

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT  
INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 15 SUBPART C  
REQUIREMENT**

*OF*

**Touch Screen LED Controller**

**MODEL No.: E4405b**

**Trademark: N/A**

**FCC ID: 2ABU2-E4405B**

**REPORT NO.: ES131204007E**

**ISSUE DATE: January 24, 2014**

*Prepared for*

**P12 Enterprises/ Allen Bogdanoff.**

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*Prepared by*

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## VERIFICATION OF COMPLIANCE

Applicant:	P12 Enterprises/ Allen Bogdanoff. 954 N Humboldt St, San Mateo, CA 94401, United States.
Manufacturer:	P12 Enterprises/ Allen Bogdanoff. 954 N Humboldt St, San Mateo, CA 94401, United States..
Factory:	Futlight Optoelectronics Co., Ltd. Floor 2, Building D, Fusen Technology Park, Hangchang Road, Bao'an District, Shenzhen City, Guangdong Province, China.
Product Description:	Touch Screen LED Controller
Model Number:	E4405b
Date of Test:	December 05, 2013 to January 24, 2014

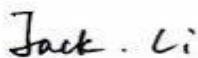
### We hereby certify that:

The above equipment was tested by SHENZHEN EMTEK CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2009) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.249.

The test results of this report relate only to the tested sample identified in this report.


Date of Test : December 05, 2013 to January 24, 2014

Prepared by :



Jack Li/Editor

Reviewer :



June Xie /Supervisor

Approve & Authorized Signer :



Lisa Wang/Manager

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## **1. GENERAL INFORMATION**

### **1.1. Product Description**

P12 Enterprises/ Allen Bogdanoff.

A major technical descriptions of EUT is described as following:

- A). Operation Frequency: 2405MHz~2475MHz
- B). Modulation: GFSK
- C). Number of Channels: 71
- D). Channel space: 1MHz
- E). Antenna Type: Metal antenna
- F). Antenna Gain: 2dBi
- G). Power Supply: 3.0V DC(Supplied by 2\*1.5V AA Battery)

### **1.2. Related Submittal(s) / Grant (s)**

This submittal(s) (test report) is intended for FCC ID: 2ABU2-E4405B filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules.

### **1.3. Test Methodology**

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2009). Radiated testing was performed at an antenna to EUT distance 3 meters.

### **1.4. Special Accessories**

Not available for this EUT intended for grant.

### **1.5. Equipment Modifications**

Not available for this EUT intended for grant.

## 1.6. Measurement Uncertainty

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±3.00dB
Fundamental Fieldstrength	Not Applicable	95%	±2.94dB
Transmitter 20 dB Bandwidth	Not Applicable	95%	±0.92PPm
Radiated Spurious Emissions	30 MHz to 40 GHz	95%	±3.00dB

## 1.7. Test Facility

Site Description  
 EMC Lab.

: Accredited by CNAS, 2013.10.29  
 The certificate is valid until 2016.10.28  
 The Laboratory has been assessed and proved to be in compliance with CNAS/CL01:2006(identical to ISO/IEC17025: 2005)  
 The Certificate Registration Number is L2291

Accredited by TUV Rheinland Shenzhen 2010.5.25  
 The Laboratory has been assessed according to the requirements ISO/IEC 17025

Accredited by FCC, October 28, 2010  
 The Certificate Registration Number is 406365.

Accredited by Industry Canada, March 5, 2010  
 The Certificate Registration Number is 46405-4480.

Name of Firm  
 Site Location

: SHENZHEN EMTEK CO., LTD  
 : Bldg 69, Majialong Industry Zone,  
 Nanshan District, Shenzhen, Guangdong, China

## **2. SYSTEM TEST CONFIGURATION**

### **2.1. EUT Configuration**

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### **2.2. EUT Exercise**

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

### **2.3. Test Procedure**

#### **2.3.1 Conducted Emissions**

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 13.1.4.1 of ANSI C63.4-2009 Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode.

#### **2.3.2 Radiated Emissions**

The EUT is placed on a turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. Emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes according to the requirements in Section 13.1.4.1 of ANSI C63.4-2009.

## 2.4. Description of test modes

The EUT (Touch Screen LED Controller) has been tested under normal operating condition. Pre-scanned tests, X, Y, Z in the three orthogonal panels, were conducted to determine the final configuration from all possible combinations. Let EUT transmit with highest power, and the worst result was reported with modulation GFSK. The 3 channels of lower, medium and higher were chosen for test.

Pretest Mode	Description
Mode 1	Low – 2405MHz
Mode 2	Middle – 2440MHz
Mode 3	High -2475MHz

For Conducted Test	
Final Test Mode	Description
--	” N/A ” denotes test is not applicable in this test report.

For Radiated Test	
Mode 1	Low – 2405MHz
Mode 2	Middle – 2440MHz
Mode 3	High -2475MHz



### 3. SUMMARY OF TEST RESULTS

FCC Part15, Subpart C (15.249)&Canada RSS-Gen:2010		
Standard Section	Test Item	Result
FCC		
15.207	Conducted Emission	N/A
15.209	Radiated Emission	Pass
15.249	Radiated Spurious Emission	Pass
15.249	Band edge test	Pass
15.249	20dB Bandwidth	Pass

Note: (1) "N/A" denotes test is not applicable in this test report.

### 3.1. CONFIGURATION OF TESTED SYSTEM

**Fig. 2-1 Configuration of Tested System**



### 3.2. DESCRIPTION OF SUPPORT UNITS

Equipment	Mfr/Brand	Model/Type No.	FCC ID / IC	Series No.	Note
Touch Screen LED Controller	N/A	E4405b	2ABU2-E4405B	N/A	EUT

## 4. CONDUCTED EMISSIONS TEST

### 4.1. Measurement Procedure:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured was complete.

### 4.2. Test SET-UP (Block Diagram of Configuration)

### 4.3. Measurement Equipment Used:

Conducted Emission Test Site # 1					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2013	05/28/2014
L.I.S.N	Rohde & Schwarz	ESH2-Z5	834549/005	05/29/2013	05/28/2014
L.I.S.N	Rohde & Schwarz	ENV216	834549/005	05/29/2013	05/28/2014
50ΩCoaxial Switch	Anritsu	MP59B	M20531	05/29/2013	05/28/2014

### 4.4. Conducted Emission Limit

#### (7) Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

#### Note:

1. The lower limit shall apply at the transition frequencies
2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.5. Measurement Result:

Note: Not applicable, the EUT power supply from DC 3V battery.

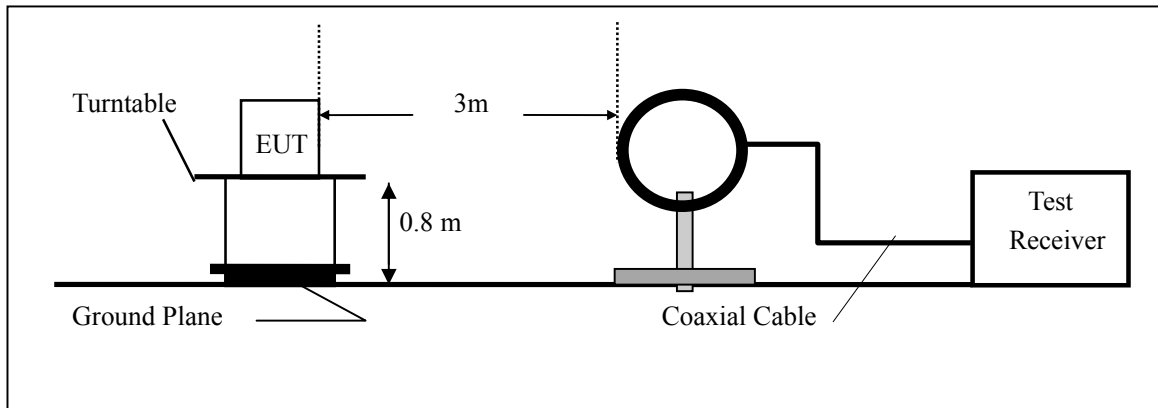
## 5. RADIATED EMISSION TEST

### 5.1. Measurement Procedure

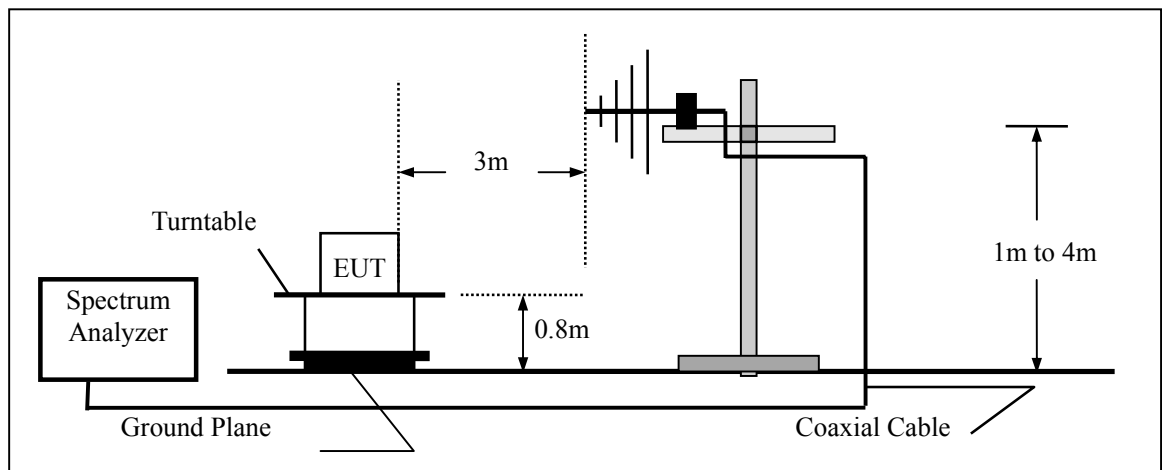
- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz)
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter Semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(above 1GHz)
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test Antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector Mode pre-scanning the measurement frequency range. Significant peaks are then marked and then AV detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.

## 5.2. Test SET-UP (Block Diagram of Configuration)

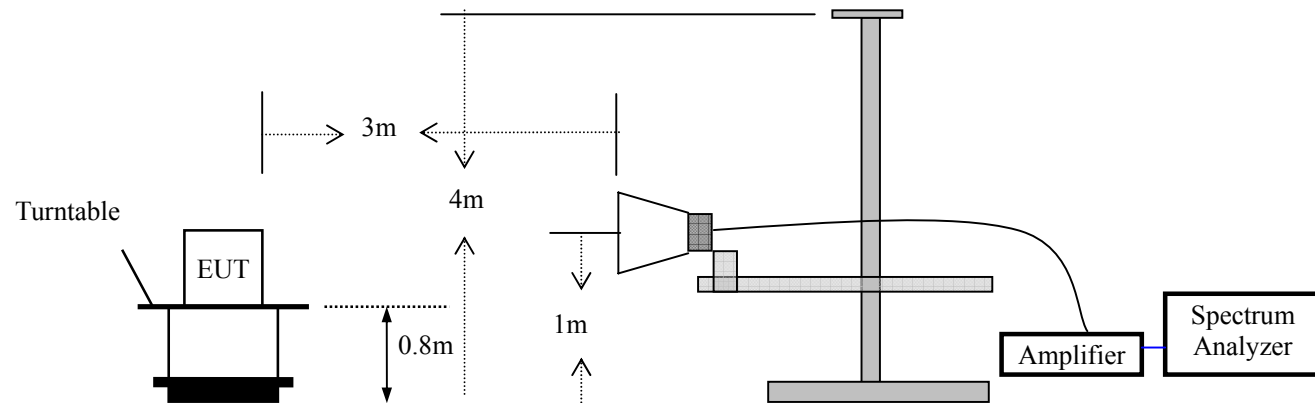
(A) Radiated Emission Test Set-Up, Frequency Below 30MHz



(B) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(C) Radiated Emission Test Set-Up, Frequency above 1000MHz



### 5.3 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Rohde & Schwarz	FSP7	839511/010	05/29/2013	05/28/2014
Spectrum Analyzer	HP	E4407B	839840481	05/29/2013	05/28/2014
EMI Test Receiver	Rohde & Schwarz	ESCS30	828985/018	05/29/2013	05/28/2014
Pre-Amplifier	HP	8447D	2944A07999	05/29/2013	05/28/2014
Bilog Antenna	Schwarzbeck	VULB9163	142	05/14/2013	05/13/2014
Loop Antenna	ARA	PLA-1030/B	1029	05/14/2013	05/13/2014
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	05/14/2013	05/13/2014
Horn Antenna	Schwarzbeck	BBHA 9120	D143	05/14/2013	05/13/2014

### 5.4 Radiated Emission Limit

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 1 5.209(a) limit in the table below has to be followed.

Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission level (dBuV/m)=20log Emission level (uV/m).

# Limits of radiated emission measurement (FCC 15.209)

FREQUENCY (MHz)	(dBuV/m) (at 3m)	
	PEAK	AVERAGE
Above 1000	74	54

## Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m) = 20log Emission level (uV/m).

# Limits of radiated emission measurement (FCC 15.249)

FCC Part15 (15.249) , Subpart C	
Limit	Frequency Range (MHz)
Field strength of fundamental 50000uV/m (94 dBV/m) @ 3 m	2400-2483.5
Field strength of harmonics 500uV/m (54 dBV/m) @ 3 m	Above 2483.5

## 5.5 Measurement Result

### Transmitter Fundamental Field Strength

Operation Mode: CH1: 2405MHz Test Date : December 05, 2013  
FCC Part: 15.249(a) Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: WOLF  
Test Method Used: As detailed in ANSI C63.4 Section 8 and relevant annexes

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
2405	V	78.16	46.91	114.00	94.00	-35.84	-47.09
2405	H	75.49	46.57	114.00	94.00	-38.51	-47.43

Operation Mode: CH36: 2440MHz Test Date : December 05, 2013  
FCC Part: 15.249(a) Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: WOLF  
Test Method Used: As detailed in ANSI C63.4 Section 8 and relevant annexes

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
2440	V	77.65	45.97	114.00	94.00	-36.35	-48.03
2440	H	76.13	46.03	114.00	94.00	-37.87	-47.97

Operation Mode: CH71: 2475MHz Test Date : December 05, 2013  
FCC Part: 15.249(a) Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: WOLF  
Test Method Used: As detailed in ANSI C63.4 Section 8 and relevant annexes

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
2475	V	75.63	44.79	114.00	94.00	-38.37	-49.21
2475	H	74.51	44.48	114.00	94.00	-39.49	-49.52

Operation Mode: TX Test Date : December 05, 2013  
Frequency Range: 9KHz~30MHz Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: WOLF

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
--	--	--	--	--

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Operation Mode: 2405MHz Test Date : December 05, 2013  
Frequency Range: 30~1000MHz Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: KL

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Note
57.55	V	15.62	40.00	-24.38	PK
74.65	V	18.33	40.00	-21.67	PK
96.41	V	17.88	43.50	-25.62	PK
161.70	V	20.53	43.50	-22.97	PK
472.59	V	21.55	46.00	-24.45	PK
701.10	V	25.43	46.00	-20.57	PK
51.33	H	15.04	40.00	-24.96	PK
104.18	H	14.96	43.50	-28.54	PK
309.37	H	18.38	46.00	-27.62	PK
453.94	H	20.77	46.00	-25.23	PK
610.94	H	24.29	46.00	-21.71	PK
693.33	H	26.12	46.00	-19.88	PK

**Note:** (1) All Readings are Peak Value.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

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

(4) All the x/y/z orientation has been investigated, and only worst case is presented in this report.



Operation Mode: 2440MHz Test Date : December 05, 2013  
Frequency Range: 30~1000MHz Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: KL

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Note
43.56	V	15.28	40.00	-24.72	PK
96.41	V	17.91	43.50	-25.59	PK
161.70	V	20.90	43.50	-22.60	PK
359.12	V	18.73	46.00	-27.27	PK
421.30	V	21.72	46.00	-24.28	PK
654.47	V	25.22	46.00	-20.78	PK
38.89	H	14.94	40.00	-25.06	PK
102.63	H	15.05	43.50	-28.45	PK
282.95	H	17.48	46.00	-28.52	PK
422.85	H	20.52	46.00	-25.48	PK
666.91	H	25.42	46.00	-20.58	PK
814.58	H	26.16	46.00	-19.84	PK

Operation Mode: 2475MHz Test Date : December 05, 2013  
Frequency Range: 30~1000MHz Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: KL

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Margin (dB)	Note
55.99	V	15.31	40.00	-24.69	PK
74.65	V	18.82	40.00	-21.18	PK
97.96	V	16.45	43.50	-27.05	PK
161.70	V	20.26	43.50	-23.24	PK
461.71	V	20.81	46.00	-25.19	PK
668.46	V	25.92	46.00	-20.08	PK
48.22	H	15.13	40.00	-24.87	PK
107.29	H	14.96	43.50	-28.54	PK
225.43	H	16.38	46.00	-29.62	PK
349.79	H	19.17	46.00	-26.83	PK
453.94	H	20.77	46.00	-25.23	PK
677.79	H	25.50	46.00	-20.50	PK

**Note:** (1) All Readings are Peak Value.

(2) Emission Level= Reading Level+Probe Factor +Cable Loss

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

(4) All the x/y/z orientation has been investigated, and only worst case is presented in this report.

Operation Mode: 2405MHz Test Date : December 05, 2013  
 Frequency Range: 1-25GHz Temperature : 24°C  
 Test Result: PASS Humidity : 53 %  
 Measured Distance: 3m Test By: Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
4860.00	V	57.40	31.31	74.00	54.00	-16.60	-22.69
7290.00	V	58.03	33.39	74.00	54.00	-15.97	-20.61
9720.00	V	57.09	34.34	74.00	54.00	-16.91	-19.66
12150.00	V	61.10	34.30	74.00	54.00	-12.90	-19.70
14580.00	V	60.10	33.14	74.00	54.00	-13.90	-20.86
17010.00	V	64.23	35.21	74.00	54.00	-9.77	-18.79
4860.00	H	57.60	32.71	74.00	54.00	-16.40	-21.29
7290.00	H	57.60	30.87	74.00	54.00	-16.40	-23.13
9720.00	H	59.80	32.25	74.00	54.00	-14.20	-21.75
12150.00	H	59.83	33.56	74.00	54.00	-14.17	-20.44
14580.00	H	61.26	33.12	74.00	54.00	-12.74	-20.88
17010.00	H	64.80	33.42	74.00	54.00	-9.20	-20.58

- Note:**
- (1) All Readings are Peak Value and AV.
  - (2) Emission Level= Reading Level+Probe Factor +Cable Loss
  - (3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
  - (4) All the x/y/z orientation has been investigated, and only worst case is presented in this report.

Operation Mode: 2440MHz Test Date : December 05, 2013  
Frequency Range: 1-25GHz Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
4904.00	V	57.18	30.79	74.00	54.00	-16.82	-23.21
7356.00	V	57.45	29.36	74.00	54.00	-16.55	-24.64
9808.00	V	59.26	30.90	74.00	54.00	-14.74	-23.10
12260.00	V	60.55	32.50	74.00	54.00	-13.45	-21.50
14712.00	V	60.56	33.94	74.00	54.00	-13.44	-20.06
17164.00	V	66.56	35.21	74.00	54.00	-7.44	-18.79
4904.00	H	55.80	34.49	74.00	54.00	-18.20	-19.51
7356.00	H	57.56	29.13	74.00	54.00	-16.44	-24.87
9808.00	H	61.51	29.57	74.00	54.00	-12.49	-24.43
12260.00	H	60.27	32.38	74.00	54.00	-13.73	-21.62
14712.00	H	60.57	31.27	74.00	54.00	-13.43	-22.73
17164.00	H	65.07	33.62	74.00	54.00	-8.93	-20.38

- Note:**
- (1) All Readings are Peak Value and AV.
  - (2) Emission Level= Reading Level+Probe Factor +Cable Loss
  - (3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
  - (4) All the x/y/z orientation has been investigated, and only worst case is presented in this report.

Operation Mode: 2475MHz Test Date : December 05, 2013  
Frequency Range: 1-25GHz Temperature : 24°C  
Test Result: PASS Humidity : 53 %  
Measured Distance: 3m Test By: Andy

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV/m)		Limit 3m(dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
4948.00	V	58.56	28.11	74.00	54.00	-15.44	-25.89
7422.00	V	57.98	28.69	74.00	54.00	-16.02	-25.31
9896.00	V	60.08	32.54	74.00	54.00	-13.92	-21.46
12370.00	V	60.09	33.59	74.00	54.00	-13.91	-20.41
14844.00	V	61.17	43.05	74.00	54.00	-12.83	-10.95
17318.00	V	65.50	32.25	74.00	54.00	-8.50	-21.75
4948.00	H	57.30	29.91	74.00	54.00	-16.70	-24.09
7422.00	H	57.83	29.66	74.00	54.00	-16.17	-24.34
9896.00	H	57.92	30.32	74.00	54.00	-16.08	-23.68
12370.00	H	60.40	31.62	74.00	54.00	-13.60	-22.38
14844.00	H	61.19	30.49	74.00	54.00	-12.81	-23.51
17318.00	H	64.41	30.27	74.00	54.00	-9.59	-23.73

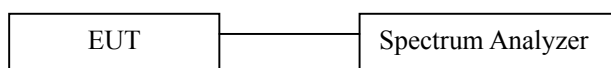
- Note:**
- (1) All Readings are Peak Value and AV.
  - (2) Emission Level= Reading Level+Probe Factor +Cable Loss
  - (3) Data of measurement within this frequency range shown "--" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.
  - (4) All the x/y/z orientation has been investigated, and only worst case is presented in this report.

## 6. BANDWIDTH TEST

### 6.1. Measurement Procedure

The EUT was operating in hopping mode or could be controlled its channel. Printed out the test result from the spectrum by hard copy function.

### 6.2. Test SET-UP (Block Diagram of Configuration)



### 6.3. Measurement Equipment Used:

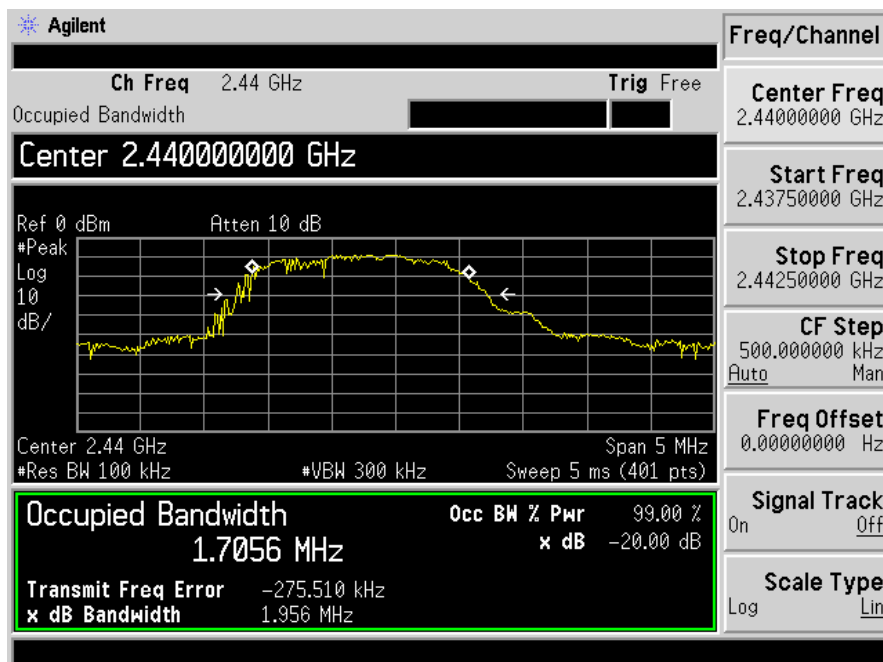
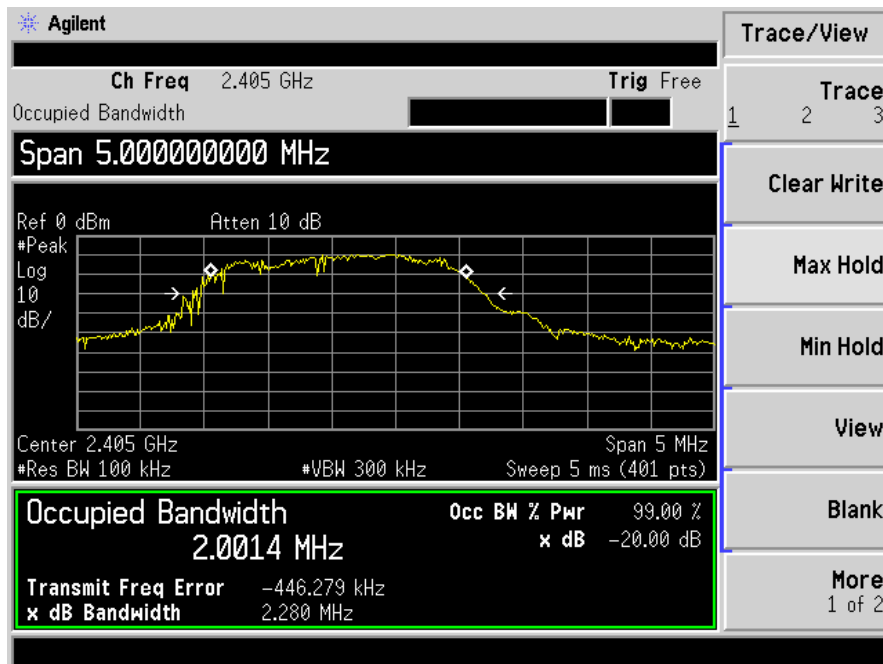
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4407B	88156318	05/29/2013	05/28/2014

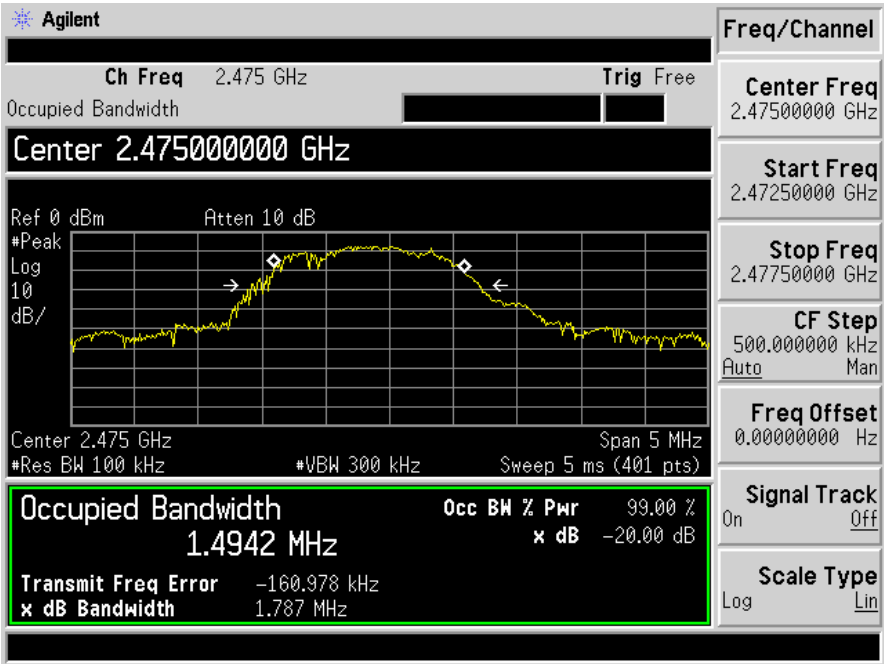
### 6.4. Measurement Results:

20dB Bandwidth test data Chart:  
Refer to attached data chart.

Spectrum Detector:	PK	Test Date:	January 24, 2014
Test By:	KK	Temperature:	24°C
Test Result:	PASS	Humidity:	53 %
Modulation:	GFSK		

Channel number	Channel frequency (MHz)	20dB Down BW(kHz)
CH1	2405	2280.00
CH36	2440	1956.00
CH71	2475	1787.00





## 7. BAND EDGE TEST

### 7.1. Measurement Procedure

1. The EUT was Operating in hopping mode or could be controlled its channel. Printed out test result from the spectrum by hard copy function.
2. The EUT was placed on a turn table which is 0.8m above ground plane.
3. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
4. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
5. Repeat above procedures until all frequency measured were complete.

### 7.2. Test SET-UP (Block Diagram of Configuration)

As 5.2 Test set up (B) and (C)

### 7.3. Measurement Equipment Used:

Same as 5.3 Radiated Emission Measurement.

### 7.4. Measurement Results:

Spectrum Detector: PK/AV      Test Date : December 05, 2013  
Test By: Andy      Temperature : 24°C  
Test channel: CH1(2405MHz)      Humidity : 53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2390.00	H	41.84	38.59	74	54
2390.00	V	44.27	39.12	74	54

Spectrum Detector: PK/AV      Test Date : December 05, 2013  
Test By: Andy      Temperature : 24°C  
Test channel: CH71(2475MHz)      Humidity : 53 %

Frequency (MHz)	Polarity	Level (dBuV/m)		Limited (dBuV/m)	
		PK	AV	PK	AV
2483.50	H	46.65	40.33	74	54
2483.50	V	47.81	40.96	74	54



## **8. Antenna Application**

### **8.1 Antenna Requirement**

For intentional device, according to FCC 47 CFR 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.

### **8.2 Result**

The EUT'S antenna is Metal Antenna. The antenna's gain is 2dBi and meets the requirement.