



**FCC PART 15C TEST REPORT FOR CERTIFICATION  
On Behalf of**

**Phottix (HK) Ltd.**

**Phottix Ares II Flash Trigger Transmitter**

**F0702**

**FCC ID: P9M-ARES2TX**

Prepared for : Phottix (HK) Ltd.

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Report Number : ACS-F16205

Date of Test : Oct.25~27, 2016

Date of Report : Nov.08, 2016

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FCC ID: P9M-ARES2TX

### TEST REPORT CERTIFICATION

Applicant : Phottix (HK) Ltd.  
Manufacturer : Phottix (HK) Ltd.  
Product : Phottix Ares II Flash Trigger Transmitter  
FCC ID : P9M-ARES2TX  
(A) Model No. : F0702  
(B) Serial No. : N/A  
(C) Power Supply : DC 3V  
(D) Test Voltage : DC 3V

Tested for comply with:  
FCC Rules and Regulations Part 15 Subpart C: 2016

Test procedure used:  
ANSI C63.10:2013

The device described above is tested by AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. to confirm comply with all the FCC Part 15 Subpart C requirements.

The test results are contained in this test report and AUDIX TECHNOLOGY (SHENZHEN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these tests. This report contains data that are not covered by the NVLAP accreditation. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This Report is made under FCC Part 2.1075. No modifications were required during testing to bring this product into compliance.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Date of Test : Oct.25~27, 2016 Report of date: Nov.08, 2016

Prepared by : Cindy Zhu Assistant Reviewed by : Sunny Lu Deputy Manager  
Cindy Zhu / Assistant Sunny Lu / Deputy Manager



Approved & Authorized Signer : David Jin  
David Jin / Manager

## 1. SUMMARY OF STANDARDS AND RESULTS

### 1.1. Description of Standards and Results

The EUT has been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Power Line Conducted Emission Test	FCC Part 15C: 15.207 ANSI C63.10-2013	N/A
Radiated Emission Test	FCC Part 15C: 15.209 FCC Part 15C: 15.249 ANSI C63.10-2013	PASS
Band Edge Compliance Test	FCC Part 15: 15.249 ANSI C63.10-2013	PASS
20dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.10-2013	PASS

N/A is an abbreviation for Not Applicable.

## 2. GENERAL INFORMATION

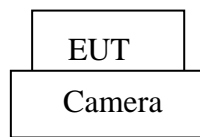
### 2.1. Description of Device (EUT)

Product	: Phottix Ares II Flash Trigger Transmitter
Model No.	: F0702
FCC ID	: P9M-ARES2TX
Operation frequency	: 2409~2464MHz (Tx)
Antenna	: PCB Monopole Antenna, 3.0dBi gain
Modulation	: GFSK
Applicant	: Phottix (HK) Ltd. Unit 1 & 13, 8/F., Block B, Hoi Luen Ind. Centre, 55 Hoi Yuen Rd., Kwun Tong, Kln., Hong Kong
Manufacturer	: Phottix (HK) Ltd. Unit 1 & 13, 8/F., Block B, Hoi Luen Ind. Centre, 55 Hoi Yuen Rd., Kwun Tong, Kln., Hong Kong
Factory	: Shenzhen Fudasi Technology Co., Ltd. B Building, Shengde Industrial Park, Danglang, Longhua Town, Baoan District, Shenzhen City, China
Date of Test	: Oct.25~27, 2016
Date of Receipt	: Oct.23, 2016
Sample Type	: Prototype production

### 2.2. Tested Supporting System Details

No.	Description	ACS No.	Manufacturer	Model	Serial Number	Approved type
1.	Camera	N/A	Canon	EOS 50D	N/A	N/A

### 2.3. EUT Configuration and operation conditions for test.



**(EUT: Phottix Ares II Flash Trigger Transmitter)**

**2.4. Test Facility**

Site Description

- Name of Firm : Audix Technology (Shenzhen) Co., Ltd.  
No. 6, Kefeng Road, Science & Technology Park, Nanshan District , Shenzhen, Guangdong, China
- 3m Anechoic Chamber : Certificated by FCC, USA  
Registration Number: 90454  
Valid Date: Jul.12, 2017
- 3m & 10m Anechoic Chamber : Certificated by FCC, USA  
Registration Number: 794232  
Valid Date: Jul.12, 2017
- EMC Lab. : Certificated by Industry Canada  
Registration Number: IC 5183A-1  
Valid Date: May.14, 2017
- : Certificated by DAkkS, Germany  
Registration No: D-PL-12151-01-00  
Valid Date: Dec.15, 2016
- : Accredited by NVLAP, USA  
NVLAP Code: 200372-0  
Valid Date: Mar.31, 2017

**2.5. Measurement Uncertainty (95% confidence levels, k=2)**

Test Item	Uncertainty
Uncertainty for Radiation Emission test in 3m chamber	2.8dB(30~200MHz, Polarization: H)
	2.8dB(30~200MHz, Polarization: V)
	2.8dB(200M~1GHz, Polarization: H)
	2.8dB(200M~1GHz, Polarization: V)
Uncertainty for Radiation Emission test in 3m chamber (1GHz-18GHz)	5.8dB (1~6GHz, Distance: 3m)
	5.8dB (6~18GHz, Distance: 3m)
Uncertainty for Radiated Spurious Emission test in RF chamber	3.6dB
Uncertainty for Conduction Spurious emission test	2.0dB
Uncertainty for Output power test	0.8dB
Uncertainty for Bandwidth test	83kHz
Uncertainty for DC power test	0.1%
Uncertainty for test site temperature and humidity	0.6
	3%

### **3. POWER LINE CONDUCTED EMISSION TEST**

According to Paragraph (c) of FCC Part 15 section 15.249, Tests to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines.



## 4. RADIATED EMISSION TEST

### 4.1. Test Equipment

Frequency rang: 30~1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Mar.28,16	1 Year
2.	EMI Spectrum	Agilent	E4407B	MY41440292	Apr.24,16	1 Year
3.	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	Apr.24,16	1 Year
4.	Amplifier	HP	8447D	2648A04738	Apr.24,16	1 Year
5.	Tri-log-Broadband Antenna	SCHWARZBECK	VULB 9168	9168-710	Jul.20,16	1 Year
6.	RF Cable	MIYAZAKI	CFD400NL-LW	No.3	Sep.26.16	1 Year
7.	Coaxial Switch	Anritsu	MP59B	6201397222	Apr.23,16	1 Year
8.	Attenuator	EMCI	EMCI-N-6-06	AT-N0639	Sep.26.16	1 Year
9.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A

Note: N/A means Not applicable.

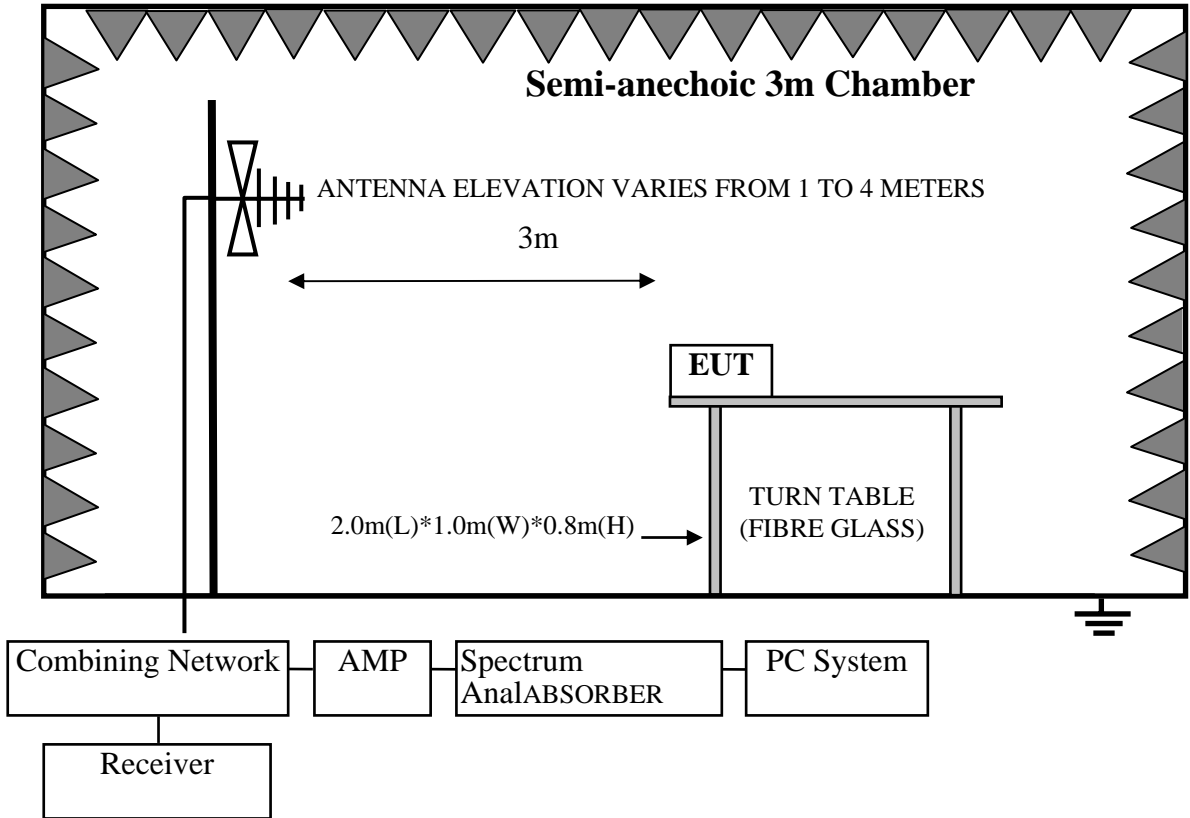
Frequency rang: above 1000MHz

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	May.21,16	1 Year
2.	Spectrum Analyzer	Agilent	E4407B	MY41440292	Apr.24,16	1 Year
3.	Horn Antenna	ETC	MCTD 1209	DRH15F03006	Apr.11,16	1 Year
4.	Amplifier	Agilent	83017A	MY53270084	May.17,16	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX106	505238/6	Apr.24,16	1 Year
6.	Test Software	AUDIX	e3	6.2009-5-21a(n)	N/A	N/A

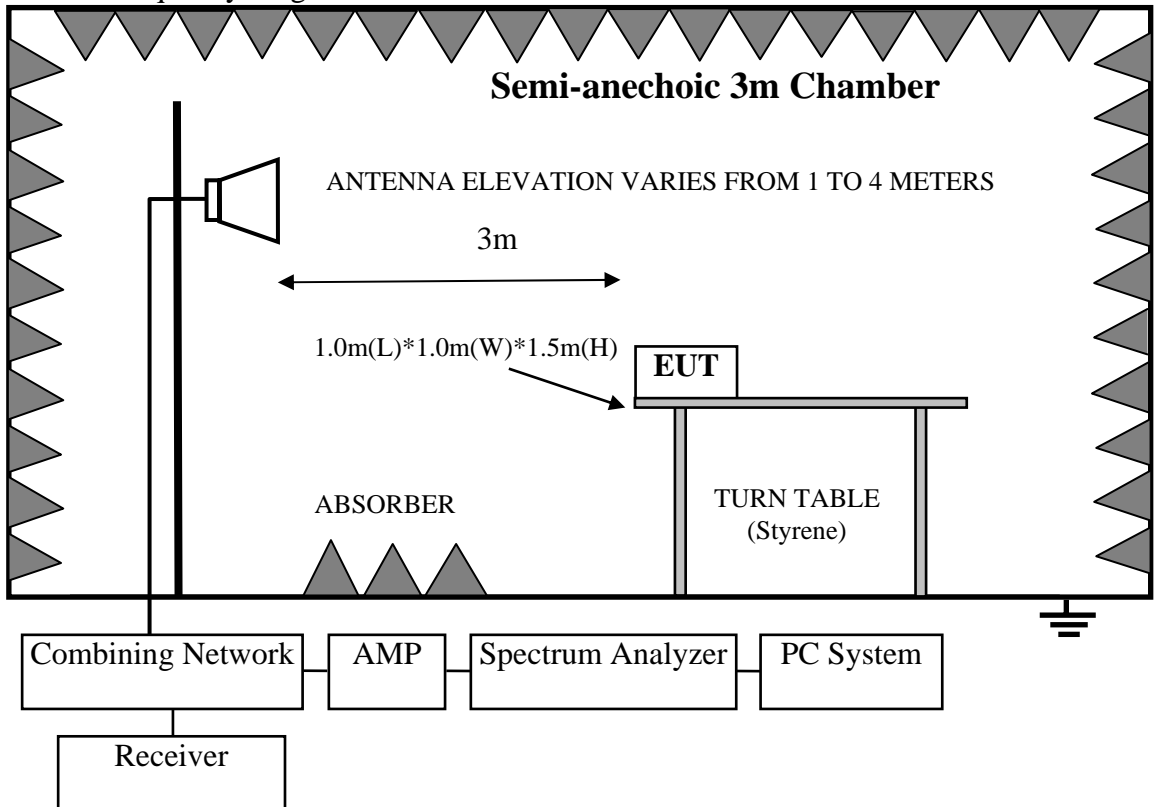
Note: N/A means Not applicable.

### 4.2. Block Diagram of Test Setup

For frequency range 30MHz-1000MHz



For frequency range above 1GHz



### 4.3. Radiated Emission Limit Standard: FCC 15.209 and 15.249

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		μV/m	dB(μV)/m
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000MHz	3	74.0 dB(μV)/m (Peak) 54.0 dB(μV)/m (Average)	
Field Strength of fundamental emissions for 2.4GHz-2.4835GHz	3	114.0 dB(μV)/m (Peak) 94.0 dB(μV)/m (Average)	

- Remark :
- (1) Emission level dBμV = 20 log Emission level μV/m
  - (2) The smaller limit shall apply at the cross point between two frequency bands.
  - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.
  - (4) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

### 4.4.EUT Configuration on Test

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

### 4.5.Operating Condition of EUT

- 4.5.1.Setup the EUT and simulator as shown as Section 4.2.
- 4.5.2.Turn on the power of all equipments.
- 4.5.3.Let EUT work in Tx mode.

### 4.6.Test Procedure

EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground for frequency 30MHz~1000MHz, 1.5 meter high above ground for frequency above 1GHz and put the absorbing with 2.4m(L)\*2.4m(W)\*0.3m(H) on the ground . The turn table can rotate 360 degrees to determine the position of the maximum emission level. Power on the EUT and let it working in test mode, then test it.EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna for frequency 30MHz~1000MHz, and the Horn antenna is used as receiving antenna for frequency above 1GHz. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10-2013 on radiated emission Test.

This test was performed with EUT in X, Y, Z position, and the worse case was found when EUT in X position as the test photo indicated.

The bandwidth of the EMI test receiver (R&S ESVS10) is set at 120kHz for frequency range from 30MHz to 1000MHz.

The bandwidth of the Spectrum's RBW is set at 1MHz and VBW is set at 3MHz for peak emissions measurement above 1GHz

This device is pulse Modulated, a duty cycle factor was used to calculated average level based measured peak level.

The frequency range from 30MHz to 10th harmonic (25GHz) are checked. and no any emissions were found from 18GHz to 25 GHz, So the radiated emissions from 18GHz to 25GHz were not record.

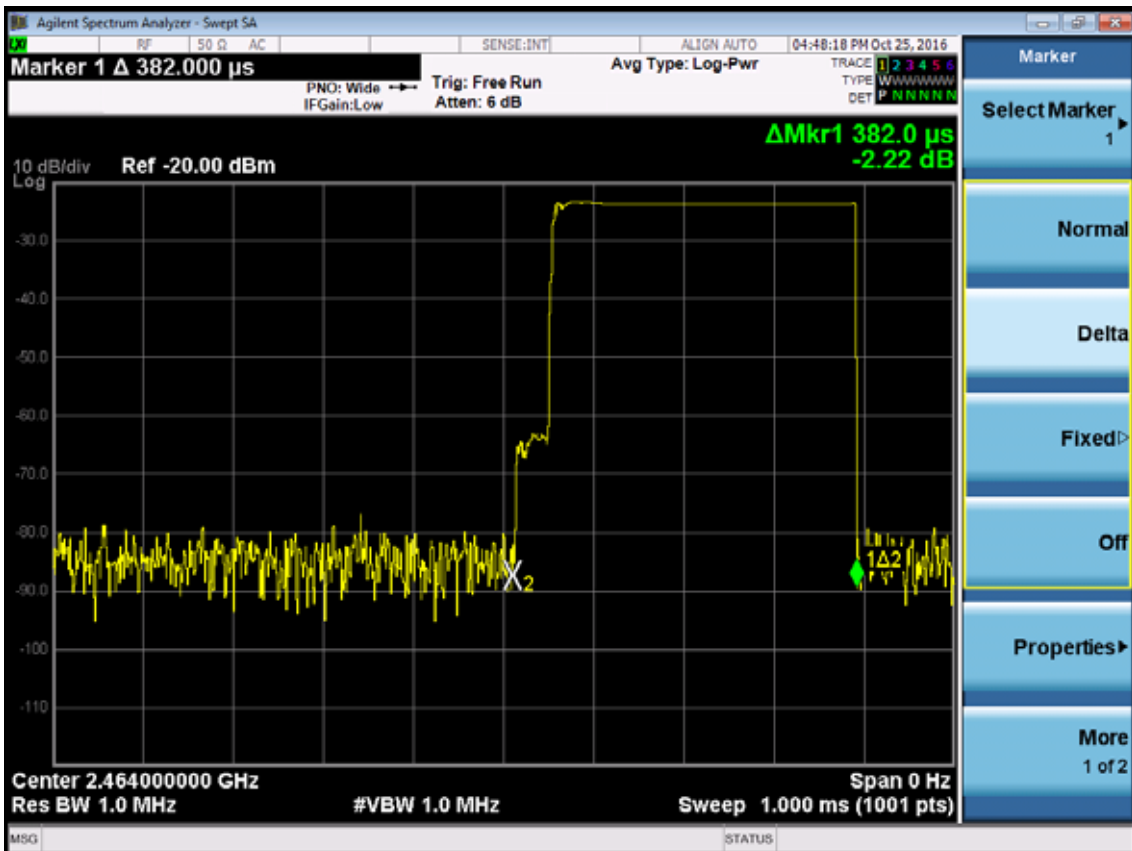
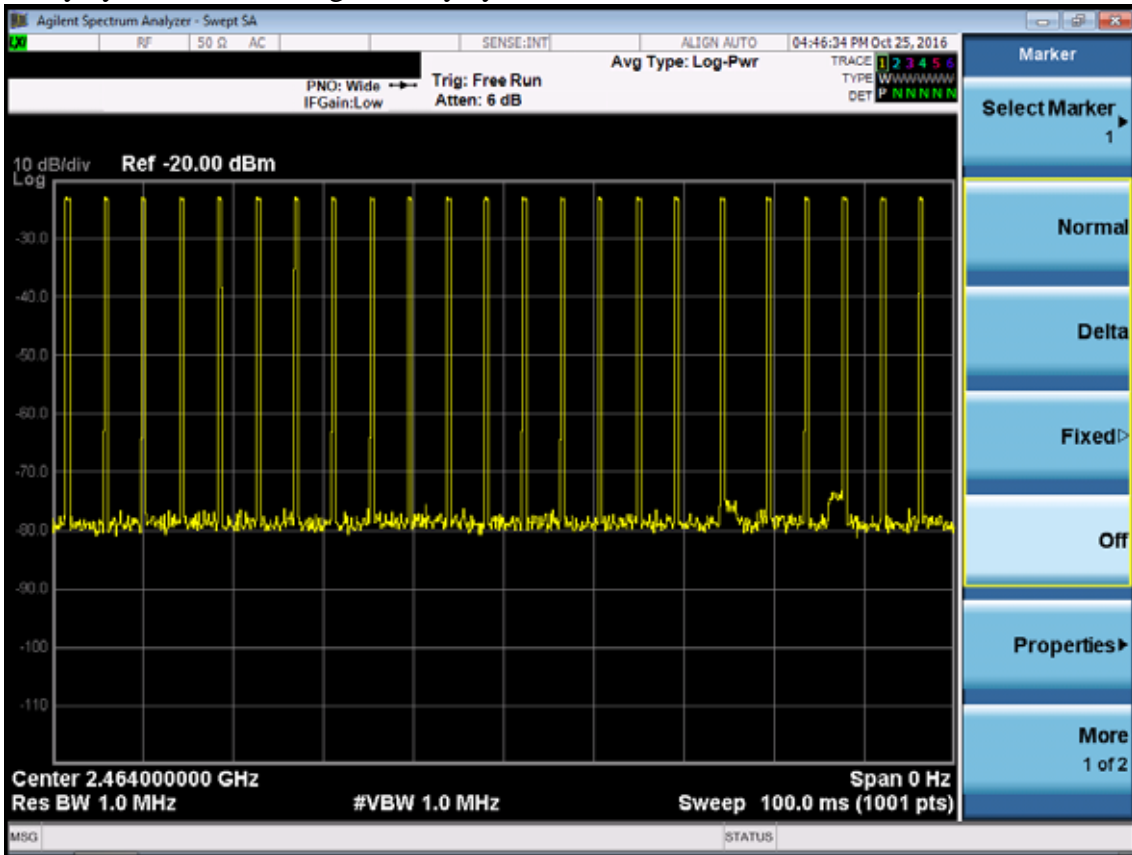
#### 4.7.Radiated Emission Test Results

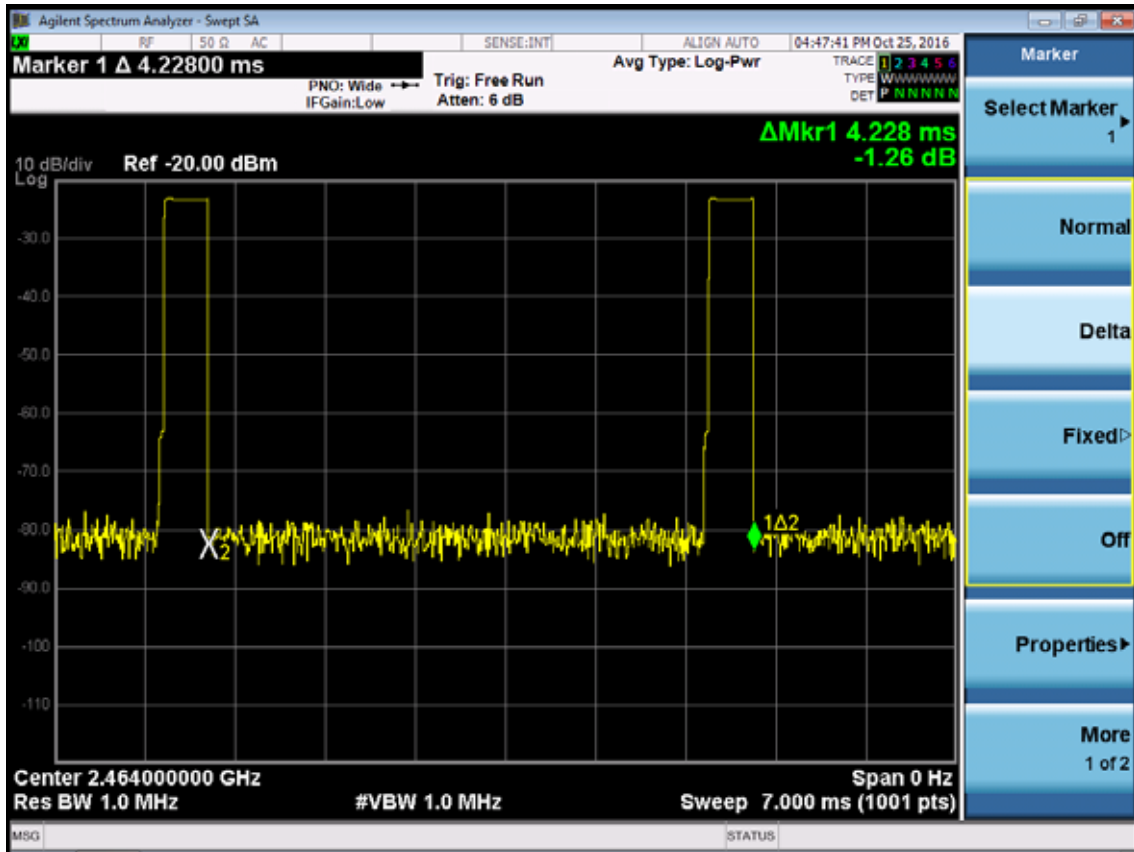
**PASS.**

All the emissions from 30MHz to 25GHz were comply with the 15.209 Limit.

Note: The duty cycle factor for calculate average level is 21.12dB, and average limit is 20dB below peak limit, so if peak measured level comply with average limit, the average level was deemed to comply with average limit.

Duty cycle factor =  $20\log ( 1/\text{duty cycle} ) = 21.12\text{dB}$



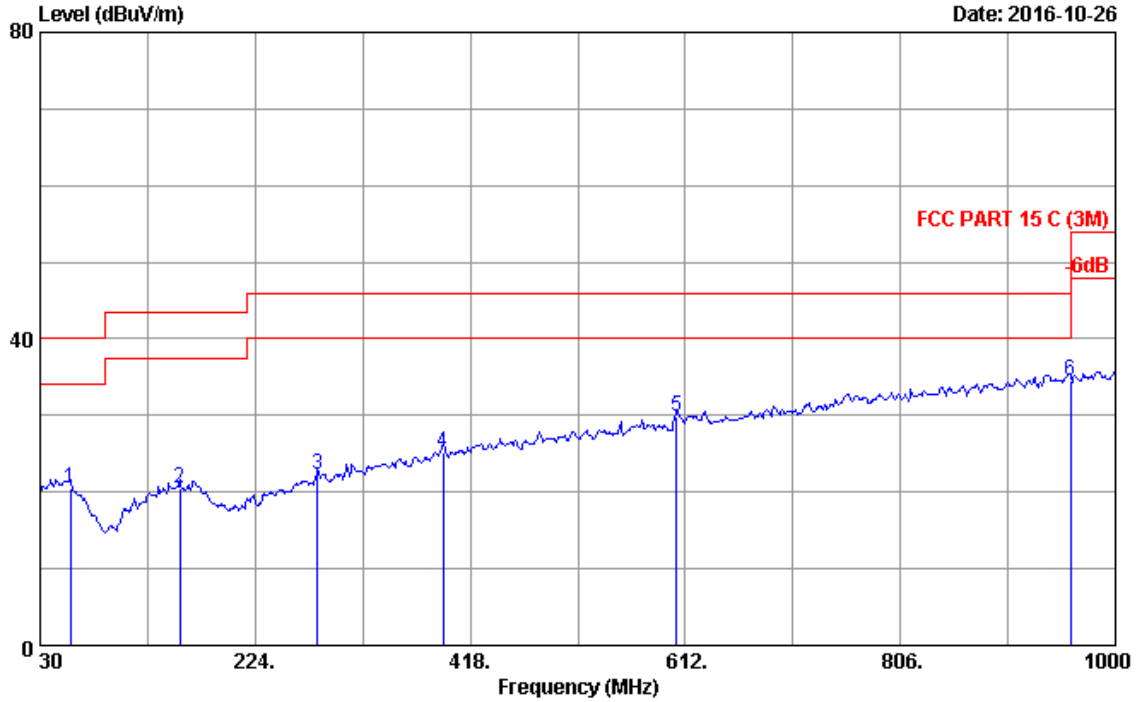


**Frequency: 30MHz~1GHz**

Data: 1

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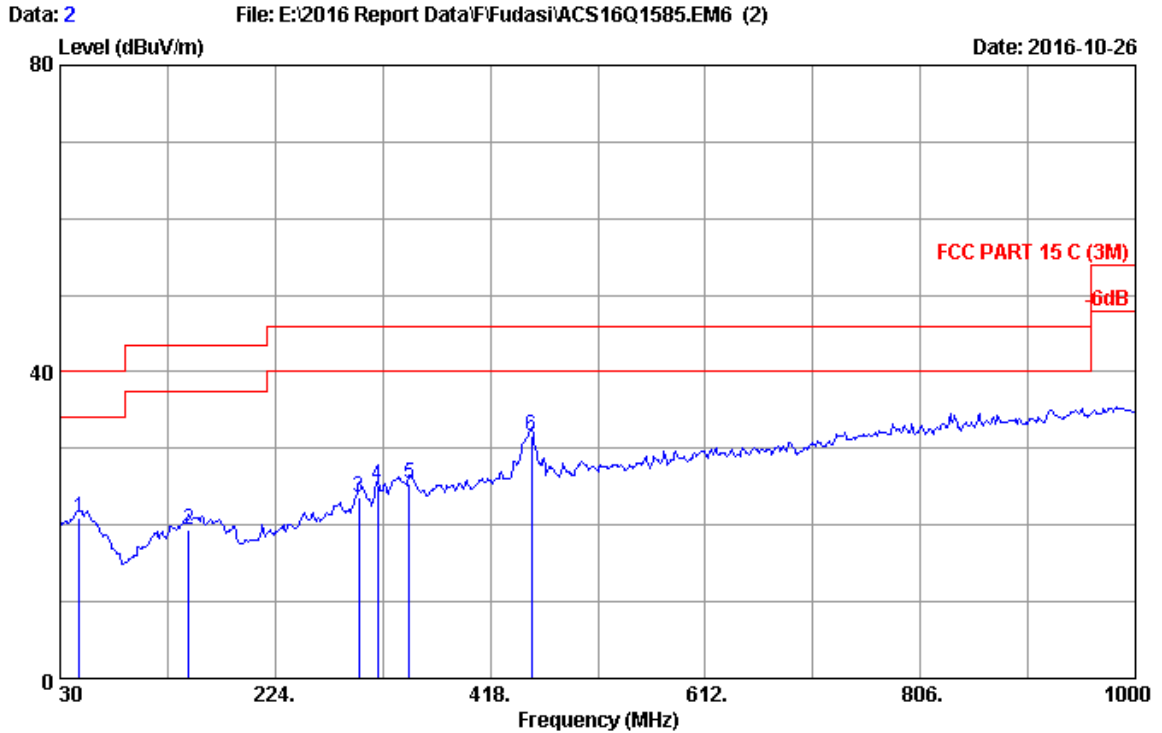
Date: 2016-10-26



Site no. : 3m Chamber Data no. : 1  
 Dis. / Ant. : 3m ANT 2016 9168 710 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 C (3M)  
 Env. / Ins. : 22.1°C/45% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	57.160	20.03	0.89	-0.35	20.57	40.00	19.43	QP
2	156.100	19.72	1.06	-0.27	20.51	43.50	22.99	QP
3	280.260	19.40	1.79	1.09	22.28	46.00	23.72	QP
4	393.750	22.02	2.41	0.76	25.19	46.00	20.81	QP
5	604.240	26.10	3.14	0.55	29.79	46.00	16.21	QP
6	959.260	29.99	4.49	0.01	34.49	46.00	11.51	QP

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



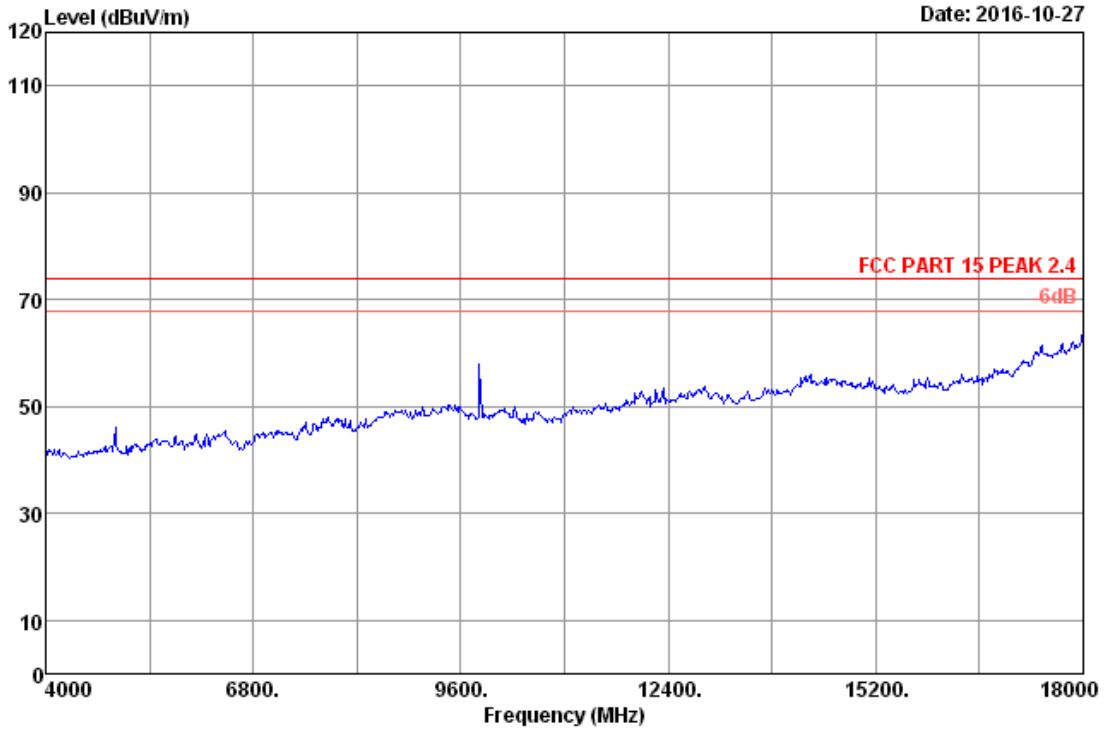
Site no. : 3m Chamber Data no. : 2  
 Dis. / Ant. : 3m ANT 2016 9168 710 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 C (3M)  
 Env. / Ins. : 22.1°C/45% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : Tx Mode

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	47.460	20.50	0.78	-0.31	20.97	40.00	19.03	QP
2	146.400	19.59	1.08	-1.37	19.30	43.50	24.20	QP
3	299.660	19.81	1.99	1.83	23.63	46.00	22.37	QP
4	316.150	20.25	2.06	2.81	25.12	46.00	20.88	QP
5	345.250	20.88	2.19	2.43	25.50	46.00	20.50	QP
6	454.860	23.42	2.61	5.62	31.65	46.00	14.35	QP

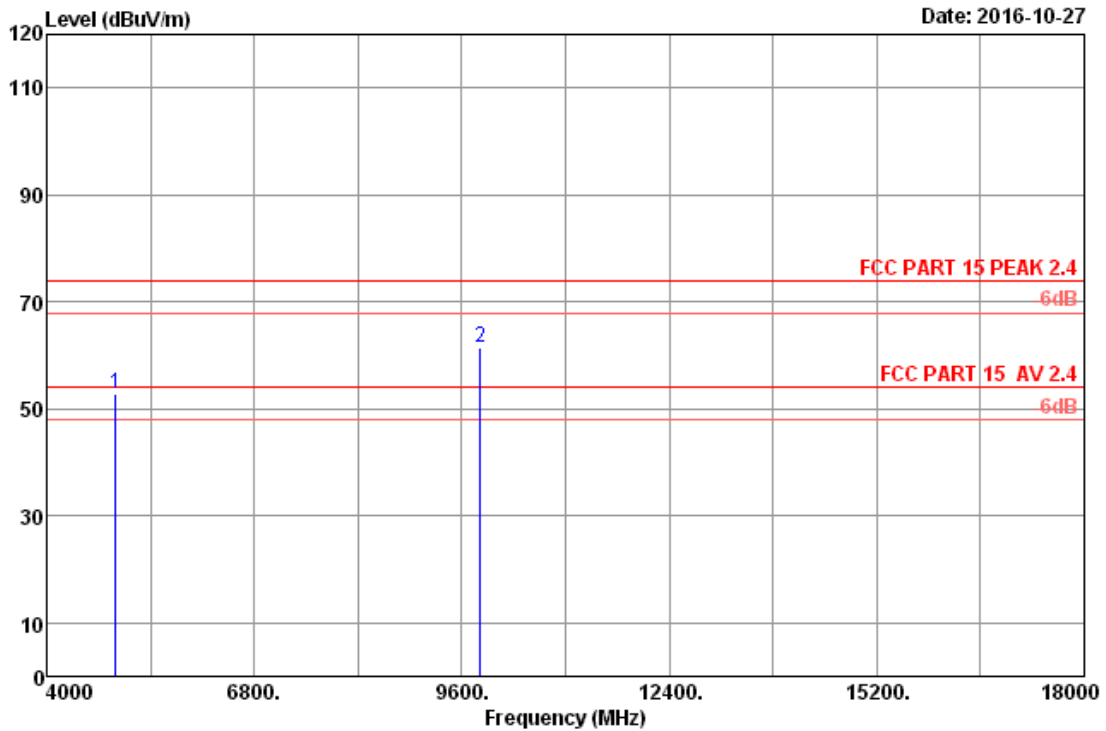
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.  
 2. The emission levels that are 20dB below the official limit are not reported.



Frequency: 1GHz~18GHz



Site no. : 3m Chamber Data no. : 20  
Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
Env. / Ins. : 22.5\*C/51.6% Engineer : Leo-Li  
EUT : Phottix Ares II Flash Trigger Transmitter  
Power rating : DC 3V  
Test Mode : GFSK 2464MHz Tx  
F0702

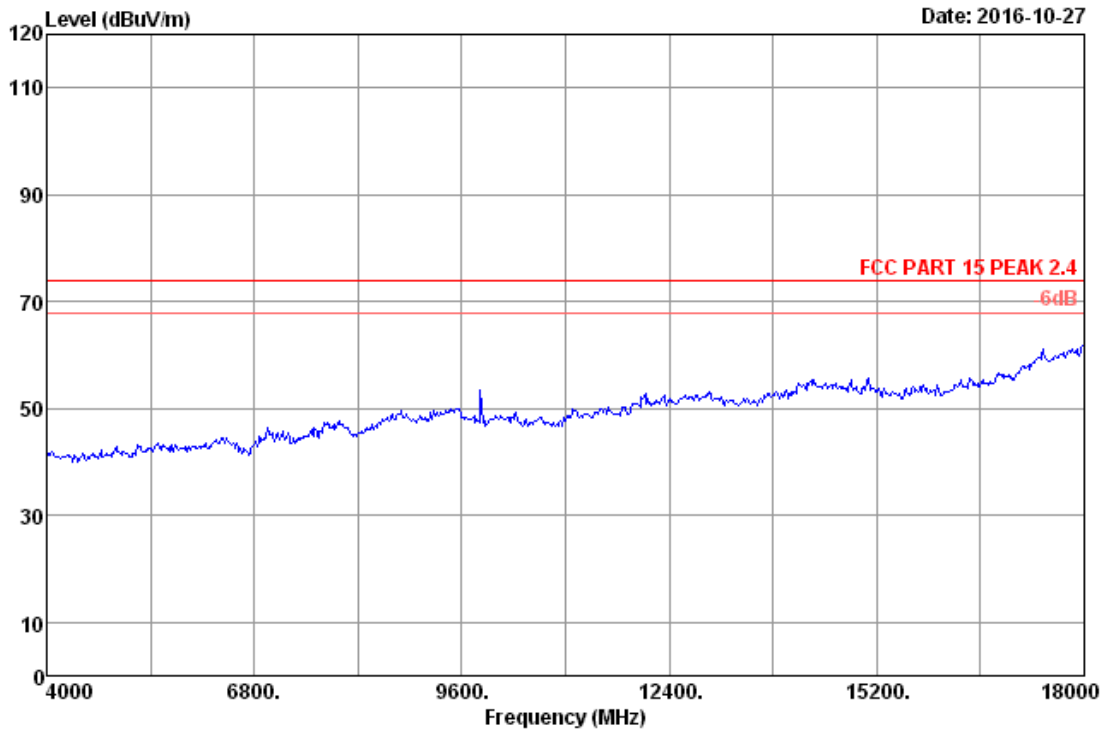


Site no. : 3m Chamber Data no. : 21  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2464MHz Tx F0702

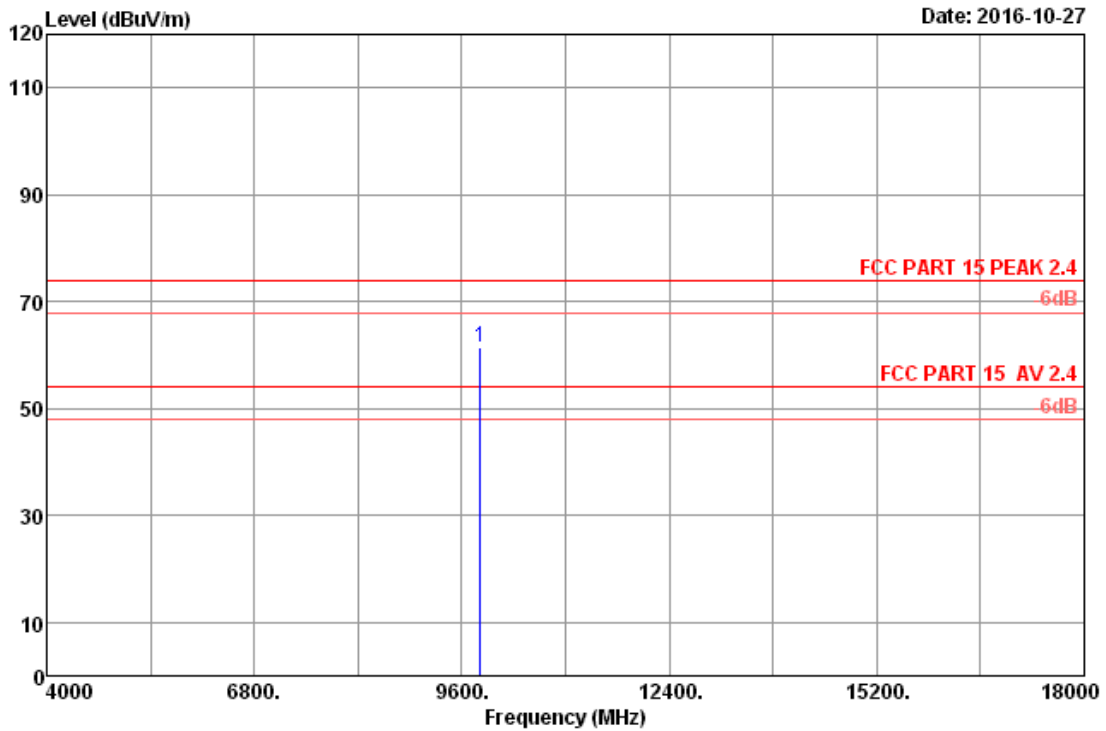
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4928.00	32.54	11.83	44.07	35.70	52.74	74.00	21.26	Peak
2	9856.00	37.81	13.22	46.35	36.02	61.36	74.00	12.64	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Conclusion
9856.00	61.36	21.12	40.24	54	Pass



Site no. : 3m Chamber Data no. : 22  
Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
EUT : Phottix Ares II Flash Trigger Transmitter  
Power rating : DC 3V  
Test Mode : GFSK 2464MHz Tx  
F0702

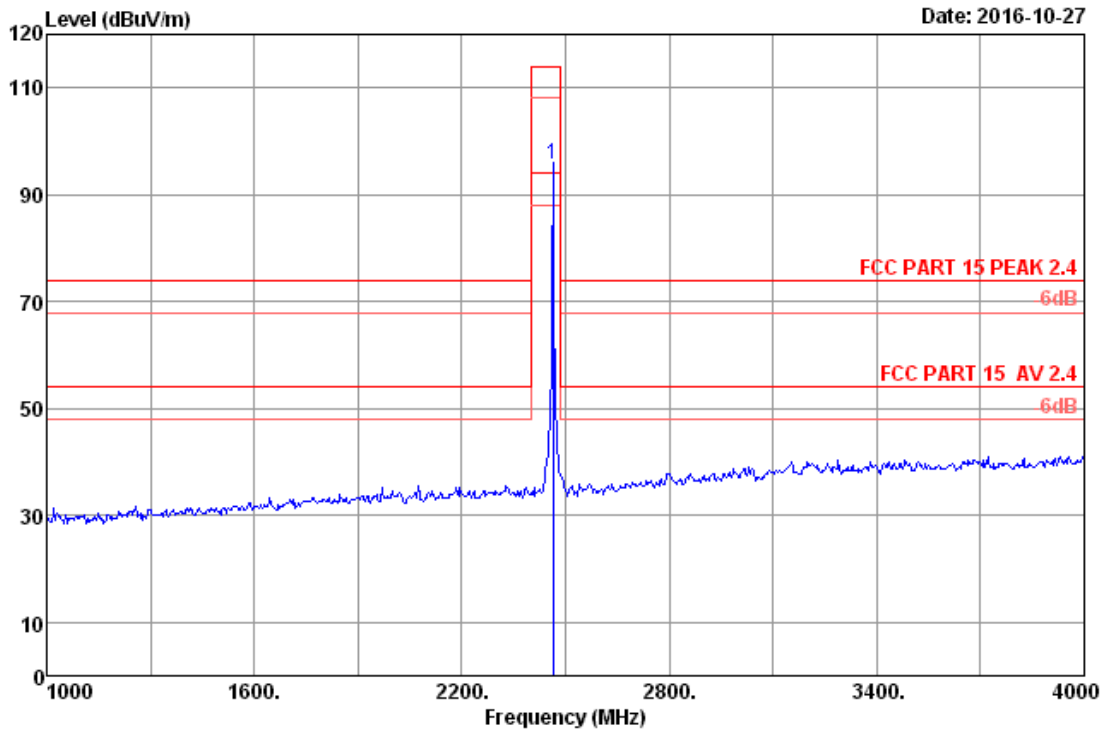


Site no. : 3m Chamber Data no. : 23  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2464MHz Tx F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	9856.00	37.81	13.22	46.38	36.02	61.39	74.00	12.61	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

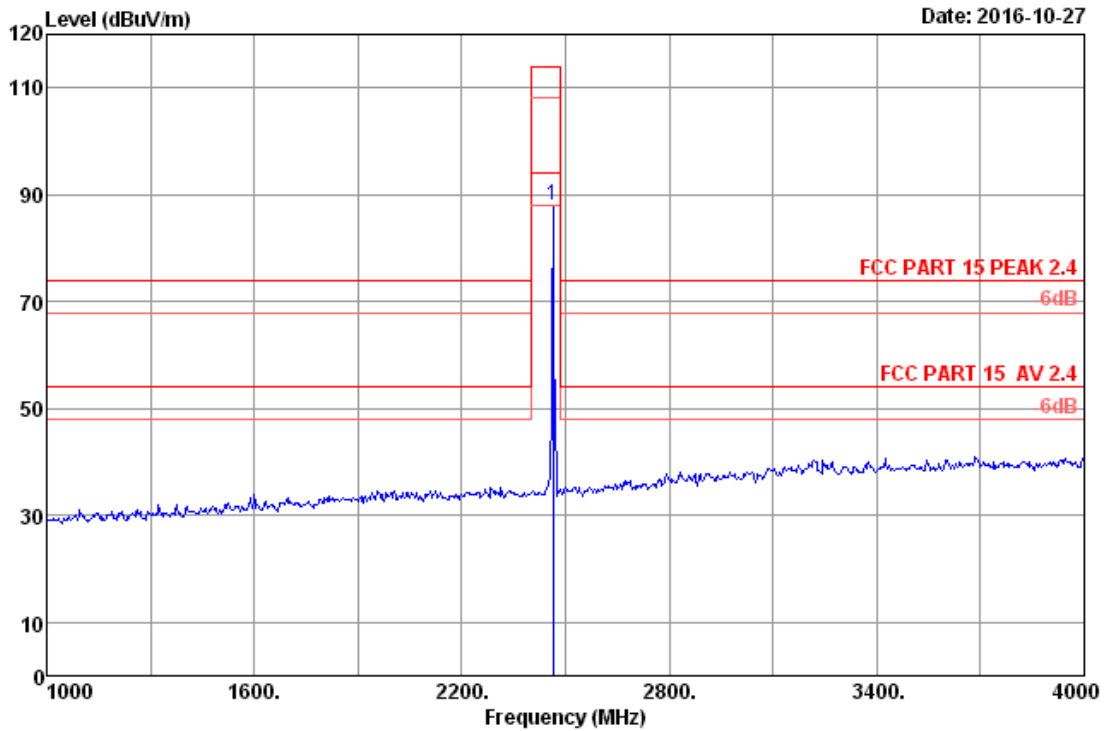
Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Conclusion
9856.00	61.39	21.12	40.27	54	Pass



Site no. : 3m Chamber Data no. : 24  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2464MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.00	28.24	8.40	95.48	36.38	95.74	114.00	18.26	Peak

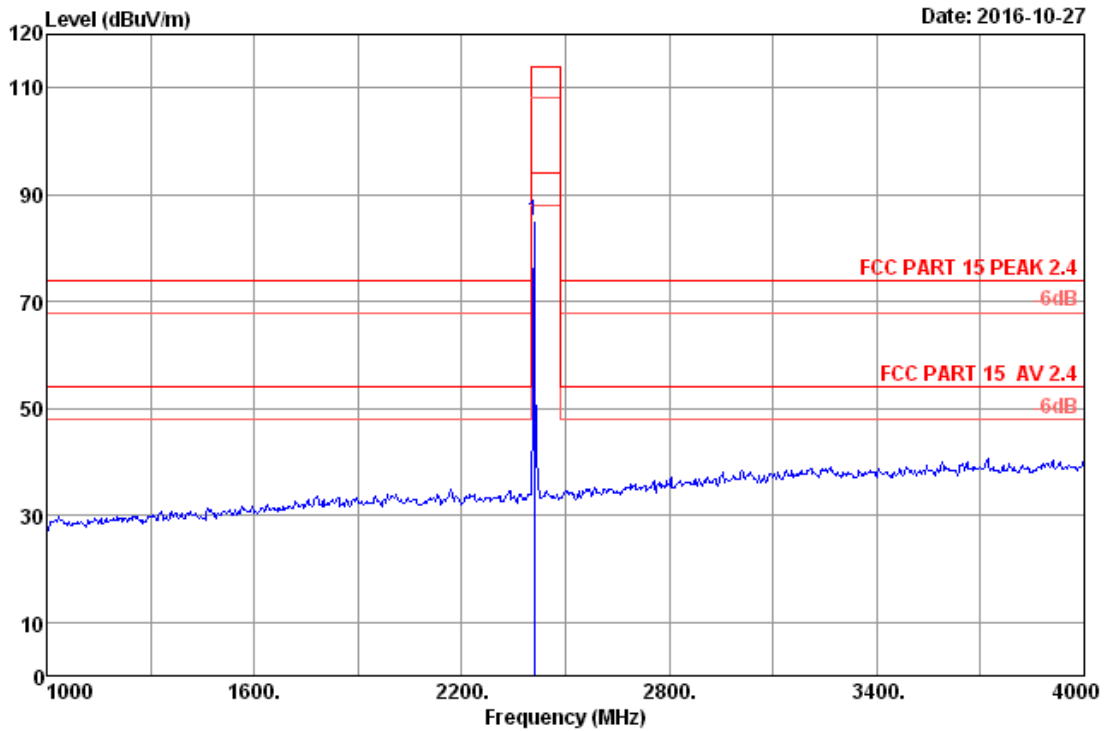
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 25  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2464MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2464.00	28.24	8.40	87.63	36.38	87.89	114.00	26.11	Peak

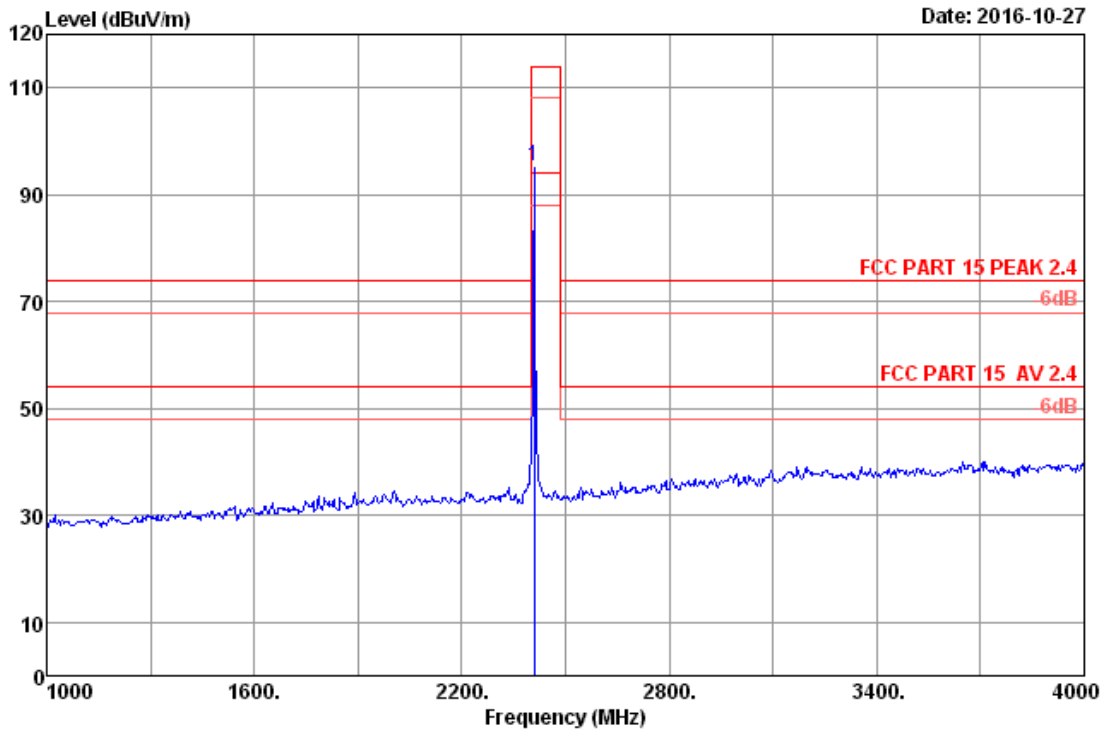
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 30  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2409MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2409.00	28.15	8.35	84.89	36.39	85.00	114.00	29.00	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

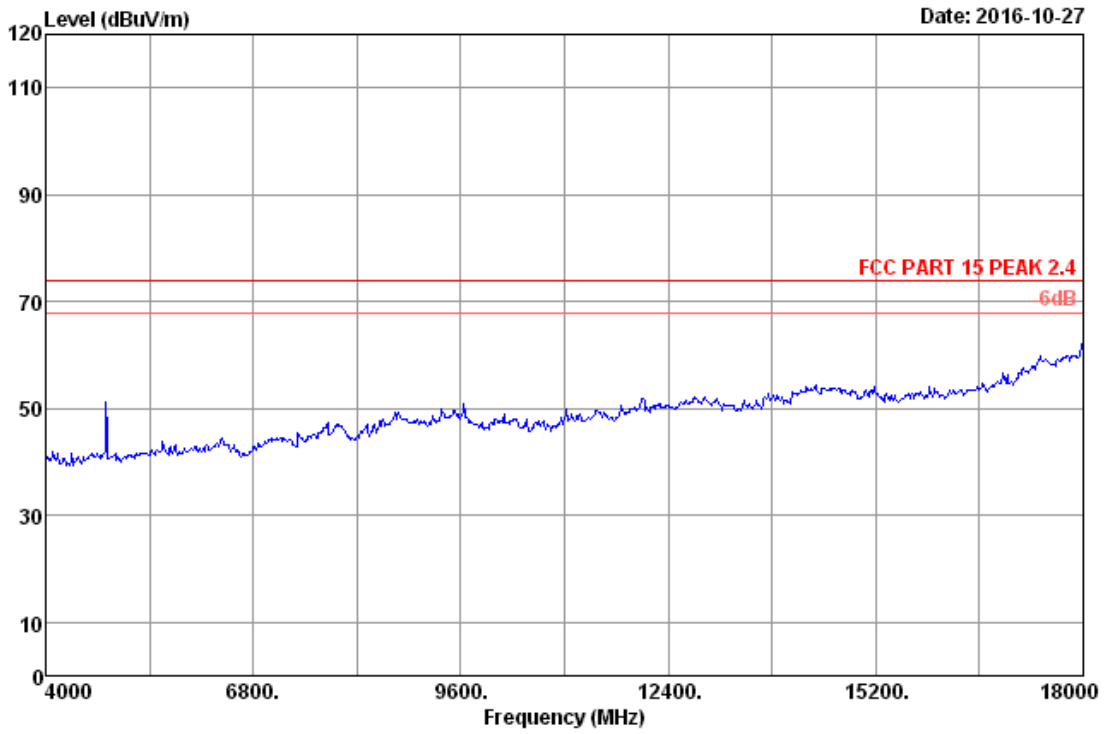


Site no. : 3m Chamber Data no. : 31  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2409MHz Tx  
 F0702

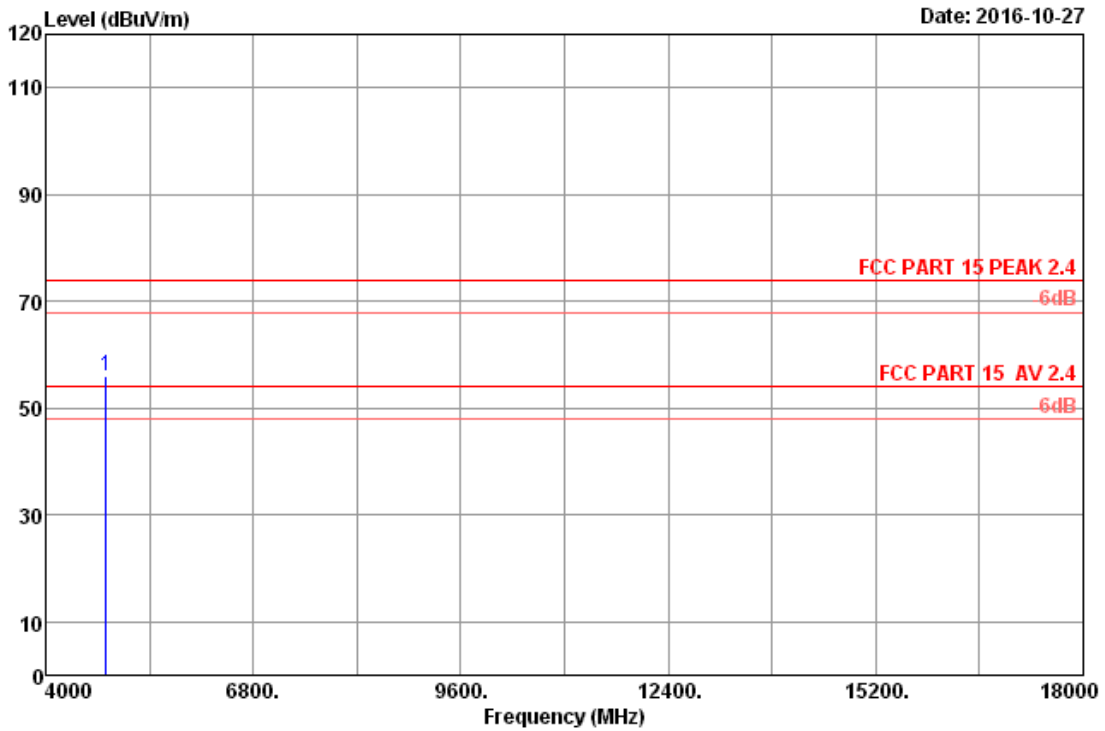
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2409.00	28.15	8.35	95.28	36.39	95.39	114.00	18.61	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.





Site no. : 3m Chamber Data no. : 32  
Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
EUT : Phottix Ares II Flash Trigger Transmitter  
Power rating : DC 3V  
Test Mode : GFSK 2409MHz Tx  
F0702

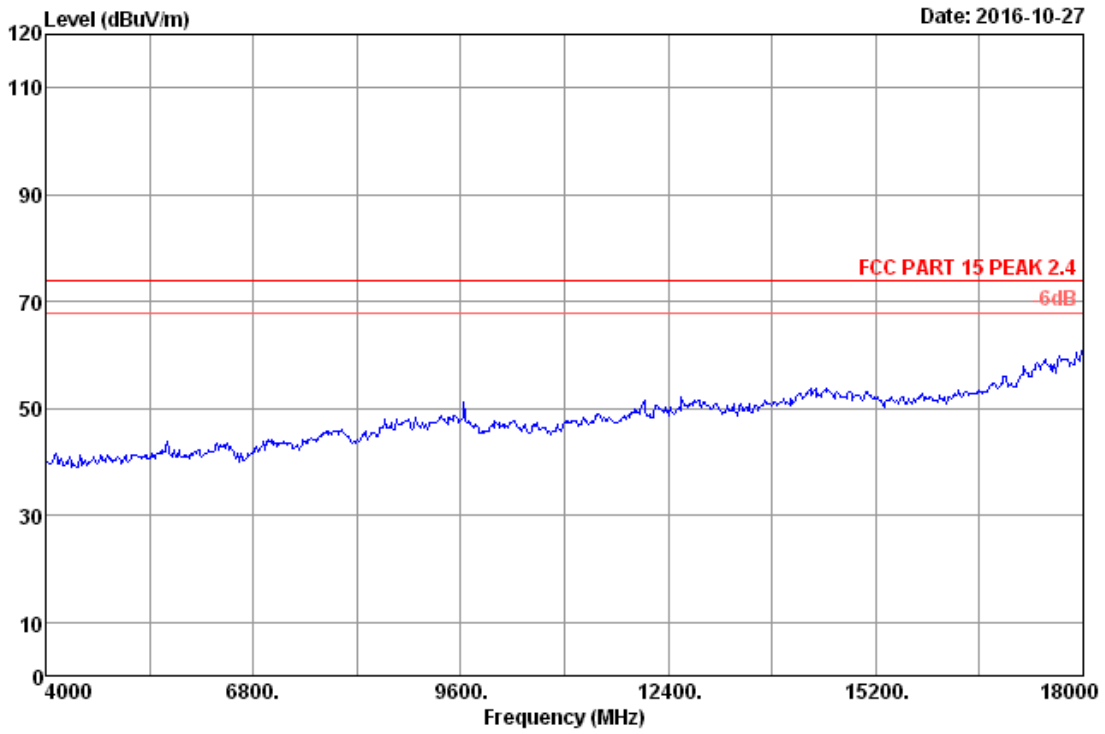


Site no. : 3m Chamber Data no. : 33  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2409MHz Tx  
 F0702

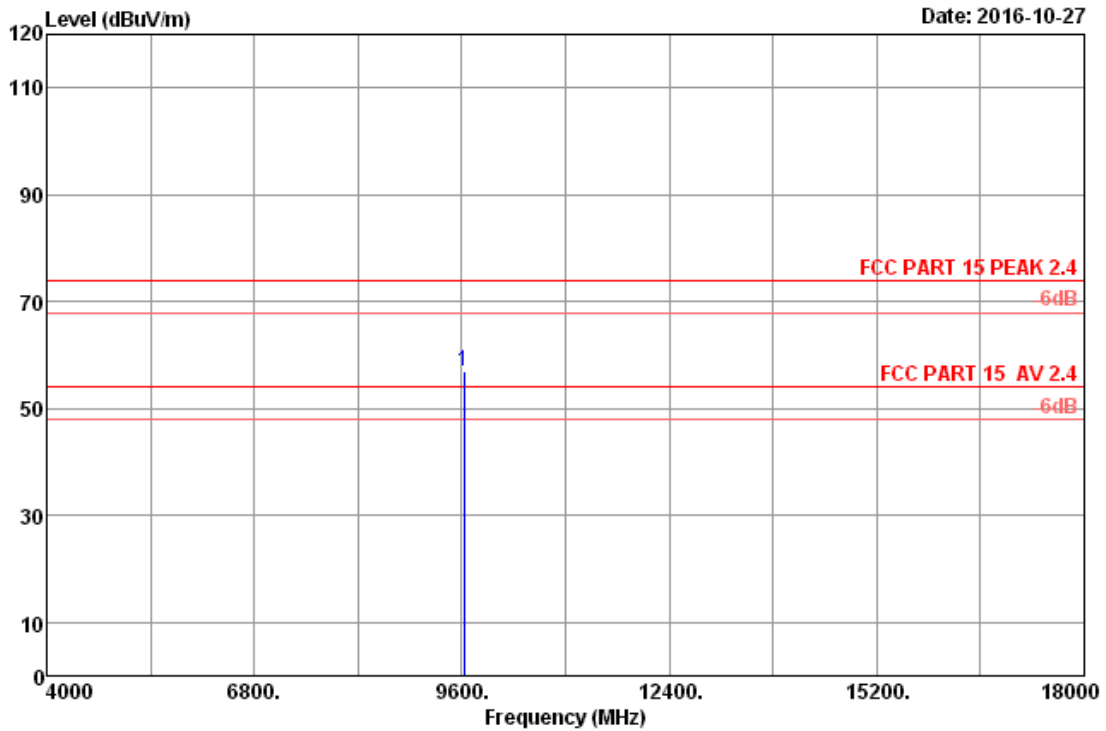
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4818.00	32.76	11.76	47.31	35.68	56.15	74.00	17.85	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Conclusion
4818.00	56.15	21.12	35.03	54	Pass



Site no. : 3m Chamber Data no. : 34  
Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
EUT : Phottix Ares II Flash Trigger Transmitter  
Power rating : DC 3W  
Test Mode : GFSK 2409MHz Tx  
F0702

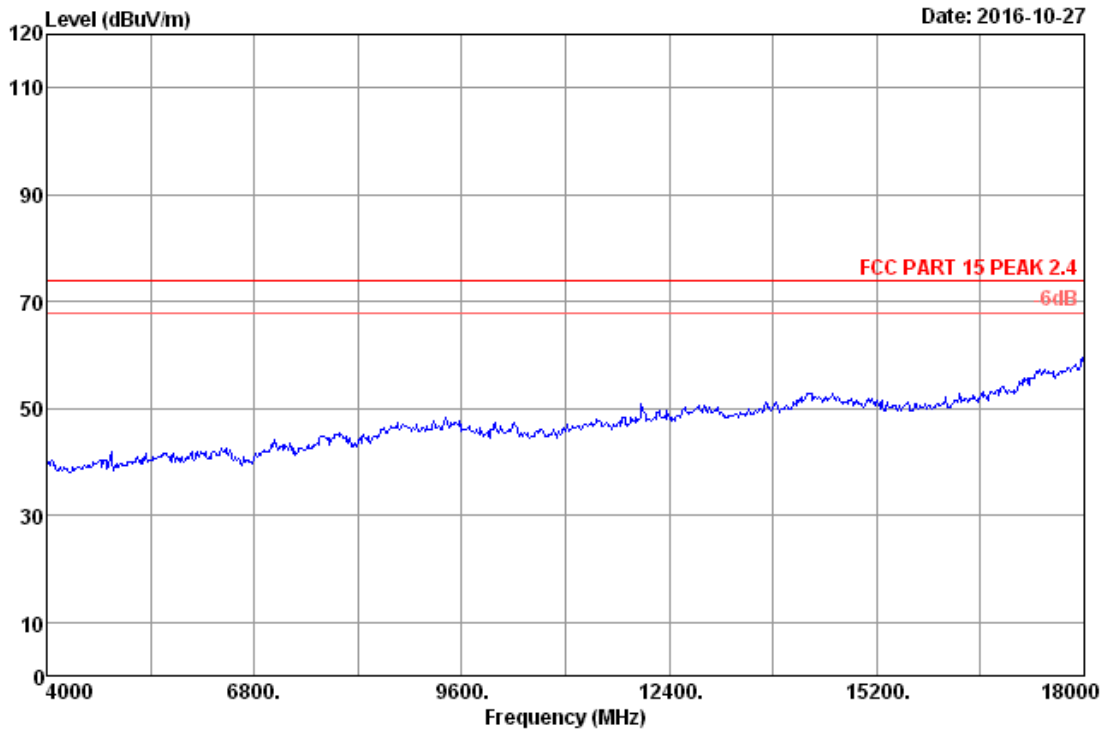


Site no. : 3m Chamber Data no. : 35  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2409MHz Tx  
 F0702

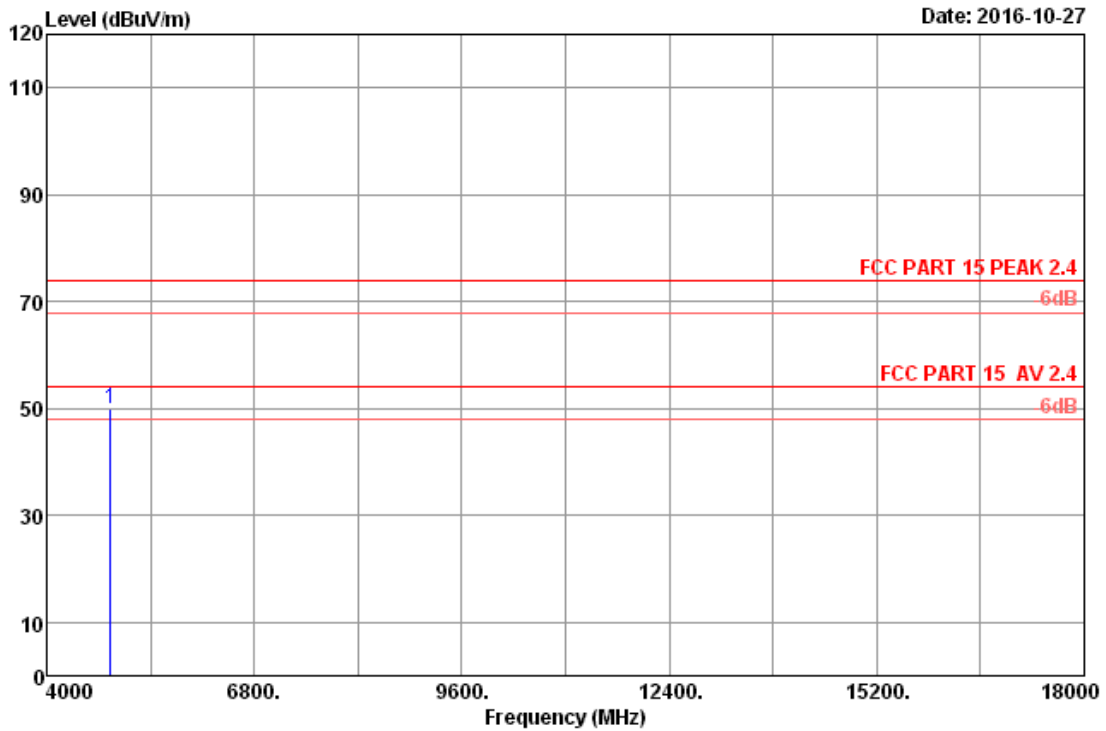
No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	9636.00	37.68	13.20	41.73	35.67	56.94	74.00	17.06	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Conclusion
9636.00	56.94	21.12	35.82	54	Pass



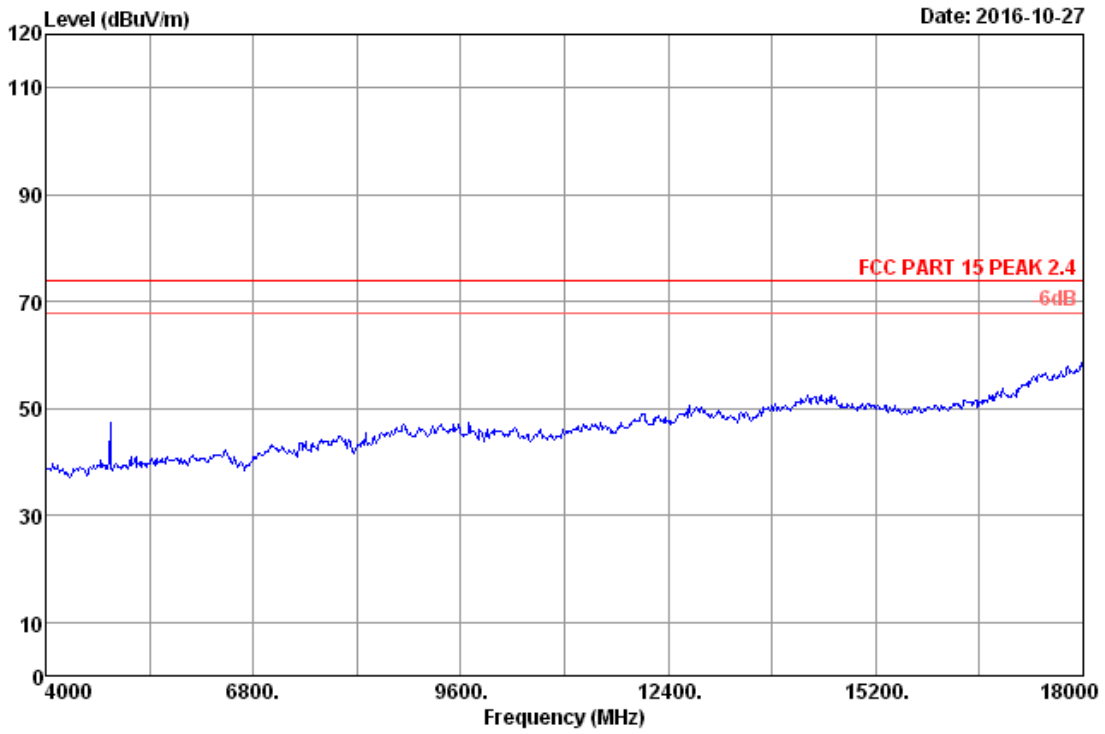
Site no. : 3m Chamber Data no. : 36  
Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
EUT : Phottix Ares II Flash Trigger Transmitter  
Power rating : DC 3W  
Test Mode : GFSK 2431MHz Tx  
F0702



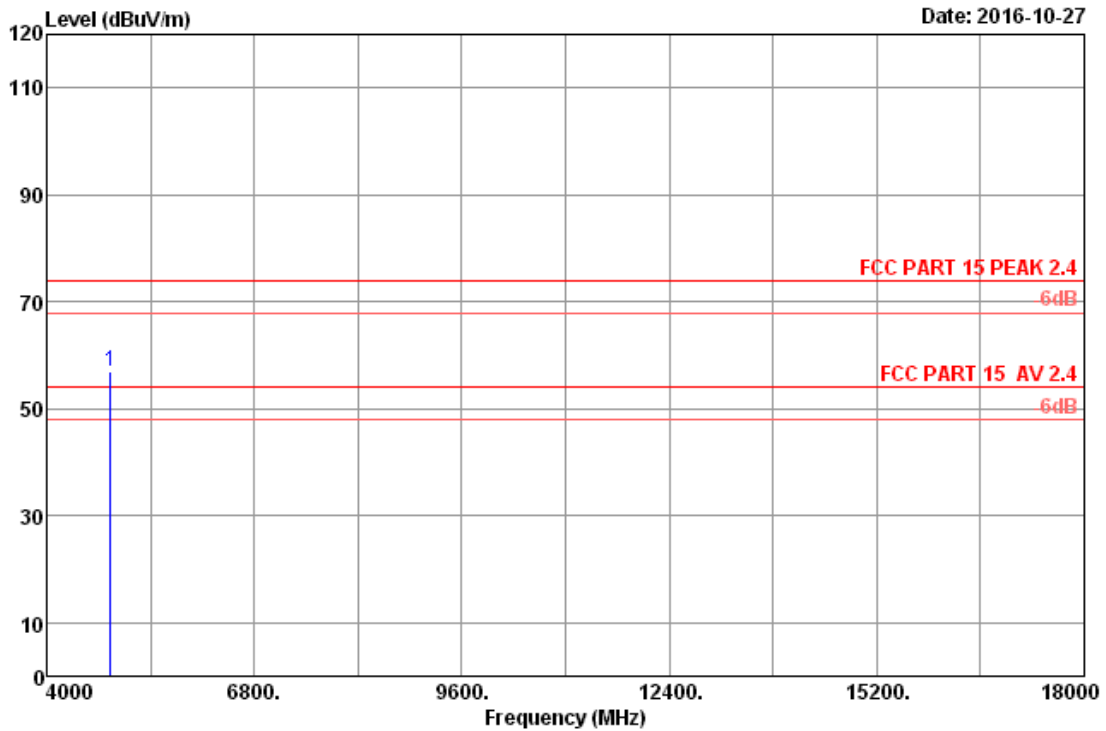
Site no. : 3m Chamber Data no. : 37  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2431MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4862.00	32.68	11.79	41.26	35.69	50.04	74.00	23.96	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 38  
Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
EUT : Phottix Ares II Flash Trigger Transmitter  
Power rating : DC 3W  
Test Mode : GFSK 2431MHz Tx  
F0702



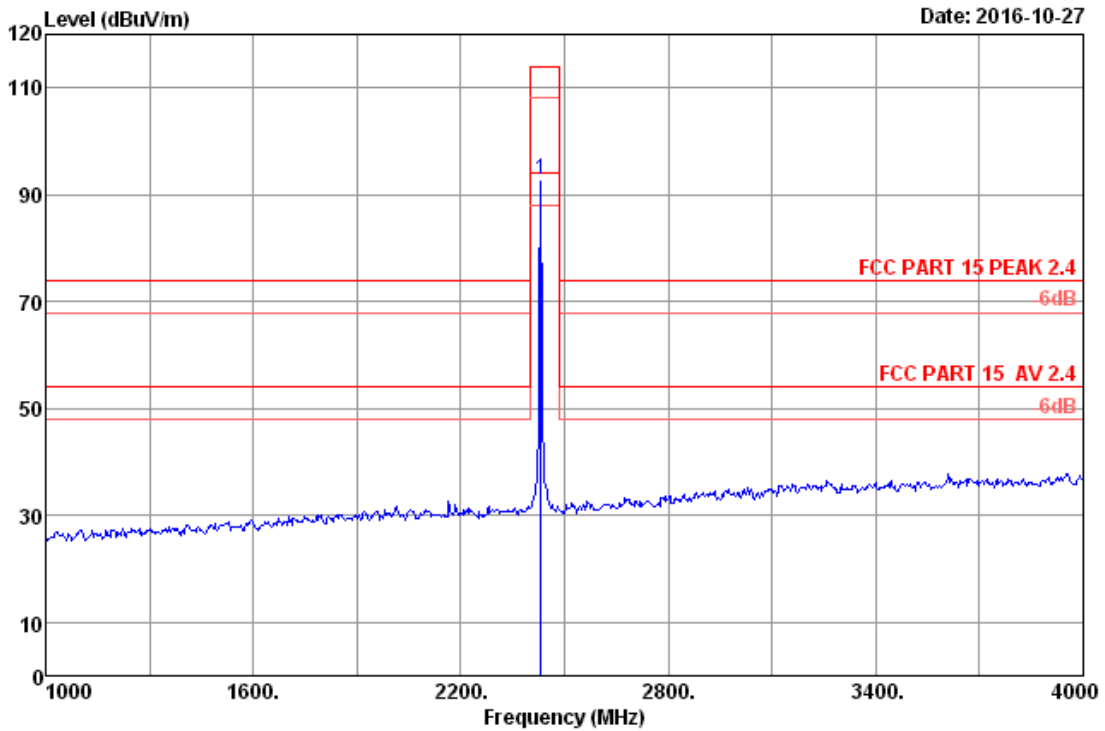
Site no. : 3m Chamber Data no. : 39  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2431MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	4862.00	32.68	11.79	48.24	35.69	57.02	74.00	16.98	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Conclusion
4862.00	57.02	21.12	35.90	54	Pass

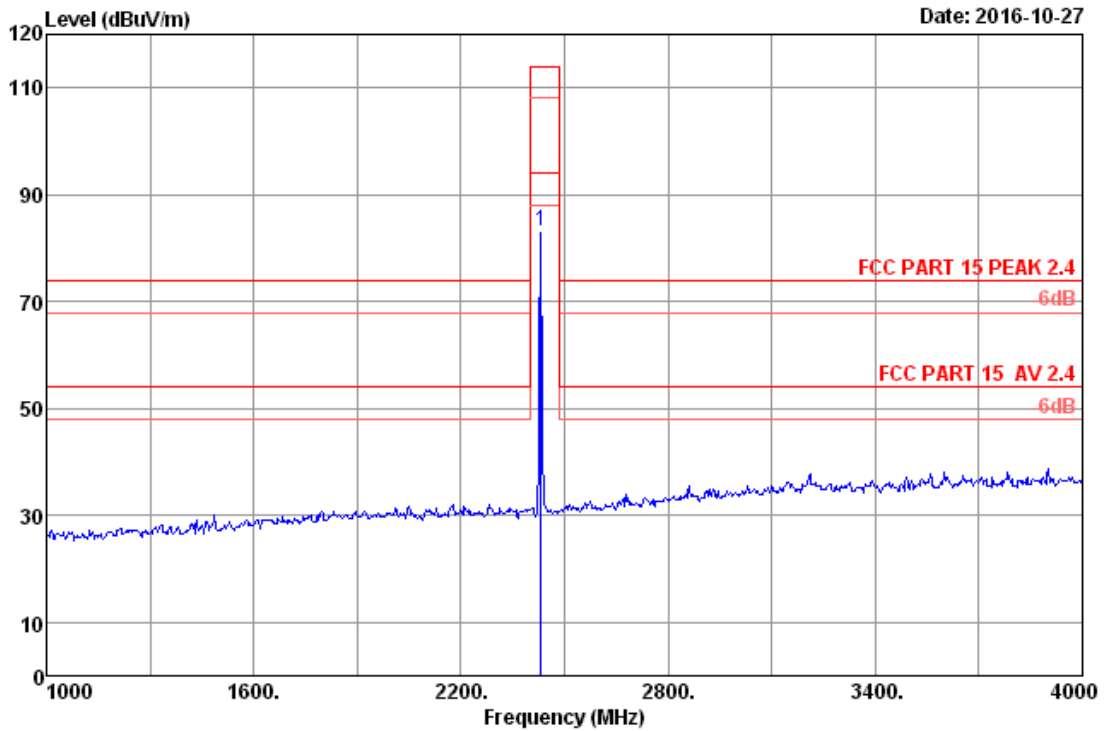




Site no. : 3m Chamber Data no. : 40  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2431MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2431.00	28.19	8.37	92.53	36.38	92.71	114.00	21.29	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 41  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2431MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2431.00	28.19	8.37	83.12	36.38	83.30	114.00	30.70	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

## 5. 20 DB BANDWIDTH TEST

### 5.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	Apr.24,16	1 Year
2.	Attenuator (20dB)	Agilent	8491B	MY39262165	Apr.23,16	1 Year
3.	RF Cable	Marvelous Microwave Inc	SFL402105FLEX	No.1	Oct.15,16	1 Year

### 5.2. Limit

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

### 5.3. Test Procedure

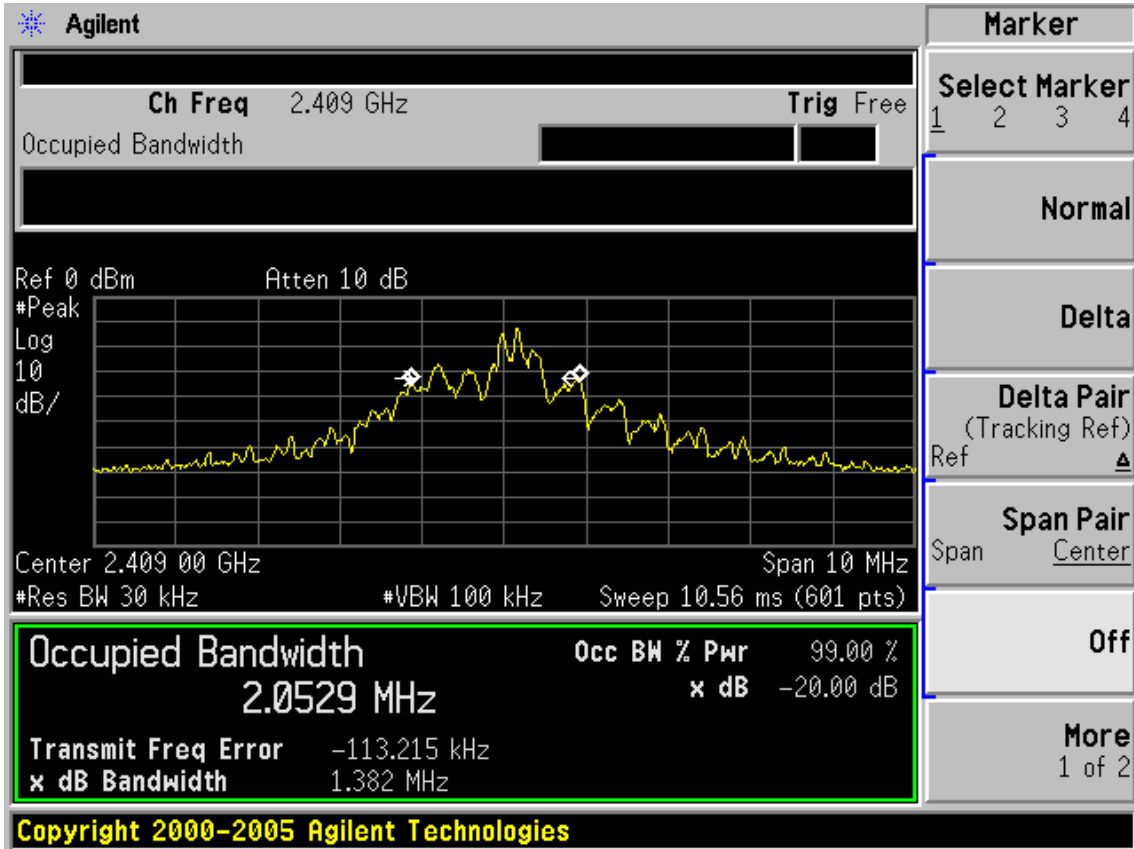
1. Connect the antenna port of the EUT to the spectrum analyzer.
2. Let the EUT transmit at Low/ Mid/ High channel with test software.
3. Setting of SA is following as: RBW: 30kHz / VBW: 100kHz  
 Sweep Mode: Continuous sweep  
 Detect mode: Positive peak  
 Trace mode: Max hold.
4. Use the occupied bandwidth function of the SA measure the 20dB bandwidth directly.

### 5.4. Test Results

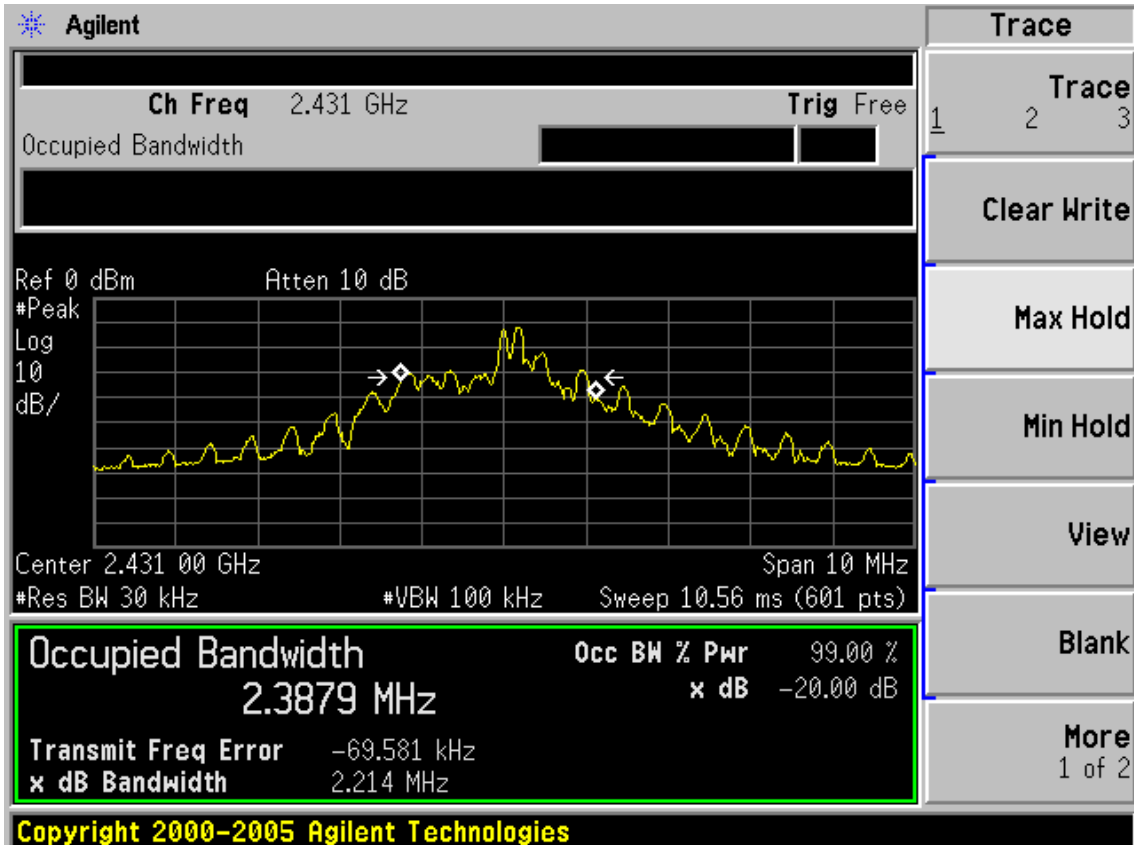
EUT: Phottix Ares II Flash Trigger Transmitter		
M/N: F0702		
Test date: 2016-10-27	Pressure: 102.1±1.0 kpa	Humidity:53.1±3.0%
Tested by: Leo-Li	Test site: RF site	Temperature:23.2±0.6

Test Mode	Frequency ( MHz )	20dB Bandwidth ( MHz )	Limit (KHz)
Tx	2409	1.382	N/A
	2431	2.214	N/A
	2464	2.063	N/A
Conclusion : PASS			

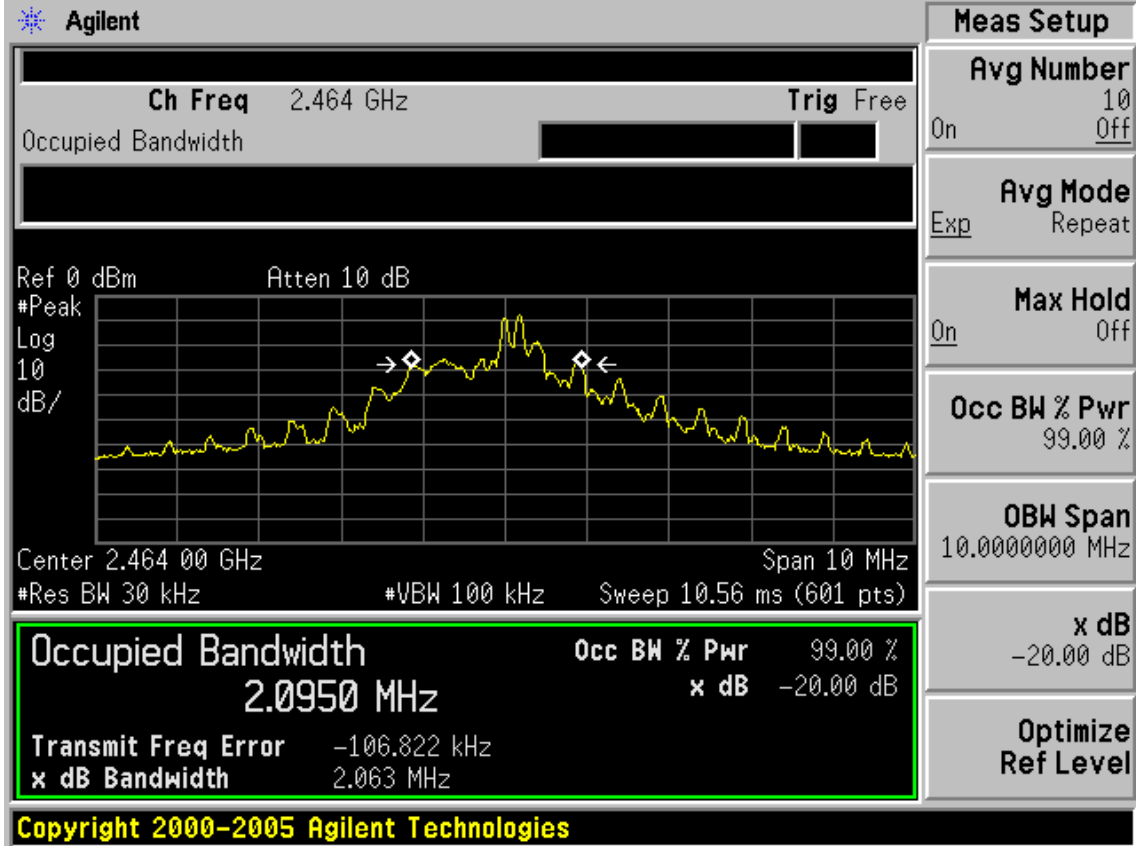
2409MHz



2431MHz



2464MHz



## 6. BAND EDGE COMPLIANCE TEST

### 6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum	Agilent	E4446A	US44300459	Apr.24,16	1 Year
2.	Amp	HP	8449B	3008A02495	Apr.24,16	1 Year
3.	Horn Antenna	ETC	MCTD 1209	DRH15F03007	Apr.11,16	1 Year
4.	HF Cable	Hubersuhner	Sucoflex104	274094/4	Apr.24,16	1 Year

### 6.2. Limit

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

### 6.3. Test Produce

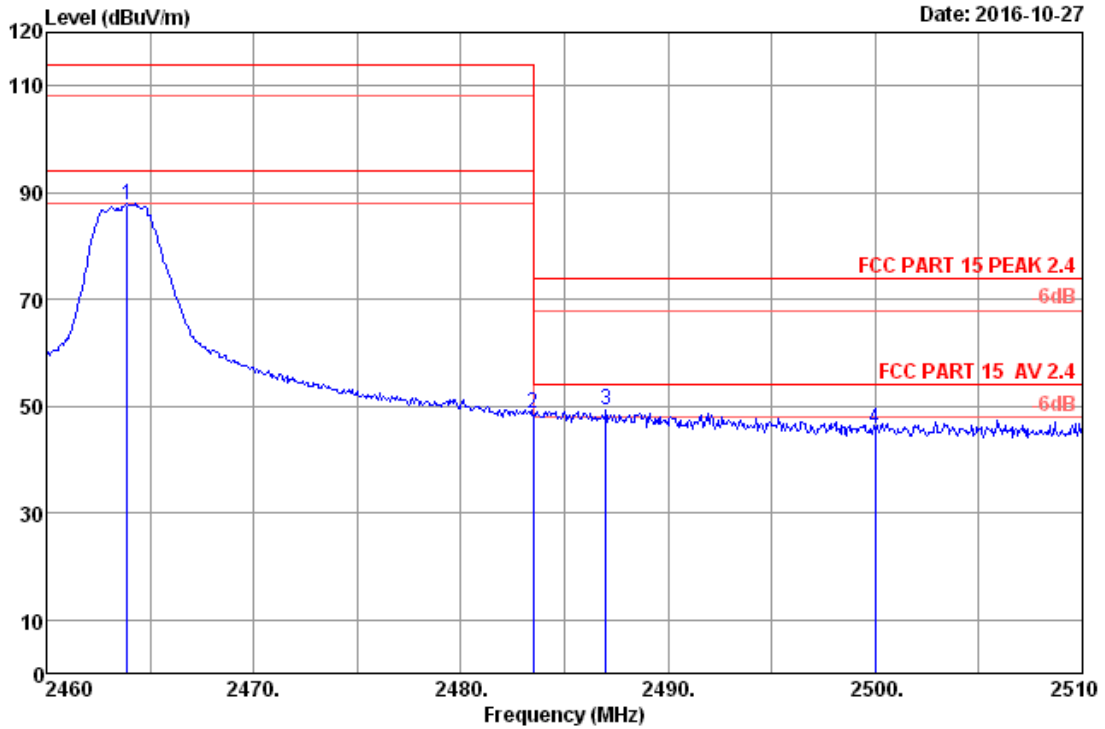
1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
4. Set the spectrum analyzer in the following setting in order to capture the lower and upperband-edges of the emission:
  - (a) PEAK: RBW=1MHz ;VBW=3MHz, PK detector, Sweep=AUTO
  - (b)This device is pulse modulated, a duty cycle factor was used to calculate average level based measured peak level

### 6.4. Test Results

Pass (The testing data was attached in the next pages.)

Note: If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

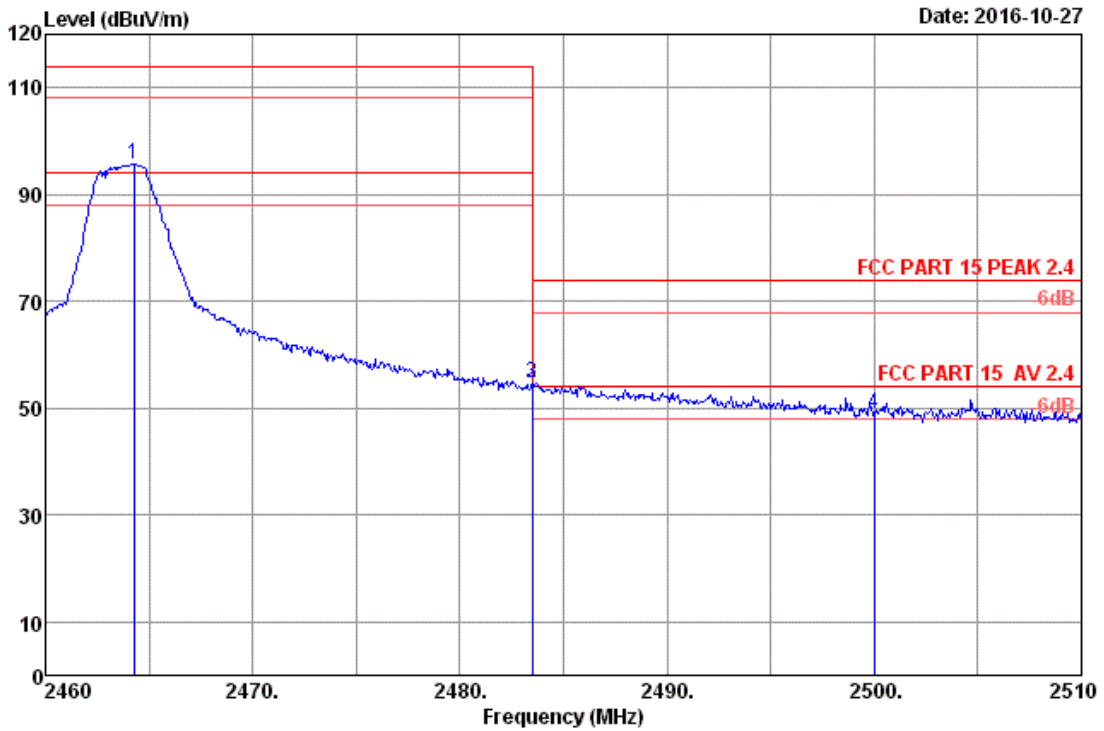
Note: The duty cycle factor for calculate average level is 21.12dB, and average limit is 20dB below peak limit, so if peak measured level comply with average limit, the average level was deemed to comply with average limit.



Site no. : 3m Chamber Data no. : 26  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2464MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2463.90	28.24	8.40	87.53	36.38	87.79	114.00	26.21	Peak
2	2483.50	28.27	8.42	48.48	36.38	48.79	74.00	25.21	Peak
3	2487.00	28.28	8.43	48.81	36.38	49.14	74.00	24.86	Peak
4	2500.00	28.30	8.44	45.38	36.38	45.74	74.00	28.26	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



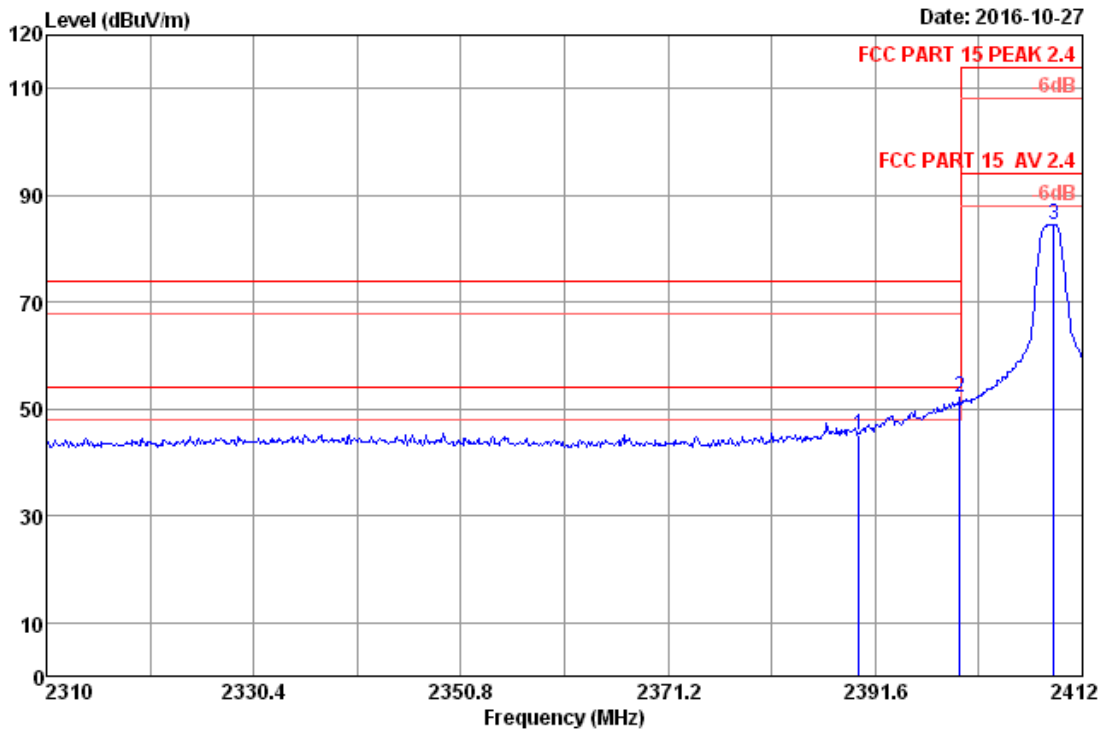
Site no. : 3m Chamber Data no. : 27  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2464MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBUV)	AMP factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Remark
1	2464.25	28.24	8.40	95.38	36.38	95.64	114.00	18.36	Peak
2	2483.50	28.27	8.42	54.28	36.38	54.59	74.00	19.41	Peak
3	2500.00	28.30	8.44	48.66	36.38	49.02	74.00	24.98	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading -Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBUV/m)	Duty cycle factor (dB)	AV level (dBUV/m)	Limit (dBUV/m)	Conclusion
2464.25	95.64	21.12	74.52	94	Pass
2483.50	54.59	21.12	33.47	54	Pass

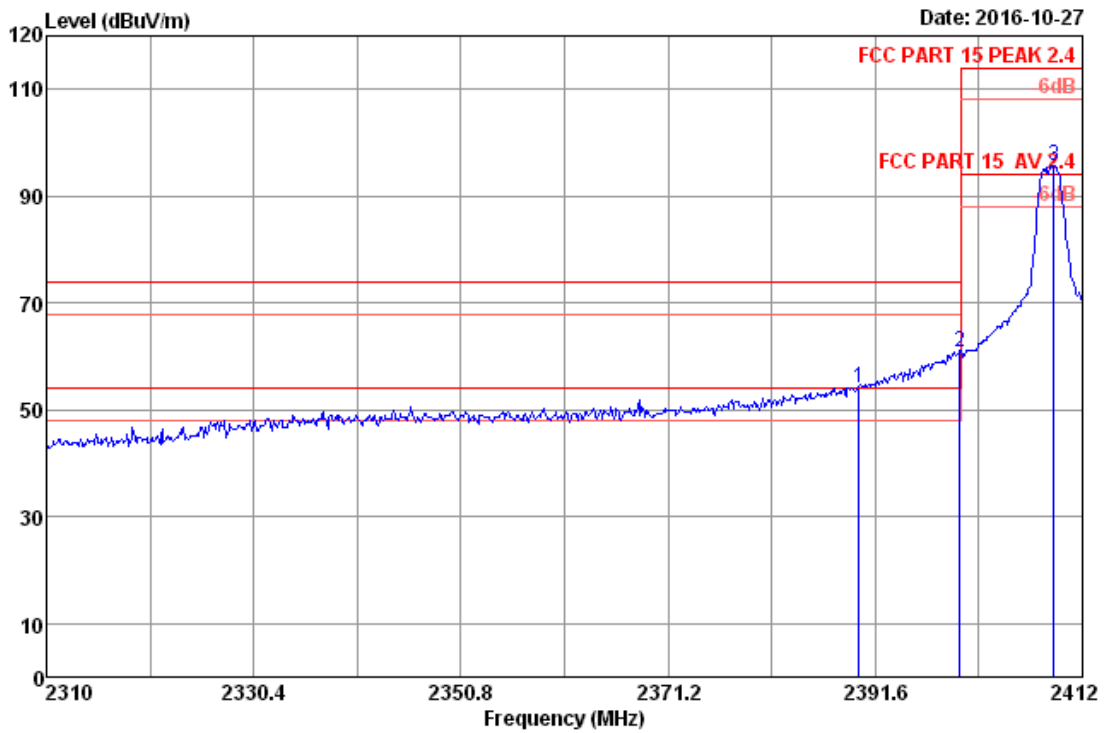




Site no. : 3m Chamber Data no. : 29  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : VERTICAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2409MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.97	28.12	8.33	45.15	36.39	45.21	74.00	28.79	Peak
2	2399.96	28.14	8.34	51.97	36.39	52.06	74.00	21.94	Peak
3	2409.14	28.15	8.35	84.37	36.39	84.48	114.00	29.52	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.



Site no. : 3m Chamber Data no. : 28  
 Dis. / Ant. : 3m 2016 MCTD1209 3006 Ant. pol. : HORIZONTAL  
 Limit : FCC PART 15 PEAK 2.4 Pre : 101.2kPa  
 Env. / Ins. : 22.5°C/51.6% Engineer : Leo-Li  
 EUT : Phottix Ares II Flash Trigger Transmitter  
 Power rating : DC 3V  
 Test Mode : GFSK 2409MHz Tx  
 F0702

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	AMP factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2389.97	28.12	8.33	54.17	36.39	54.23	74.00	19.77	Peak
2	2399.96	28.14	8.34	60.75	36.39	60.84	74.00	13.16	Peak
3	2409.14	28.15	8.35	95.56	36.39	95.67	114.00	18.33	Peak

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading - Amp Factor  
 2. The emission levels that are 20dB below the official limit are not reported.

Frequency (MHz)	Peak level (dBuV/m)	Duty cycle factor (dB)	AV level (dBuV/m)	Limit (dBuV/m)	Conclusion
2409.14	95.67	21.12	74.55	94	Pass
2389.97	54.23	21.12	33.11	54	Pass
2399.96	60.84	21.12	39.72	54	Pass

## 7. ANTENNA REQUIREMENT

**RESULT** : **PASS**

Test Date : Oct.25~27, 2016

Test standard : FCC Part 15.203

Limit : the use of antennas with directional gains that do not exceed 6dBi

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 3.0dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply the provision.

## 8. DEVIATION TO TEST SPECIFICATIONS

[NONE]