)	Limits dBm / W
Low	2412	16.54	45.08	30 dBm / 1 W
Middle	2437	16.20	41.69	30 dBm / 1 W
High	2462	16.54	45.08	30 dBm / 1 W

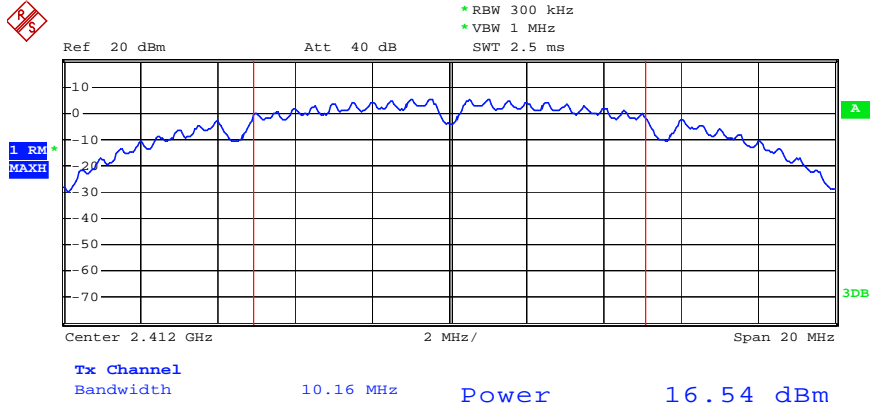
The test was performed with 802.11g				
Channel	Frequency (MHz)	Average Output Power(dBm)	Average Output Power(mW)	Limits dBm / W
Low	2412	15.36	34.36	30 dBm / 1 W
Middle	2437	15.21	33.19	30 dBm / 1 W
High	2462	15.43	34.91	30 dBm / 1 W

The test was performed with 802.11n (20MHz)				
Channel	Frequency (MHz)	Average Output Power(dBm)	Average Output Power(mW)	Limits dBm / W
Low	2412	14.50	28.18	30 dBm / 1 W
Middle	2437	14.80	30.20	30 dBm / 1 W
High	2462	14.37	27.35	30 dBm / 1 W

The test was performed with 802.11n (40MHz)				
Channel	Frequency (MHz)	Average Output Power(dBm)	Average Output Power(mW)	Limits dBm / W
Low	2422	13.12	20.51	30 dBm / 1 W
Middle	2437	13.15	20.65	30 dBm / 1 W
High	2452	13.16	20.70	30 dBm / 1 W

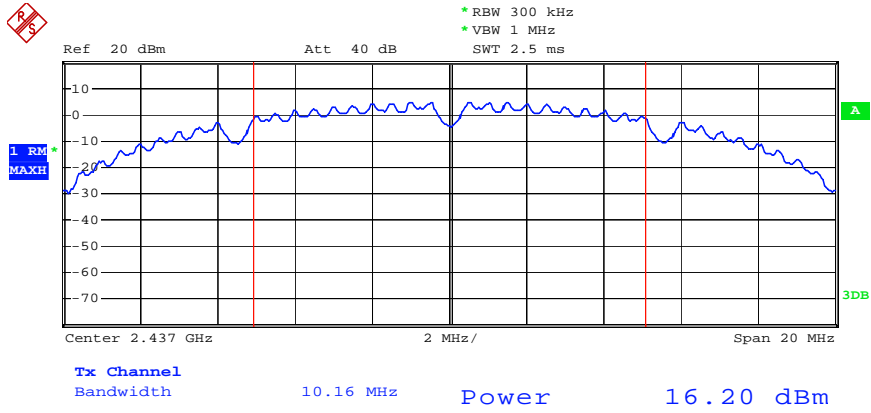
The spectrum analyzer plots are attached as below.

### 802.11b Channel Low 2412MHz



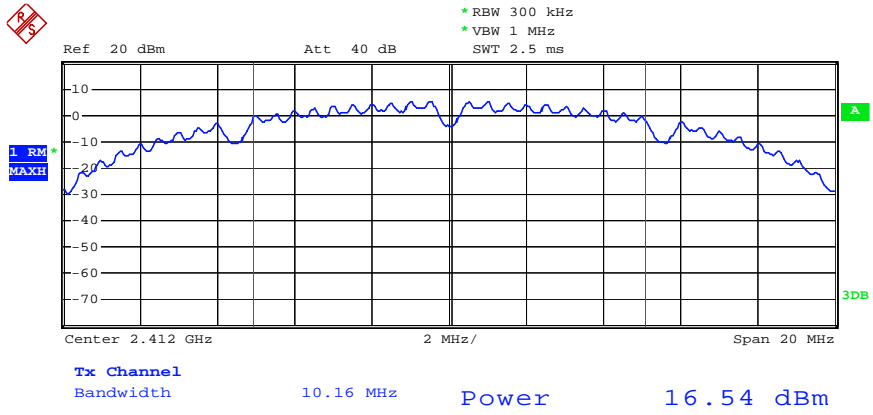
Date: 30.JUL.2014 11:24:29

### 802.11b Channel Middle 2437MHz



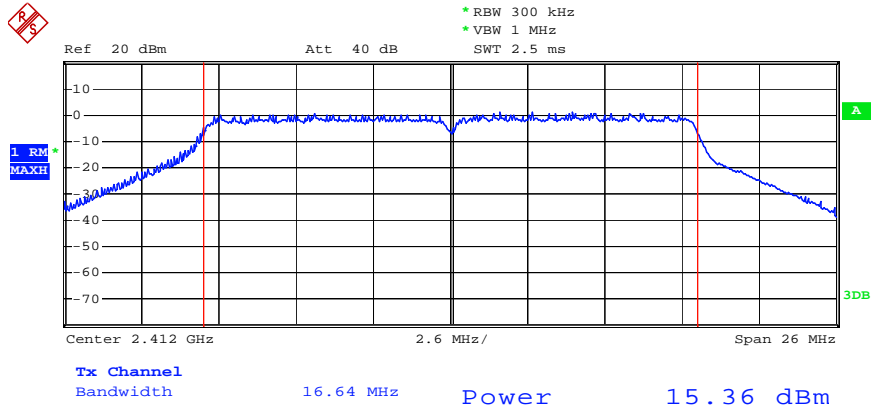
Date: 30.JUL.2014 11:24:57

### 802.11b Channel High 2462MHz



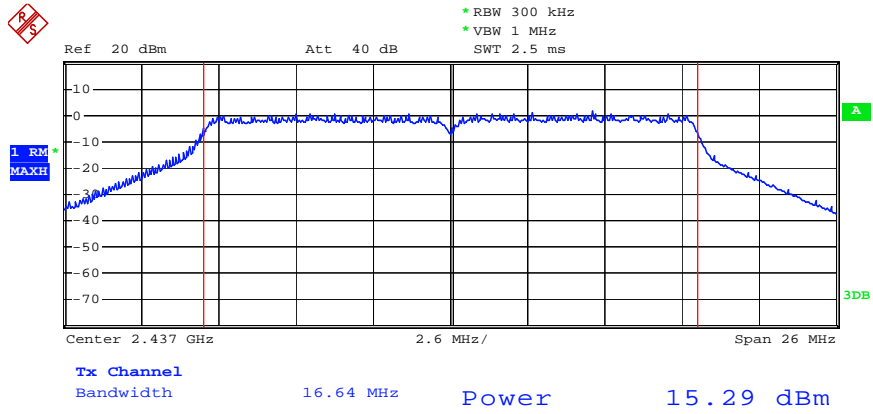
Date: 30.JUL.2014 11:24:29

### 802.11g Channel Low 2412MHz



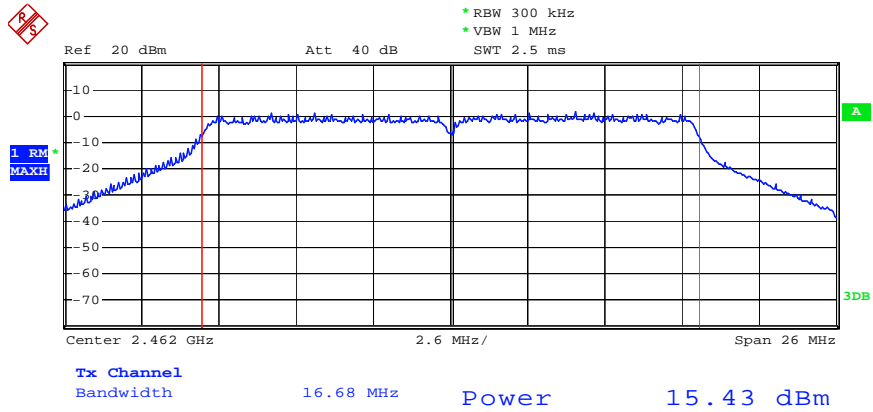
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### 802.11g Channel Middle 2437MHz



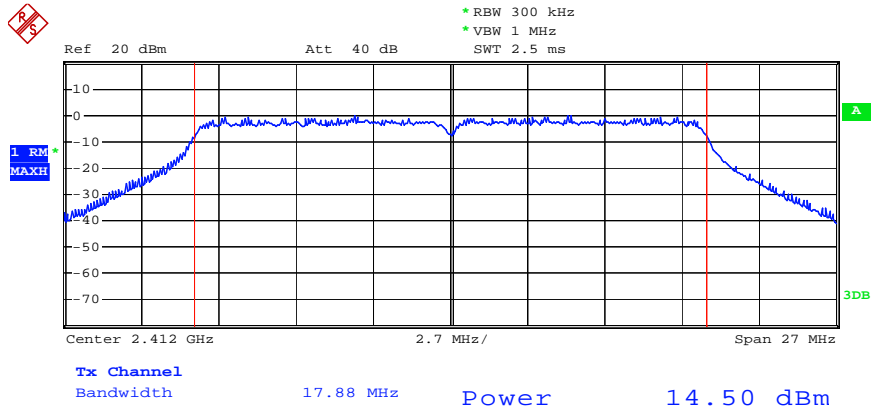
Date: 30.JUL.2014 11:22:10

### 802.11g Channel High 2462MHz



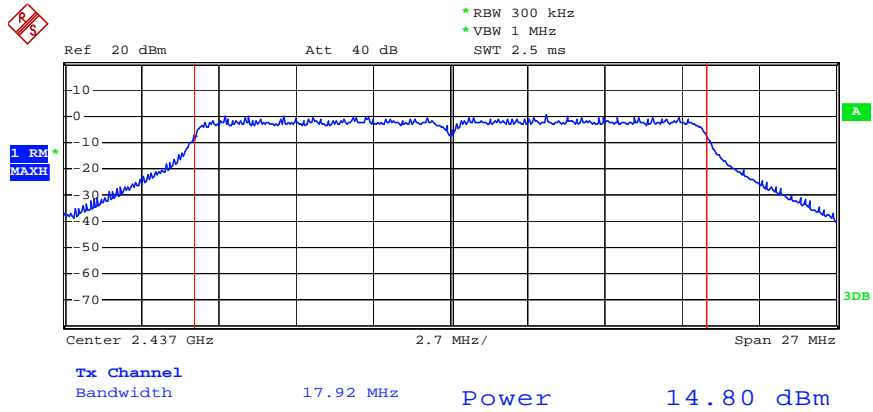
Date: 30.JUL.2014 11:21:05

### 802.11n Channel Low 2412MHz (20MHz)



Date: 30.JUL.2014 11:14:05

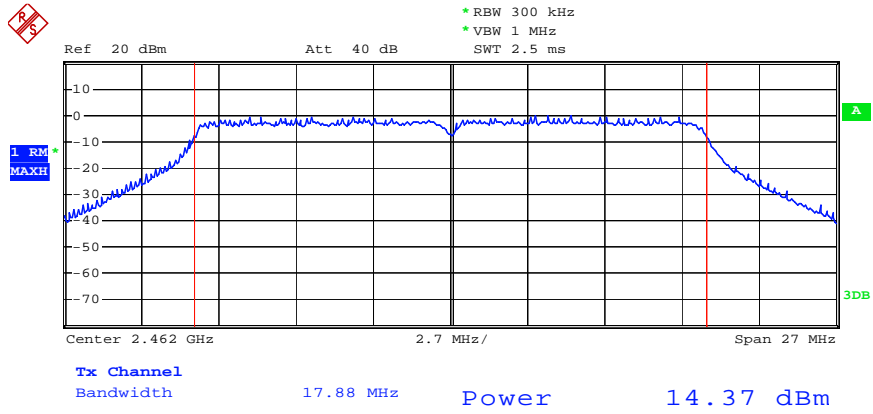
### 802.11n Channel Middle 2437MHz (20MHz)



Date: 30.JUL.2014 11:15:21

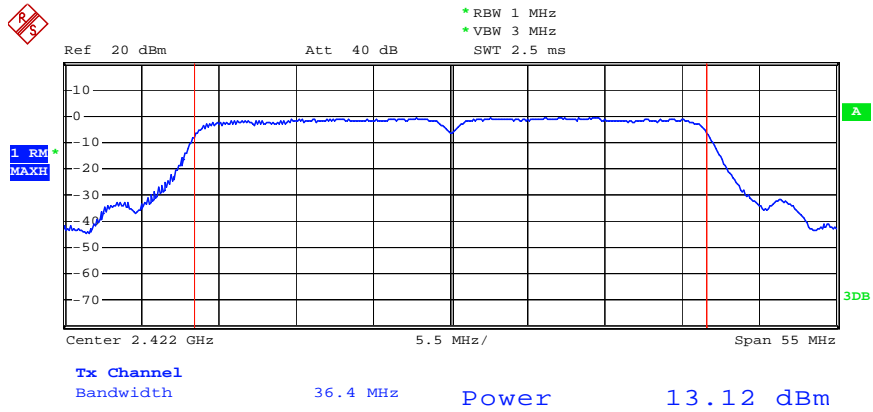


### 802.11n Channel High 2462MHz (20MHz)



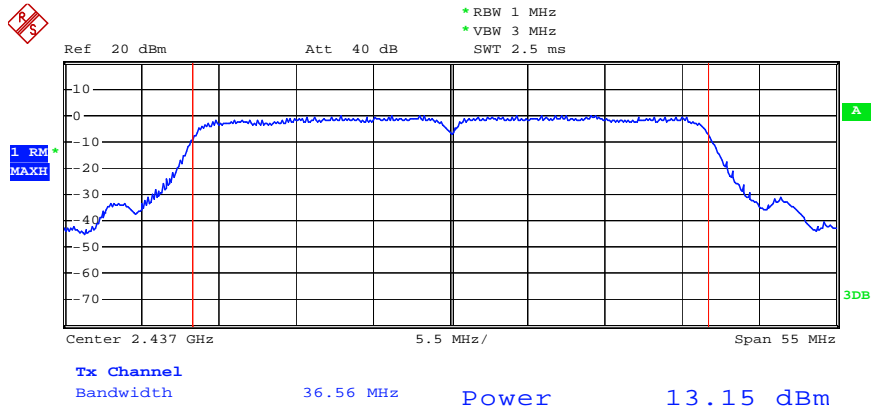
Date: 30.JUL.2014 11:16:23

### 802.11n Channel Low 2422MHz (40MHz)



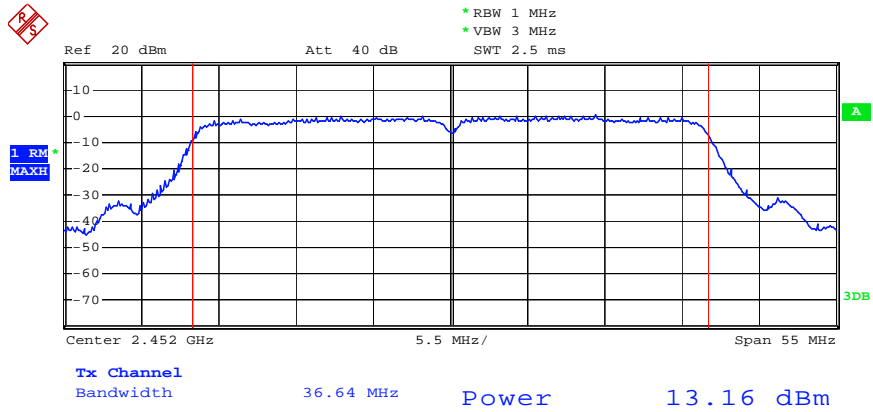
Date: 30.JUL.2014 11:11:43

### 802.11n Channel Middle 2437MHz (40MHz)



Date: 30.JUL.2014 11:09:40

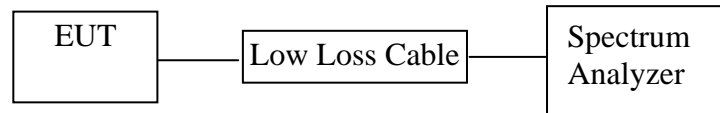
### 802.11n Channel High 2452MHz (40MHz)



Date: 30.JUL.2014 11:08:22

## 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 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.

### 7.4. 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 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz 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. Measurement Procedure PKPSD:

This procedure must be used if maximum peak conducted output power was used to demonstrate compliance to the fundamental output power limit, and is optional if the maximum (average) conducted output power was used to demonstrate compliance.

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .

4. Set the VBW  $\geq 3 \times$  RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

7.5.3.Measurement the maximum power spectral density.

7.6.Test Result

The test was performed with 802.11b			
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)
Low	2412	-17.27	8 dBm
Middle	2437	-17.02	8 dBm
High	2462	-14.84	8 dBm

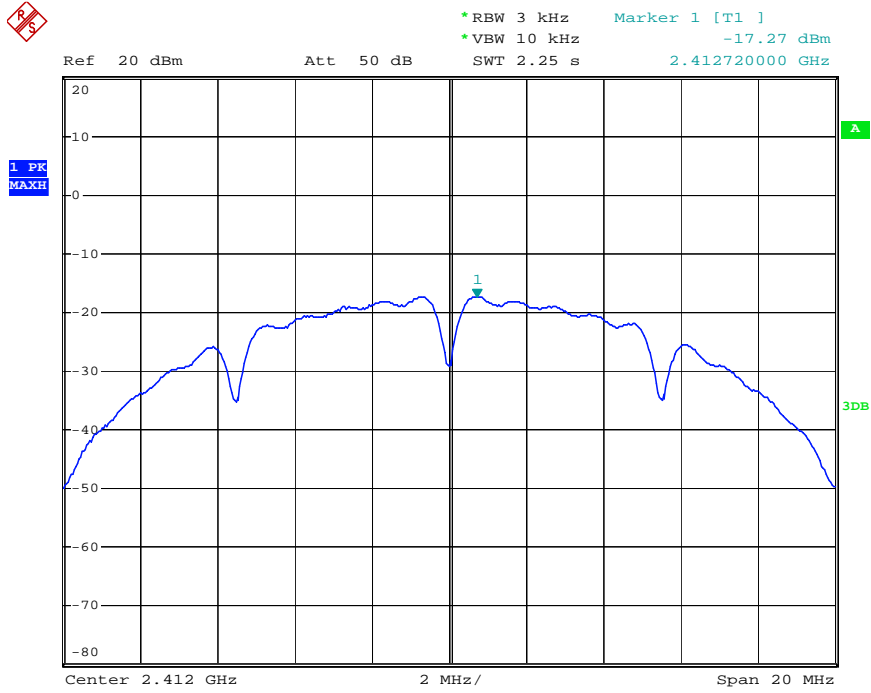
The test was performed with 802.11g			
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)
Low	2412	-20.88	8 dBm
Middle	2437	-19.67	8 dBm
High	2462	-19.15	8 dBm

The test was performed with 802.11n (20MHz)			
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)
Low	2412	-19.95	8 dBm
Middle	2437	-18.81	8 dBm
High	2462	-19.19	8 dBm

The test was performed with 802.11n (40MHz)			
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limits (dBm)
Low	2422	-21.82	8 dBm
Middle	2437	-21.65	8 dBm
High	2452	-19.26	8 dBm

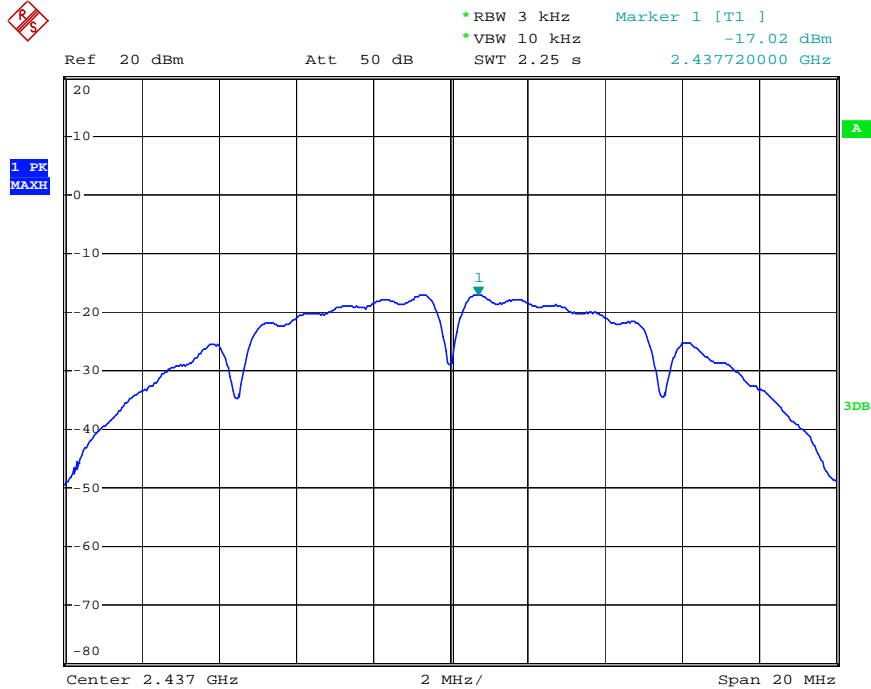
The spectrum analyzer plots are attached as below.

### 802.11b Channel Low 2412MHz



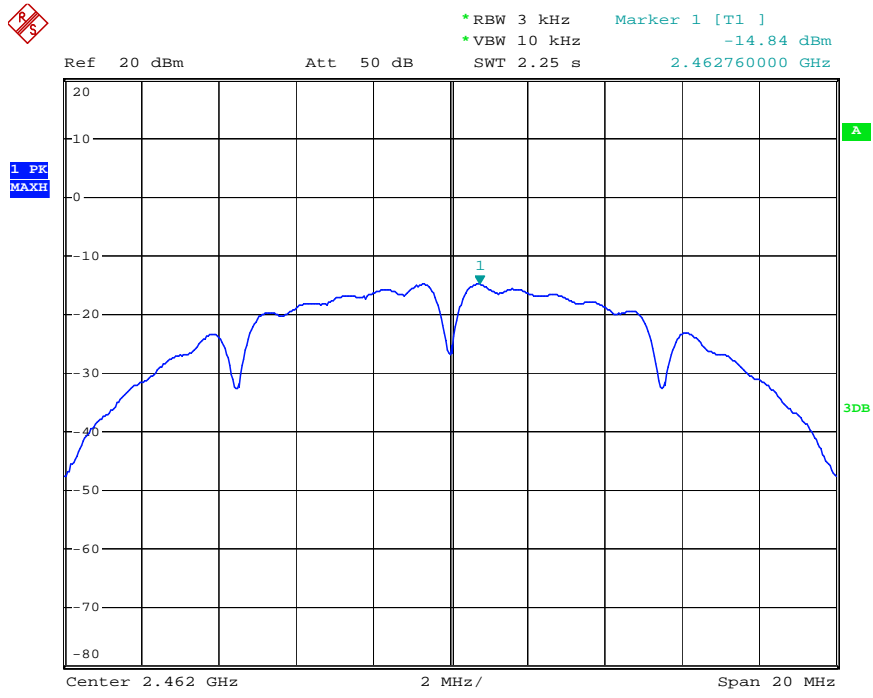
Date: 30.JUL.2014 12:17:49

### 802.11b Channel Middle 2437MHz



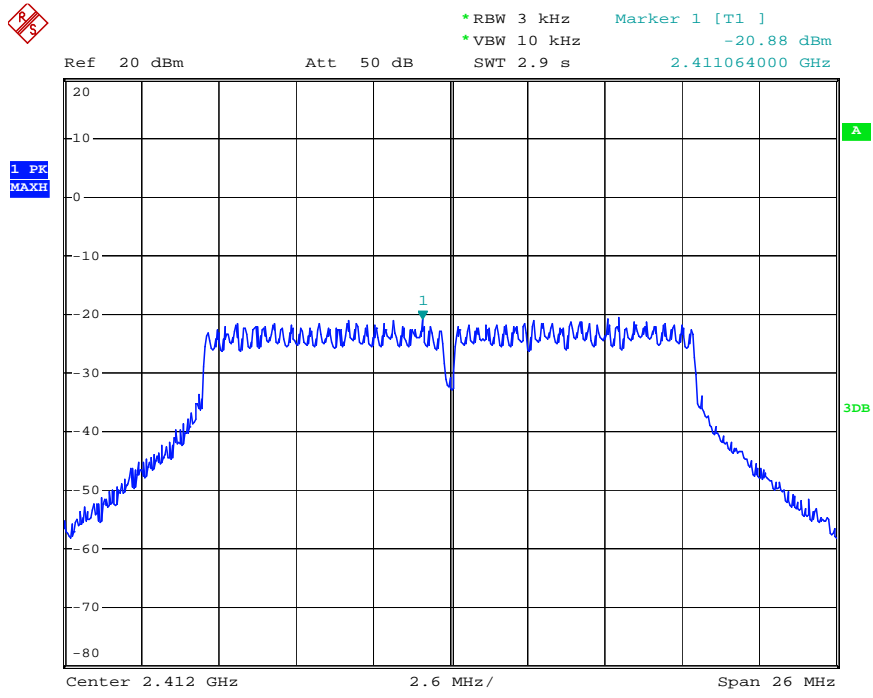
Date: 30.JUL.2014 12:17:12

### 802.11b Channel High 2462MHz



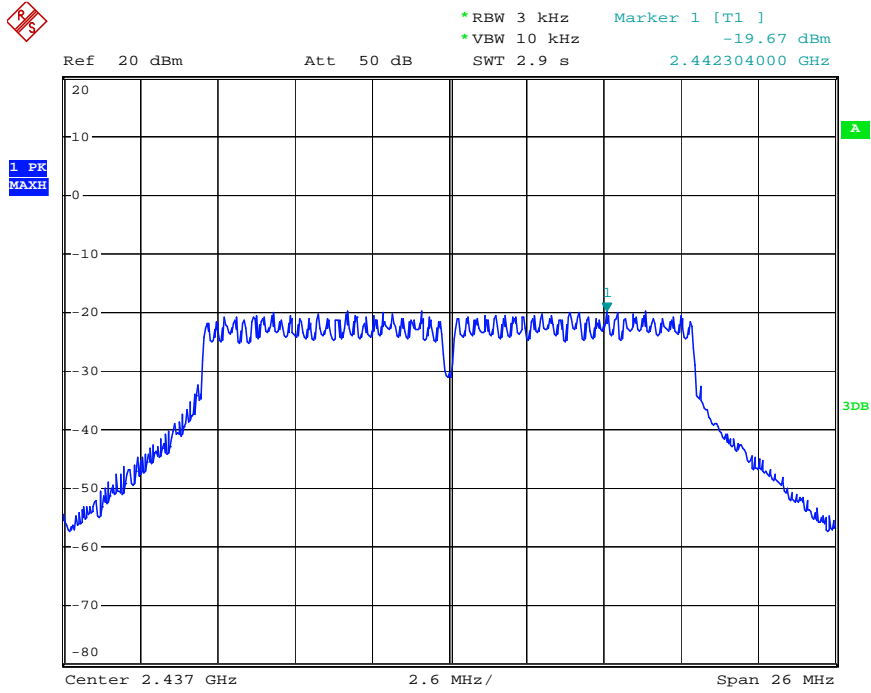
Date: 30.JUL.2014 12:14:27

### 802.11g Channel Low 2412MHz



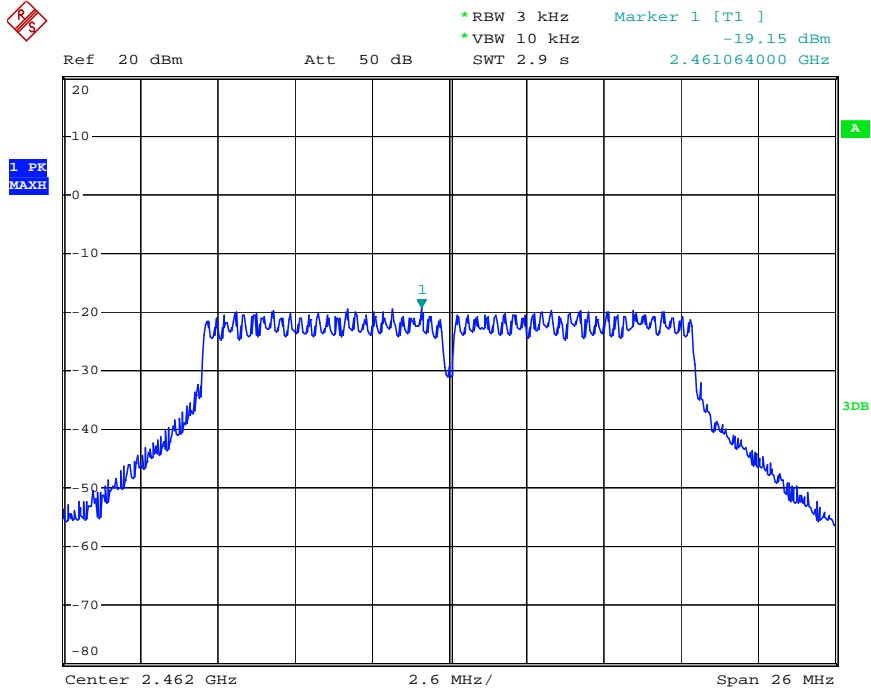
Date: 30.JUL.2014 12:29:00

### 802.11g Channel Middle 2437MHz



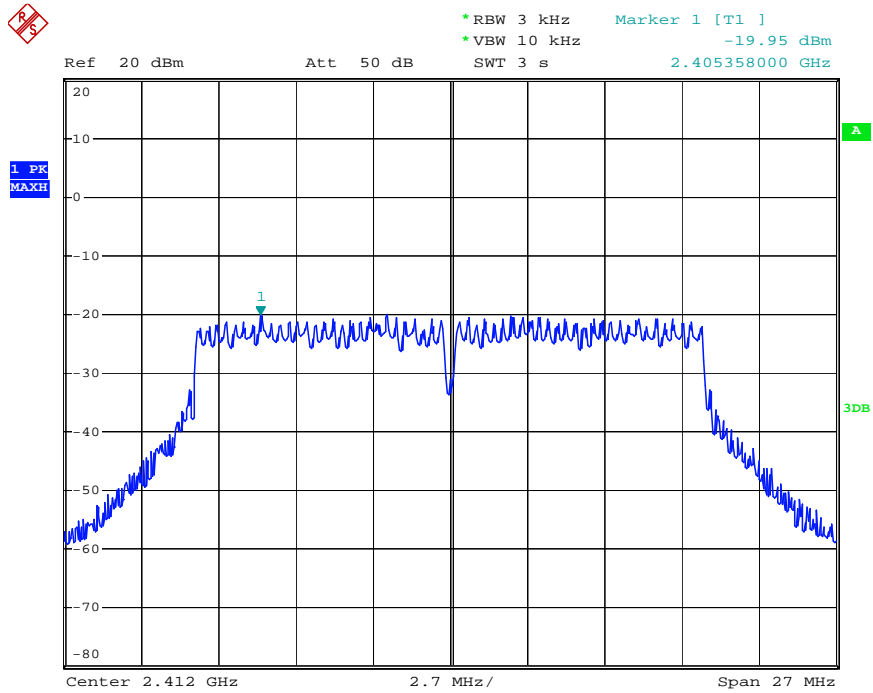
Date: 30.JUL.2014 12:29:35

### 802.11g Channel High 2462MHz



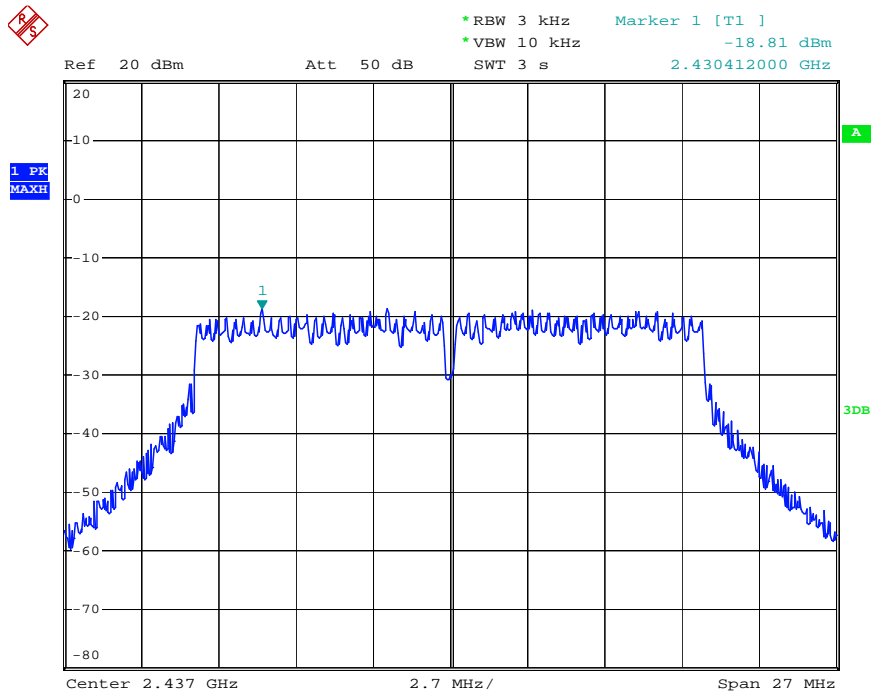
Date: 30.JUL.2014 12:30:07

### 802.11n Channel Low 2412MHz (20MHz)



Date: 30.JUL.2014 12:57:50

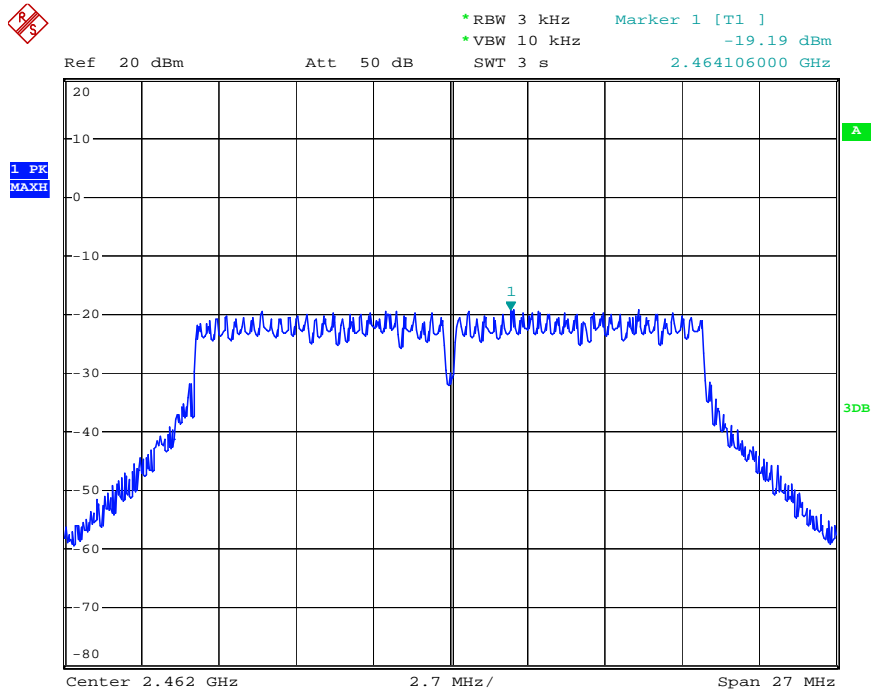
### 802.11n Channel Middle 2437MHz (20MHz)



Date: 30.JUL.2014 12:58:22

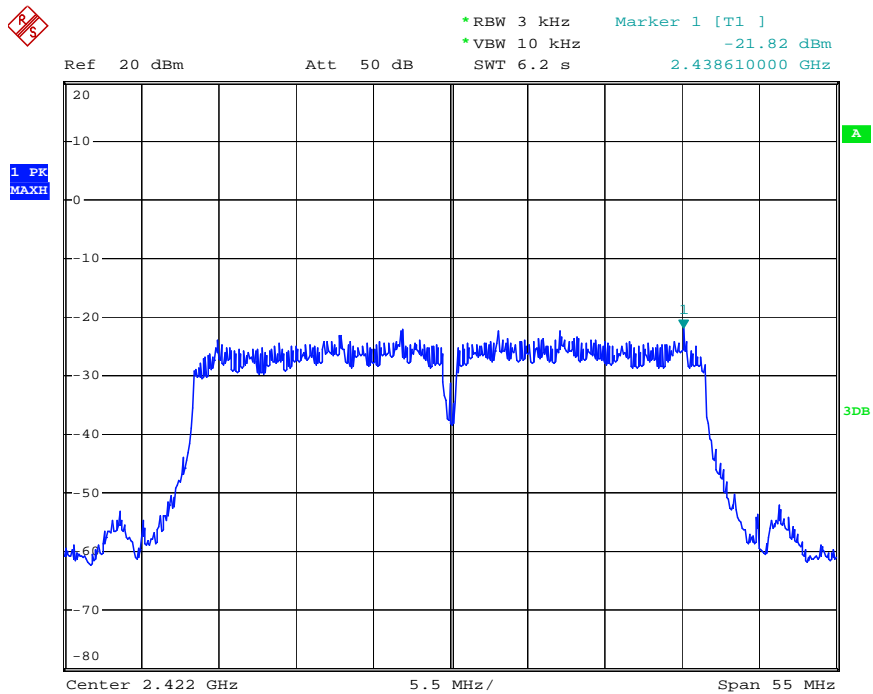


### 802.11n Channel High 2462MHz(20MHz)



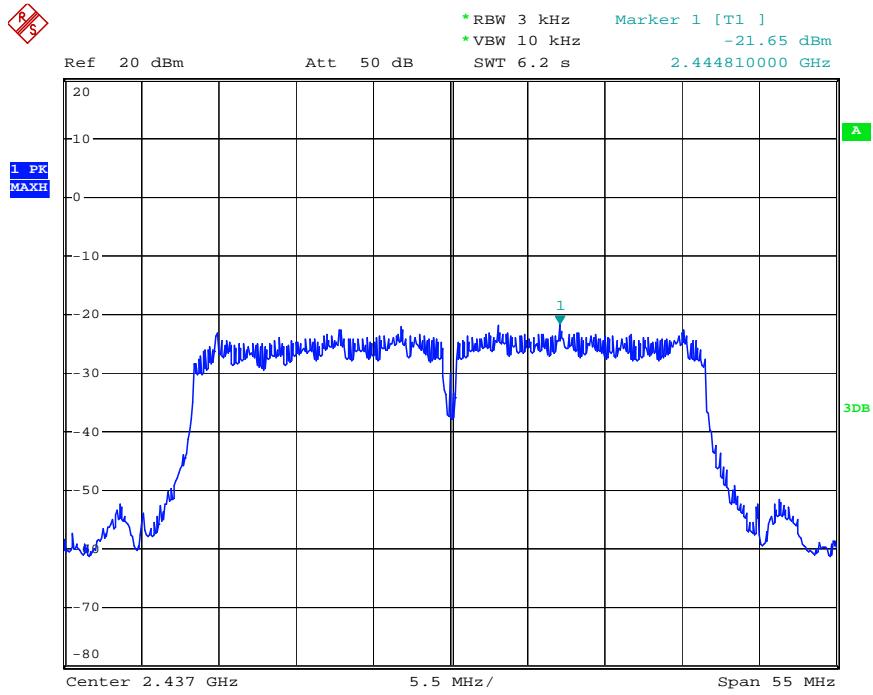
Date: 30.JUL.2014 12:58:49

### 802.11n Channel Low 2422MHz (40MHz)



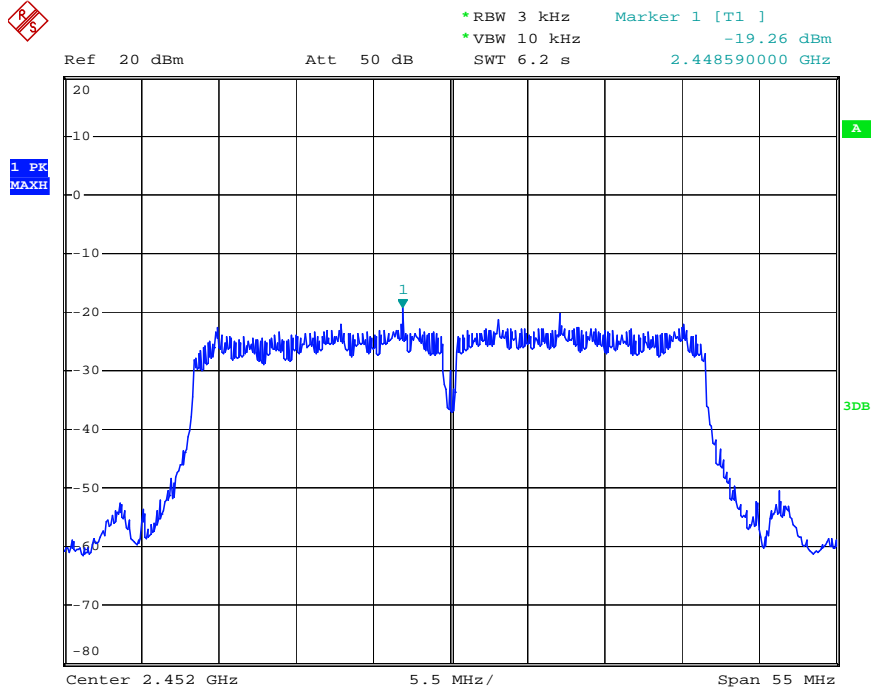
Date: 30.JUL.2014 13:07:09

### 802.11n Channel Middle 2437MHz(40MHz)



Date: 30.JUL.2014 13:06:17

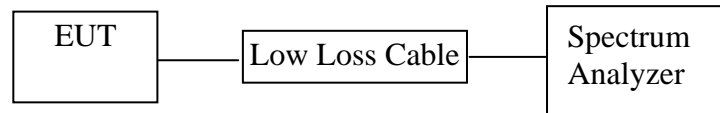
### 802.11n Channel High 2452MHz(40MHz)



Date: 30.JUL.2014 13:00:15

## 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 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.

### 8.4. 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 2412-2462 and 2422-2452MHz MHz. We select 2412MHz, 2462MHz and 2422MHz, 2452MHz 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:

RBW=1MHz, VBW=1MHz

8.5.7. The band edges was measured and recorded.

### 8.6. Test Result

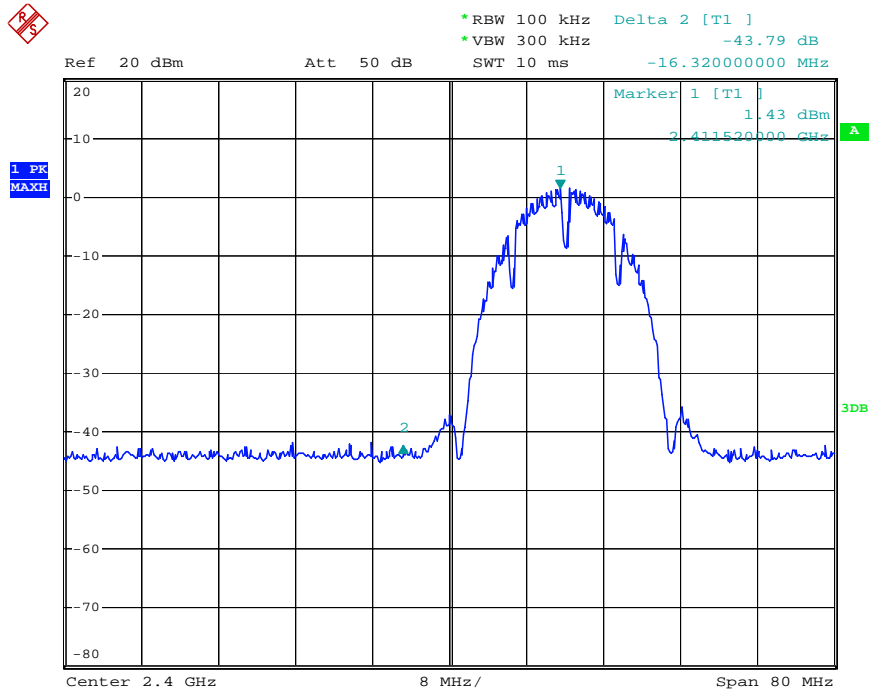
The test was performed with 802.11b		
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2412	43.79	> 20dBc
2462	43.26	> 20dBc

The test was performed with 802.11g		
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2412	36.10	> 20dBc
2462	34.78	> 20dBc

The test was performed with 802.11n (20MHz)		
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2412	35.91	> 20dBc
2462	35.99	> 20dBc

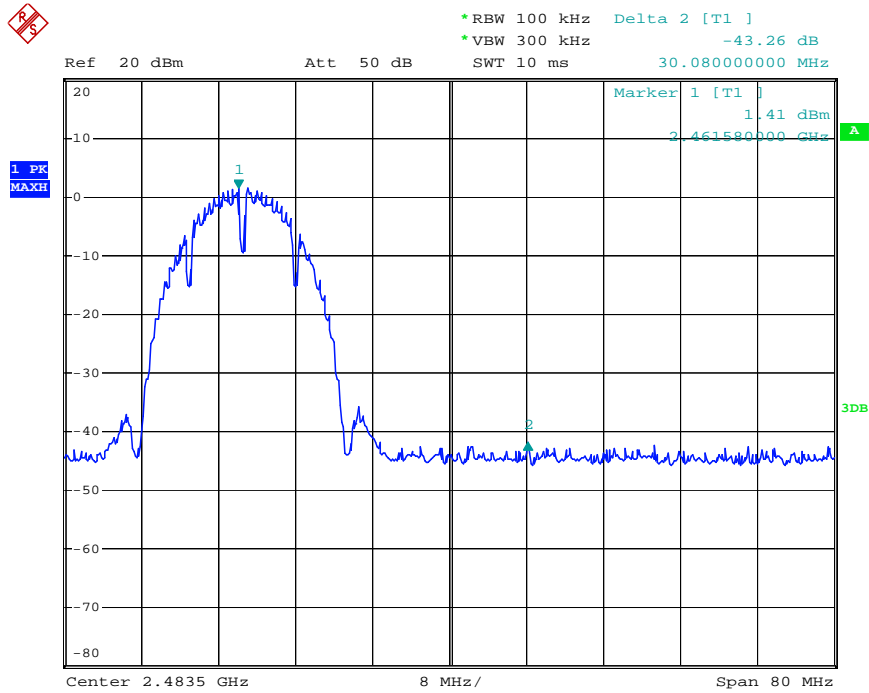
The test was performed with 802.11n (40MHz)		
Frequency (MHz)	Result of Band Edge (dBc)	Limit of Band Edge (dBc)
2422	29.65	> 20dBc
2452	34.23	> 20dBc

### 802.11b Channel Low 2412MHz



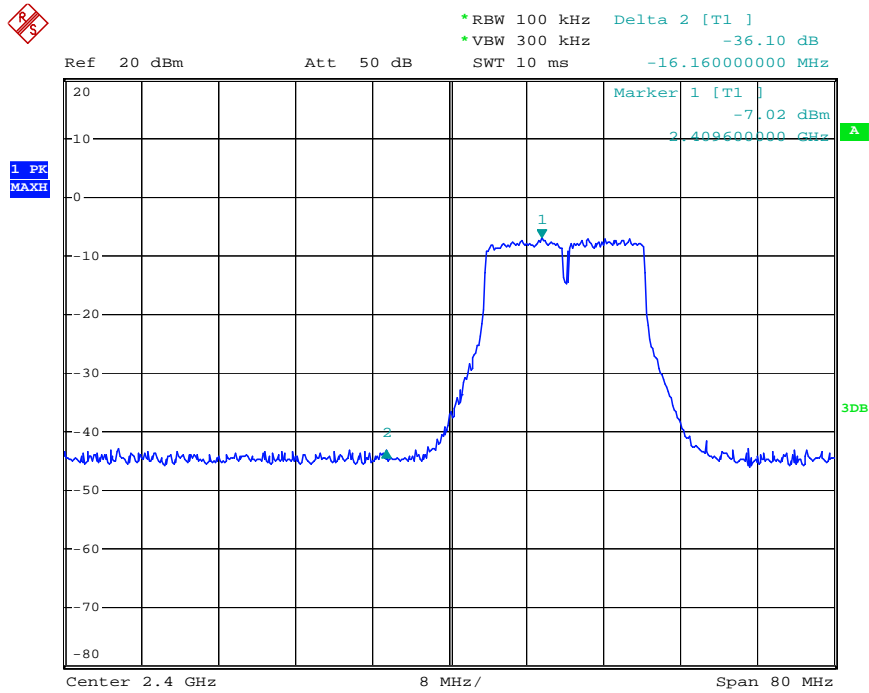
Date: 30.JUL.2014 10:33:40

### 802.11b Channel High 2462MHz



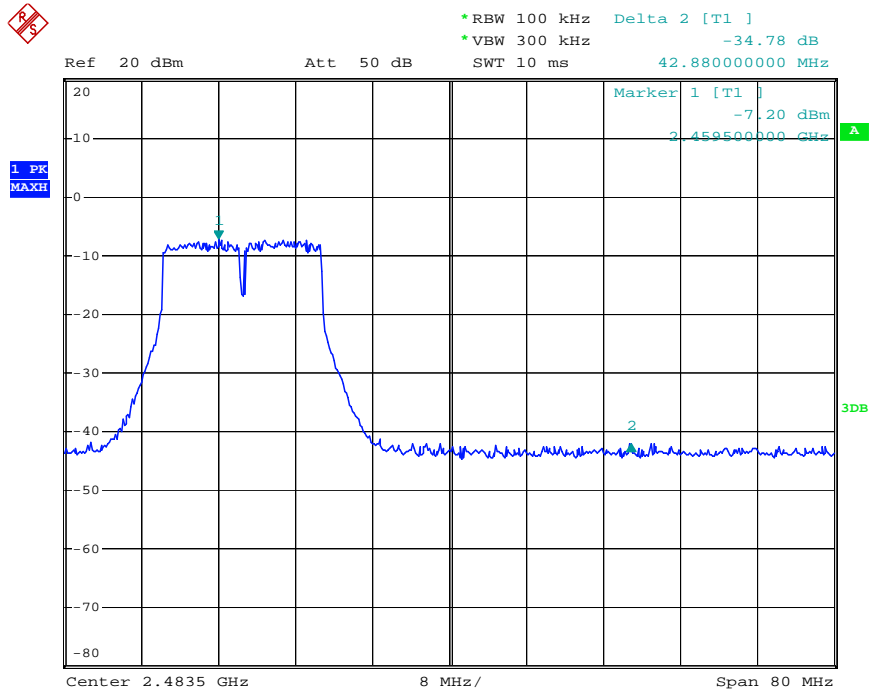
Date: 30.JUL.2014 10:34:29

### 802.11g Channel Low 2412MHz



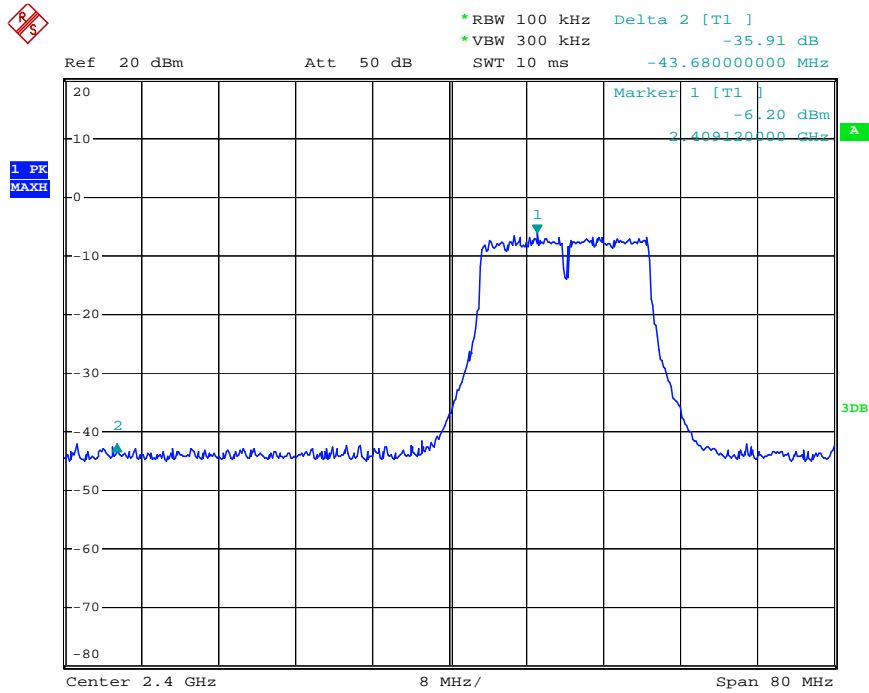
Date: 30.JUL.2014 10:39:04

### 802.11g Channel High 2462MHz



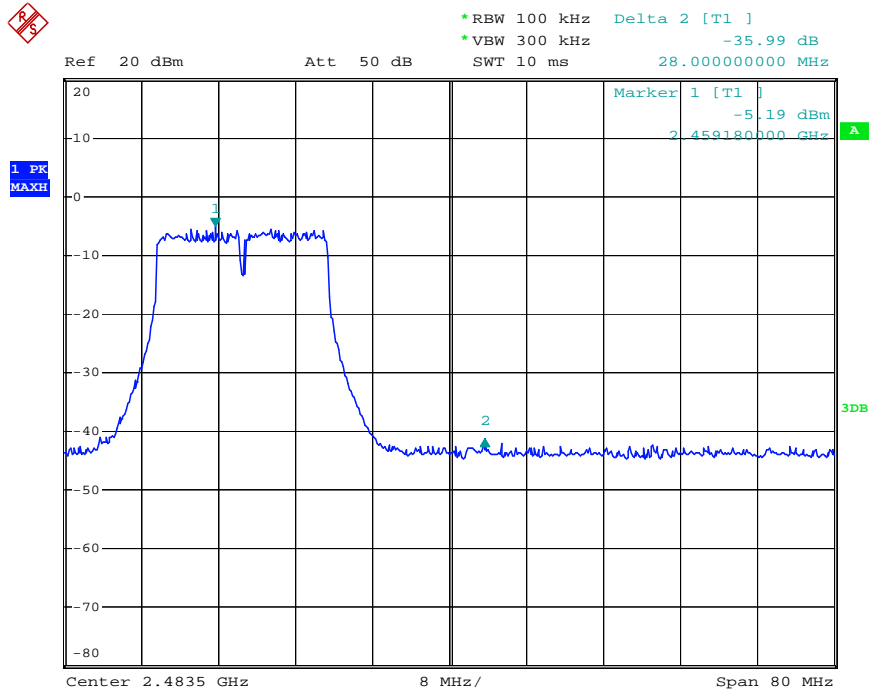
Date: 30.JUL.2014 10:37:11

### 802.11n Channel Low 2412MHz (20MHz)



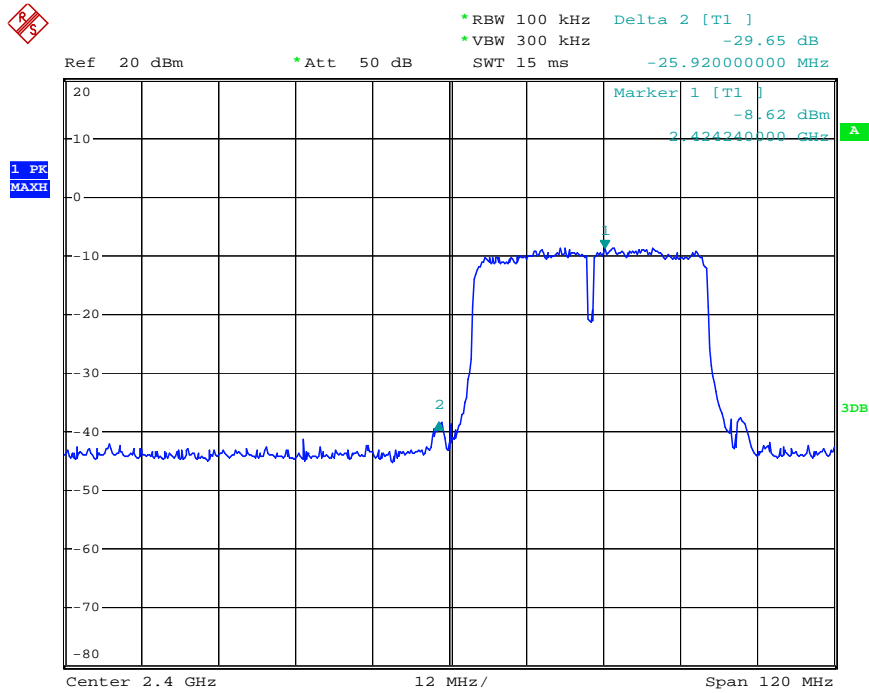
Date: 30.JUL.2014 10:40:20

### 802.11n Channel High 2462MHz (20MHz)



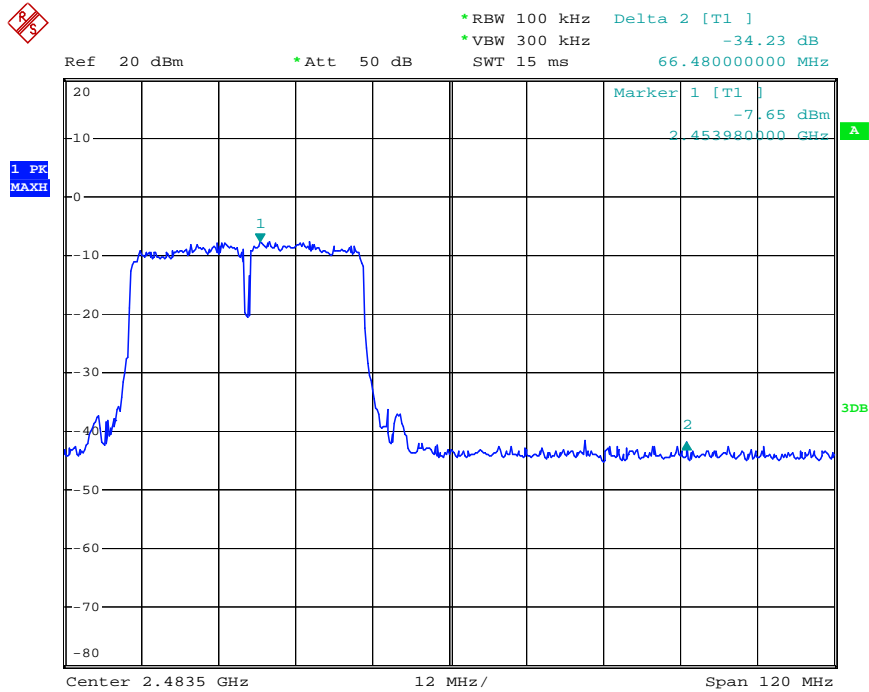
Date: 30.JUL.2014 10:42:15

### 802.11n Channel Low 2422MHz (40MHz)



Date: 30.JUL.2014 09:39:15

### 802.11n Channel High 2452MHz (40MHz)



Date: 30.JUL.2014 09:37:07



### Radiated Band Edge Result

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:

$$\text{Result} = \text{Reading} + \text{Corrected Factor}$$

3. Display the measurement of peak values.



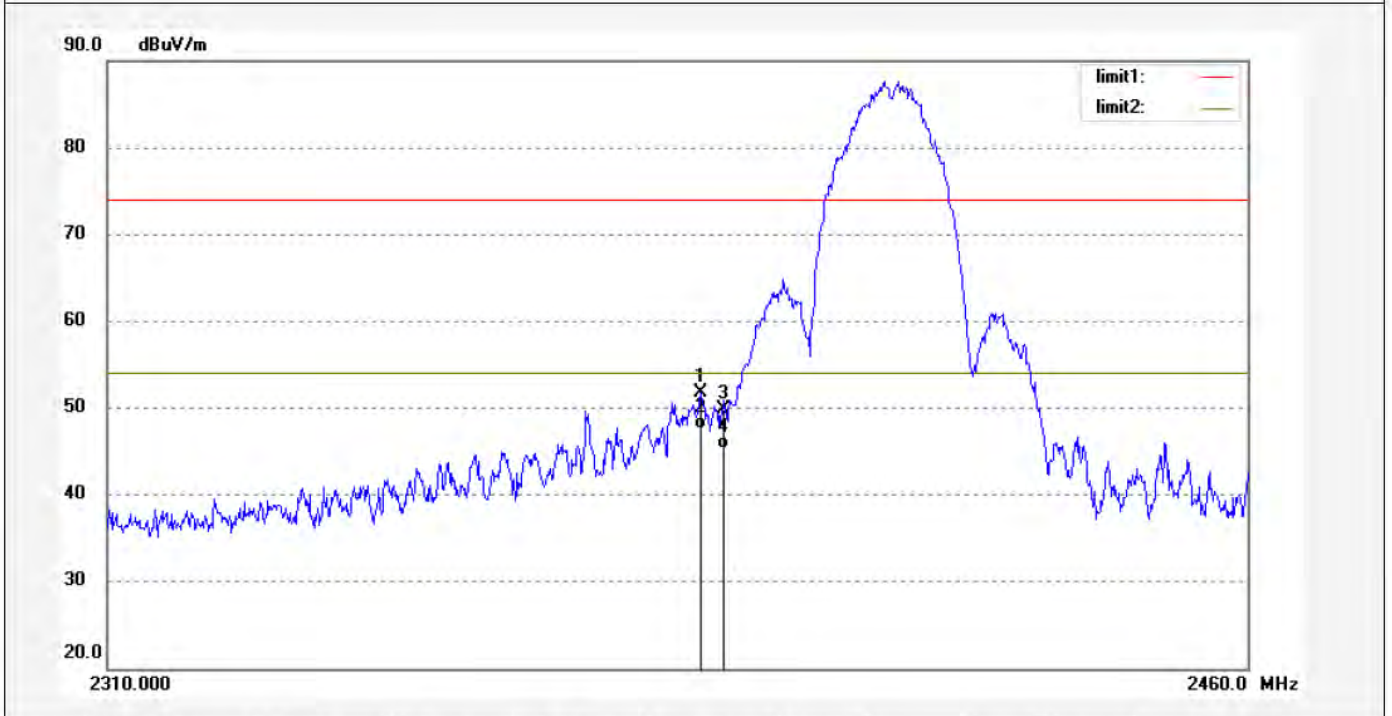
### ACCURATE TECHNOLOGY CO., LTD.

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

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #563	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/04/03
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2386.828	59.38	-7.54	51.84	74.00	-22.16	peak			
2	2386.828	55.10	-7.54	47.56	54.00	-6.44	AVG			
3	2390.000	57.38	-7.53	49.85	74.00	-24.15	peak			
4	2390.000	52.78	-7.53	45.25	54.00	-8.75	AVG			



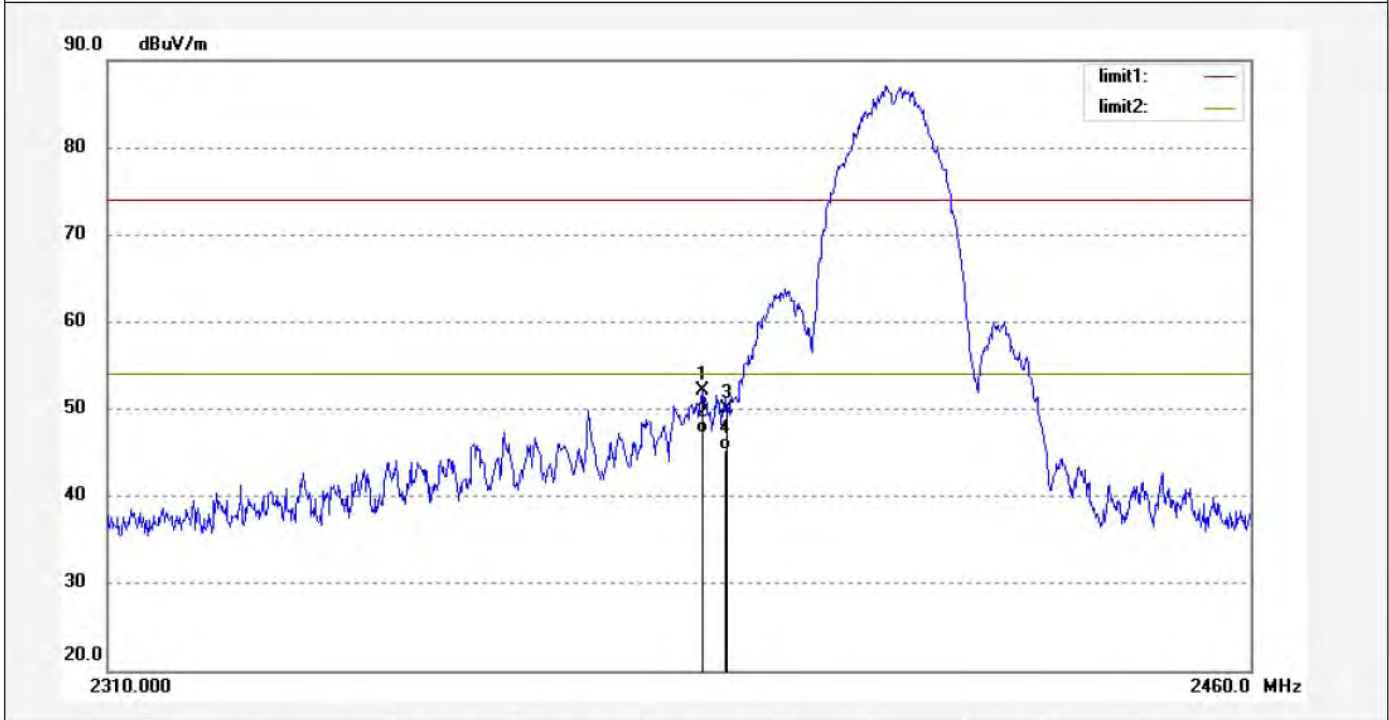
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #564	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/06/07
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2386.978	59.70	-7.54	52.16	74.00	-21.84	peak			
2	2386.978	54.82	-7.54	47.28	54.00	-6.72	AVG			
3	2390.000	57.54	-7.53	50.01	74.00	-23.99	peak			
4	2390.000	52.73	-7.53	45.20	54.00	-8.80	AVG			



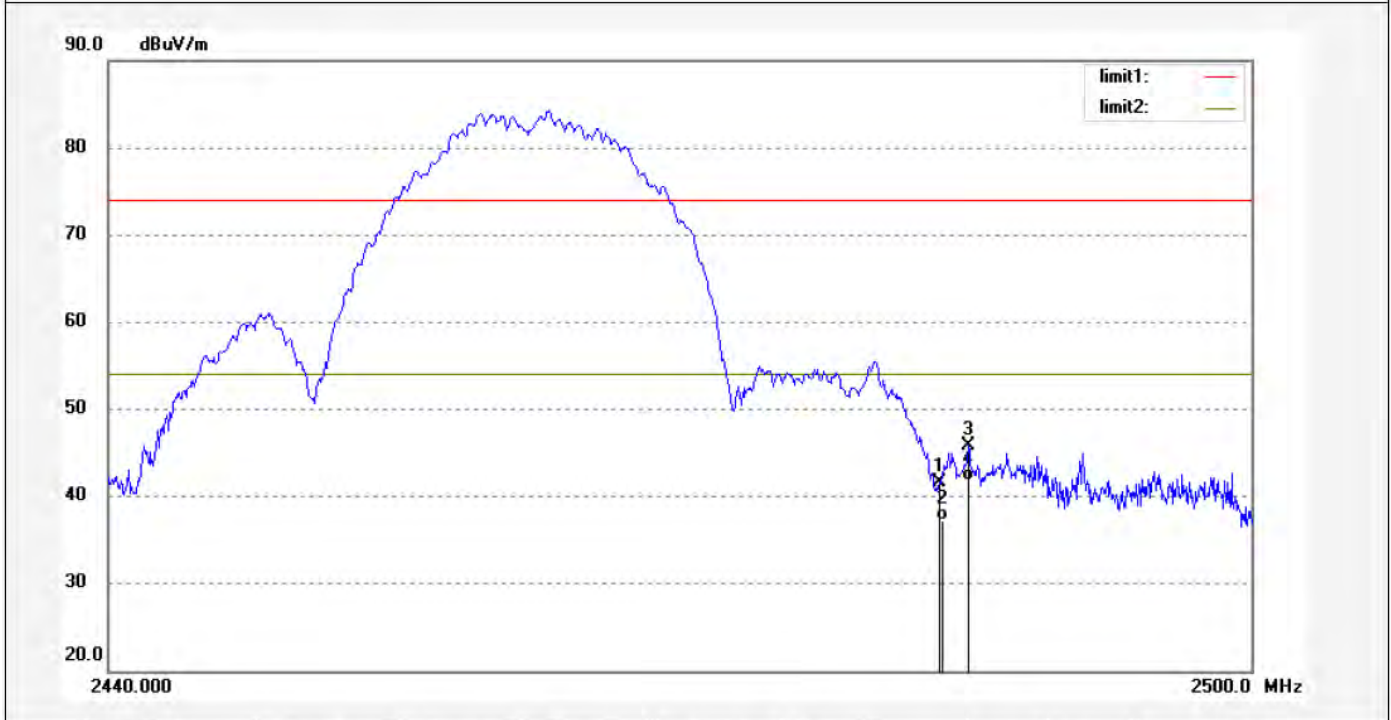
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F1,Bldg.A,Changyuan New Material Port Keyuan Rd,  
Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #566	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/12/14
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	48.92	-7.37	41.55	74.00	-32.45	peak			
2	2483.500	44.57	-7.37	37.20	54.00	-16.80	AVG			
3	2485.014	53.15	-7.38	45.77	74.00	-28.23	peak			
4	2485.014	49.08	-7.38	41.70	54.00	-12.30	AVG			



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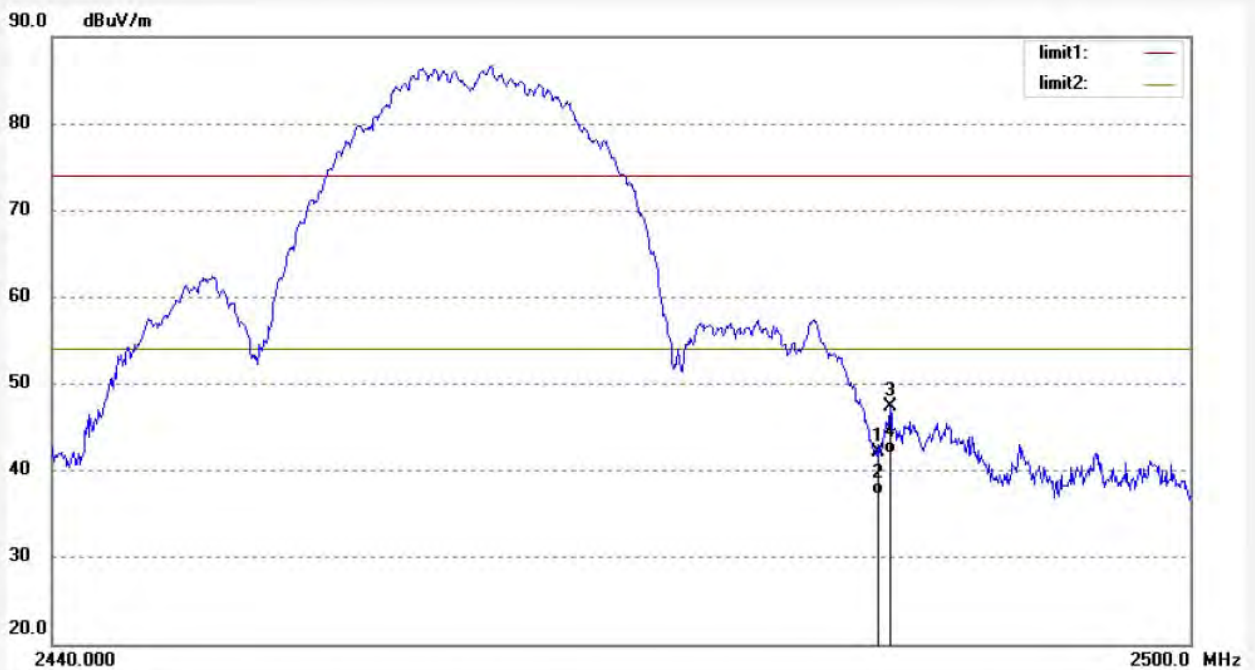
Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: RICKY #567	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/15/24
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	49.44	-7.37	42.07	74.00	-31.93	peak			
2	2483.500	44.69	-7.37	37.32	54.00	-16.68	AVG			
3	2484.047	54.84	-7.38	47.46	74.00	-26.54	peak			
4	2484.047	49.37	-7.38	41.99	54.00	-12.01	AVG			



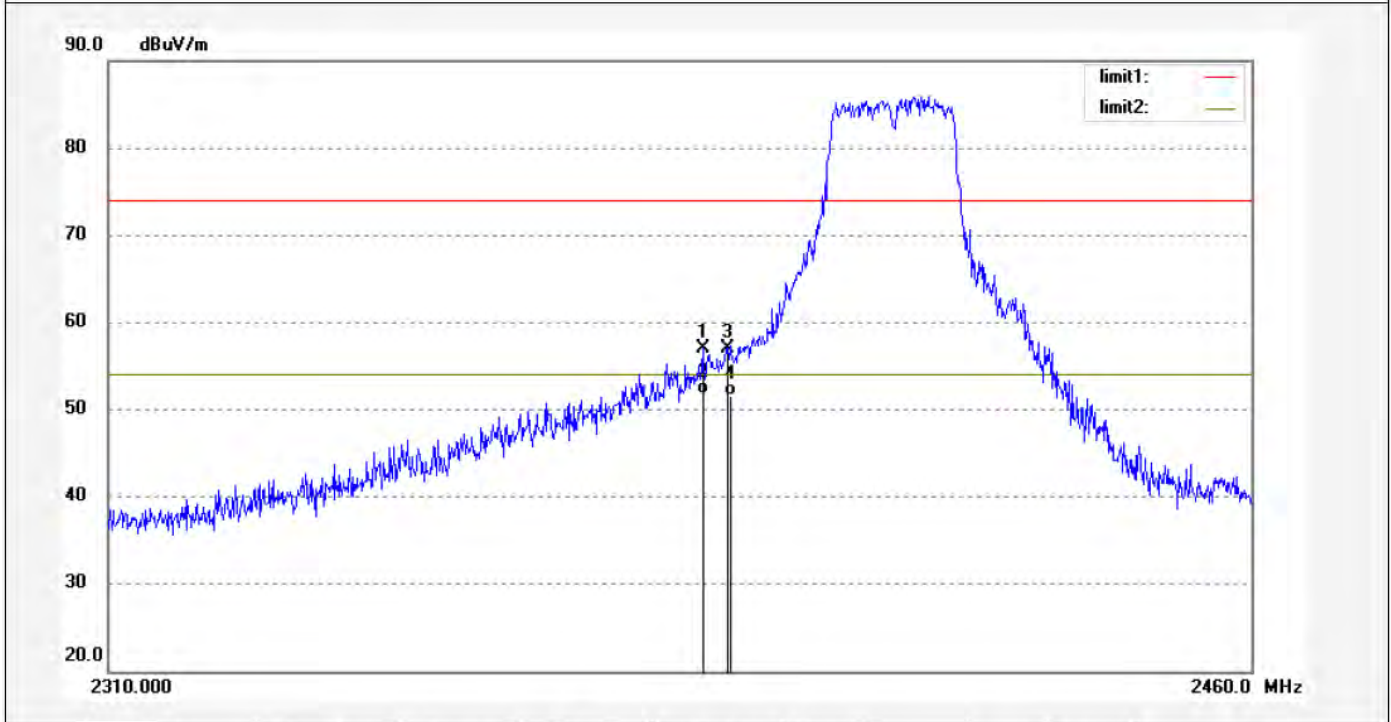
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #571	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/26/41
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2386.828	64.58	-7.54	57.04	74.00	-16.96	peak			
2	2386.828	59.28	-7.54	51.74	54.00	-2.26	AVG			
3	2390.000	64.62	-7.53	57.09	74.00	-16.91	peak			
4	2390.000	59.19	-7.53	51.66	54.00	-2.34	AVG			



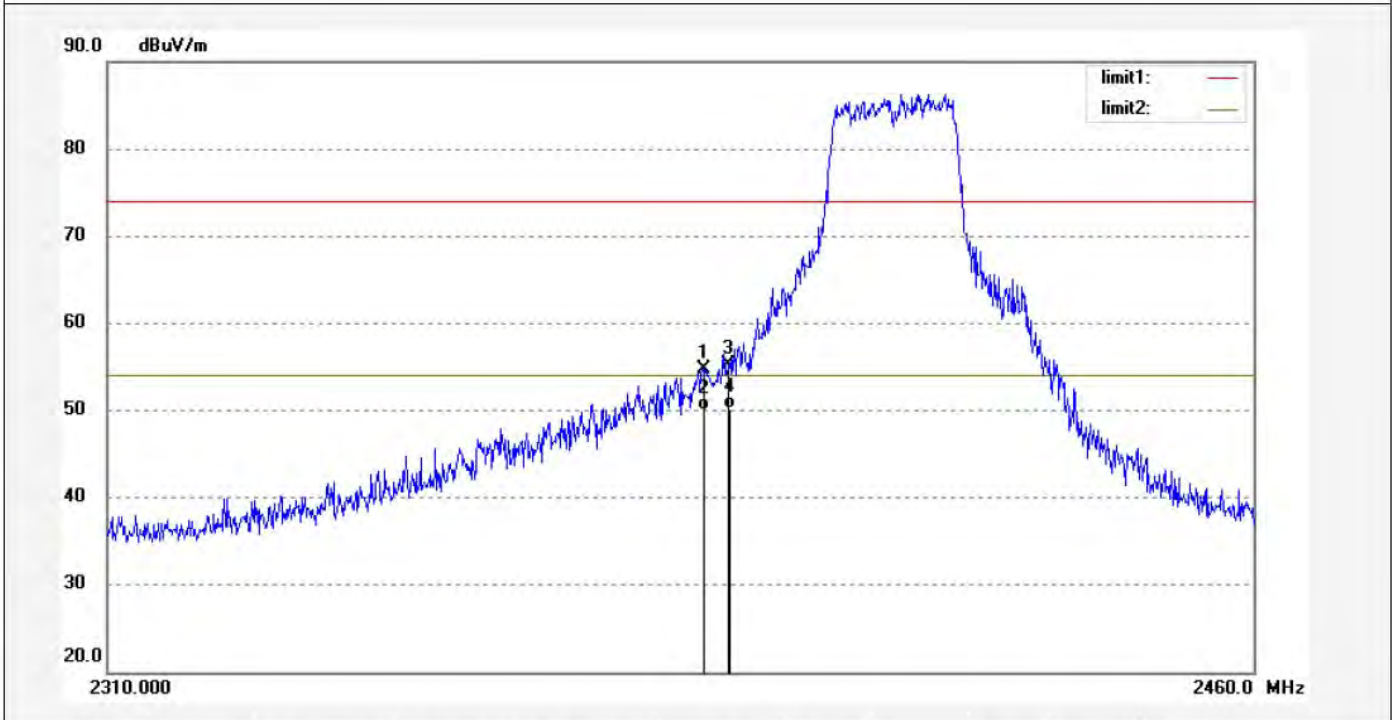
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #572	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/29/53
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2386.828	62.35	-7.54	54.81	74.00	-19.19	peak			
2	2386.828	57.58	-7.54	50.04	54.00	-3.96	AVG			
3	2390.000	62.71	-7.53	55.18	74.00	-18.82	peak			
4	2390.000	57.66	-7.53	50.13	54.00	-3.87	AVG			



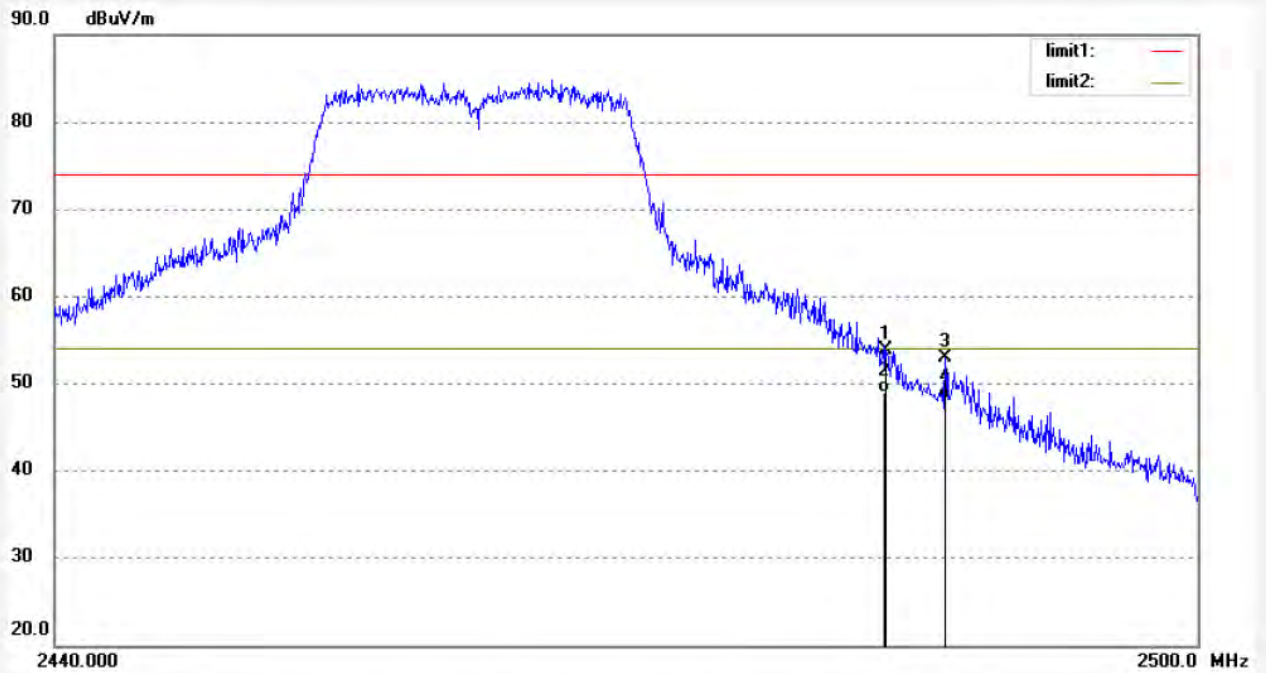
**ACCURATE TECHNOLOGY CO., LTD.**

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #570	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/22/20
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	61.28	-7.37	53.91	74.00	-20.09	peak			
2	2483.500	56.39	-7.37	49.02	54.00	-4.98	AVG			
3	2486.648	60.33	-7.38	52.95	74.00	-21.05	peak			
4	2486.648	55.71	-7.38	48.33	54.00	-5.67	AVG			



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Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #569	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/19/15
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	63.12	-7.37	55.75	74.00	-18.25	peak			
2	2483.500	58.33	-7.37	50.96	54.00	-3.04	AVG			
3	2486.951	60.93	-7.38	53.55	74.00	-20.45	peak			
4	2486.951	55.92	-7.38	48.54	54.00	-5.46	AVG			





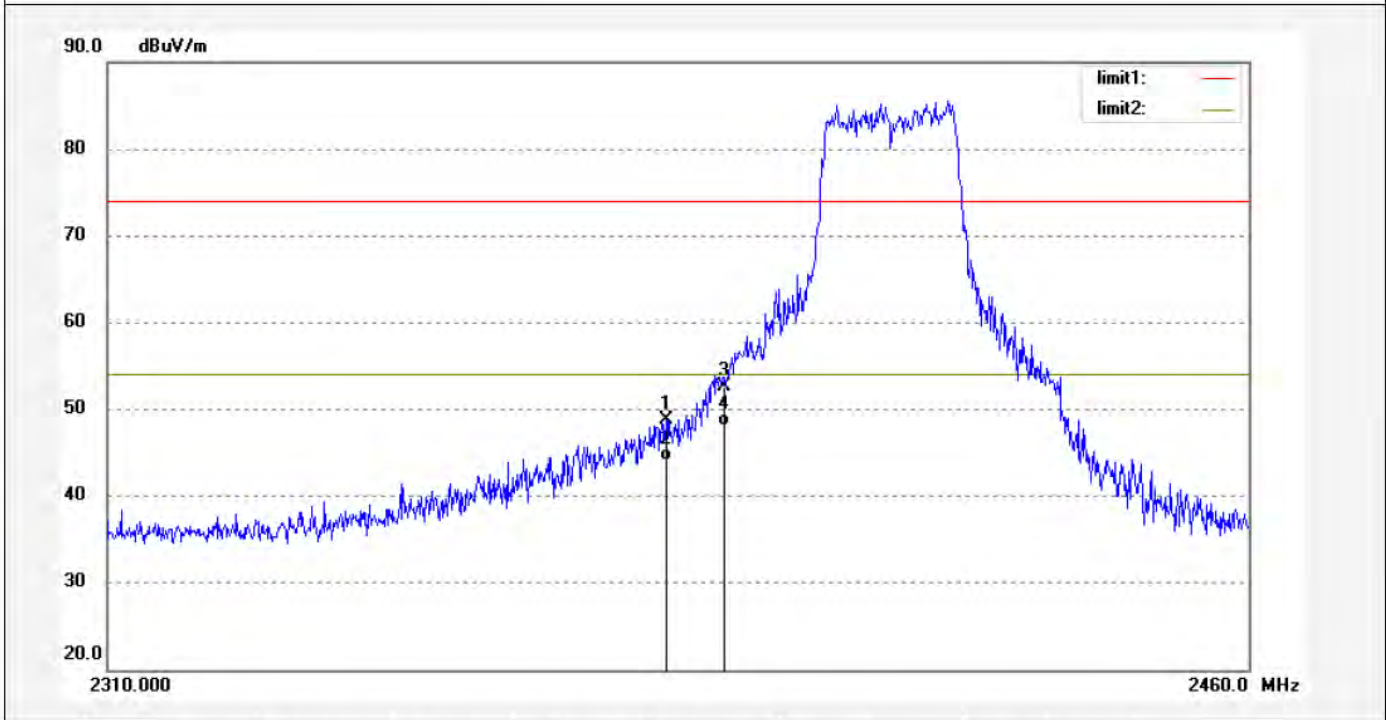
**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #573	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/33/21
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2382.318	56.45	-7.58	48.87	74.00	-25.13	peak			
2	2382.318	51.67	-7.58	44.09	54.00	-9.91	AVG			
3	2390.000	60.12	-7.53	52.59	74.00	-21.41	peak			
4	2390.000	55.64	-7.53	48.11	54.00	-5.89	AVG			



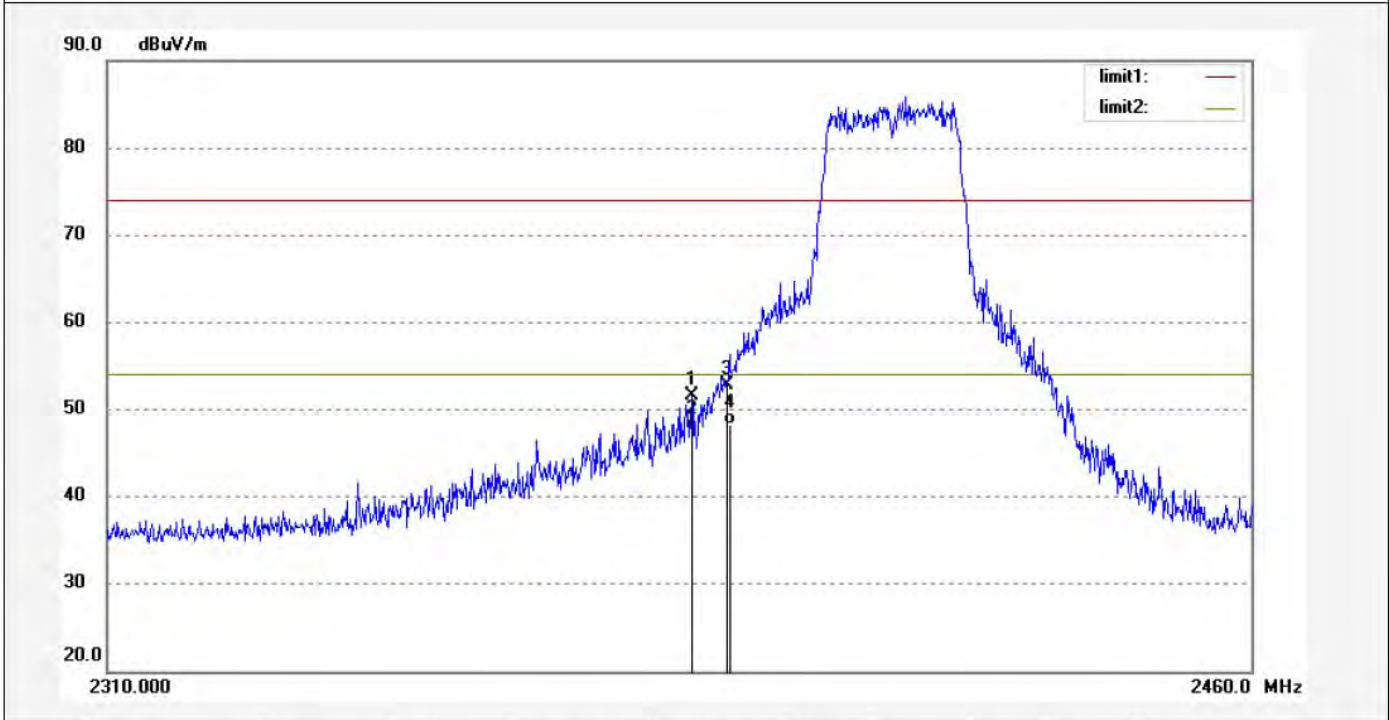
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #574	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/35/32
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2385.474	59.12	-7.56	51.56	74.00	-22.44	peak			
2	2385.474	55.19	-7.56	47.63	54.00	-6.37	AVG			
3	2390.000	60.43	-7.53	52.90	74.00	-21.10	peak			
4	2390.000	55.72	-7.53	48.19	54.00	-5.81	AVG			



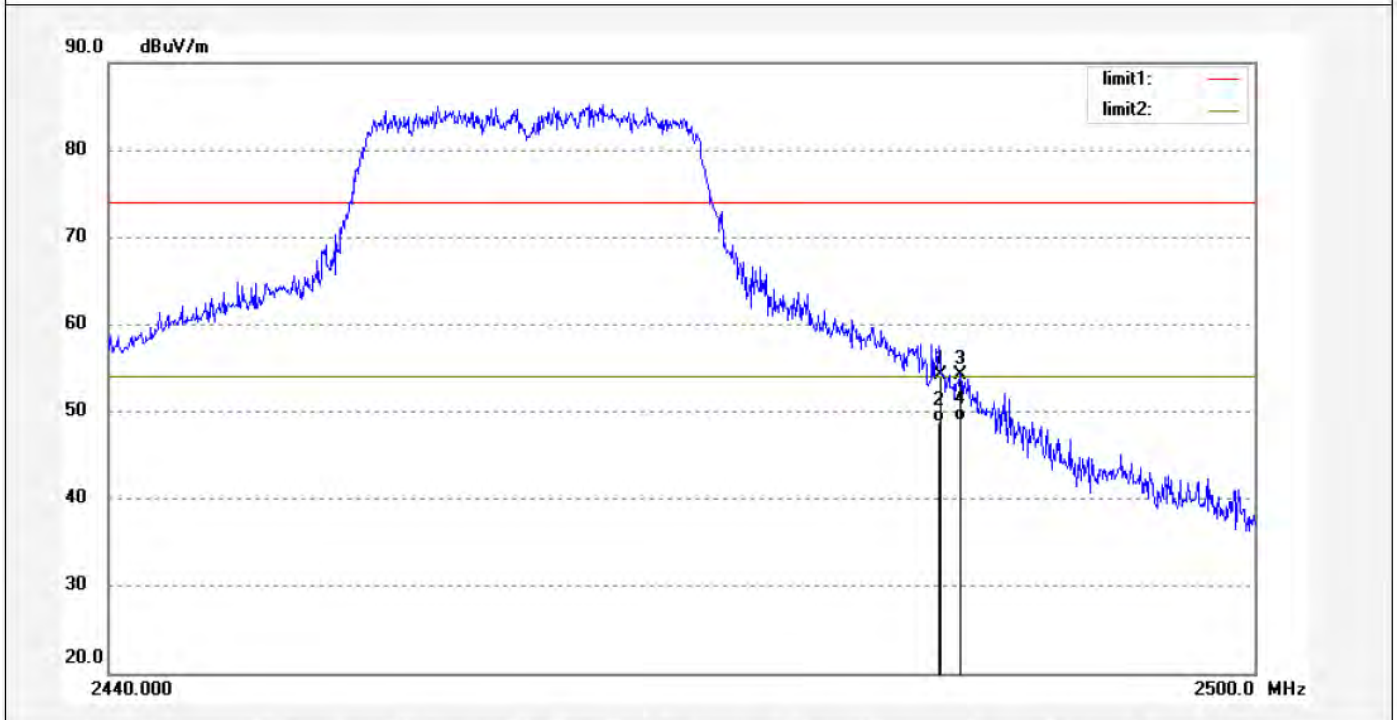
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #575	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/39/03
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	61.53	-7.37	54.16	74.00	-19.84	peak			
2	2483.500	56.23	-7.37	48.86	54.00	-5.14	AVG			
3	2484.470	61.68	-7.38	54.30	74.00	-19.70	peak			
4	2484.470	56.37	-7.38	48.99	54.00	-5.01	AVG			



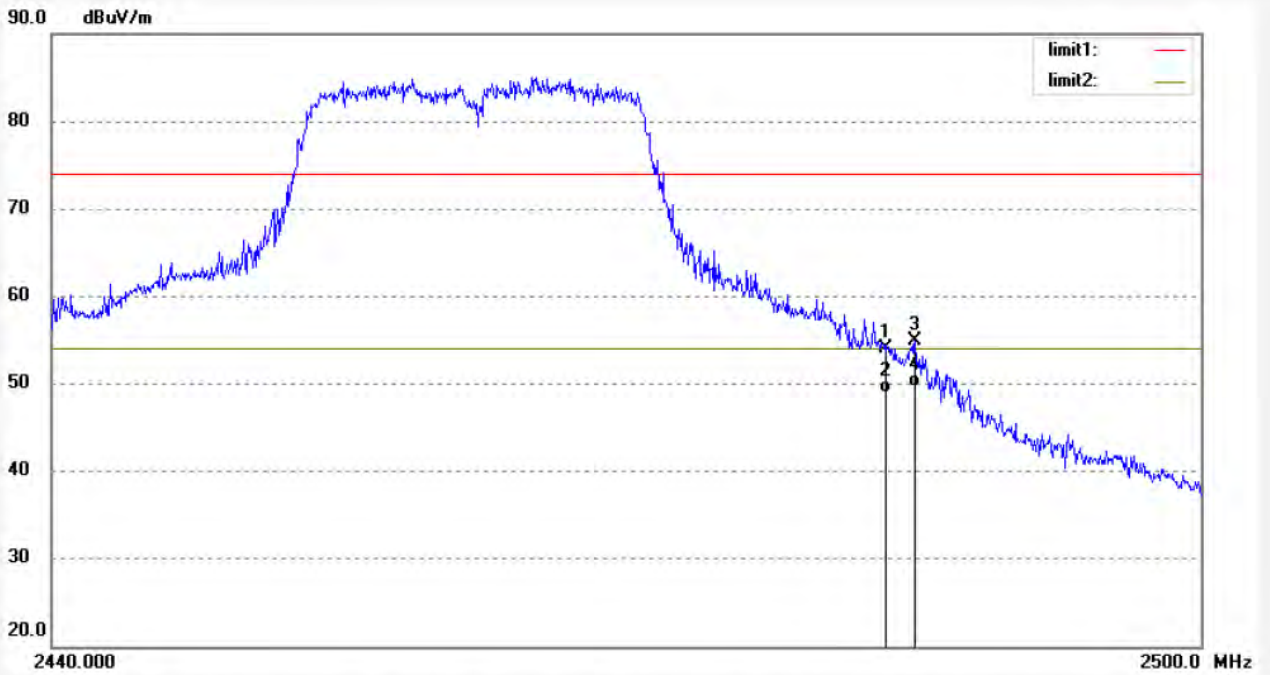
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Site: 2# Chamber  
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Fax:+86-0755-26503396

Job No.: RICKY #576	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/40/38
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	61.46	-7.37	54.09	74.00	-19.91	peak			
2	2483.500	56.39	-7.37	49.02	54.00	-4.98	AVG			
3	2484.954	62.27	-7.38	54.89	74.00	-19.11	peak			
4	2484.954	57.09	-7.38	49.71	54.00	-4.29	AVG			



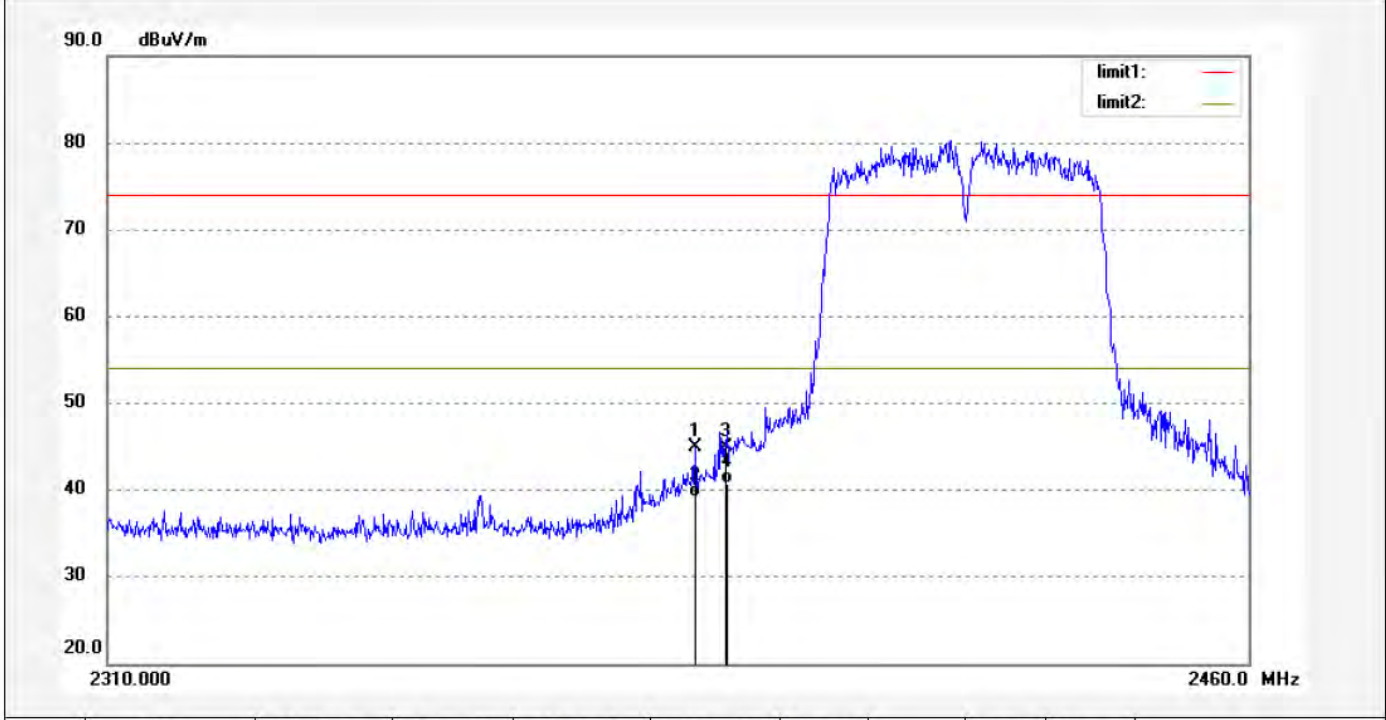
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #579	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/50/20
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2422MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2386.076	52.46	-7.56	44.90	74.00	-29.10	peak			
2	2386.076	46.68	-7.56	39.12	54.00	-14.88	AVG			
3	2390.000	52.52	-7.53	44.99	74.00	-29.01	peak			
4	2390.000	48.35	-7.53	40.82	54.00	-13.18	AVG			



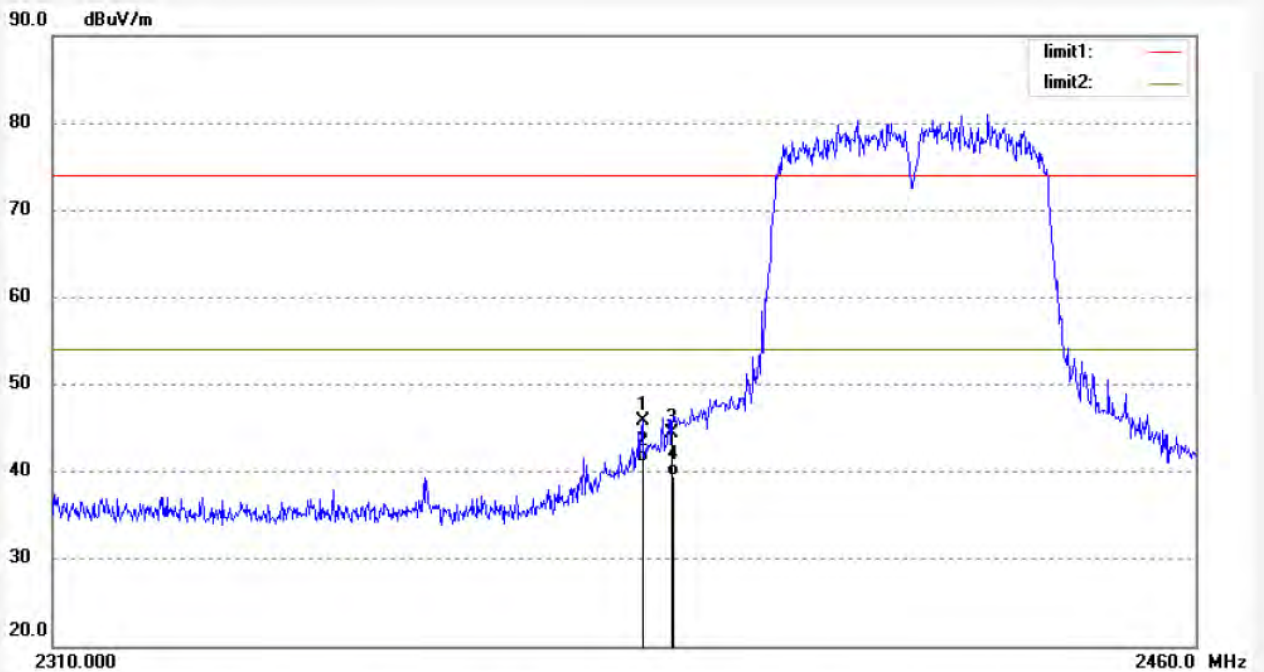
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Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #580	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/51/32
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2422MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2386.226	53.42	-7.56	45.86	74.00	-28.14	peak			
2	2386.226	48.67	-7.56	41.11	54.00	-12.89	AVG			
3	2390.000	51.90	-7.53	44.37	74.00	-29.63	peak			
4	2390.000	47.09	-7.53	39.56	54.00	-14.44	AVG			



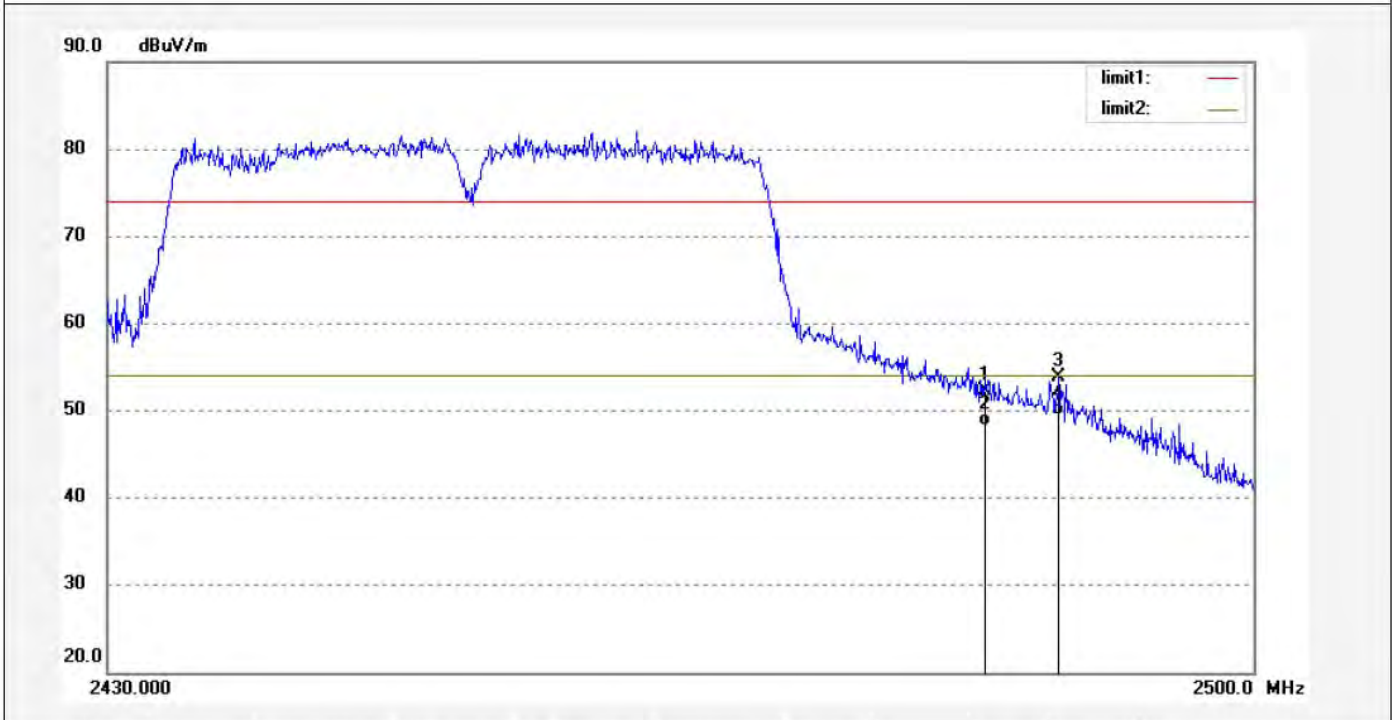
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
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Fax:+86-0755-26503396

Job No.: RICKY #578	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/46/05
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2452MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	59.74	-7.37	52.37	74.00	-21.63	peak			
2	2483.500	55.67	-7.37	48.30	54.00	-5.70	AVG			
3	2488.006	61.21	-7.38	53.83	74.00	-20.17	peak			
4	2488.006	56.89	-7.38	49.51	54.00	-4.49	AVG			



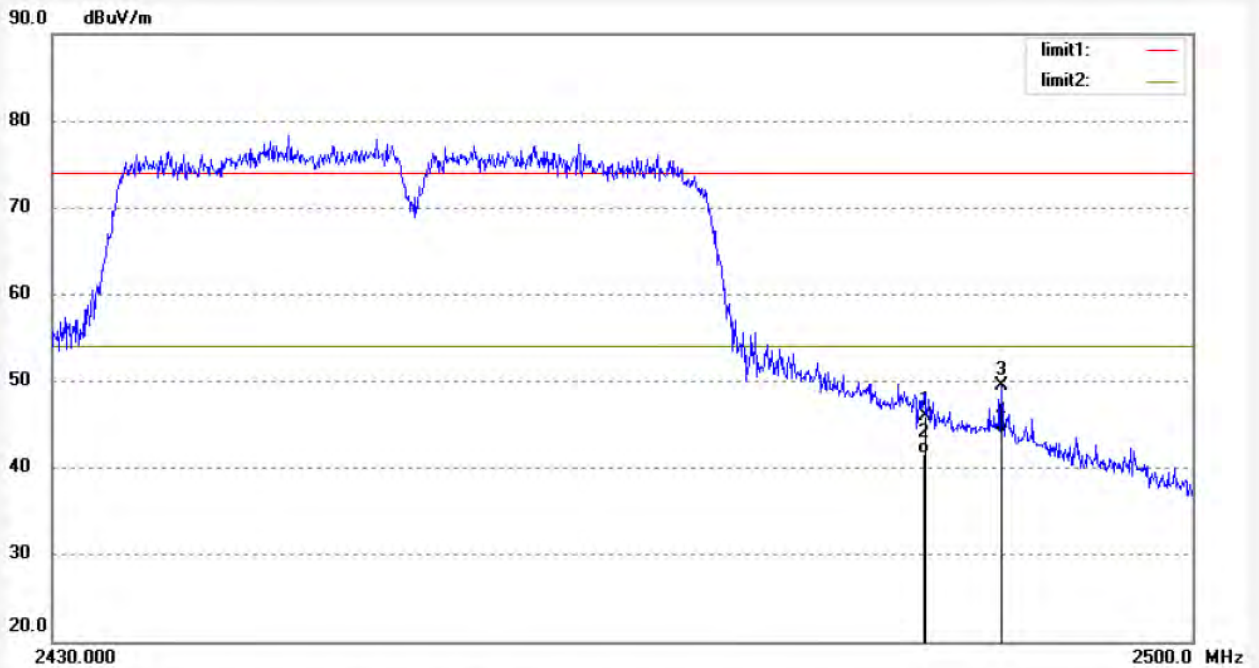
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
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Fax:+86-0755-26503396

Job No.: RICKY #577	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/07/28/
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 11/44/44
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2452MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



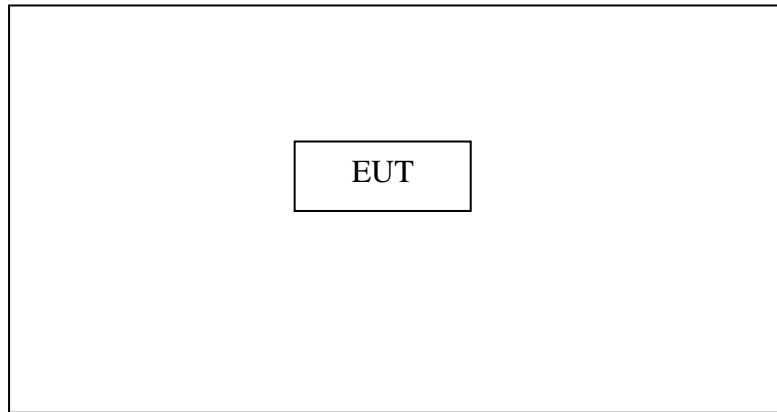
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	53.44	-7.37	46.07	74.00	-27.93	peak			
2	2483.500	48.91	-7.37	41.54	54.00	-12.46	AVG			
3	2488.148	56.82	-7.38	49.44	74.00	-24.56	peak			
4	2488.148	51.38	-7.38	44.00	54.00	-10.00	AVG			



## 9. RADIATED SPURIOUS EMISSION TEST

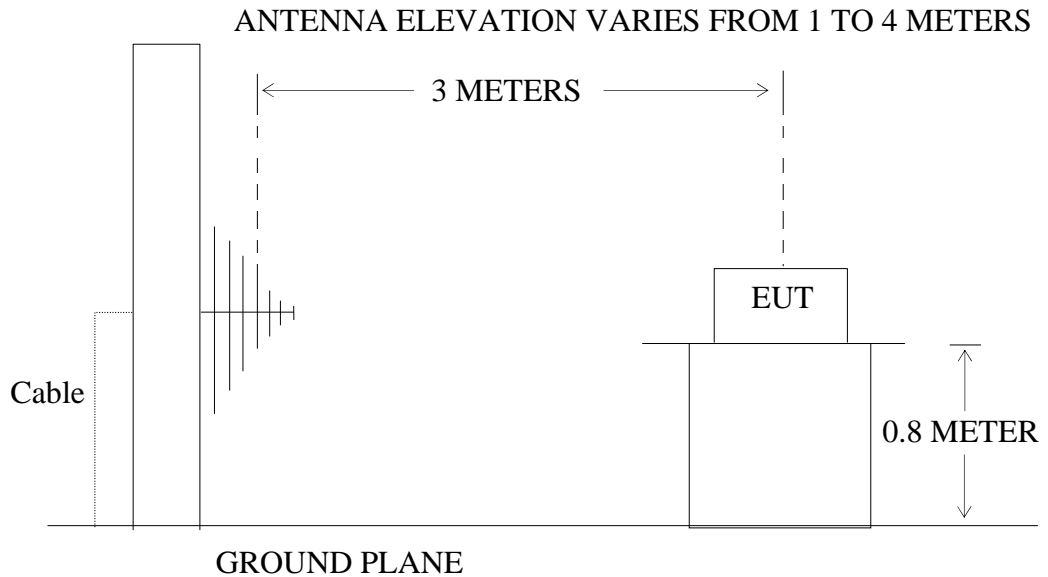
### 9.1. Block Diagram of Test Setup

#### 9.1.1. Block diagram of connection between the EUT and peripherals



Setup: Transmitting mode

#### 9.1.2. Semi-Anechoic Chamber Test Setup Diagram



### 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	( <sup>2</sup> )
13.36-13.41			

<sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510

<sup>2</sup>Above 38.6

(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 Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

### 9.4.Configuration of EUT on Measurement

The 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.

### 9.5.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 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz 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: 2009 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 and 150Mbps for 802.11n mode, based on previous with 802.11 WLAN product design architectures.

The final measurement in band 9-90 kHz, 110-490 kHz 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.

When average radiated emissions measurements are specified there is also a limit on the peak emissions level which is 20 dB above the applicable maximum permitted average emission limit

RBW (120 kHz), VBW (300 kHz) for QP detector below 1GHz

RBW (1 MHz), VBW (3MHz) for Peak detector above 1GHz

RBW (1 MHz), VBW (10Hz) for AV detector above 1GHz (duty cycle  $\geq$  98 percent)

If the peak-detected amplitude can be shown to comply with the average limit, then it is not necessary to perform a separate average measurement.

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

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

2. The average measurement was not performed when peak measured data under the limit of average detection.

3. The fundamental radiated emissions were reduced by Band Reject Filter in the attached plots.

4. The EUT is tested radiation emission at each test mode(802.11 b/g/n) in three axes. The worst emissions are reported in all test mode and channels.

5. The 18-25GHz emissions are not reported, because the levels are too low against the limit.

Below 1G



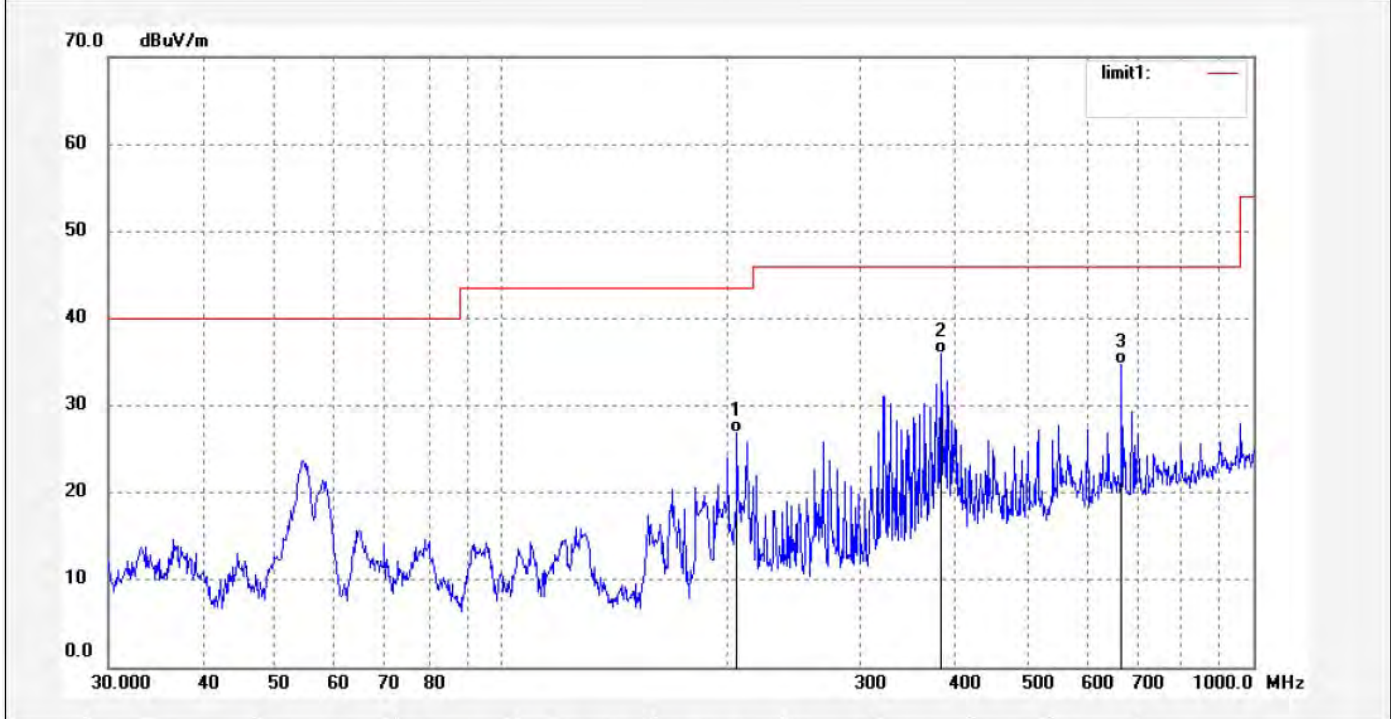
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #2083	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/08/01/
Temp.( C)/Hum.(%) 25 C / 55 %	Time: 9/14/16
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11b)	Distance: 3m
Model: A8E	
Manufacturer: Skyworth	

Note: Report No.:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	205.6751	47.00	-20.05	26.95	43.50	-16.55	QP			
2	383.9318	51.66	-15.76	35.90	46.00	-10.10	QP			
3	668.1423	45.13	-10.32	34.81	46.00	-11.19	QP			



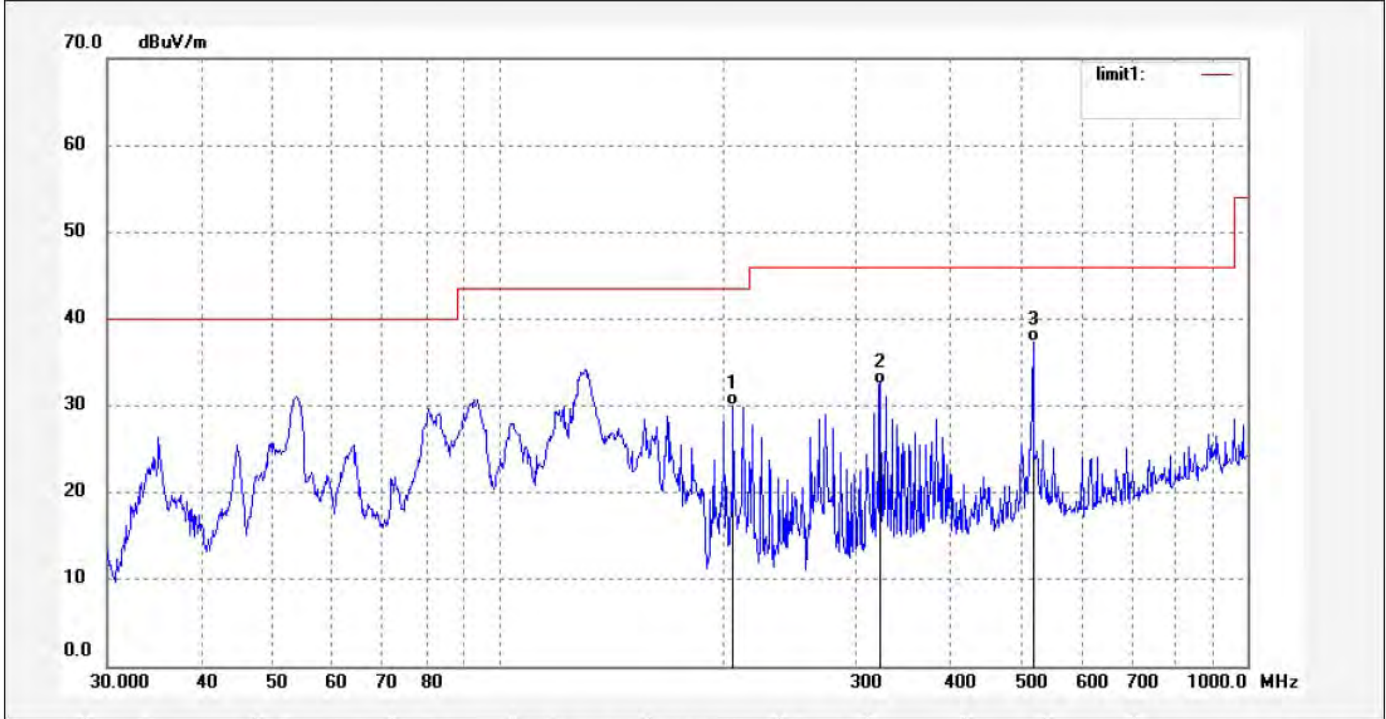
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 1# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: RICKY #2084	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 14/08/01/
Temp.( C)/Hum.(%) 25 C / 55 %	Time: 9/15/23
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11b)	Distance: 3m
Model: A8E	
Manufacturer: Skyworth	

Note: Report No.:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	205.6751	50.02	-20.05	29.97	43.50	-13.53	QP			
2	323.3204	49.81	-17.26	32.55	46.00	-13.45	QP			
3	517.2480	50.87	-13.55	37.32	46.00	-8.68	QP			

Above 1G



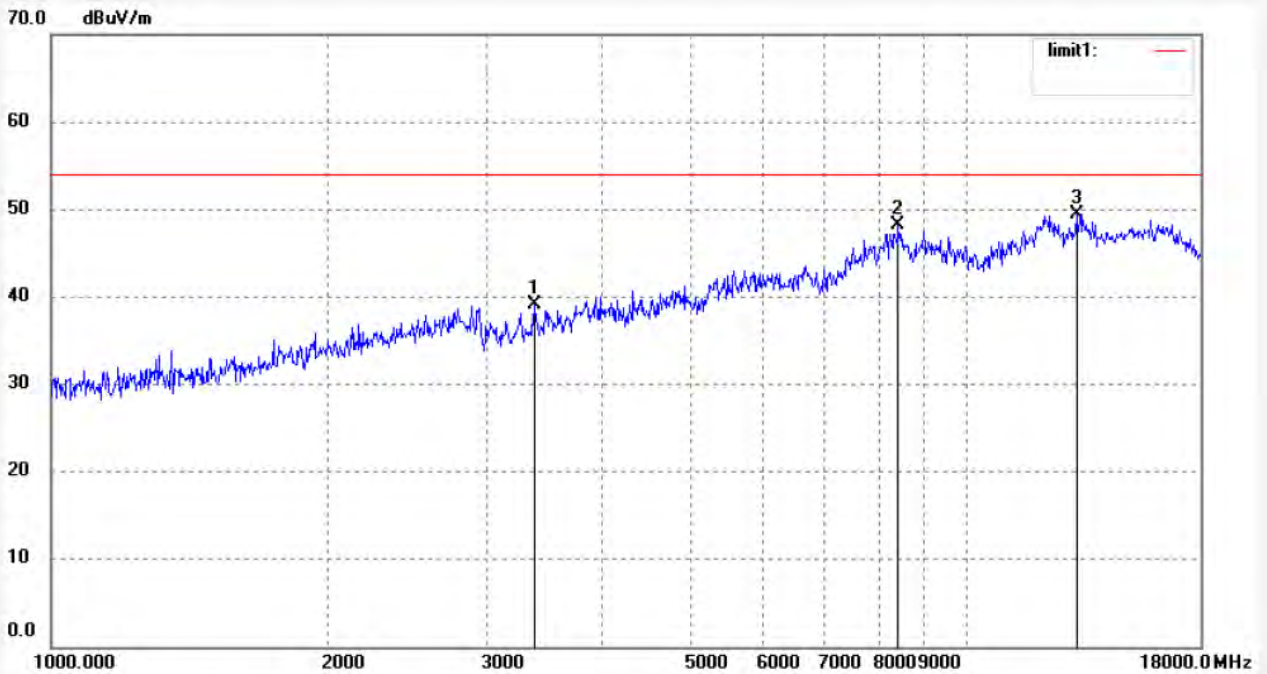
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Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #537	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:36:33
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	3376.002	43.06	-3.92	39.14	54.00	-14.86	peak			
2	8420.480	40.22	8.06	48.28	54.00	-5.72	peak			
3	13182.917	10.29	39.22	49.51	54.00	-4.49	peak			



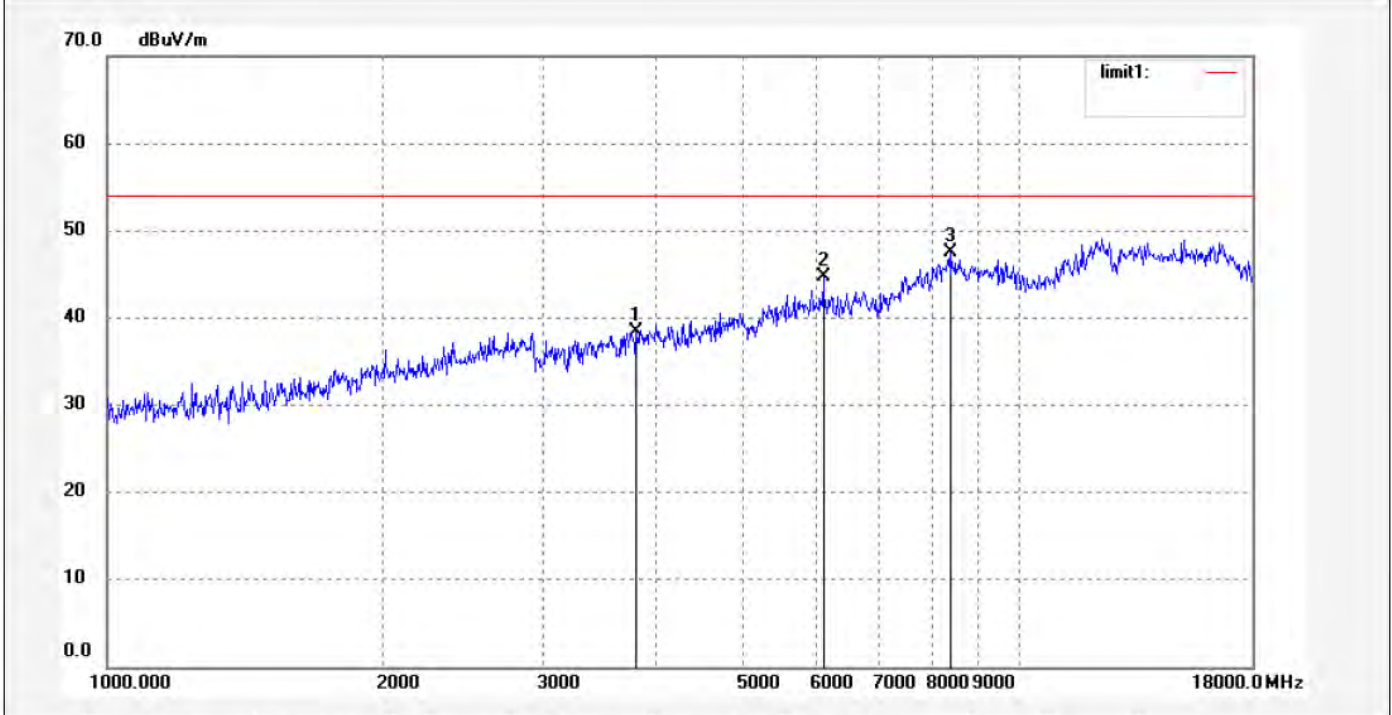
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Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #538	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:37:38
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	3803.923	40.52	-2.19	38.33	54.00	-15.67	peak			
2	6095.641	42.36	2.36	44.72	54.00	-9.28	peak			
3	8420.480	39.48	8.06	47.54	54.00	-6.46	peak			



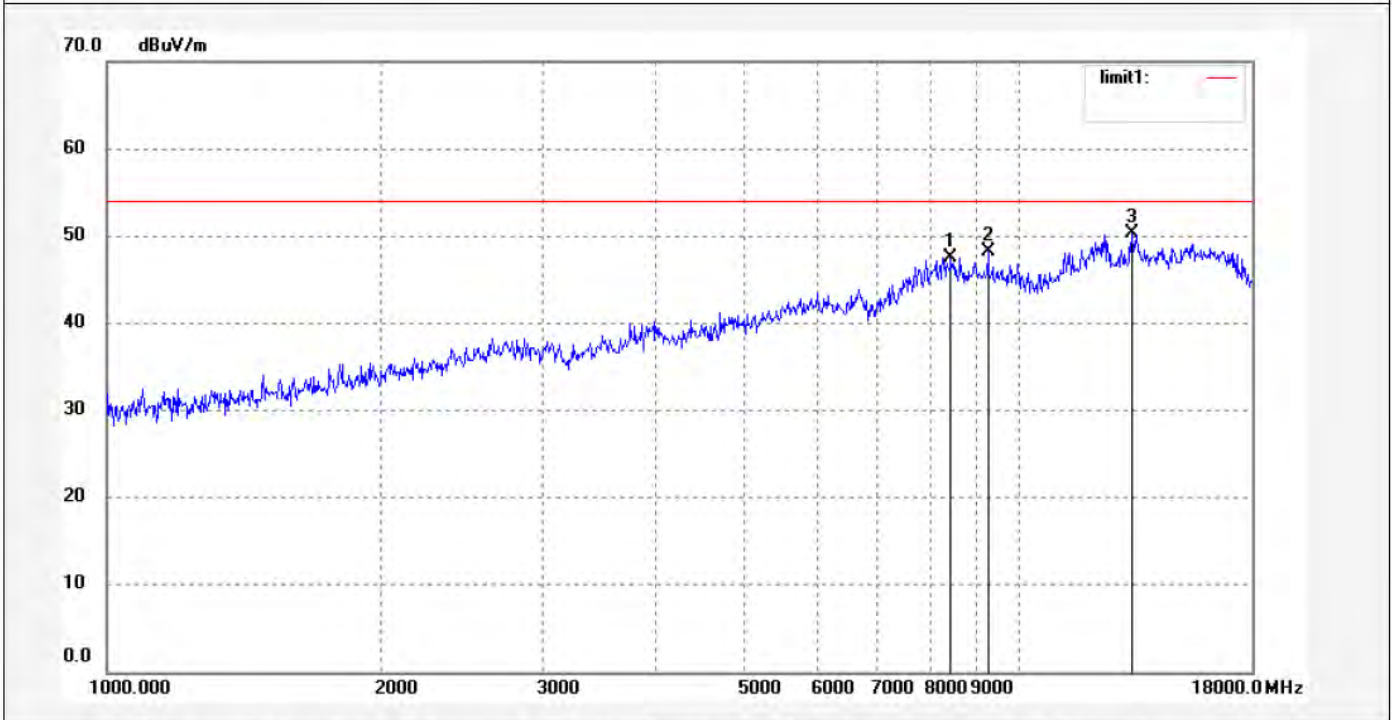
**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #539	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:40:41
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2437MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	8420.480	39.54	8.06	47.60	54.00	-6.40	peak			
2	9242.484	39.79	8.34	48.13	54.00	-5.87	peak			
3	13298.538	11.02	39.36	50.38	54.00	-3.62	peak			





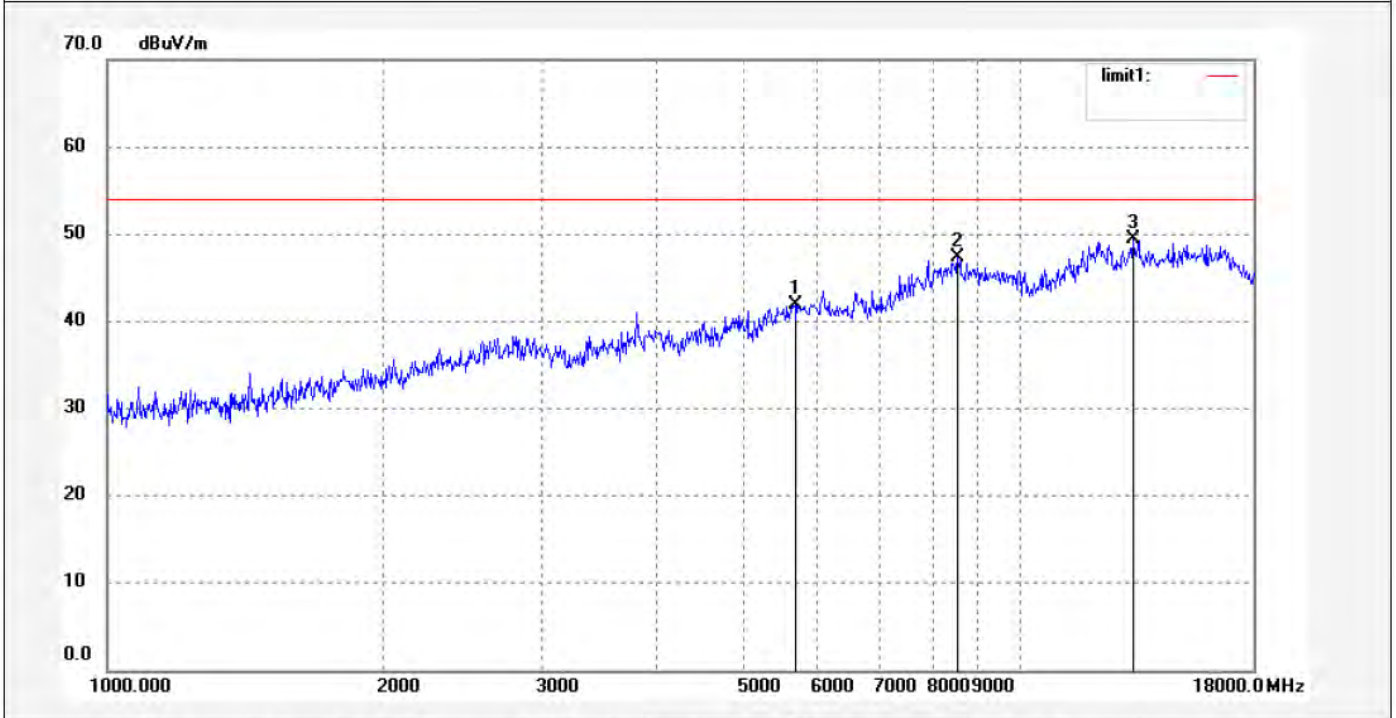
**ACCURATE TECHNOLOGY CO., LTD.**

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Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #540	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:41:44
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2437MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	5667.824	40.71	1.23	41.94	54.00	-12.06	peak			
2	8543.925	39.52	7.78	47.30	54.00	-6.70	peak			
3	13298.538	10.03	39.36	49.39	54.00	-4.61	peak			



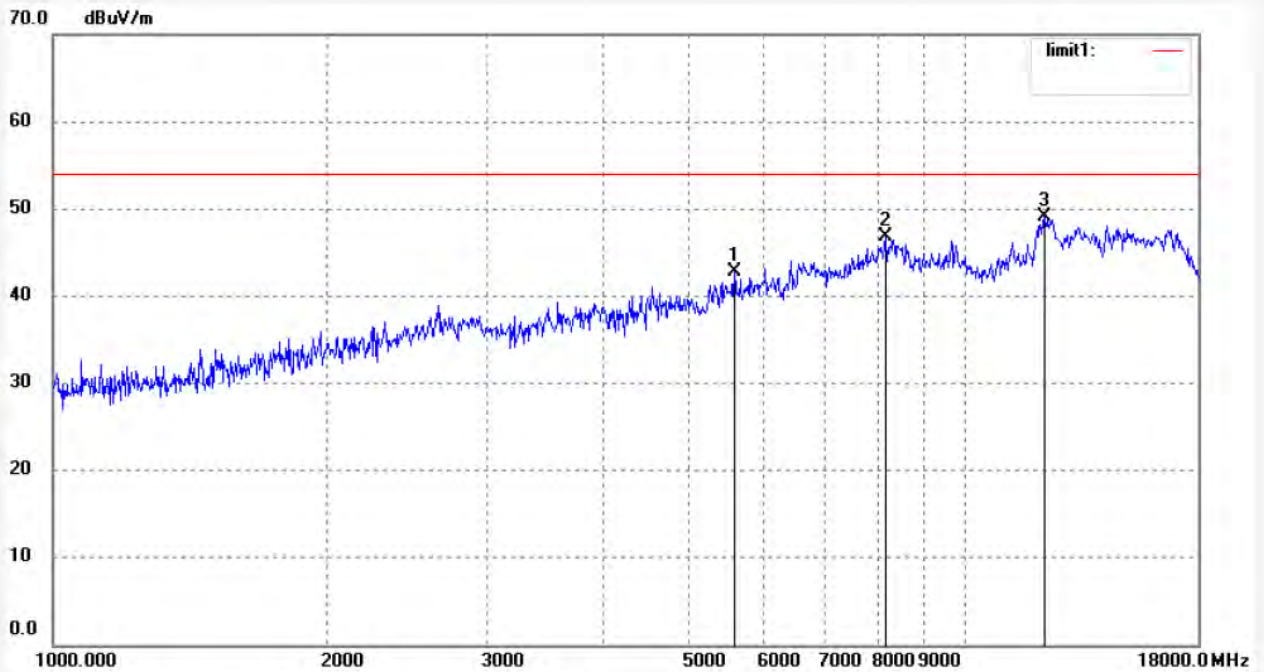
**ACCURATE TECHNOLOGY CO., LTD.**

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #541	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:42:25
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	5585.933	41.37	1.43	42.80	54.00	-11.20	peak			
2	8178.913	39.79	6.99	46.78	54.00	-7.22	peak			
3	12222.059	10.94	38.12	49.06	54.00	-4.94	peak			



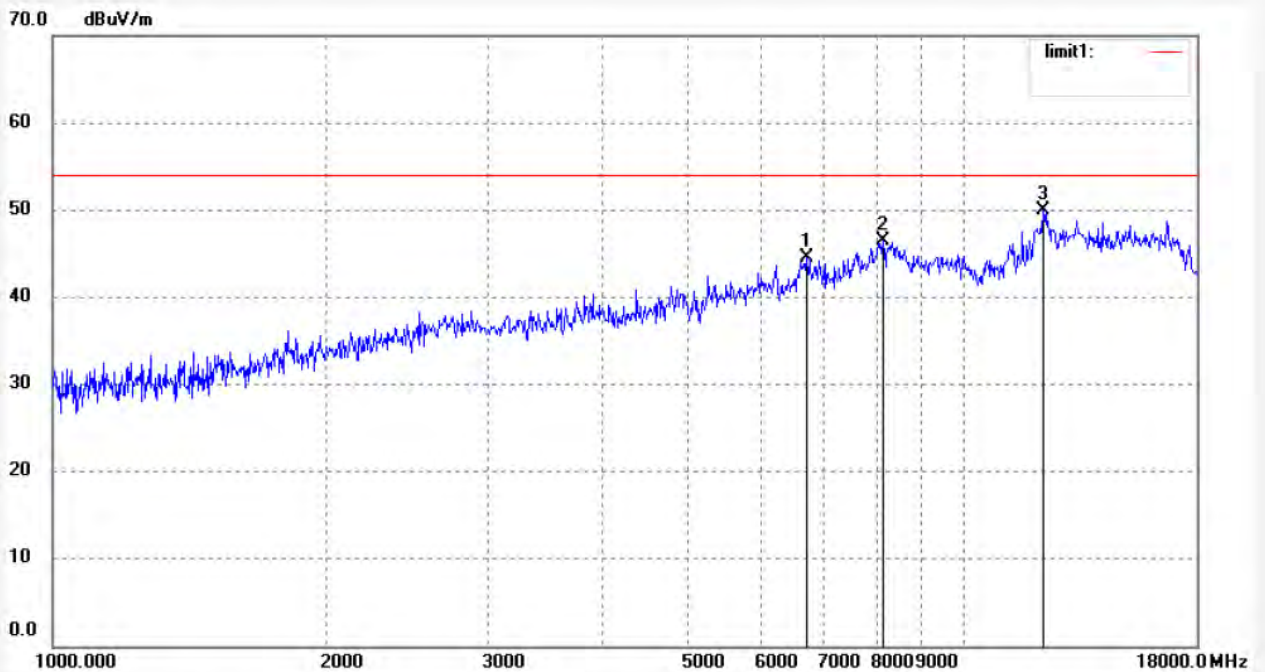
**ACCURATE TECHNOLOGY CO., LTD.**

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #542	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:43:37
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11b)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6729.759	41.15	3.39	44.54	54.00	-9.46	peak			
2	8155.141	39.54	6.98	46.52	54.00	-7.48	peak			
3	12222.059	11.81	38.12	49.93	54.00	-4.07	peak			



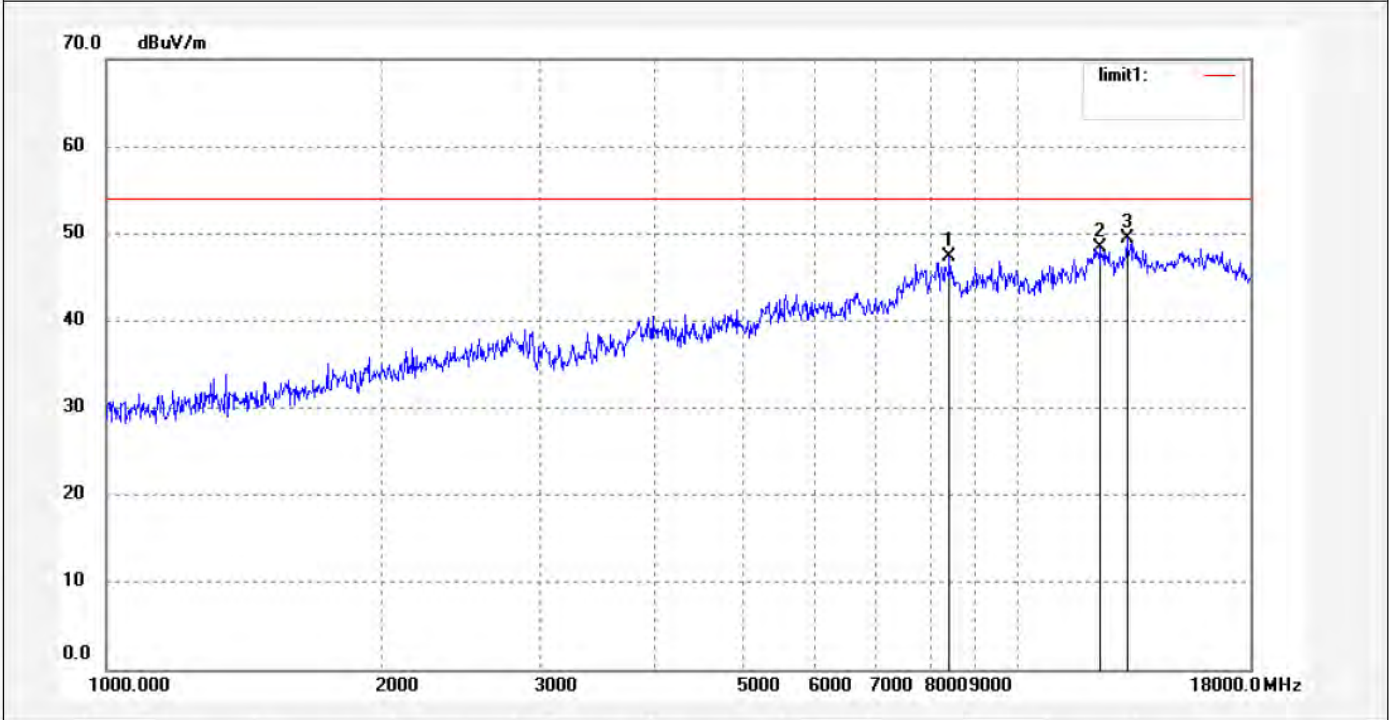
**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #543	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:44:25
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	8420.480	39.22	8.06	47.28	54.00	-6.72	peak			
2	12329.252	10.08	38.23	48.31	54.00	-5.69	peak			
3	13182.917	10.29	39.22	49.51	54.00	-4.49	peak			



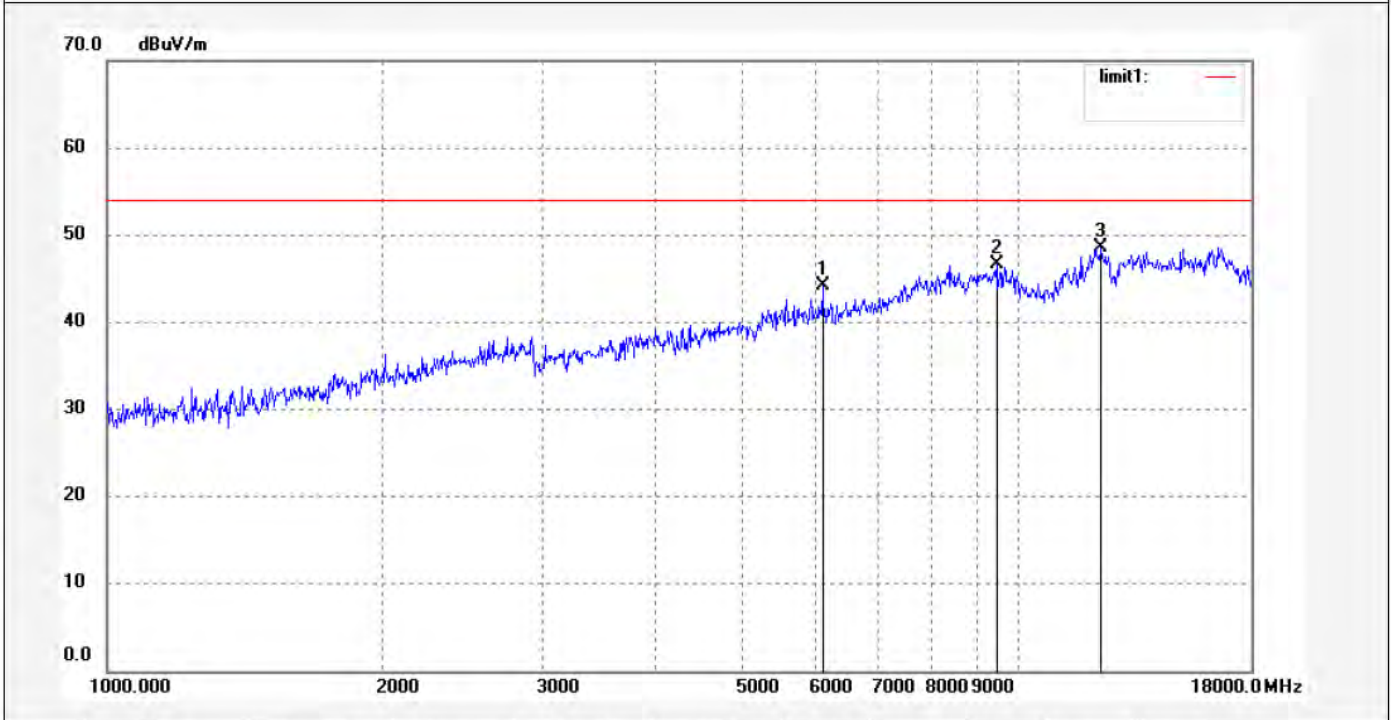
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #544	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:45:04
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6095.641	41.86	2.36	44.22	54.00	-9.78	peak			
2	9460.230	37.22	9.47	46.69	54.00	-7.31	peak			
3	12329.252	10.31	38.23	48.54	54.00	-5.46	peak			



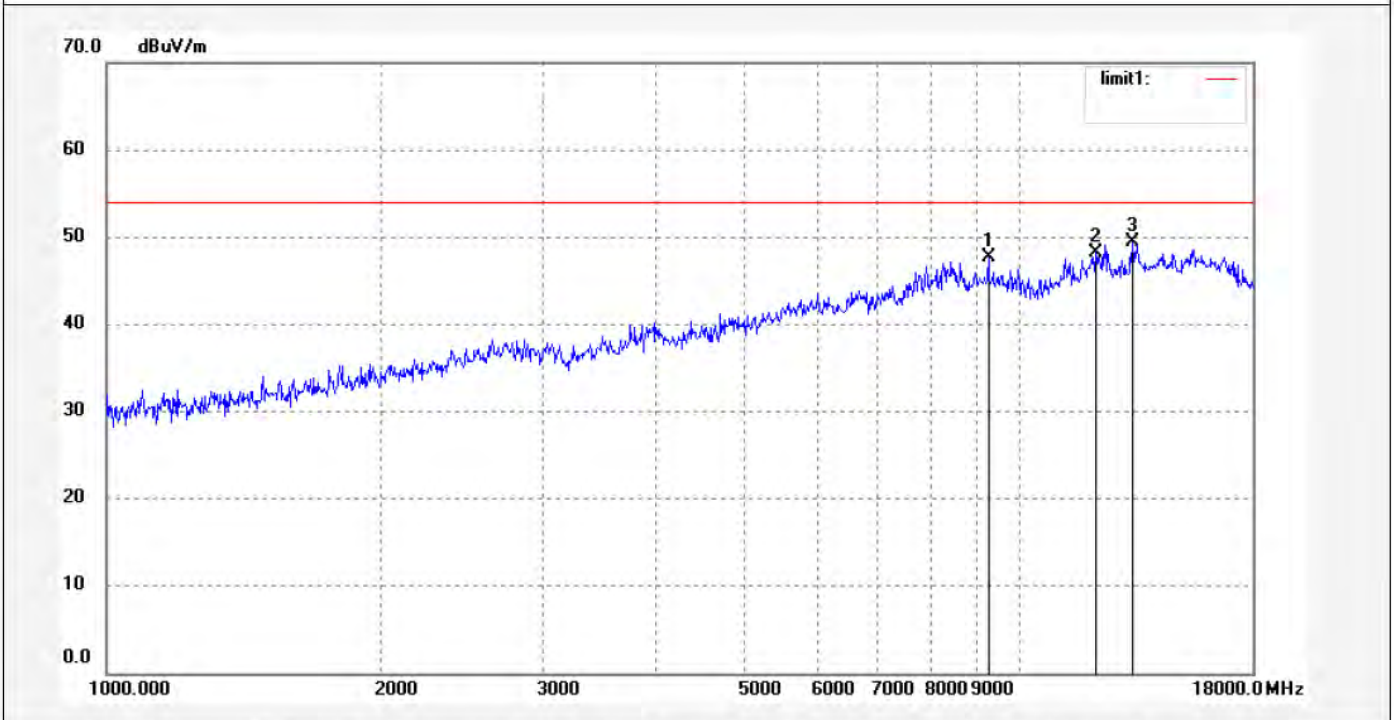
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Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #545	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:46:11
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2437MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	9242.484	39.29	8.34	47.63	54.00	-6.37	peak			
2	12115.797	38.09	10.21	48.30	54.00	-5.70	peak			
3	13298.538	10.02	39.36	49.38	54.00	-4.62	peak			



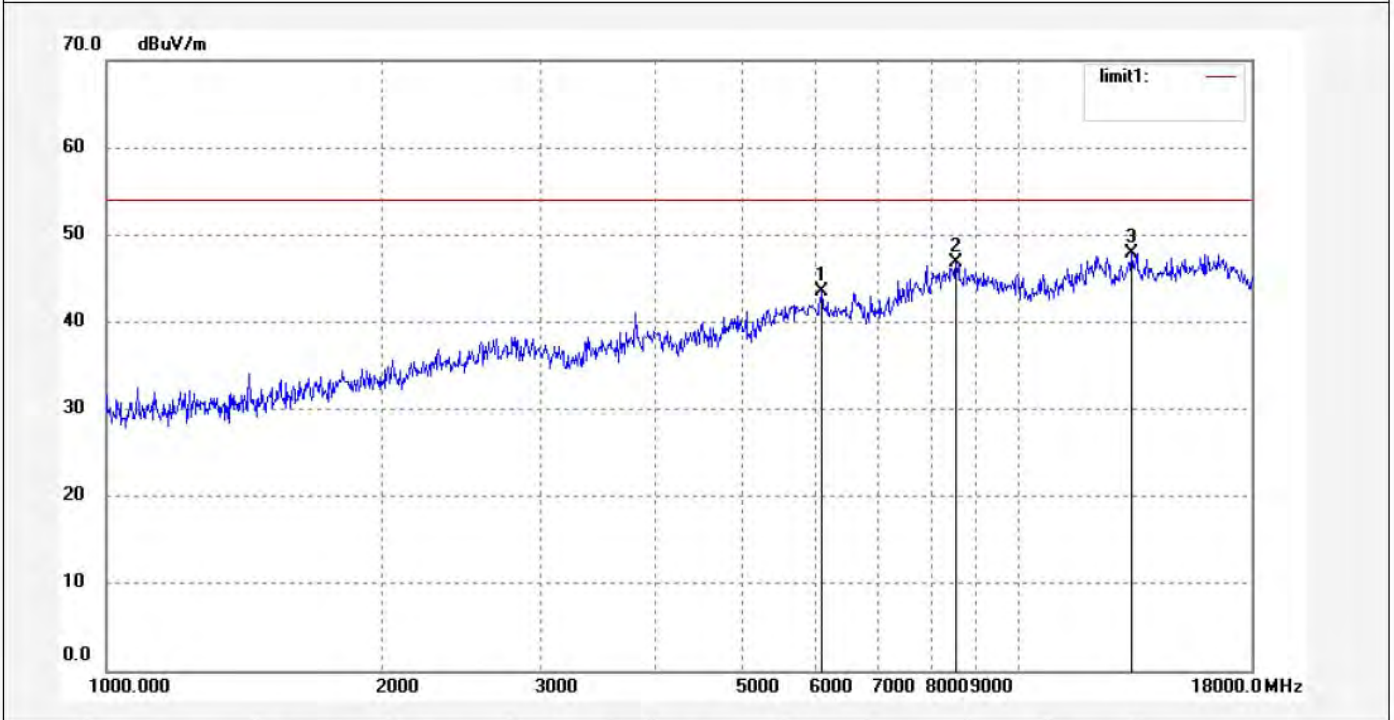
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #546	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:47:28
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2437MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6077.924	41.21	2.35	43.56	54.00	-10.44	peak			
2	8543.925	39.02	7.78	46.80	54.00	-7.20	peak			
3	13298.538	8.53	39.36	47.89	54.00	-6.11	peak			



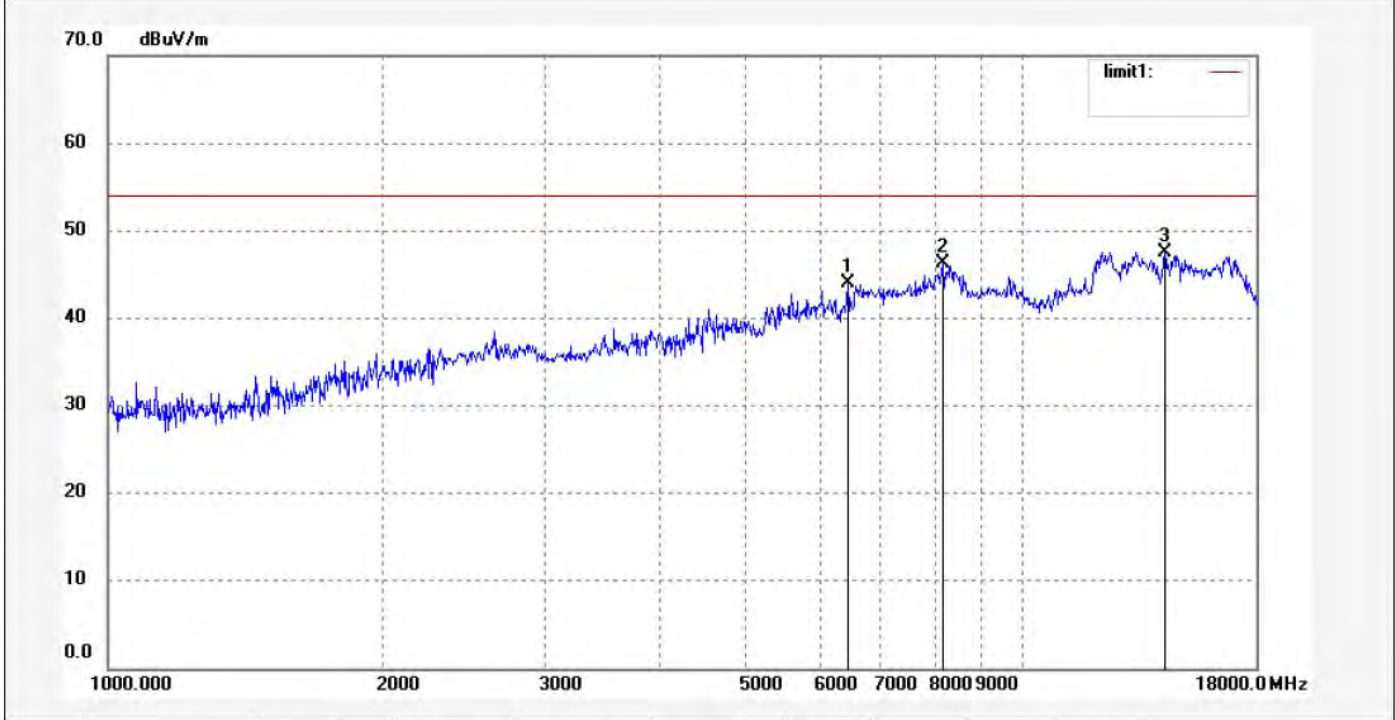
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #547	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:48:19
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6442.251	41.24	2.77	44.01	54.00	-9.99	peak			
2	8178.913	39.29	6.99	46.28	54.00	-7.72	peak			
3	14302.334	5.83	41.73	47.56	54.00	-6.44	peak			





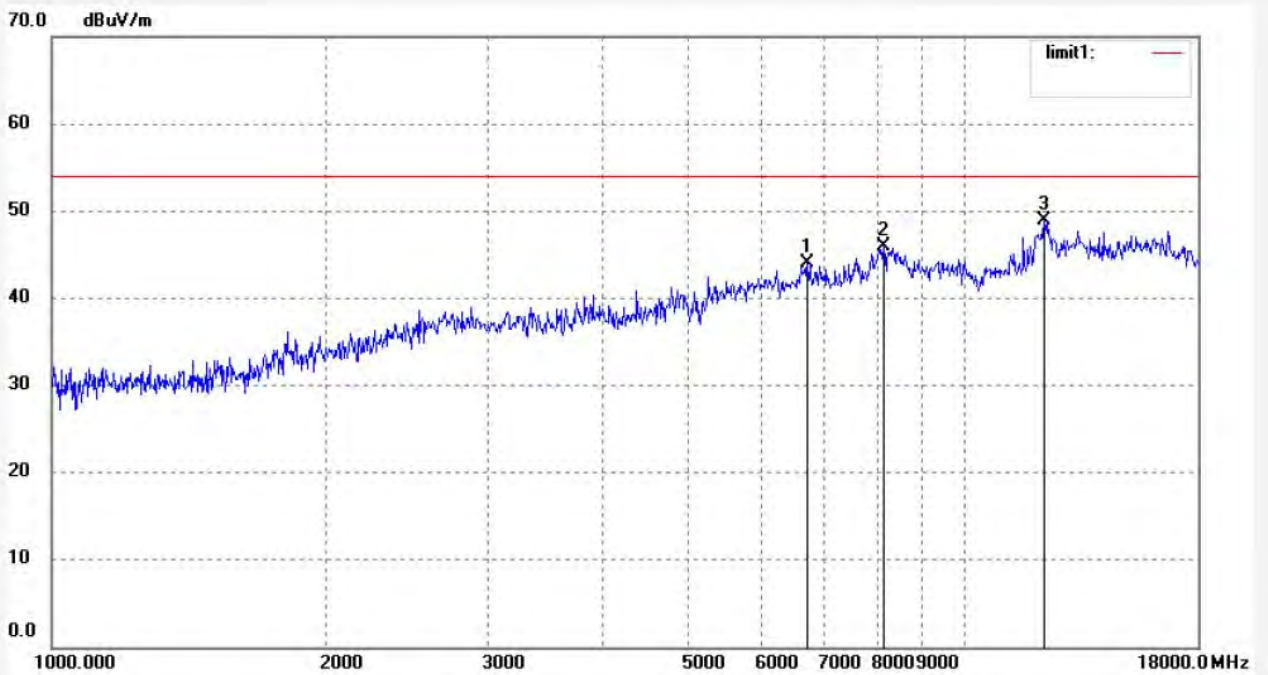
**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #548	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:49:37
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11g)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6729.759	40.65	3.39	44.04	54.00	-9.96	peak			
2	8155.141	39.04	6.98	46.02	54.00	-7.98	peak			
3	12222.059	10.81	38.12	48.93	54.00	-5.07	peak			



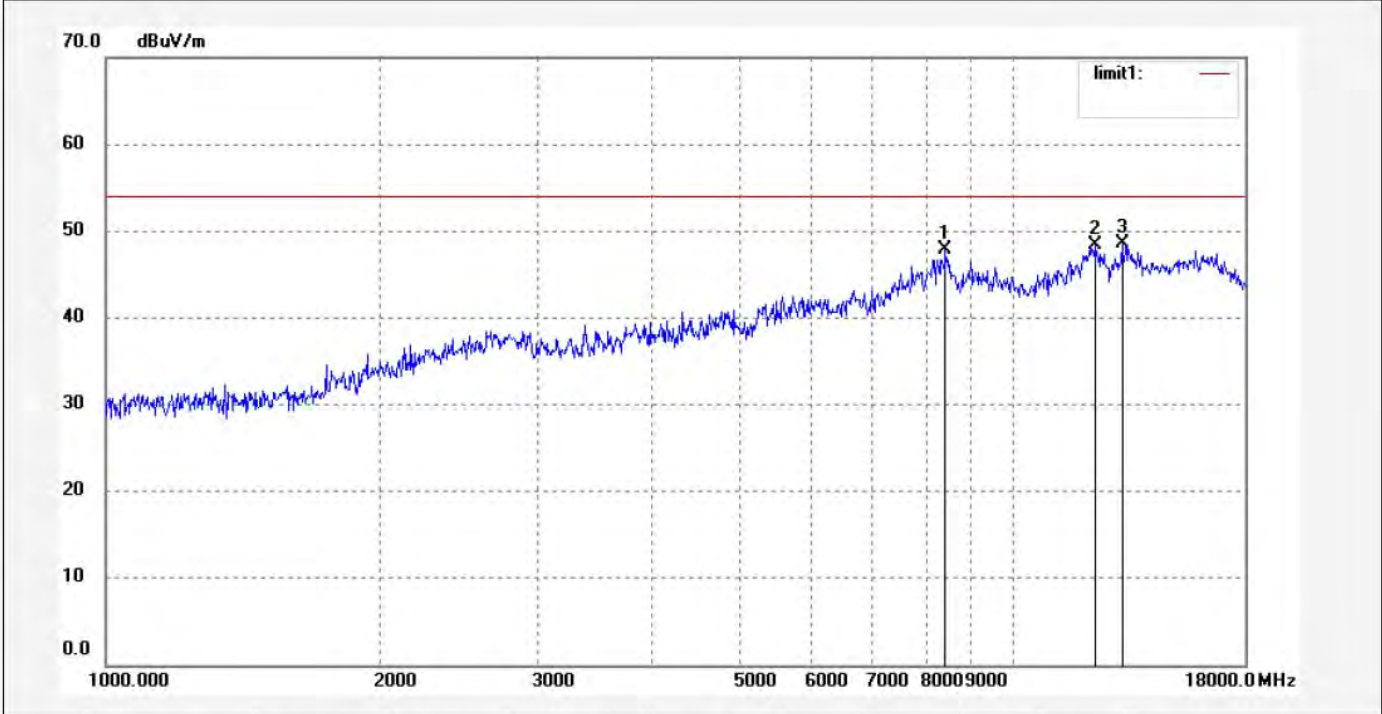
**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #549	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:50:22
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	8420.480	39.72	8.06	47.78	54.00	-6.22	peak			
2	12329.252	10.08	38.23	48.31	54.00	-5.69	peak			
3	13182.917	9.29	39.22	48.51	54.00	-5.49	peak			



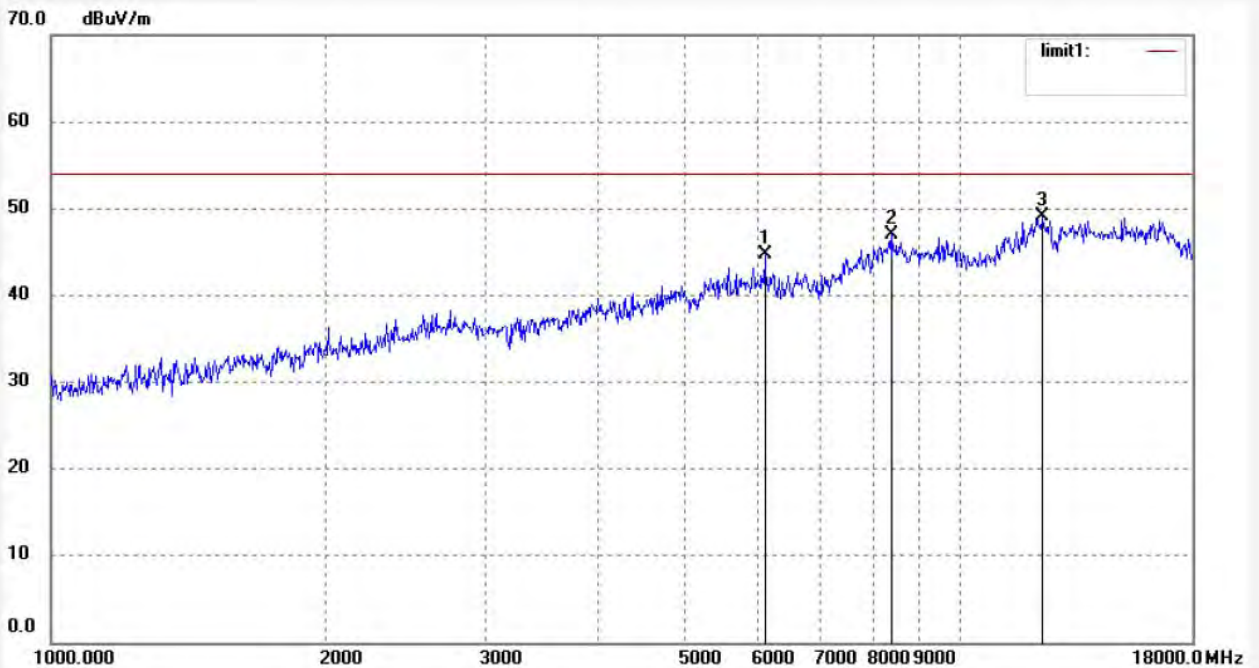
**ACCURATE TECHNOLOGY CO., LTD.**

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #550	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:51:17
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2412MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6095.641	42.36	2.36	44.72	54.00	-9.28	peak			
2	8420.480	38.98	8.06	47.04	54.00	-6.96	peak			
3	12329.252	10.81	38.23	49.04	54.00	-4.96	peak			



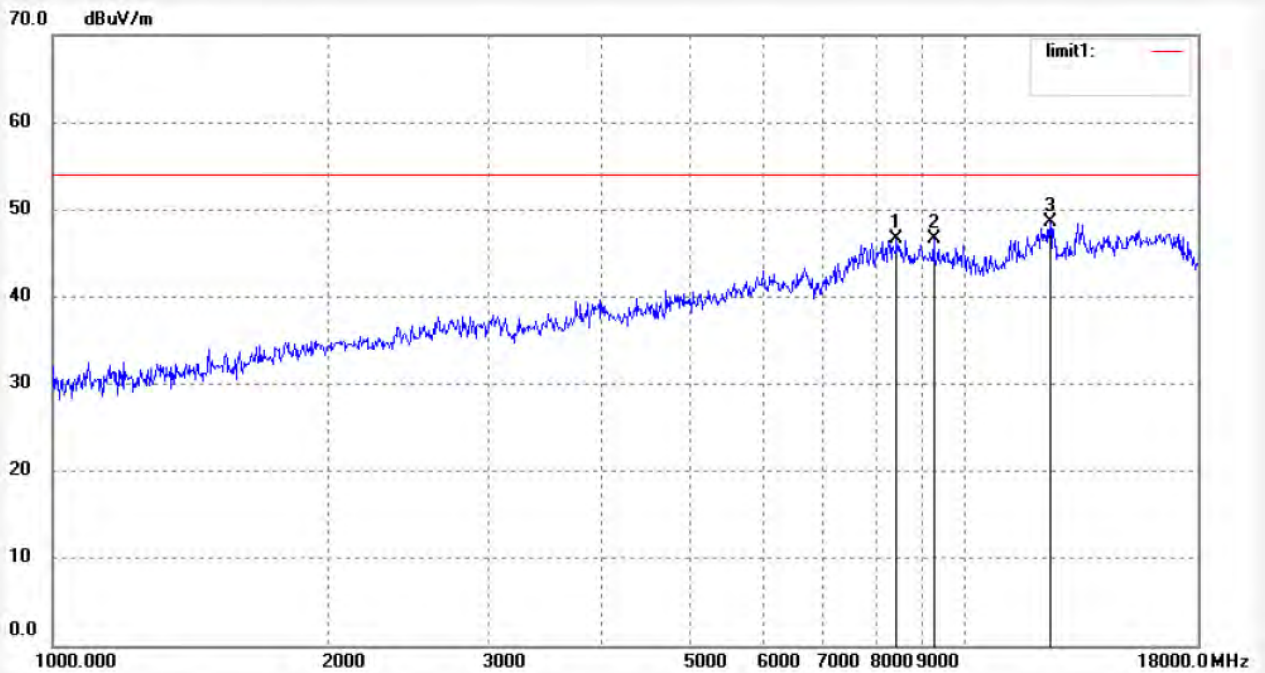
**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #551	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:52:39
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2437MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	8420.480	38.54	8.06	46.60	54.00	-7.40	peak			
2	9242.484	38.29	8.34	46.63	54.00	-7.37	peak			
3	12401.236	10.30	38.30	48.60	54.00	-5.40	peak			



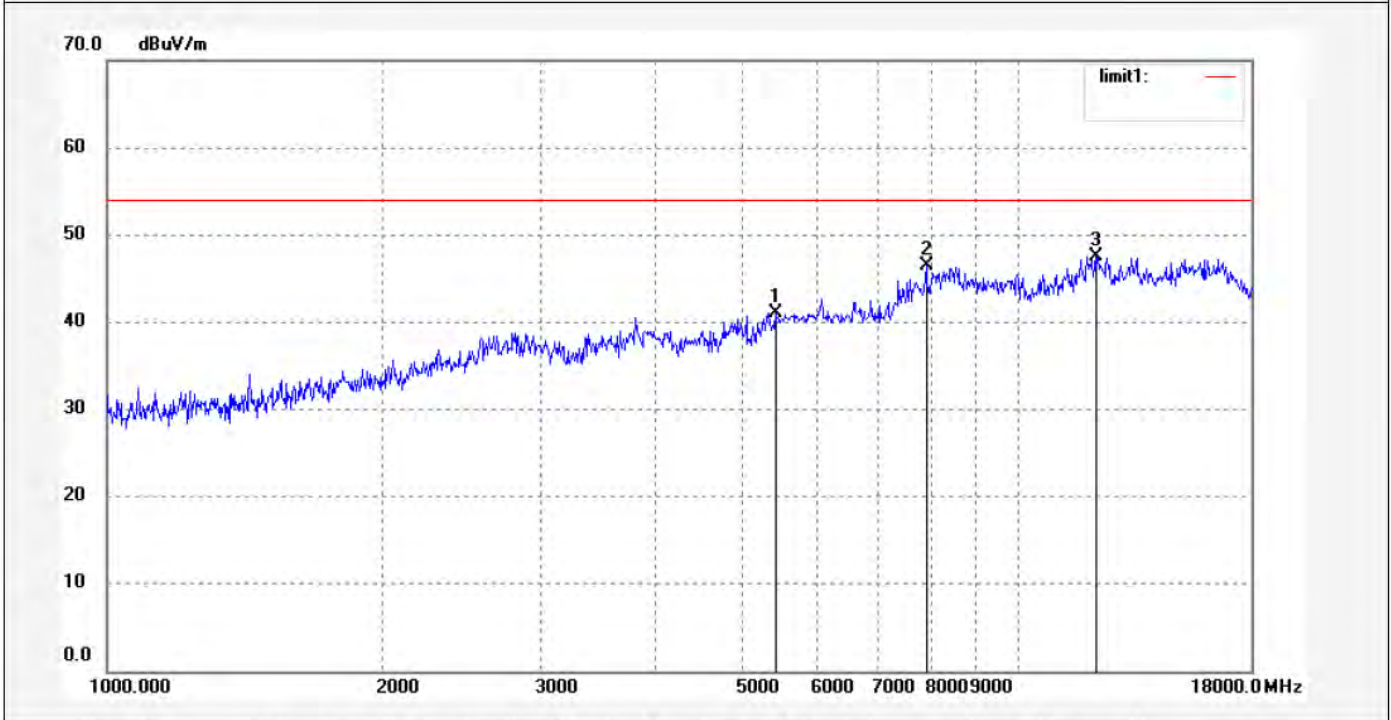
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #552	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:53:38
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2437MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	5409.914	40.39	0.71	41.10	54.00	-12.90	peak			
2	7921.187	40.08	6.43	46.51	54.00	-7.49	peak			
3	12151.115	37.40	10.12	47.52	54.00	-6.48	peak			



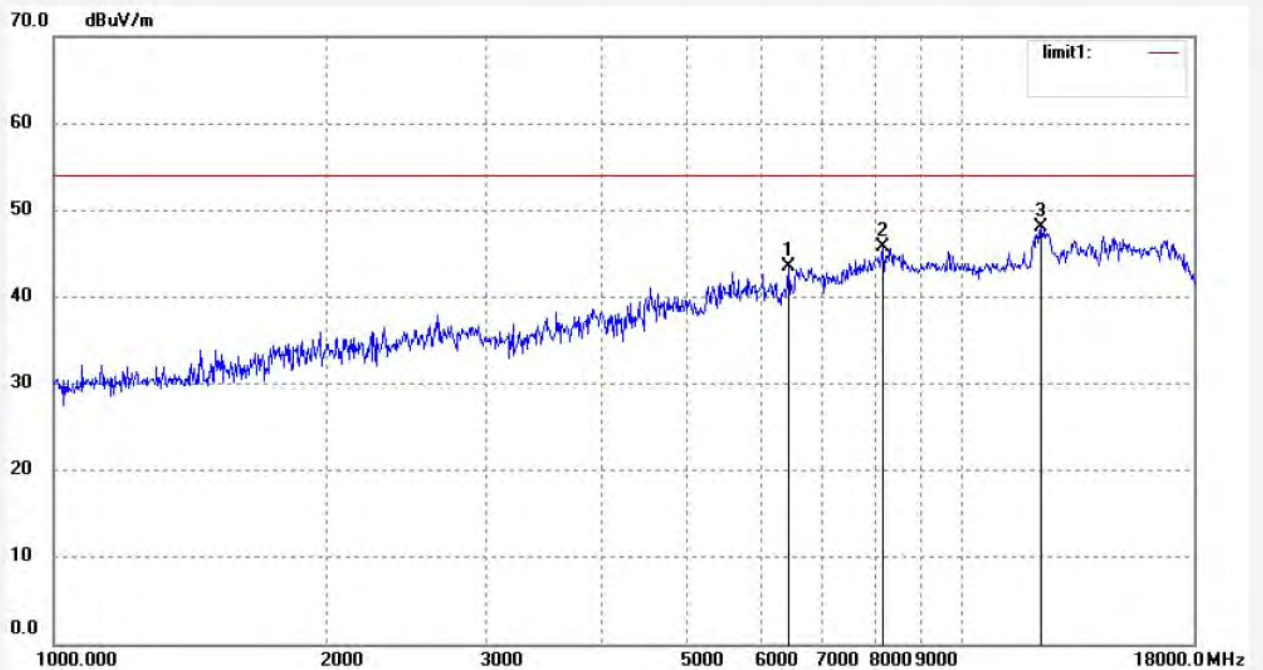
**ACCURATE TECHNOLOGY CO., LTD.**

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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #553	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:54:10
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6442.251	40.74	2.77	43.51	54.00	-10.49	peak			
2	8178.913	38.79	6.99	45.78	54.00	-8.22	peak			
3	12222.059	9.94	38.12	48.06	54.00	-5.94	peak			



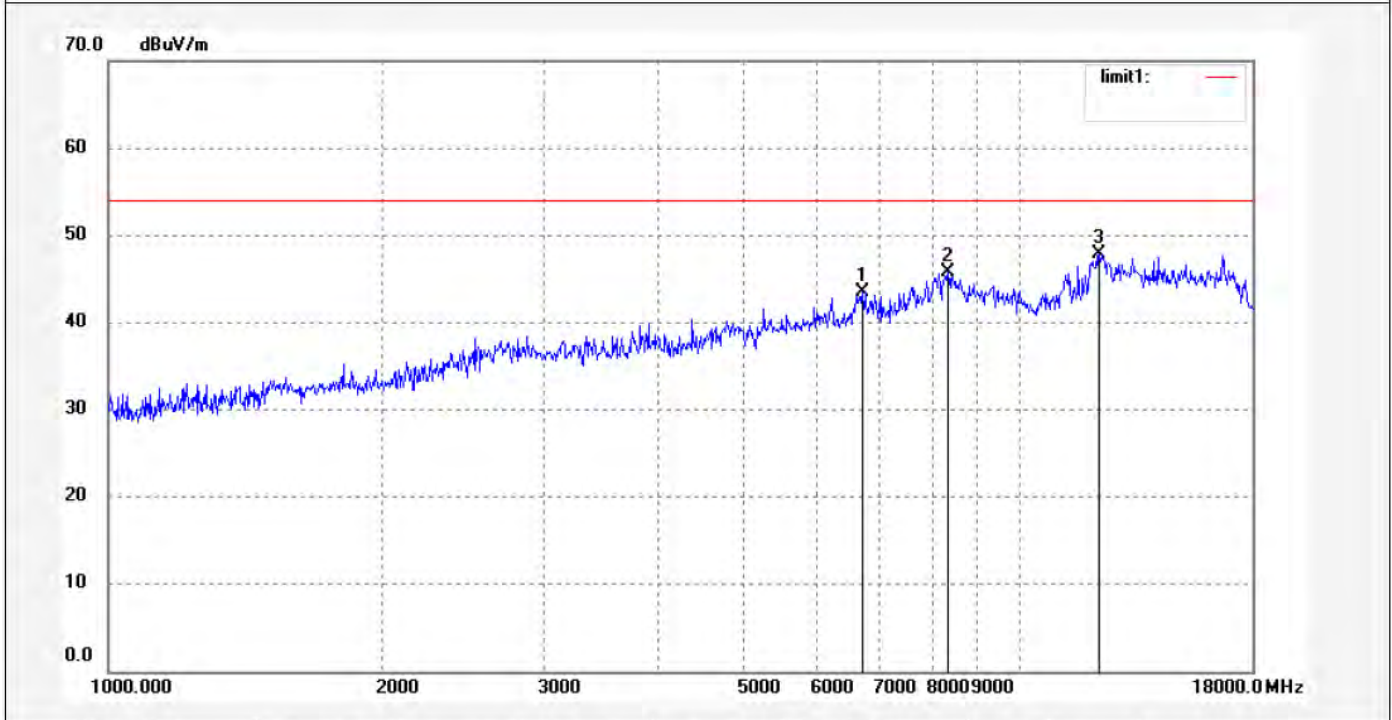
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #554	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:55:26
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2462MHz(802.11n20)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6729.759	40.15	3.39	43.54	54.00	-10.46	peak			
2	8347.270	38.03	7.81	45.84	54.00	-8.16	peak			
3	12222.059	9.81	38.12	47.93	54.00	-6.07	peak			



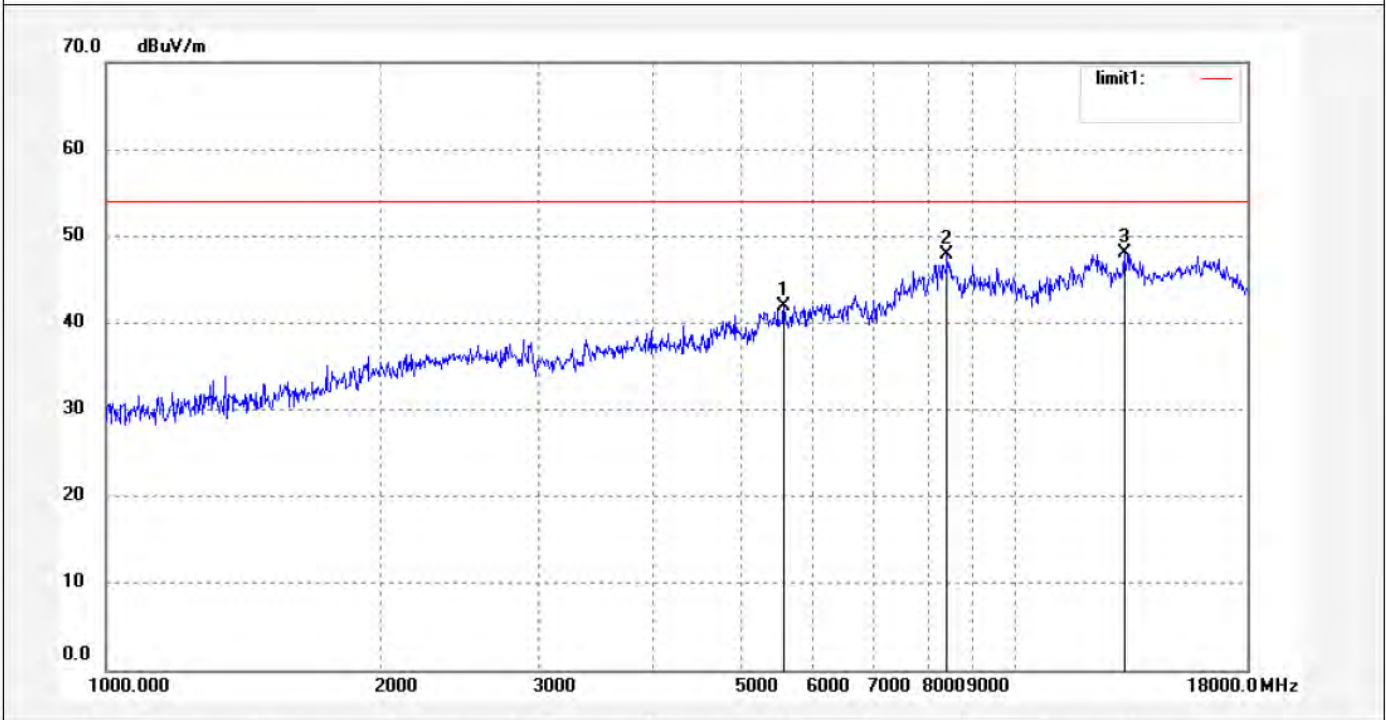
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #555	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:56:18
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2422MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	5569.697	40.60	1.38	41.98	54.00	-12.02	peak			
2	8420.480	39.72	8.06	47.78	54.00	-6.22	peak			
3	13182.917	8.79	39.22	48.01	54.00	-5.99	peak			





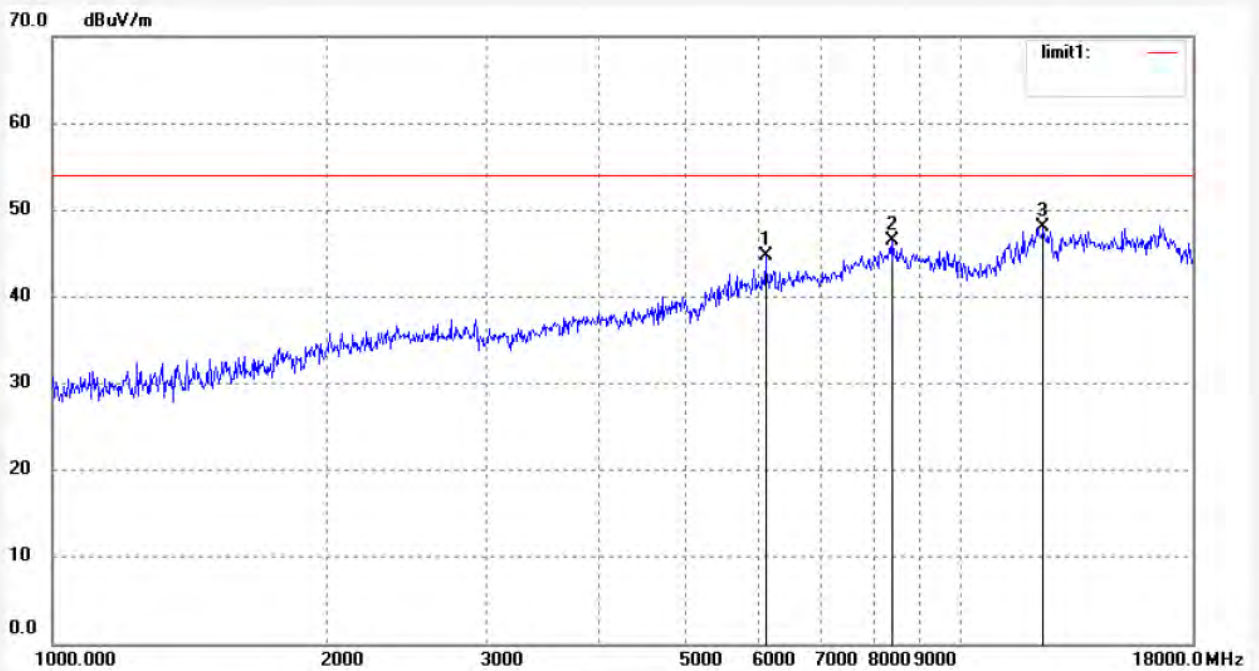
**ACCURATE TECHNOLOGY CO., LTD.**

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

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #556 Standard: FCC Class B 3M Radiated Test item: Radiation Test Temp.( C)/Hum.(%) 23 C / 48 % EUT: HD SMART TERMINAL STB Mode: TX 2422MHz(802.11n40) Model: A8E Manufacturer: Skyworth	Polarization: Vertical Power Source: AC 120V/60Hz Date: 2014/07/23 Time: 17:57:49 Engineer Signature: Distance:
---	--

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6095.641	42.36	2.36	44.72	54.00	-9.28	peak			
2	8420.480	38.48	8.06	46.54	54.00	-7.46	peak			
3	12329.252	9.81	38.23	48.04	54.00	-5.96	peak			



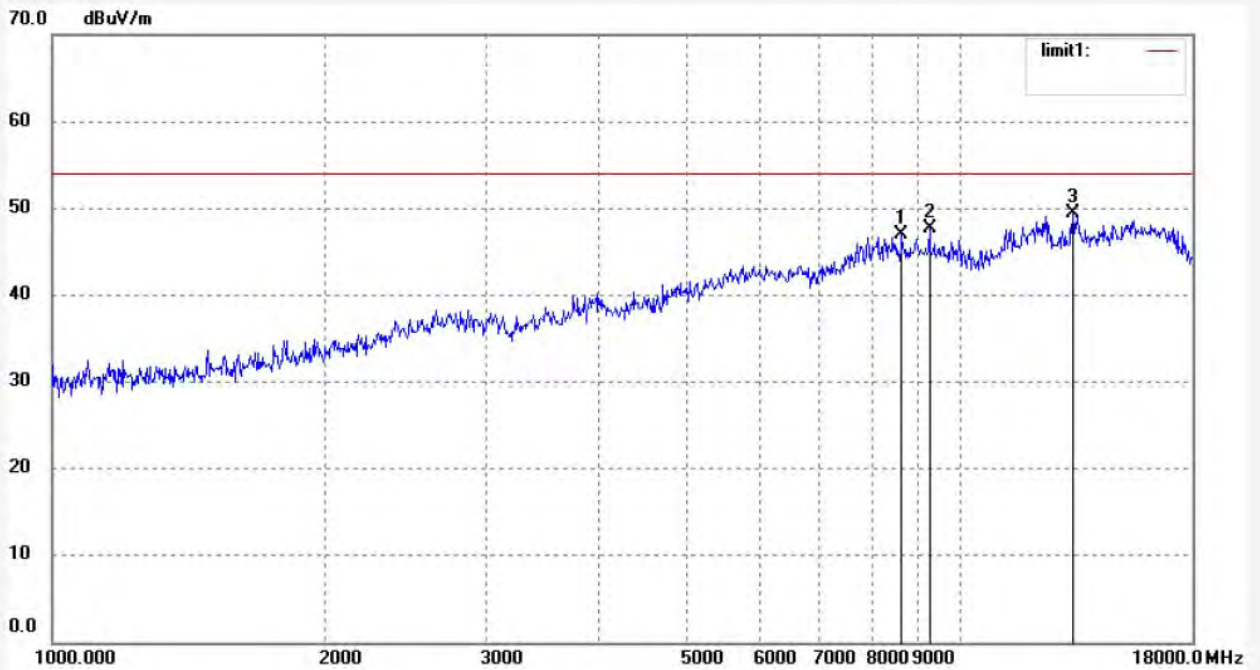
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Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #557	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:58:18
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2437MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	8618.860	39.36	7.59	46.95	54.00	-7.05	peak			
2	9242.484	39.29	8.34	47.63	54.00	-6.37	peak			
3	13298.538	10.02	39.36	49.38	54.00	-4.62	peak			



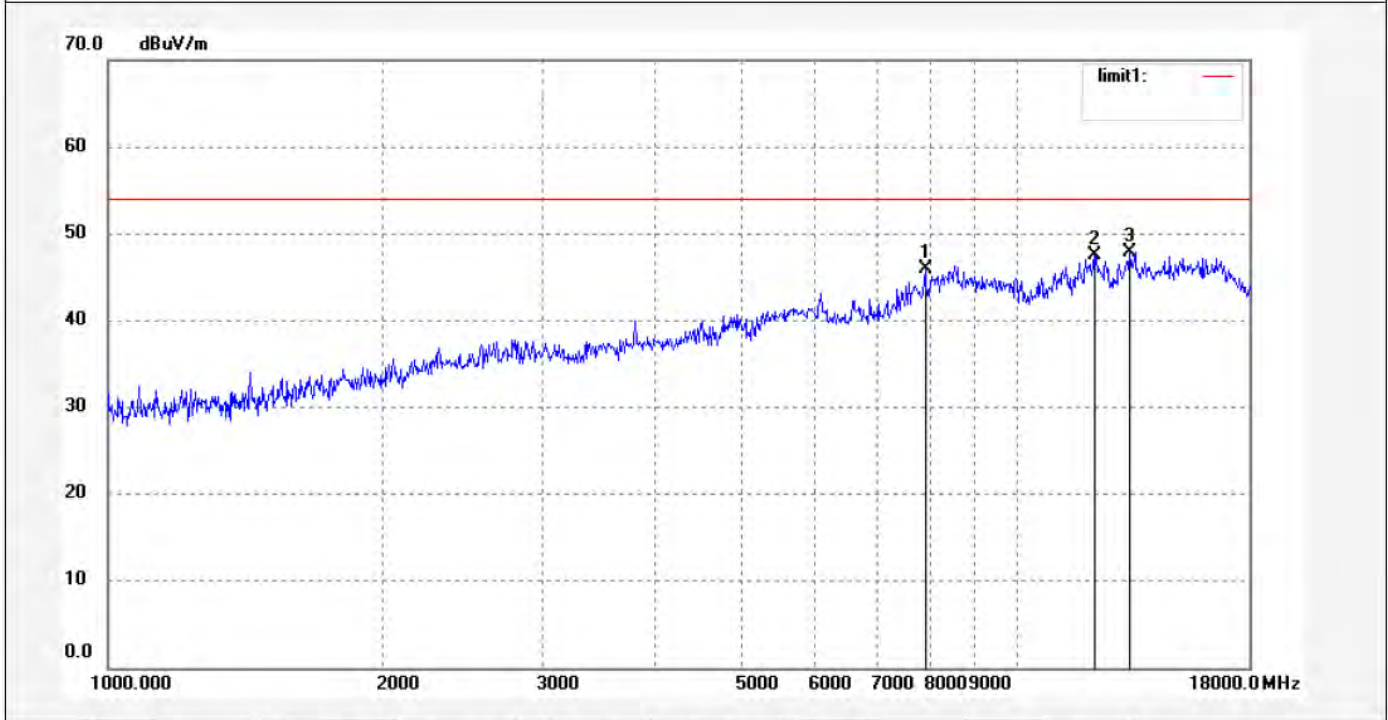
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #558	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 17:59:33
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2437MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	7921.187	39.58	6.43	46.01	54.00	-7.99	peak			
2	12151.115	37.40	10.12	47.52	54.00	-6.48	peak			
3	13298.538	8.53	39.36	47.89	54.00	-6.11	peak			



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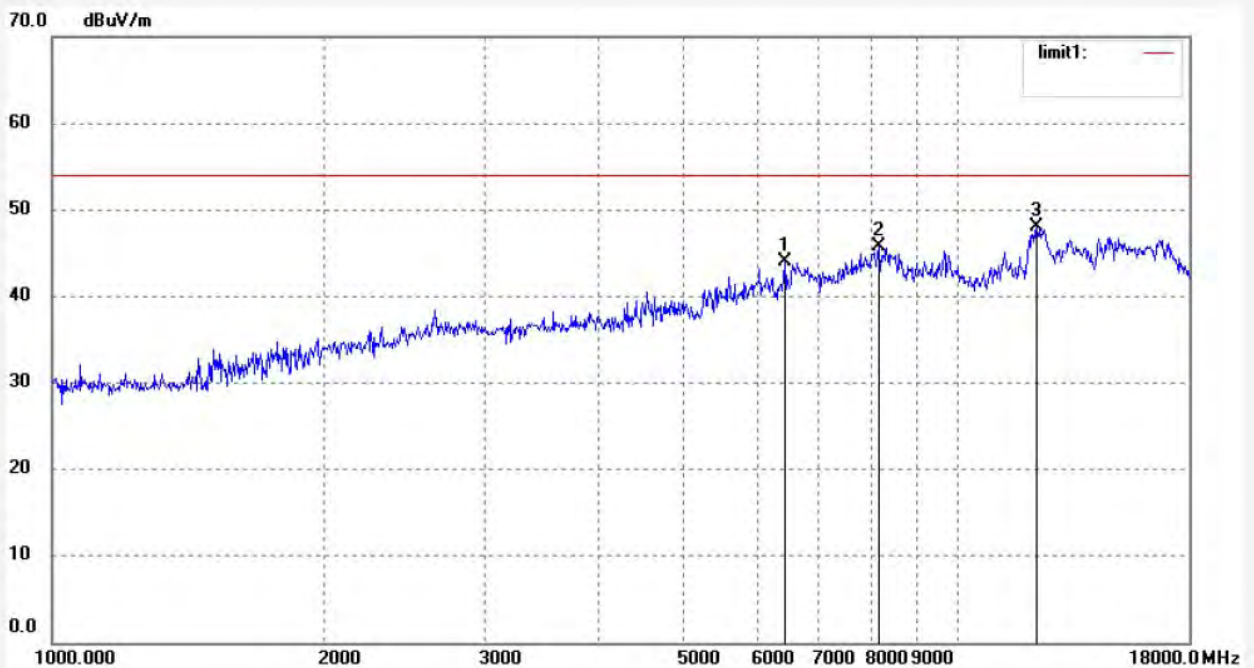
Site: 2# Chamber

Tel:+86-0755-26503290

Fax:+86-0755-26503396

Job No.: ricky #559	Polarization: Horizontal
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 18:00:09
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2452MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6442.251	41.24	2.77	44.01	54.00	-9.99	peak			
2	8178.913	38.79	6.99	45.78	54.00	-8.22	peak			
3	12222.059	9.94	38.12	48.06	54.00	-5.94	peak			



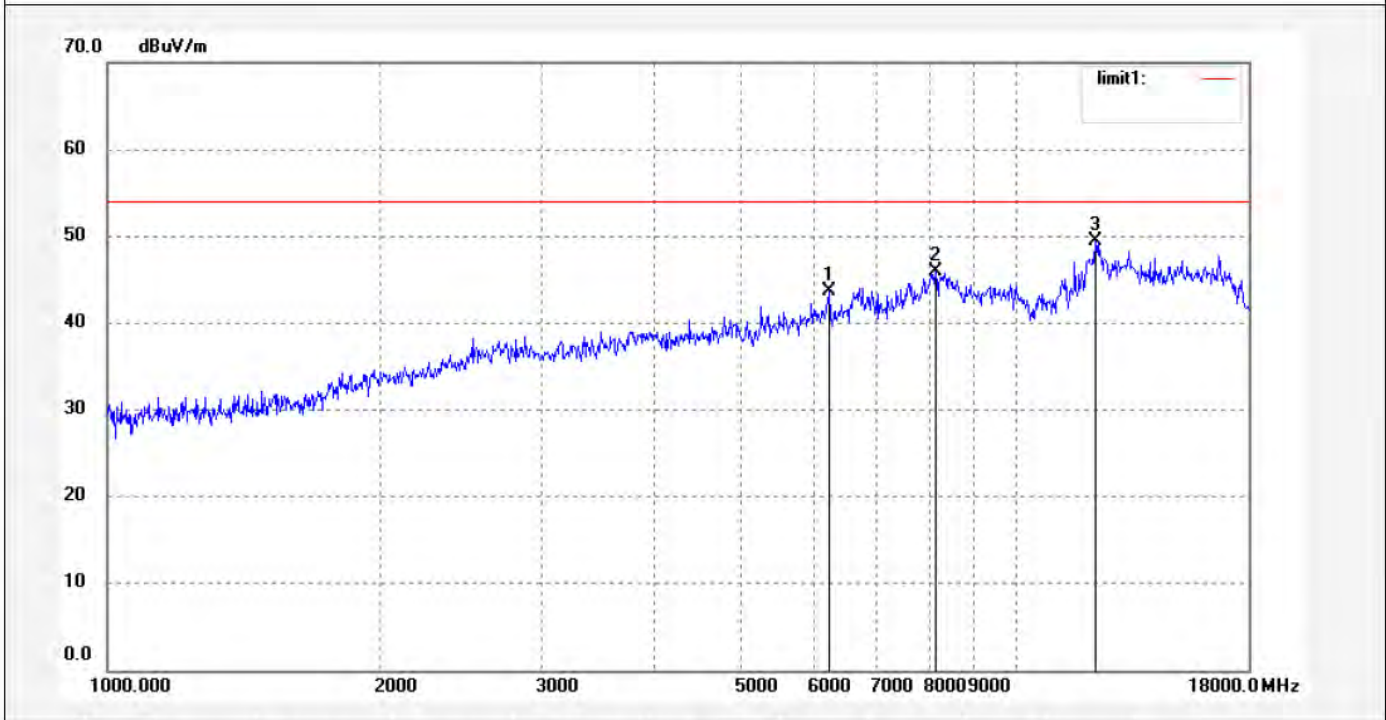
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Science & Industry Park,Nanshan Shenzhen,P.R.China

Site: 2# Chamber  
Tel:+86-0755-26503290  
Fax:+86-0755-26503396

Job No.: ricky #560	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2014/07/23
Temp.( C)/Hum.(%) 23 C / 48 %	Time: 18:01:27
EUT: HD SMART TERMINAL STB	Engineer Signature:
Mode: TX 2452MHz(802.11n40)	Distance:
Model: A8E	
Manufacturer: Skyworth	

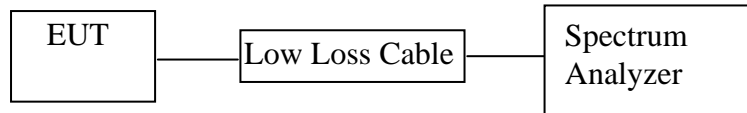
Note: Report No:ATE20141378



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	6221.115	41.23	2.48	43.71	54.00	-10.29	peak			
2	8155.141	39.04	6.98	46.02	54.00	-7.98	peak			
3	12222.059	11.31	38.12	49.43	54.00	-4.57	peak			

## 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 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.

### 10.4. 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 2412-2462 and 2422-2452MHz. We select 2412MHz, 2437MHz, 2462MHz and 2422MHz, 2437MHz, 2452MHz 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.

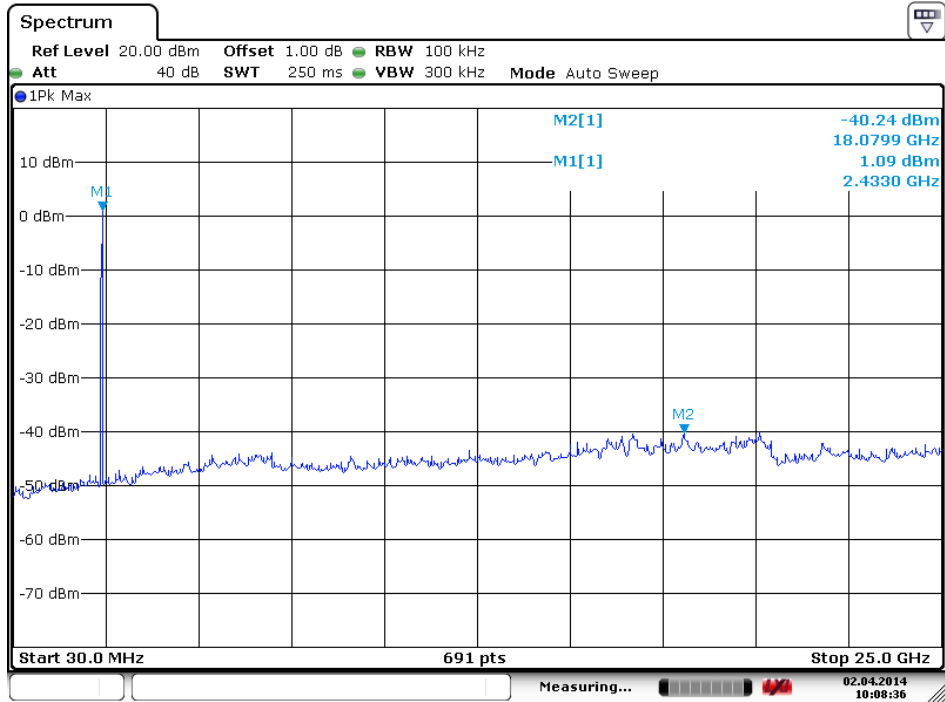
10.5.3. The Conducted Spurious Emission was measured and recorded.

## 10.6. Test Result

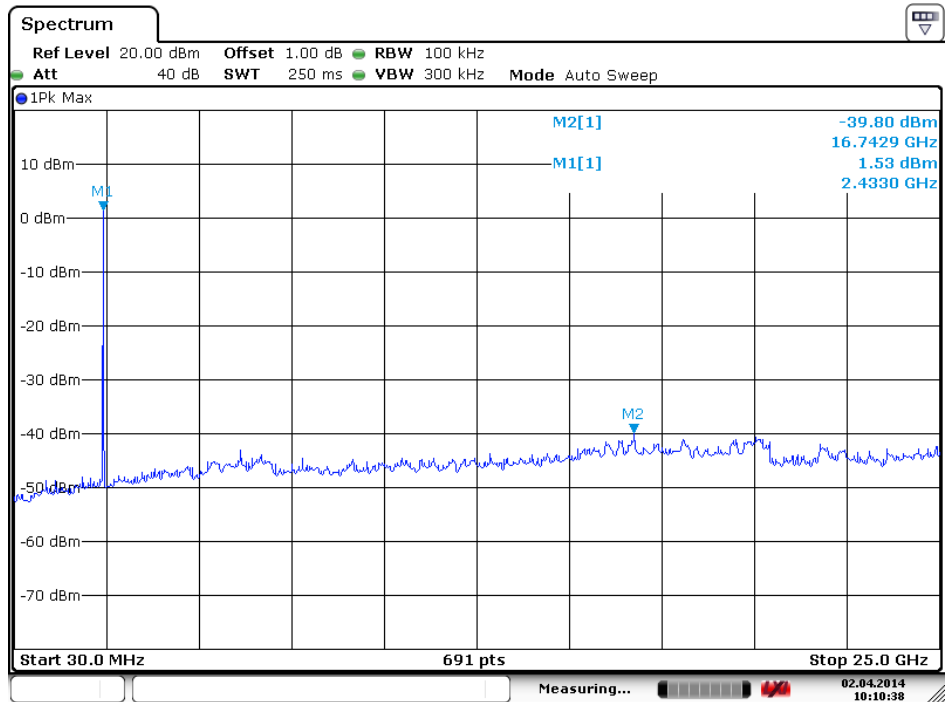
**Pass.**

The spectrum analyzer plots are attached as below.

### TX 802.11b Channel Low 2412MHz

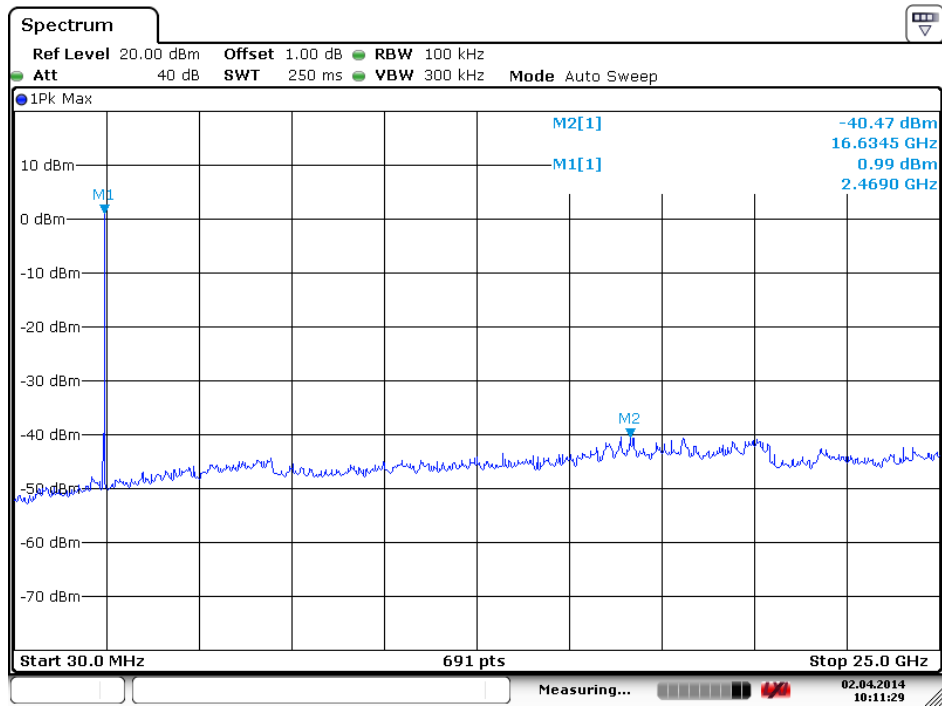


### TX 802.11b Channel Middle 2437MHz

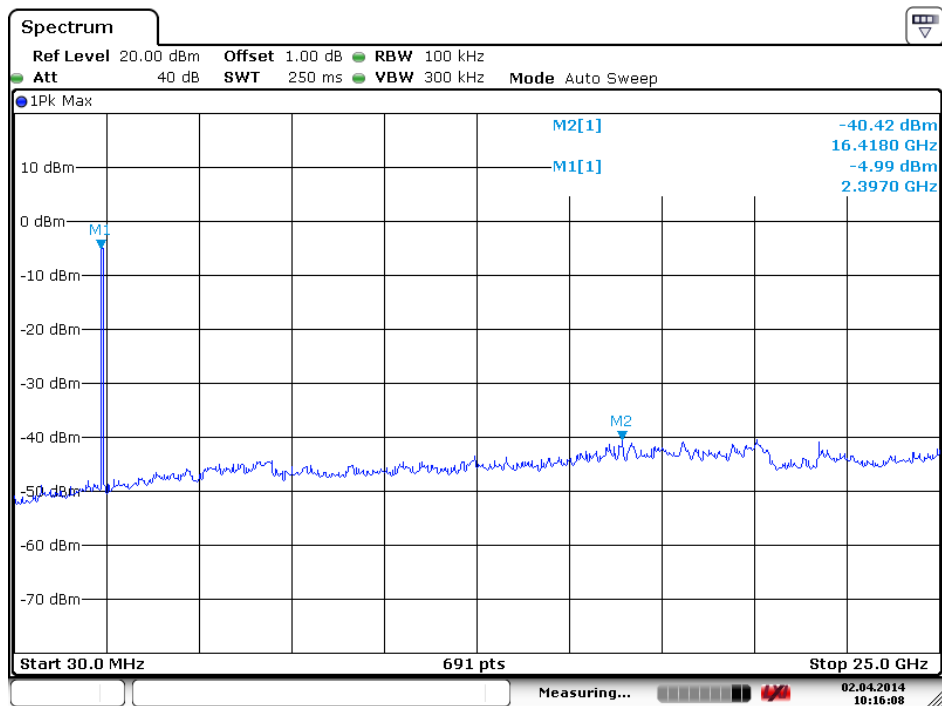




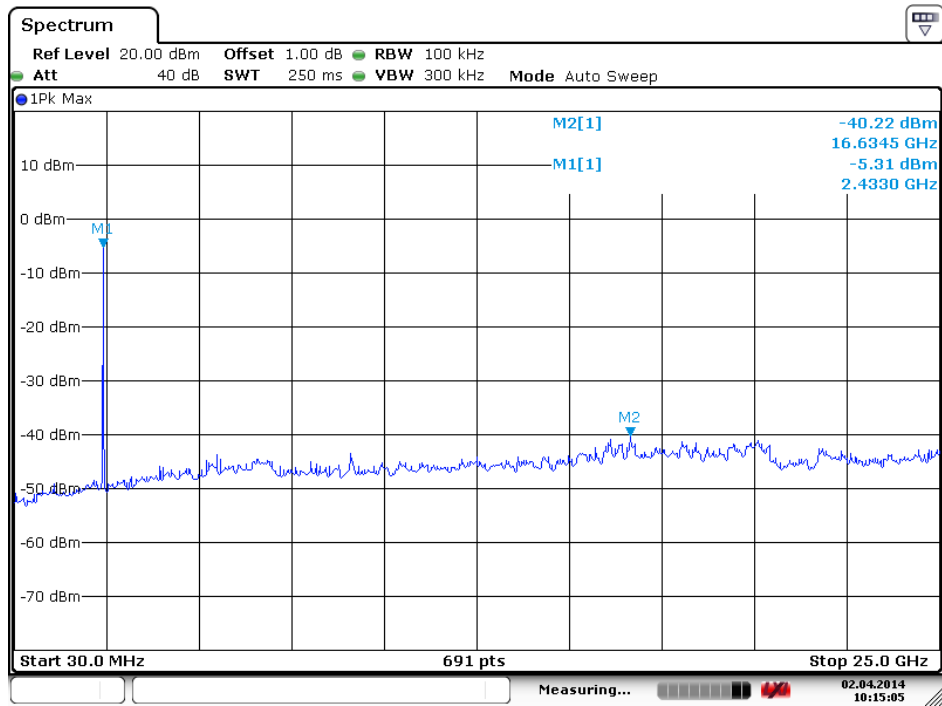
### TX 802.11b Channel High 2462MHz



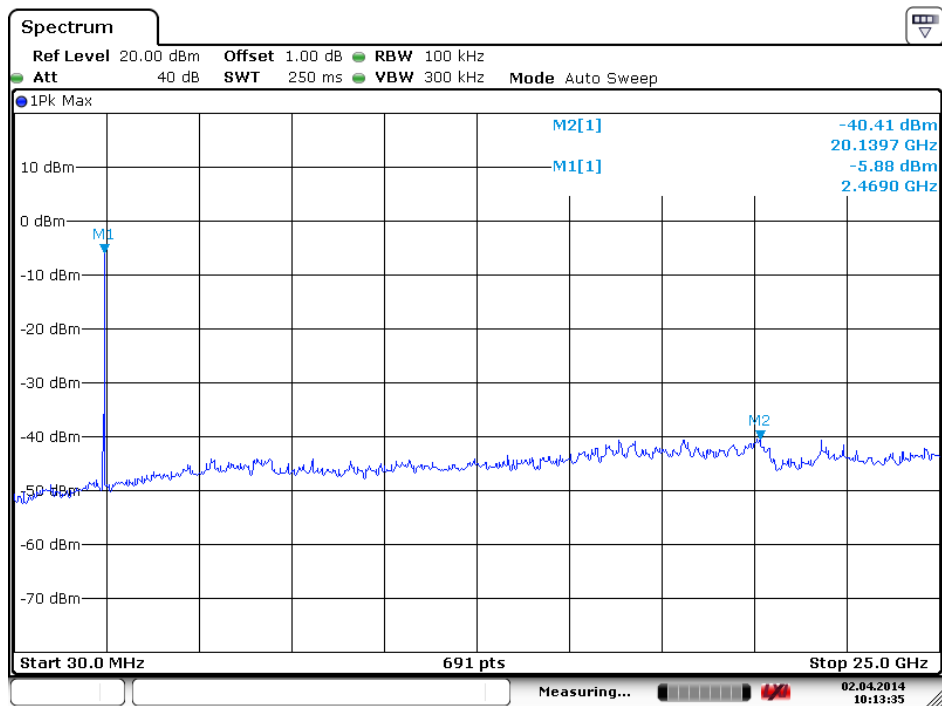
### TX 802.11g Channel Low 2412MHz



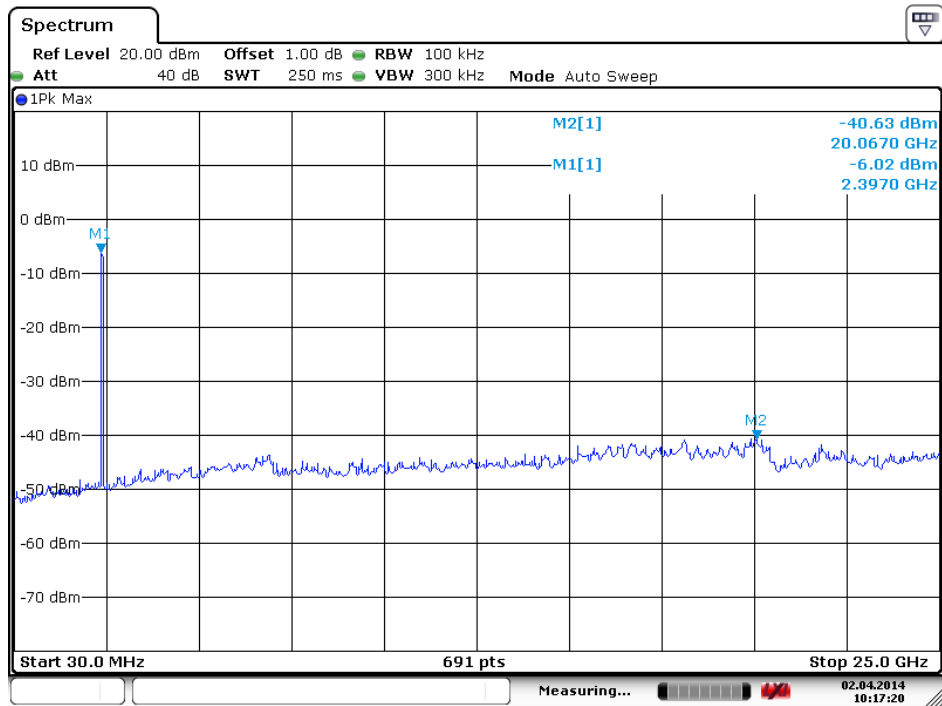
### TX 802.11g Channel Middle 2437MHz



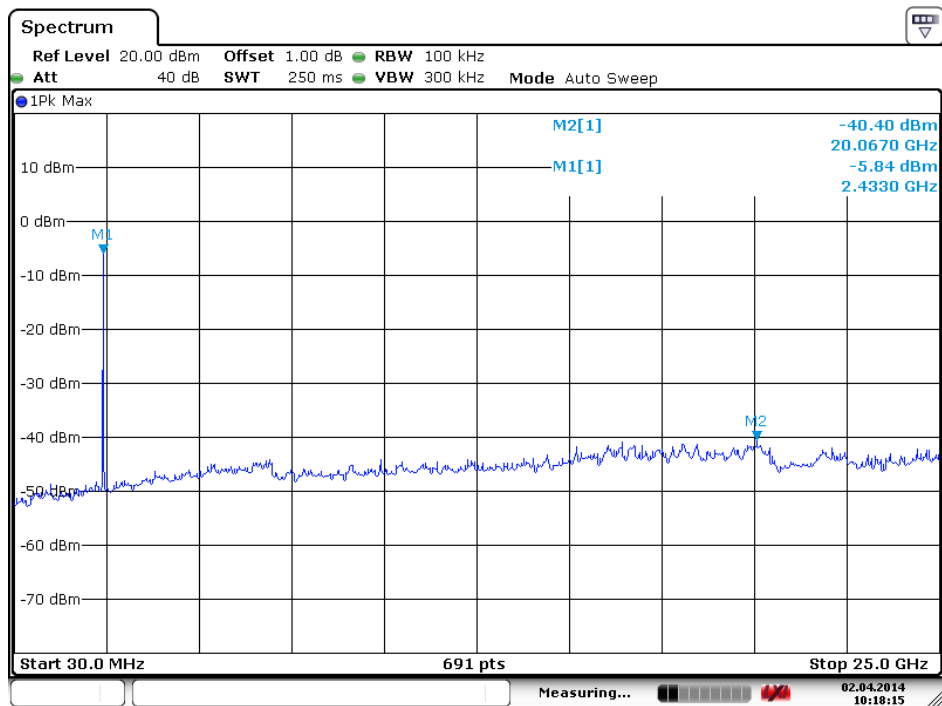
### TX 802.11g Channel High 2462MHz



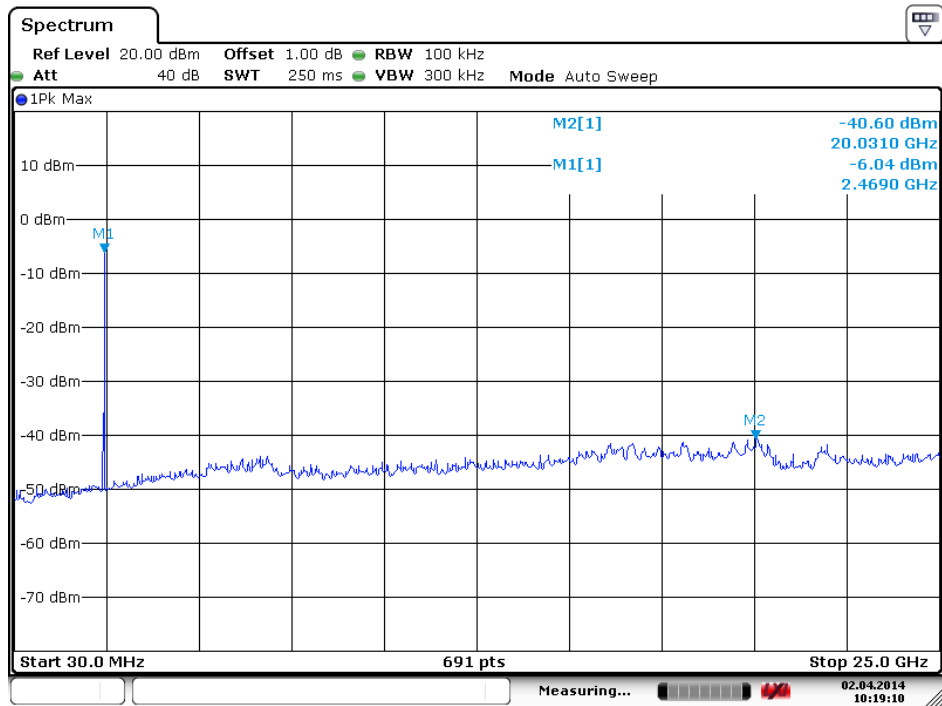
### TX 802.11n Channel Low 2412MHz (20MHz)



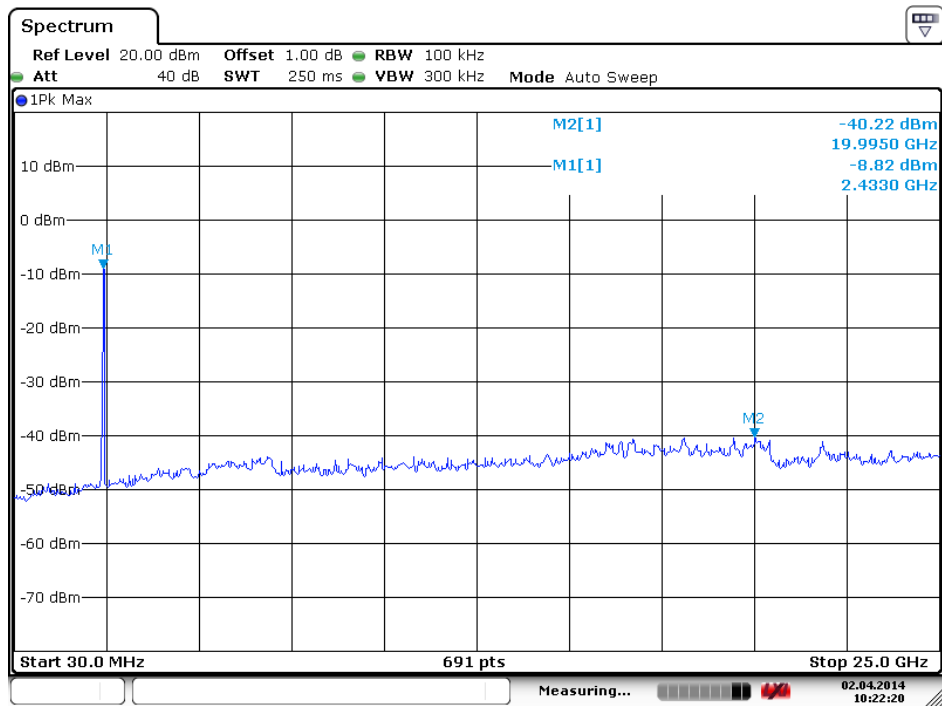
### TX 802.11n Channel Middle 2437MHz (20MHz)



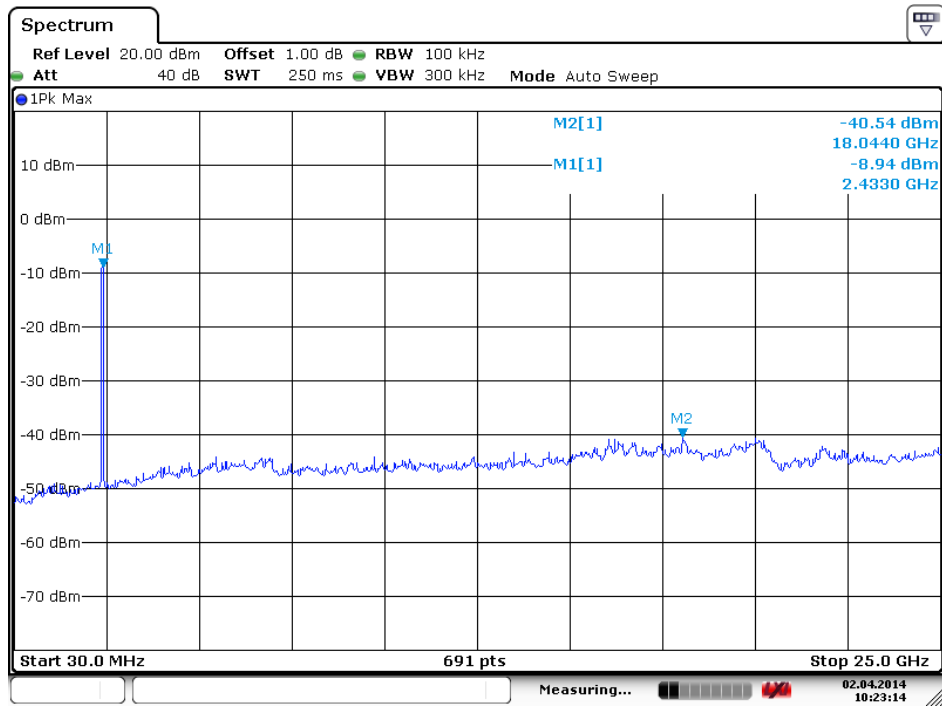
### TX 802.11n Channel High 2462MHz (20MHz)



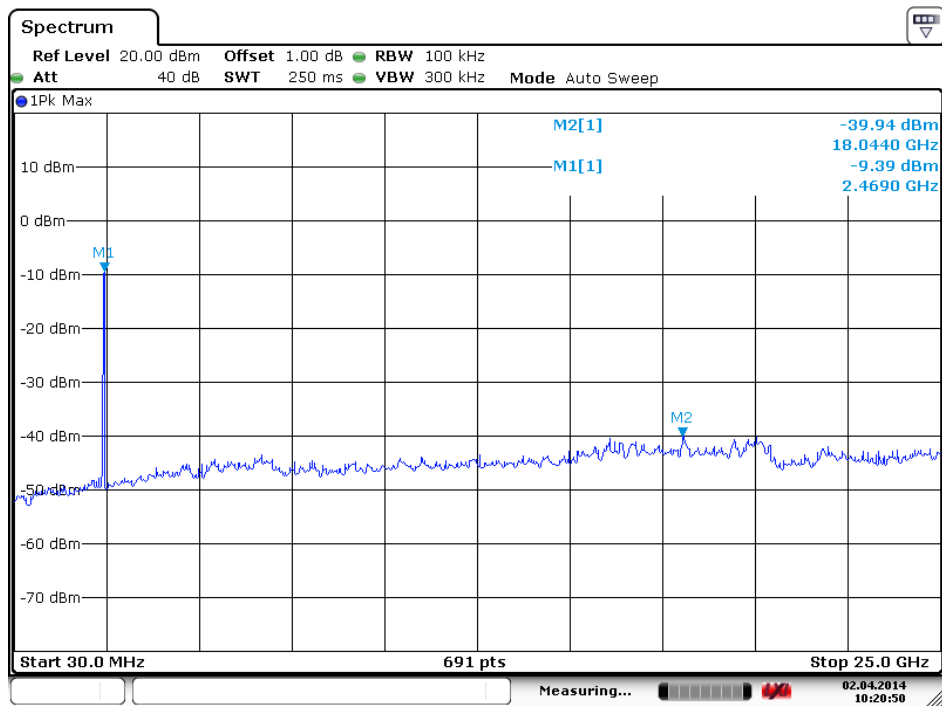
### TX 802.11n Channel Low 2422MHz (40MHz)



### TX 802.11n Channel Middle 2437MHz (40MHz)



### TX 802.11n Channel High 2452MHz (40MHz)

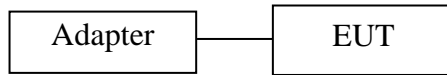


# 11.AC POWER LINE CONDUCTED EMISSION FOR FCC PART

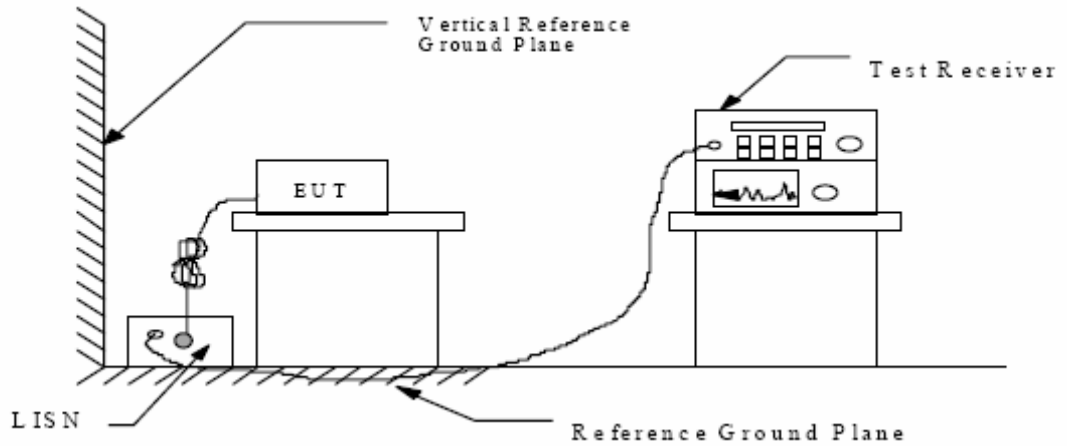
## 15 SECTION 15.207(A)

### 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



### 11.2.The Emission Limit

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

Frequency (MHz)	Limit dB(μV)	
	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

\* Decreases with the logarithm of the frequency.

### 11.3.Configuration of EUT on Measurement

The 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.

### 11.4.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 (Charging) 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 50ohm 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: 2009 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

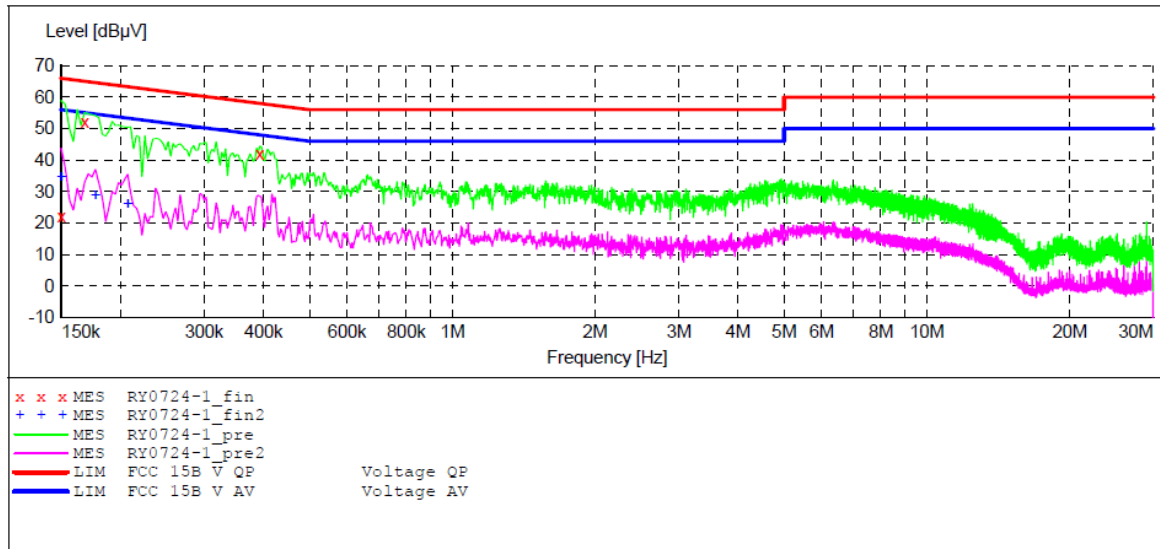
ACCURATE TECHNOLOGY CO., LTD

CONDUCTED EMISSION STANDARD FCC PART 15 B

EUT: HD SMART TERMINAL STB M/N:A8E  
 Manufacturer: Skyworth  
 Operating Condition: Operation  
 Test Site: 1#Shielding Room  
 Operator: Ricky  
 Test Specification: N 120V/60Hz  
 Comment: Report No.: ATE20141378

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

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak Average	1.0 s	9 kHz	NSLK8126 2008



MEASUREMENT RESULT: "RY0724-1\_fin"

7/24/2014 3:54PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	55.20	10.5	66	10.8	QP	N	GND
0.168000	52.20	10.5	65	12.9	QP	N	GND
0.393000	41.90	10.7	58	16.1	QP	N	GND

MEASUREMENT RESULT: "RY0724-1\_fin2"

7/24/2014 3:54PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.150000	34.70	10.5	56	21.3	AV	N	GND
0.177000	28.60	10.5	55	26.0	AV	N	GND
0.207000	25.90	10.5	53	27.4	AV	N	GND



**ACCURATE TECHNOLOGY CO., LTD**

**CONDUCTED EMISSION STANDARD FCC PART 15 B**

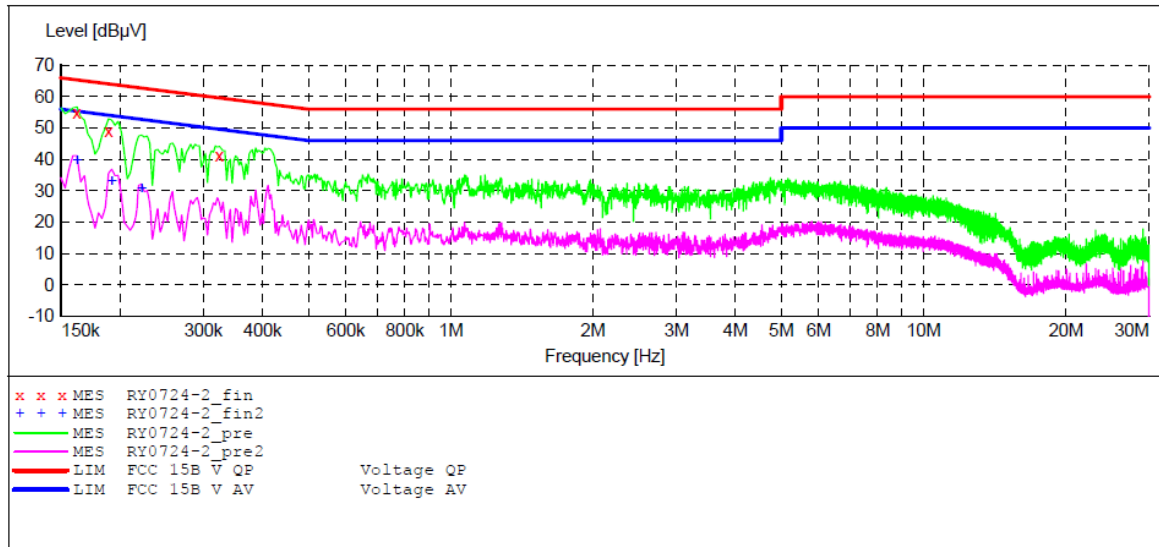
EUT: HD SMART TERMINAL STB M/N:A8E  
 Manufacturer: Skyworth  
 Operating Condition: Operation  
 Test Site: 1#Shielding Room  
 Operator: Ricky  
 Test Specification: L 120V/60Hz  
 Comment:

Report No.: ATE20141378

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

Short Description: \_SUB\_STD\_VTERM2 1.70

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
150.0 kHz	30.0 MHz	4.5 kHz	QuasiPeak	1.0 s	9 kHz	NSLK8126 2008
Average						



**MEASUREMENT RESULT: "RY0724-2\_fin"**

7/24/2014 3:59PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.162000	54.70	10.5	65	10.7	QP	L1	GND
0.189000	49.00	10.5	64	15.1	QP	L1	GND
0.324000	41.40	10.6	60	18.2	QP	L1	GND

**MEASUREMENT RESULT: "RY0724-2\_fin2"**

7/24/2014 3:59PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.162000	39.60	10.5	55	15.8	AV	L1	GND
0.192000	32.90	10.5	54	21.0	AV	L1	GND
0.222000	30.60	10.6	53	22.1	AV	L1	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.

