FCC PART 15C TEST REPORT FOR CERTIFICATION
On Behalf of

Phottix (HK) Ltd.

Phottix Laso TTL Flash Trigger Transmitter

Model Number: Laso (T)

FCC ID: P9M-LASOTX

Prepared for : Phottix (HK) Ltd.
10/F Block A, Yip Fat Factory Building, Phase 1, 77 Hoi Yuen Rd, Kwun Tong, Kln, Hong Kong

Prepared By : Audix Technology (Shenzhen) Co., Ltd.
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Report Number : ACS-F15157
Date of Test : Feb.13~17, 2015
Date of Report : Jun.04, 2015

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TEST REPORT CERTIFICATION

Applicant : Phottix (HK) Ltd.

Manufacturer : Phottix (HK) Ltd.

EUT Description : Phottix Laso TTL Flash Trigger Transmitter

FCC ID : P9M-LASOTX

(A) MODEL NO. : Laso (T)
(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: 2014

Test procedure used:
ANSI C63.10:2009

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 : Feb.13~17, 2015 Report of date: Jun.04, 2015

Prepared by : Kayli He
Kayli He / Assistant

Reviewed by :
Sunny Lu / Assistant Manager

AUDIX® 信華科技（深圳）有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章
Stamp only for EMC Dept. Report
Signature: David Jin

Approved & Authorized Signer :
David Jin / Manager

1. SUMMARY OF STANDARDS AND RESULTS

1.1.Description of Standards and Results

The EUT have 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 C63.10-2009	N/A
Radiated Emission Test	FCC Part 15C: 15.209 FCC Part 15C: 15.249 ANSI C63.10-2009	PASS
Band Edge Compliance Test	FCC Part 15: 15.249 ANSI C63.10-2009	PASS
20dB Bandwidth Test	FCC Part 15: 15.215 ANSI C63.10-2009	PASS
N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

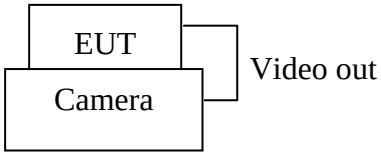
2.1.Description of Device (EUT)

Product Name	:	Phottix Laso TTL Flash Trigger Transmitter
Model Number	:	Laso (T)
FCC ID	:	P9M-LASOTX
Operation frequency	:	2405MHz-2475MHz
Antenna	:	Internal PCB PIFA Antenna, 3.0dBi gain
Applicant	:	Phottix (HK) Ltd. 10/F Block A, Yip Fat Factory Building, Phase 1, 77 Hoi Yuen Rd, Kwun Tong, Kln, Hong Kong
Manufacturer	:	Phottix (HK) Ltd. 10/F Block A, Yip Fat Factory Building, Phase 1, 77 Hoi Yuen Rd, Kwun Tong, Kln, Hong Kong
VIDEO OUT Cable	:	Unshielded, Detachable, 1.4m
Date of Test	:	Feb.13~17, 2015
Date of Receipt	:	Feb.10, 2015
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	EOS50D	N/A	N/A

2.3.EUT Configuration and operation conditions for test.



(EUT: Phottix Laso TTL Flash Trigger Transmitter)

2.4.Test Facility

Site Description

Name of Firm	:	Audix Technology (Shenzhen) Co., Ltd. No. 6, Ke Feng Rd., 52 Block, Shenzhen Science & Industrial Park,Nantou, Shenzhen, Guangdong, China
3m Anechoic Chamber	:	Certificated by FCC, USA Registration Number: 90454 Valid Date: Dec.30, 2017
3m & 10m Anechoic Chamber	:	Certificated by FCC, USA Registration Number: 794232 Valid Date: Oct.31, 2015
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, 2016

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

Test Item	Uncertainty
Uncertainty for Conduction emission test in No. 1 Conduction	3.1dB(150kHz to 30MHz)
Uncertainty for Radiation Emission test in 3m chamber	3.3dB(30~200MHz, Polarize: H)
	3.3dB(30~200MHz, Polarize: V)
	3.5dB(200M~1GHz, Polarize: H)
	3.4dB(200M~1GHz, Polarize: V)
Uncertainty for Radiation Emission test in 3m chamber (1GHz-18GHz)	5.0dB (1~6GHz, Distance: 3m)
	5.0dB (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	83 kHz
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 15.207, 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

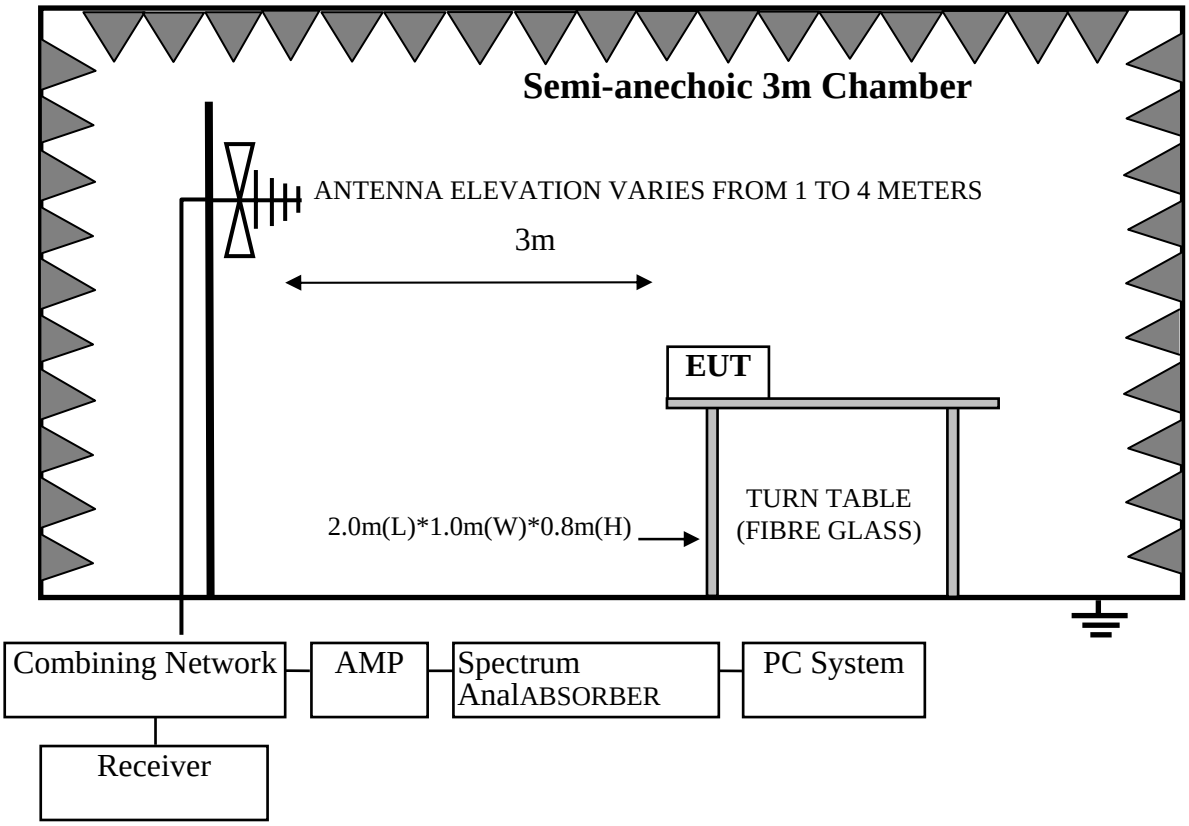
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Nov.23, 14	1 Year
2.	EMI Spectrum	Agilent	E4407B	MY41440292	Apr. 28,14	1 Year
3.	Test Receiver	Rohde & Schwarz	ESVS10	834468/011	Apr. 28,14	1 Year
4.	Amplifier	HP	8447D	2648A04738	Apr. 28,14	1 Year
5.	Bilog Antenna	TESEQ	CBL6112D	35375	Jun. 18, 14	1 Year
6.	RF Cable	MIYAZAKI	CFD400-NL	3# Chamber No.1	Apr. 28,14	1 Year
7.	Coaxial Switch	Anritsu	MP59B	6200313662	Apr. 28,14	1 Year

Frequency rang: above 1000MHz

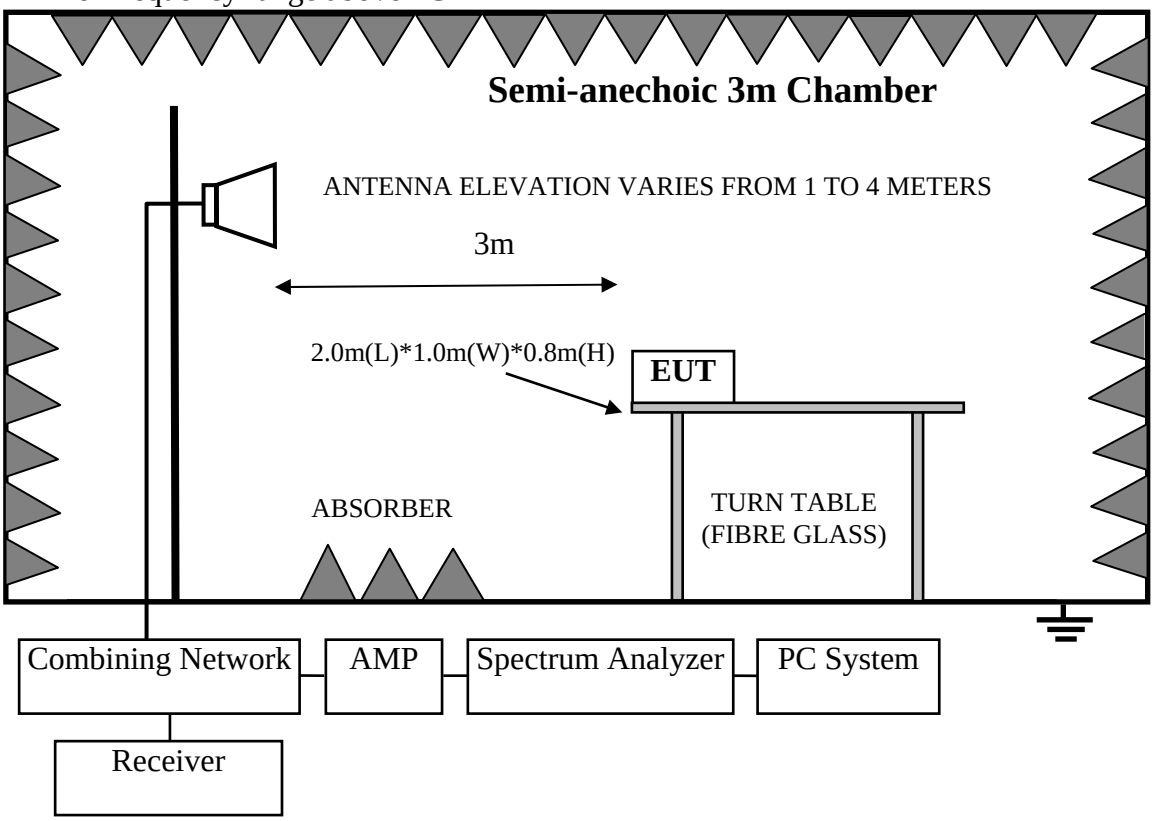
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	3#Chamber	AUDIX	N/A	N/A	Nov.02, 14	1 Year
2.	Spectrum Analyzer	Agilent	E4407B	MY41440292	Apr. 28,14	1 Year
3.	Horn Antenna	ETS	3115	9607-4877	Sep.20, 14	1 Year
4.	Amplifier	Agilent	8449B	3008A00863	Apr. 28,14	1 Year
5.	RF Cable	Hubersuhner	SUCOFLEX106	77977/6	Apr. 28,14	1 Year
6.	RF Cable	Hubersuhner	SUCOFLEX106	28616/2	Apr. 28,14	1 Year
7.	Horn Antenna	ETS	3116	00060089	Sep.20, 14	1 Year

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.Turned on the power of all equipment.
4.5.3.Let EUT work in Tx mode.

4.6.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The 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. 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 C63.10-2009 on radiated emission Test.

During the pretest the EUT was rotated through three orthogonal axes to determine the attitude that maximizes the emissions.

After that the EUT was manually handled to find the orientation that has the maximum emission, which is the orientation show in the test setup photos.

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

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 calculate 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.

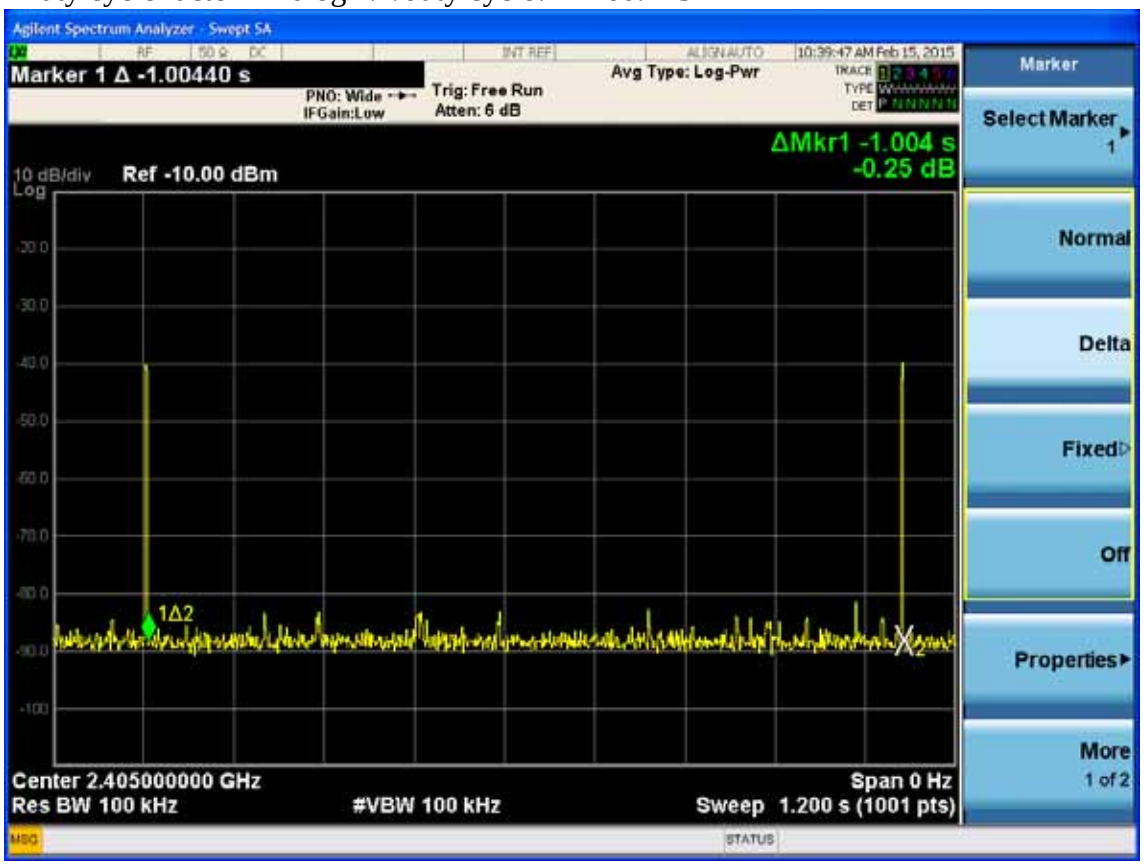
4.7. Radiated Emission Test Results

PASS.

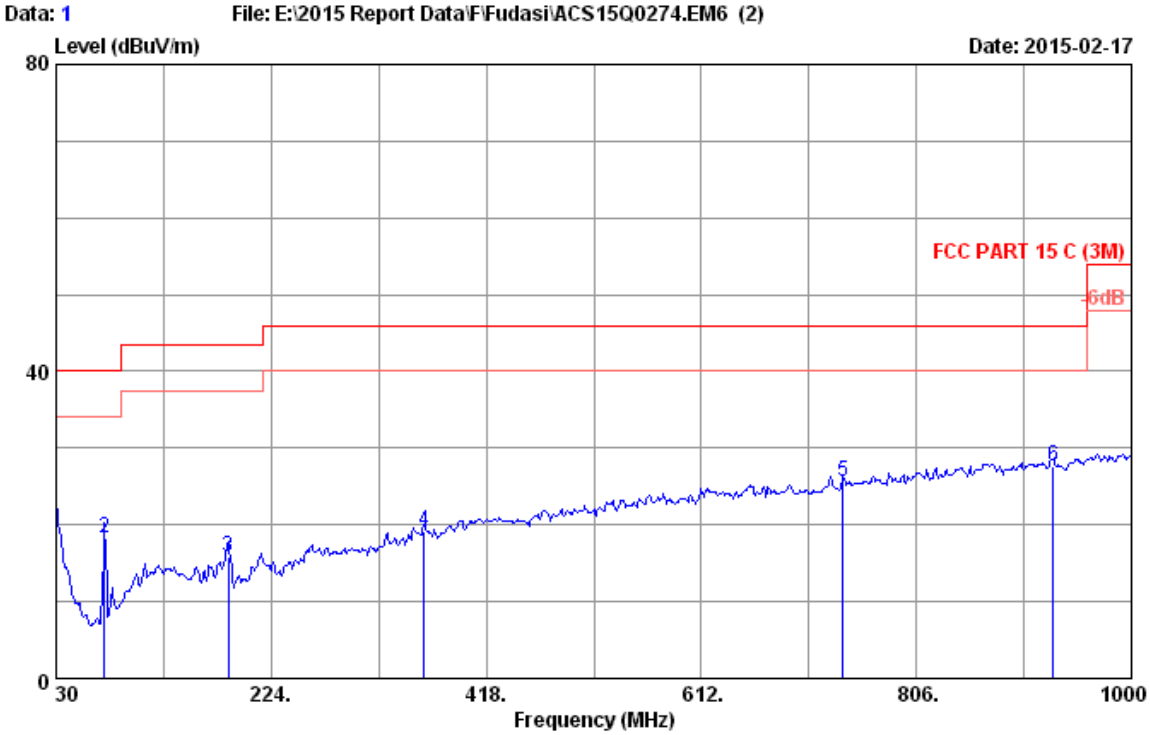
All the emissions from 30MHz to 25GHz were comply with the 15.209 Limit.

Note: The duty cycle factor for calculate average level is -60.273 dB, 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 = 20log（1/duty cycle）= -60.273



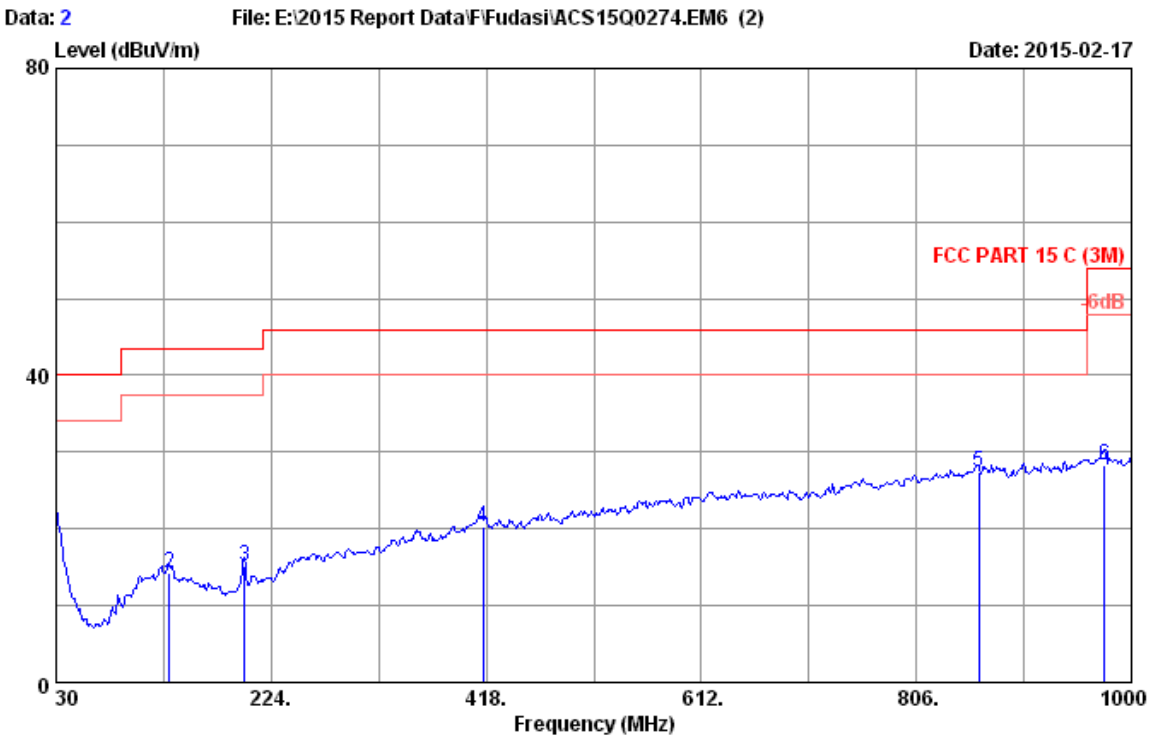
Frequency: 30MHz~1GHz



Site no. : 3m Chamber Data no. : 1
Dis. / Ant. : 3m 2014 CBL6112D 35375 Ant. pol. : HORIZONTAL
Limit : FCC PART 15 C (3M)
Env. / Ins. : 24.5*C/64% Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : Tx Mode
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.60	0.60	1.64	21.84	40.00	18.16	QP
2	73.650	6.90	0.96	10.42	18.28	40.00	21.72	QP
3	185.200	9.70	1.76	4.36	15.82	43.50	27.68	QP
4	361.740	15.73	2.62	0.72	19.07	46.00	26.93	QP
5	740.040	20.60	4.27	0.71	25.58	46.00	20.42	QP
6	929.190	22.02	4.98	0.56	27.56	46.00	18.44	QP

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

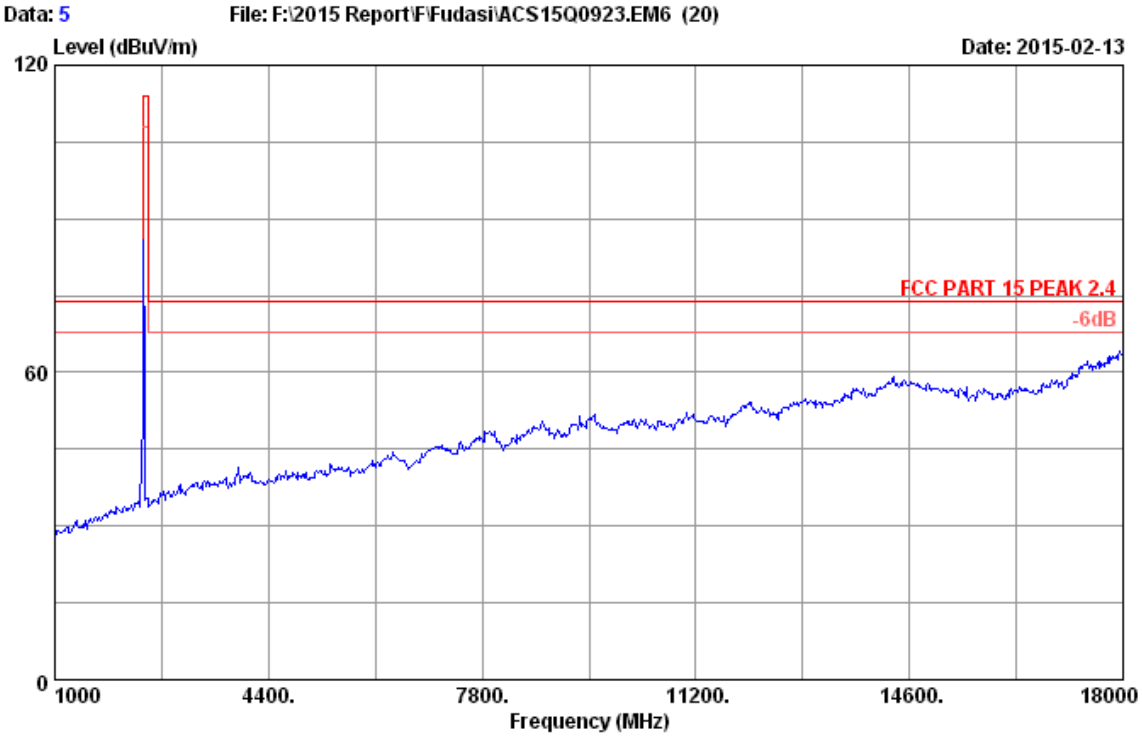


Site no. : 3m Chamber Data no. : 2
Dis. / Ant. : 3m 2014 CBL6112D 35375 Ant. pol. : VERTICAL
Limit : FCC PART 15 C (3M)
Env. / Ins. : 24.5*C/64% Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : Tx Mode
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	30.000	19.60	0.60	1.37	21.57	40.00	18.43	QP
2	131.850	12.60	1.40	0.34	14.34	43.50	29.16	QP
3	199.750	10.29	1.84	3.12	15.25	43.50	28.25	QP
4	415.090	17.40	2.87	0.07	20.34	46.00	25.66	QP
5	862.260	21.80	4.73	0.87	27.40	46.00	18.60	QP
6	975.750	22.69	5.14	0.44	28.27	54.00	25.73	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

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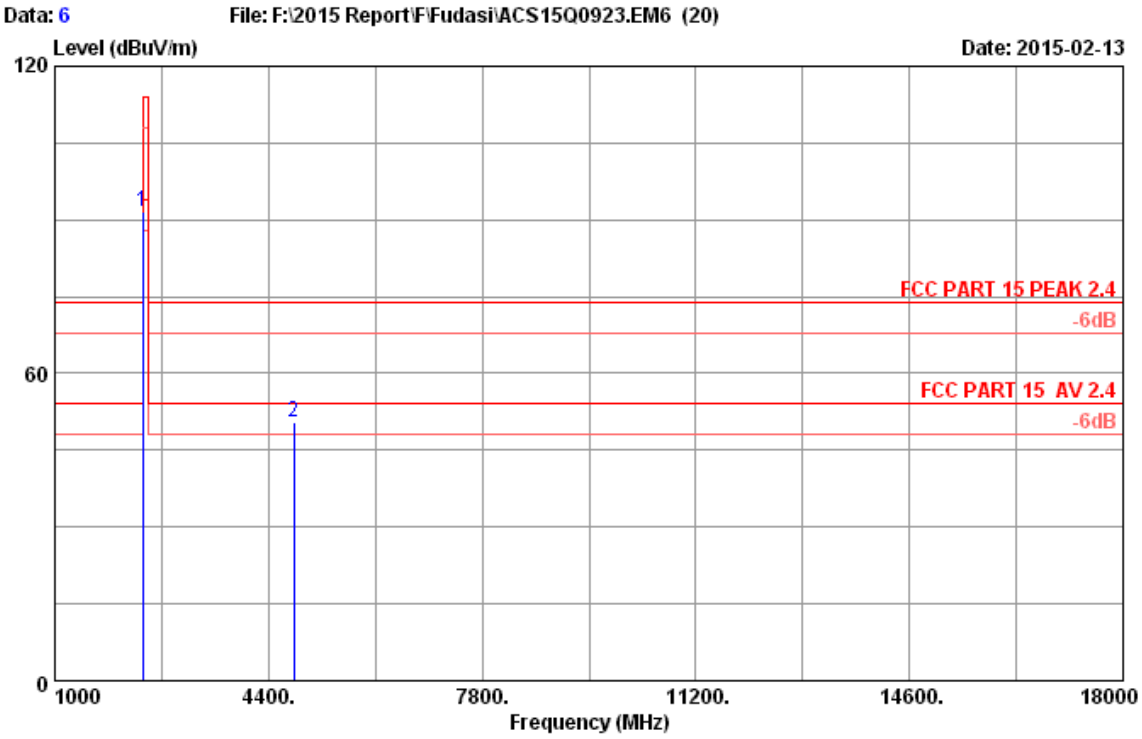
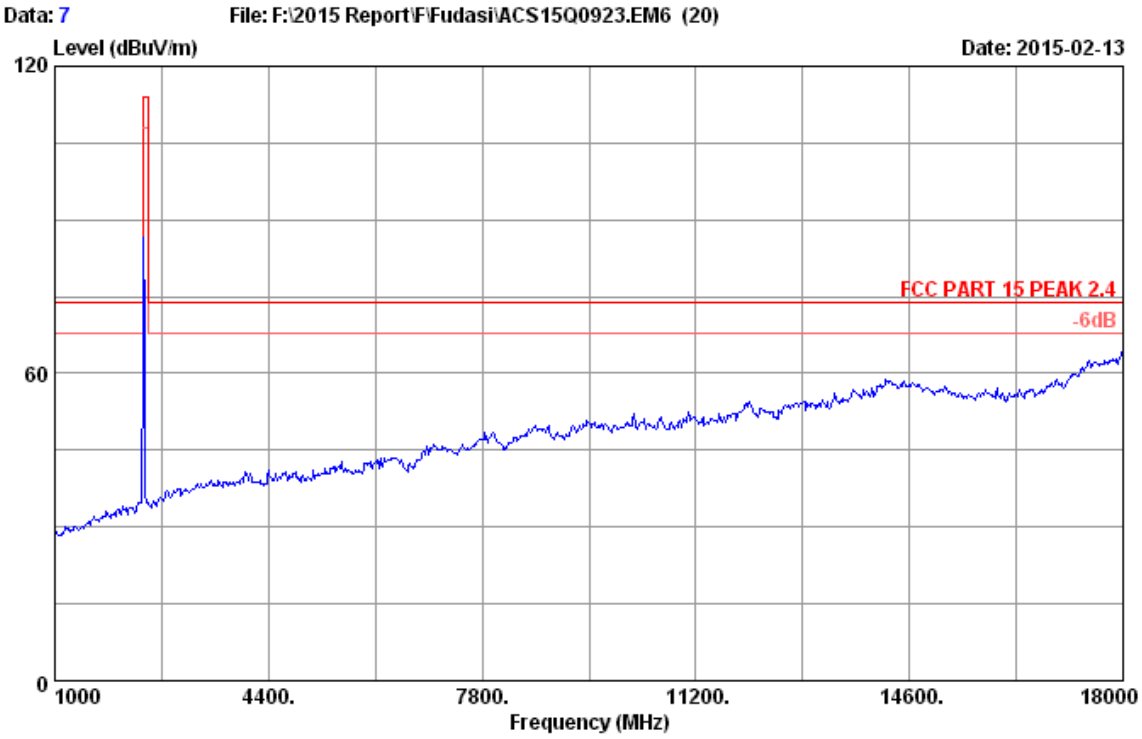
Site no.      : 3m Chamber                        Data no.   : 5
Dis. / Ant.   : 3m   2014 3115 (4580)        Ant. pol. : HORIZONTAL
Limit         : FCC PART 15 PEAK 2.4
Env. / Ins.   : 22.5*C/51.6%
Engineer      : Leo-Li
EUT           : Phottix Laso TTL Flash Trigger Transmitter
Power rating  : DC 3V
Test Mode     : 2405MHz Tx
M/N           : Laso(T)
```



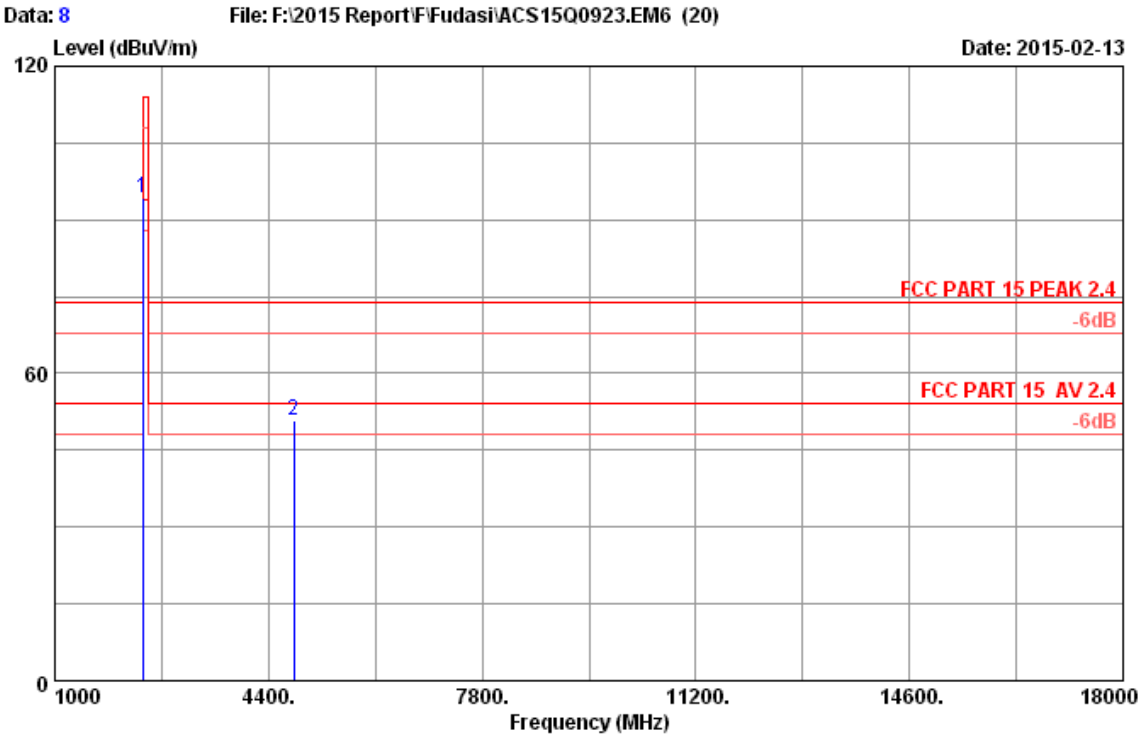
Site no. : 3m Chamber Data no. : 6
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2405MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2405.000	28.19	5.80	35.70	93.41	91.70	114.00	22.30	Peak
2	4810.000	32.86	8.57	35.70	44.74	50.47	74.00	23.53	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.



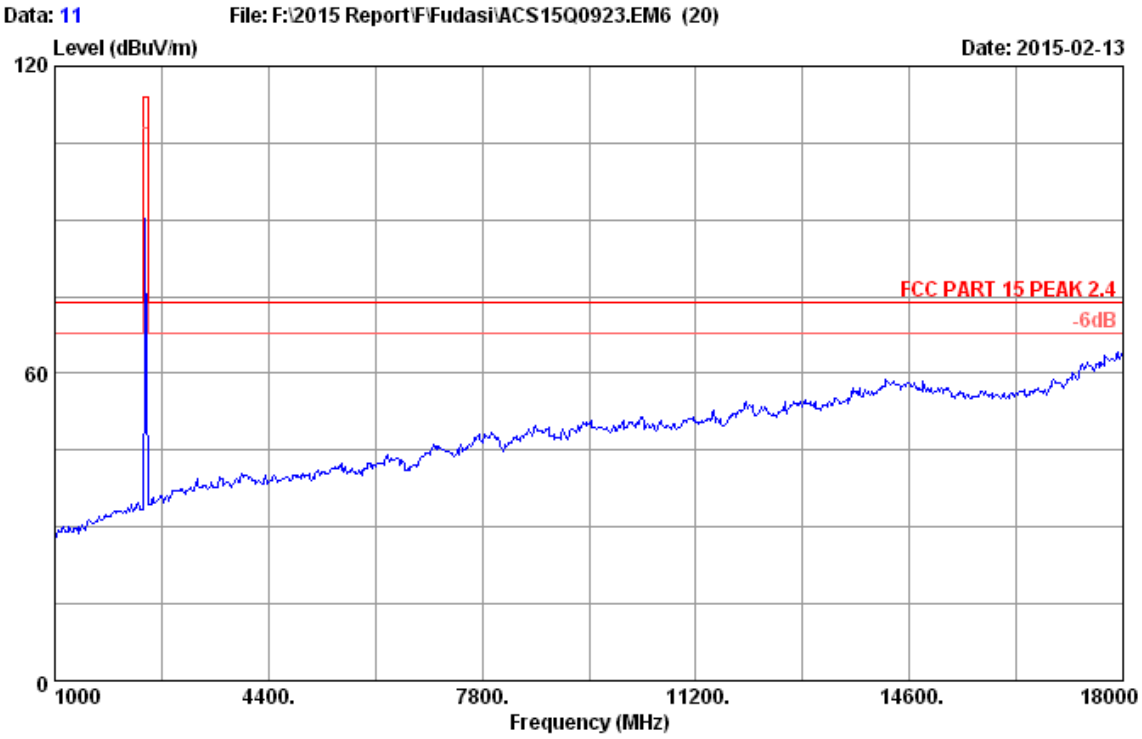

```
Site no.      : 3m Chamber                        Data no.  : 7
Dis. / Ant.   : 3m   2014 3115 (4580)        Ant. pol. : VERTICAL
Limit         : FCC PART 15 PEAK 2.4
Env. / Ins.   : 22.5*C/51.6%
Engineer      : Leo-Li
EUT           : Phottix Laso TTL Flash Trigger Transmitter
Power rating  : DC 3V
Test Mode     : 2405MHz Tx
M/N           : Laso(T)
```



Site no. : 3m Chamber Data no. : 8
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2405MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2405.000	28.19	5.80	35.70	96.13	94.42	114.00	19.58	Peak
2	4810.000	32.86	8.57	35.70	45.16	50.89	74.00	23.11	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.

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Site no.      : 3m Chamber                        Data no.  : 11
Dis. / Ant.   : 3m   2014 3115 (4580)        Ant. pol. : HORIZONTAL
Limit         : FCC PART 15 PEAK 2.4
Env. / Ins.   : 22.5*C/51.6%
Engineer      : Leo-Li
EUT           : Phottix Laso TTL Flash Trigger Transmitter
Power rating  : DC 3V
Test Mode     : 2440MHz Tx
M/N           : Laso(T)
```
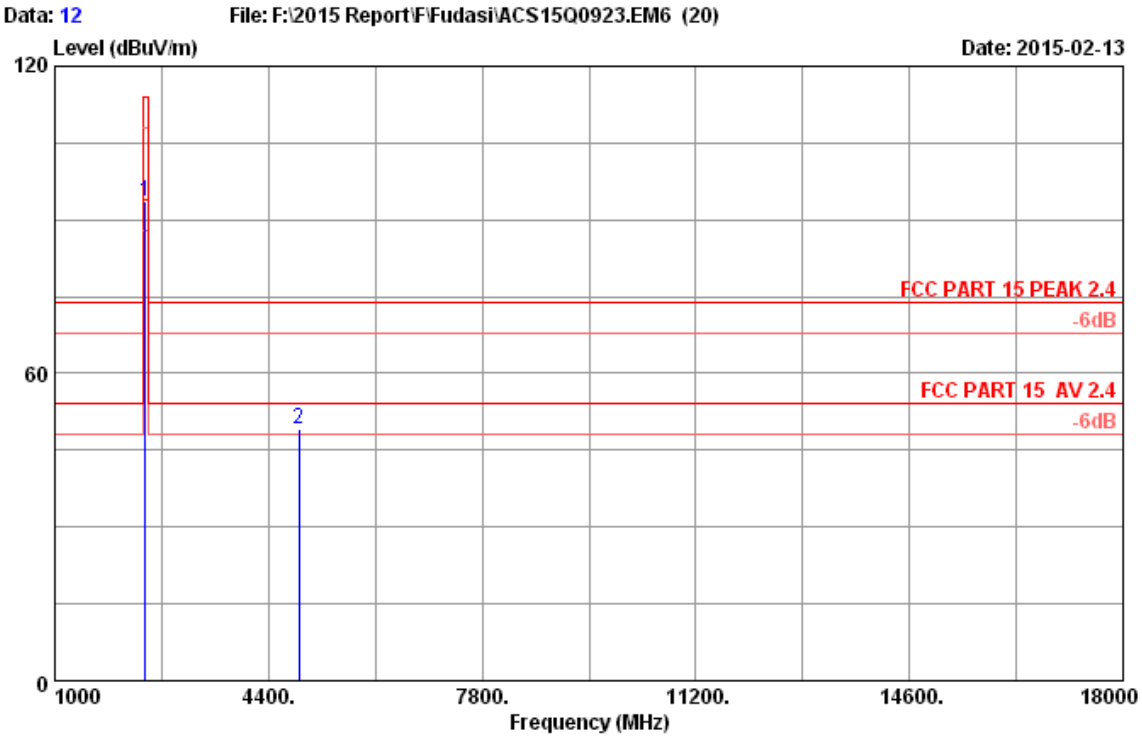
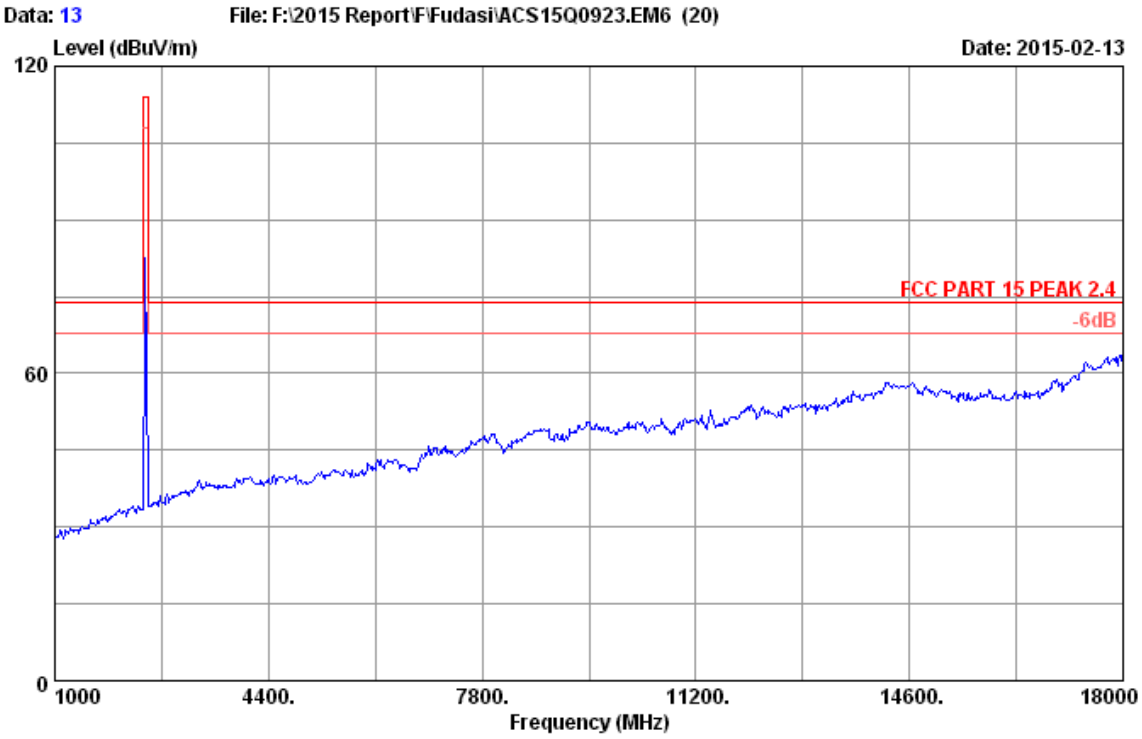



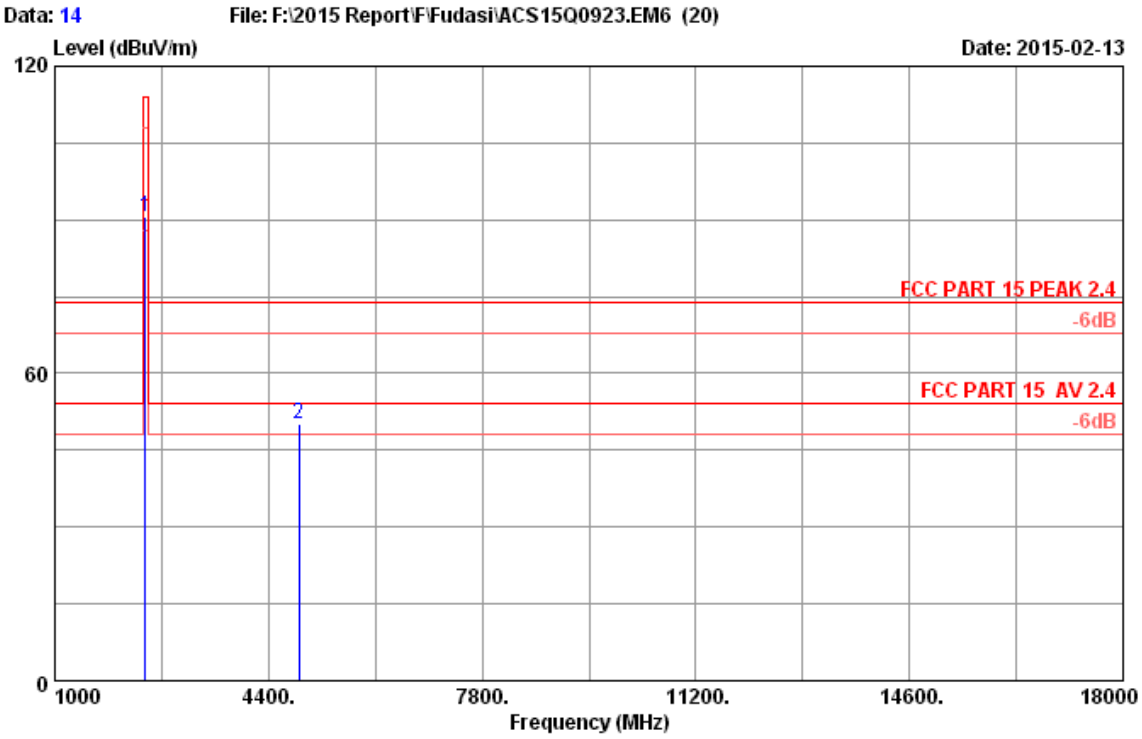
Site no. : 3m Chamber Data no. : 12
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2440MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.000	28.27	5.86	35.70	95.12	93.55	114.00	20.45	Peak
2	4880.000	32.98	8.64	35.70	43.29	49.21	74.00	24.79	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.



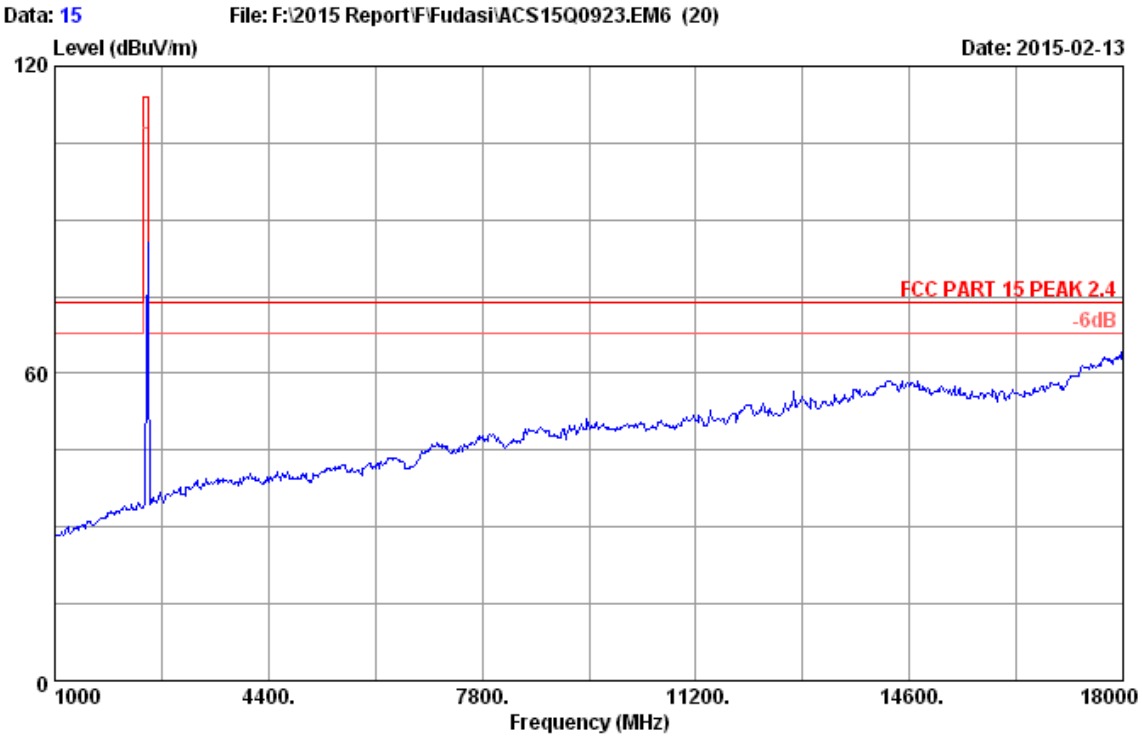

```
Site no.      : 3m Chamber                        Data no.  : 13
Dis. / Ant.   : 3m   2014 3115 (4580)        Ant. pol. : VERTICAL
Limit         : FCC PART 15 PEAK 2.4
Env. / Ins.   : 22.5*C/51.6%
Engineer      : Leo-Li
EUT           : Phottix Laso TTL Flash Trigger Transmitter
Power rating  : DC 3V
Test Mode     : 2440MHz Tx
M/N           : Laso(T)
```



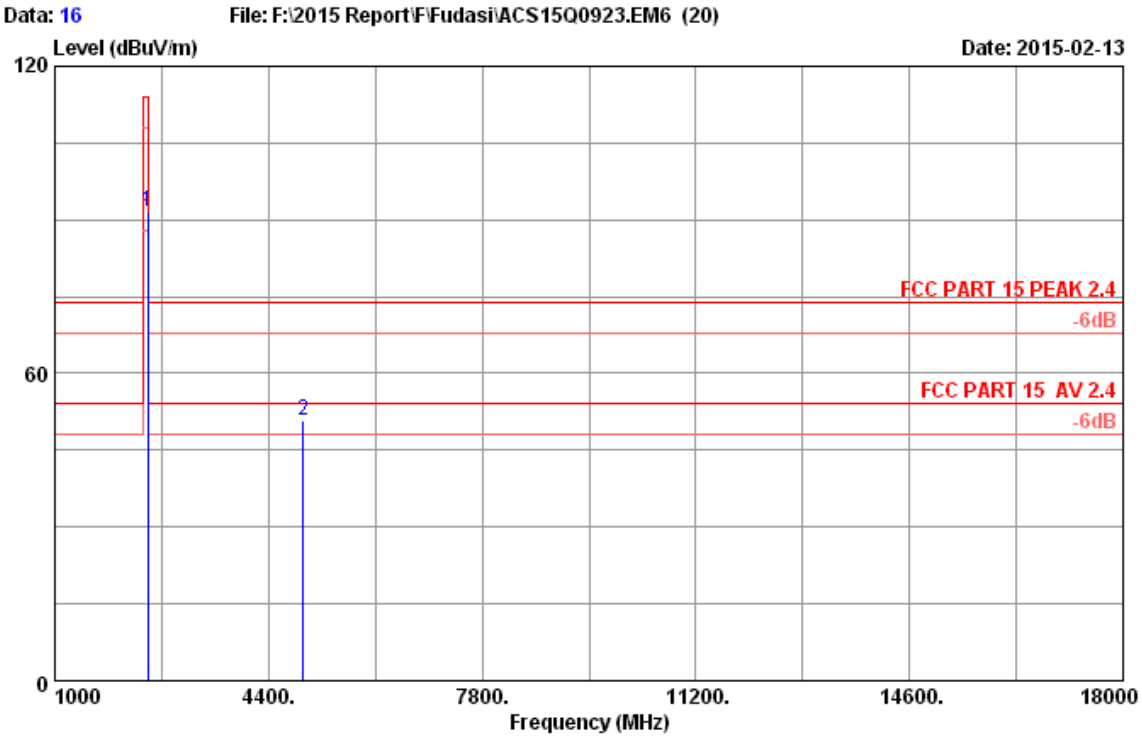
Site no. : 3m Chamber Data no. : 14
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2440MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2440.000	28.27	5.86	35.70	92.22	90.65	114.00	23.35	Peak
2	4880.000	32.98	8.64	35.70	44.18	50.10	74.00	23.90	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.



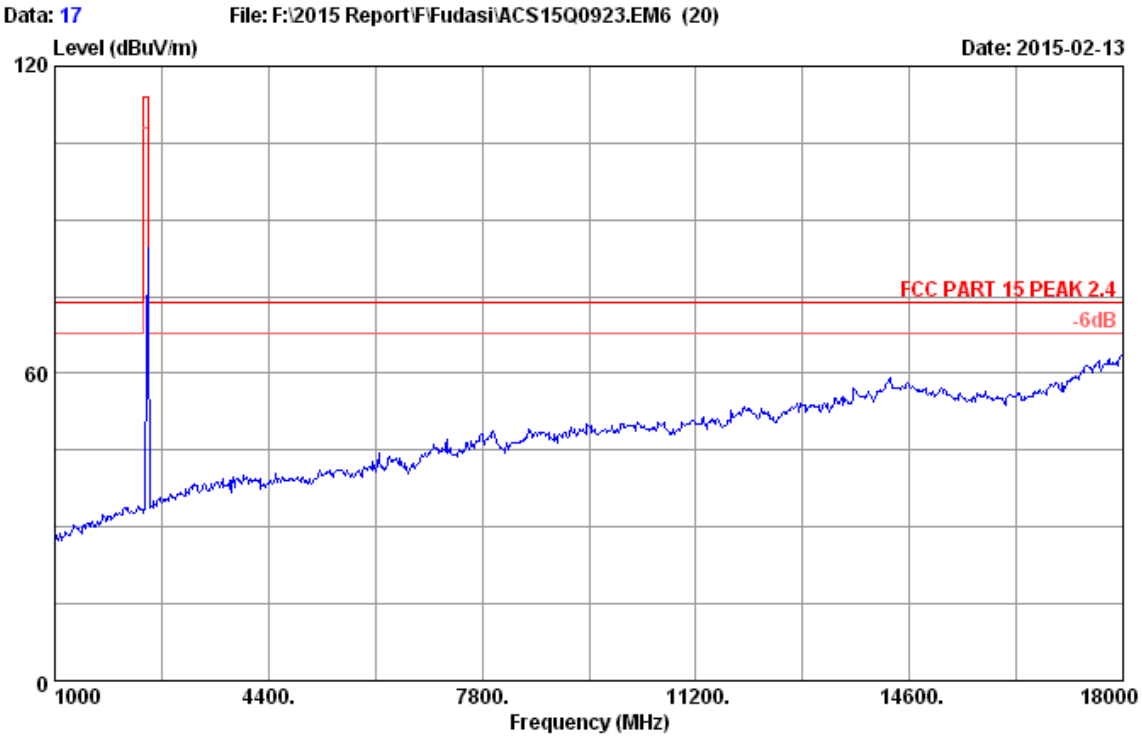

```
Site no.      : 3m Chamber                        Data no.  : 15
Dis. / Ant.   : 3m   2014 3115 (4580)        Ant. pol. : VERTICAL
Limit         : FCC PART 15 PEAK 2.4
Env. / Ins.   : 22.5*C/51.6%
Engineer      : Leo-Li
EUT           : Phottix Laso TTL Flash Trigger Transmitter
Power rating  : DC 3V
Test Mode     : 2475MHz Tx
M/N           : Laso(T)
```



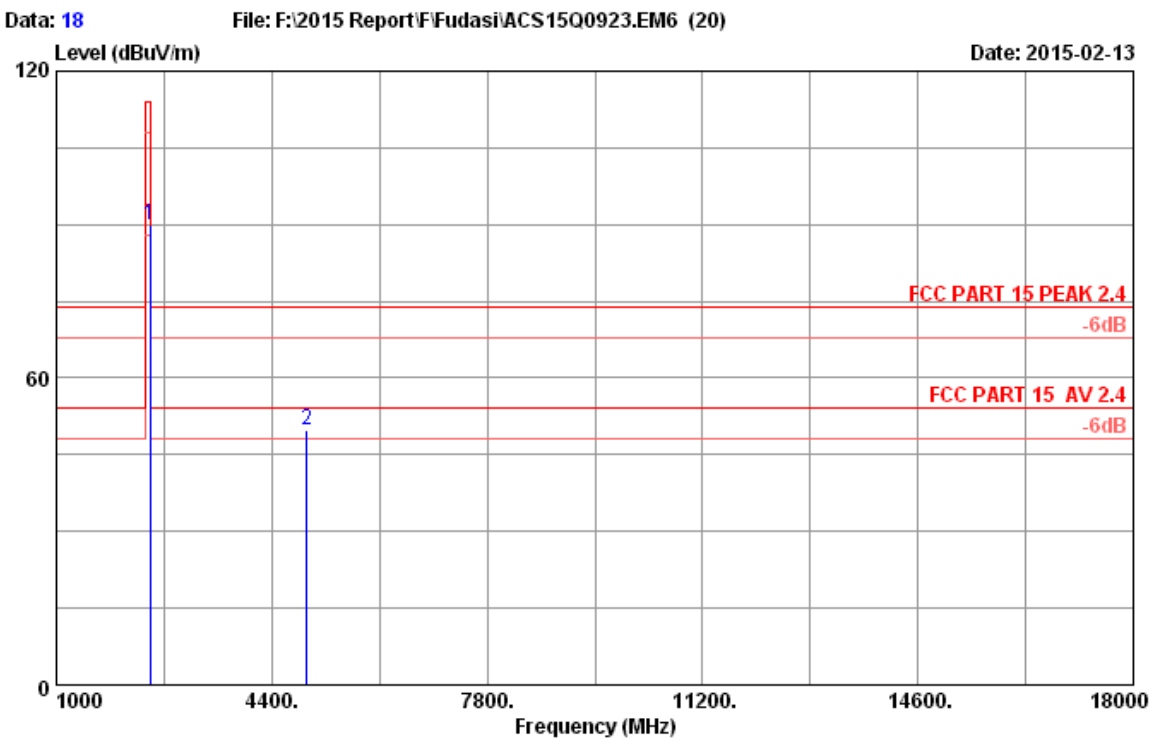
Site no. : 3m Chamber Data no. : 16
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2475MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.000	28.34	5.91	35.70	93.01	91.56	114.00	22.44	Peak
2	4950.000	33.11	8.71	35.70	44.72	50.84	74.00	23.16	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.  : 17
Dis. / Ant.   : 3m   2014 3115 (4580)        Ant. pol. : HORIZONTAL
Limit         : FCC PART 15 PEAK 2.4
Env. / Ins.   : 22.5*C/51.6%
Engineer      : Leo-Li
EUT           : Phottix Laso TTL Flash Trigger Transmitter
Power rating  : DC 3V
Test Mode     : 2475MHz Tx
M/N           : Laso(T)
```



Site no. : 3m Chamber Data no. : 18
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2475MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.000	28.34	5.91	35.70	91.22	89.77	114.00	24.23	Peak
2	4950.000	33.11	8.71	35.70	43.78	49.90	74.00	24.10	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	N9030A	MY51380221	Oct.29, 14	1Year
2.	Attenuator (20dB)	Agilent	8491B	MY39262165	Apr. 28,14	1 Year
3.	RF Cable	Hubersuhner	SUCOFLEX102	28620/2	Apr. 28,14	1 Year

5.2. Limit

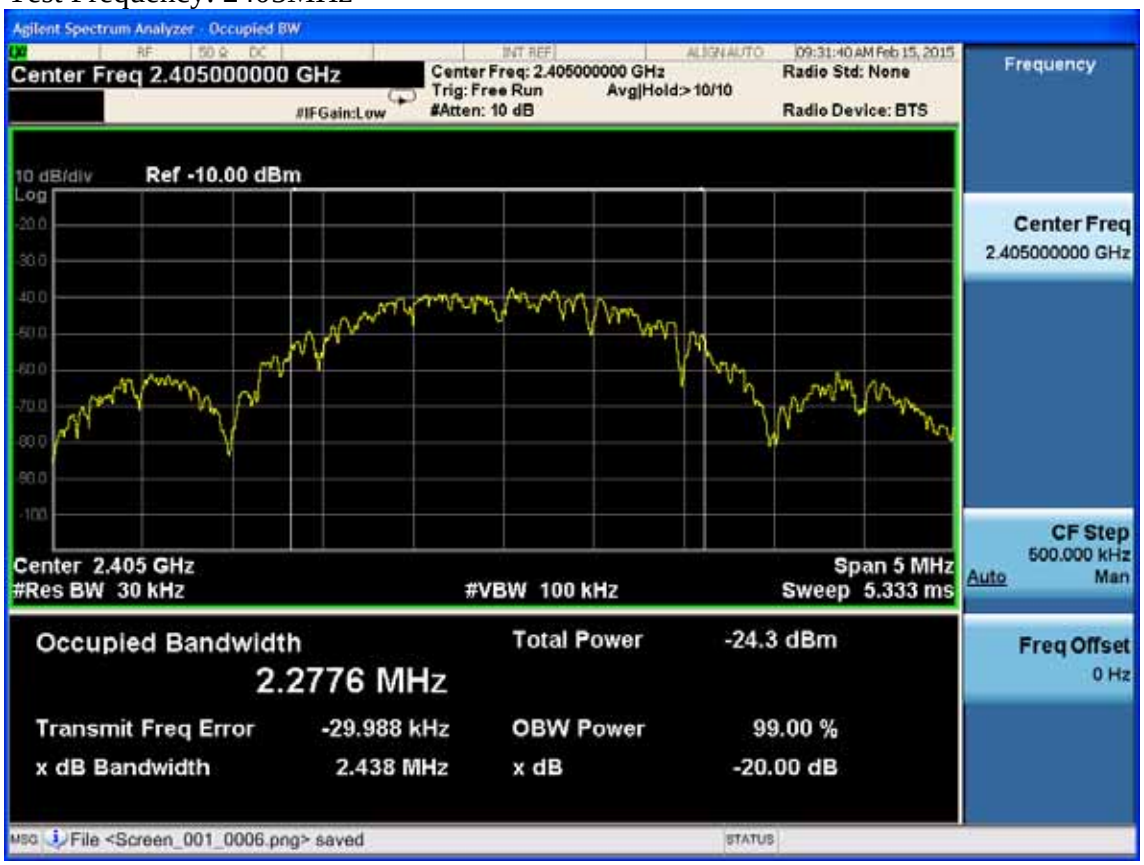
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific 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 Results

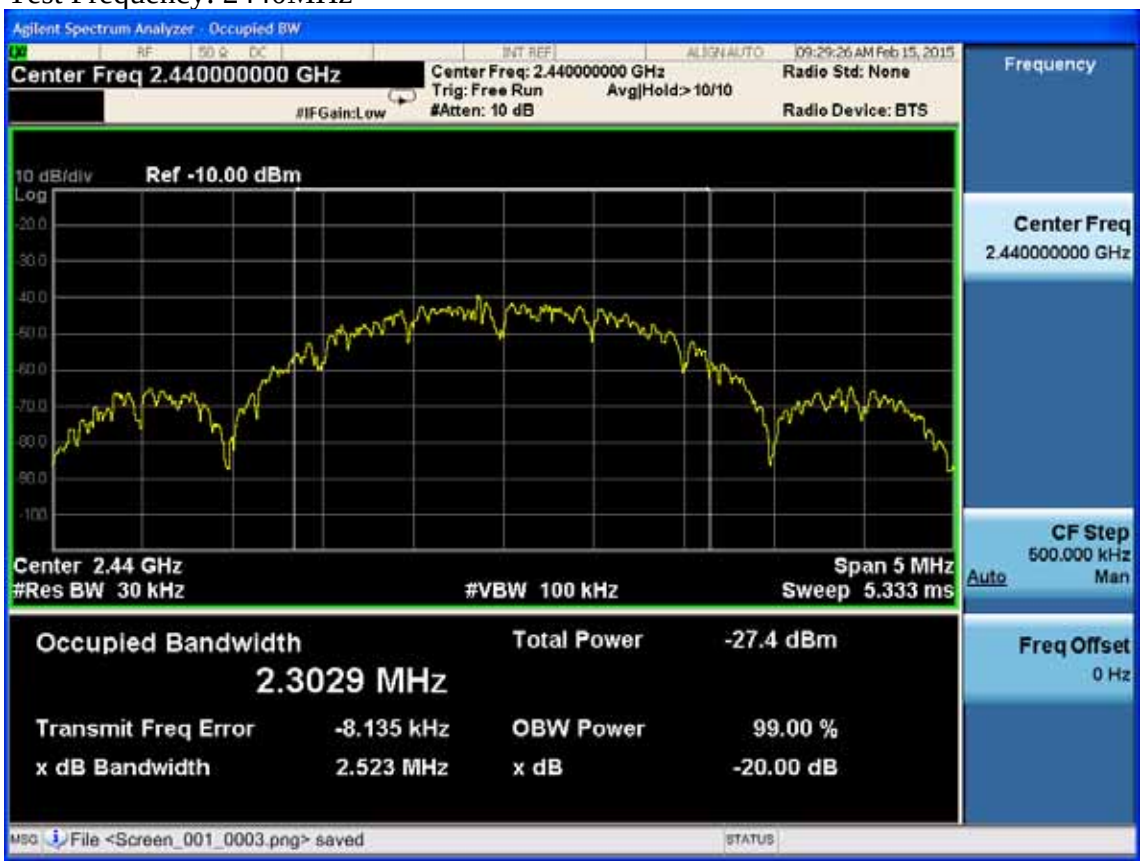
EUT: Phottix Laso TTL Flash Trigger Transmitter		
M/N: Laso (T)		
Test date: 2015-02-15	Pressure: 101.1±1.0 kpa	Humidity: 51.9±3.0%
Tested by: Leo-Li	Test site: RF Site	Temperature: 22.3±0.6℃

Frequency	20dB Bandwidth （MHz）	Limit (MHz)
2405MHz	2.438	N/A
2440MHz	2.523	N/A
2475MHz	2.597	N/A
Conclusion：PASS		

Test Frequency: 2405MHz



Test Frequency: 2440MHz



Test Frequency: 2475MHz

6. BAND EDGE COMPLIANCE TEST

6.1. Test Equipment

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Amp	HP	8449B	3008A02495	Apr. 28,14	1 Year
2.	Horn Antenna	ETS	3115	9510-4580	Jun. 06, 14	1 Year
3.	HF Cable	Hubersuhner	Sucoflex104	274094/4	Apr. 28,14	1 Year
4.	RF Cable	Hubersuhner	Sucoflex102	28610/2	Apr. 28,14	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

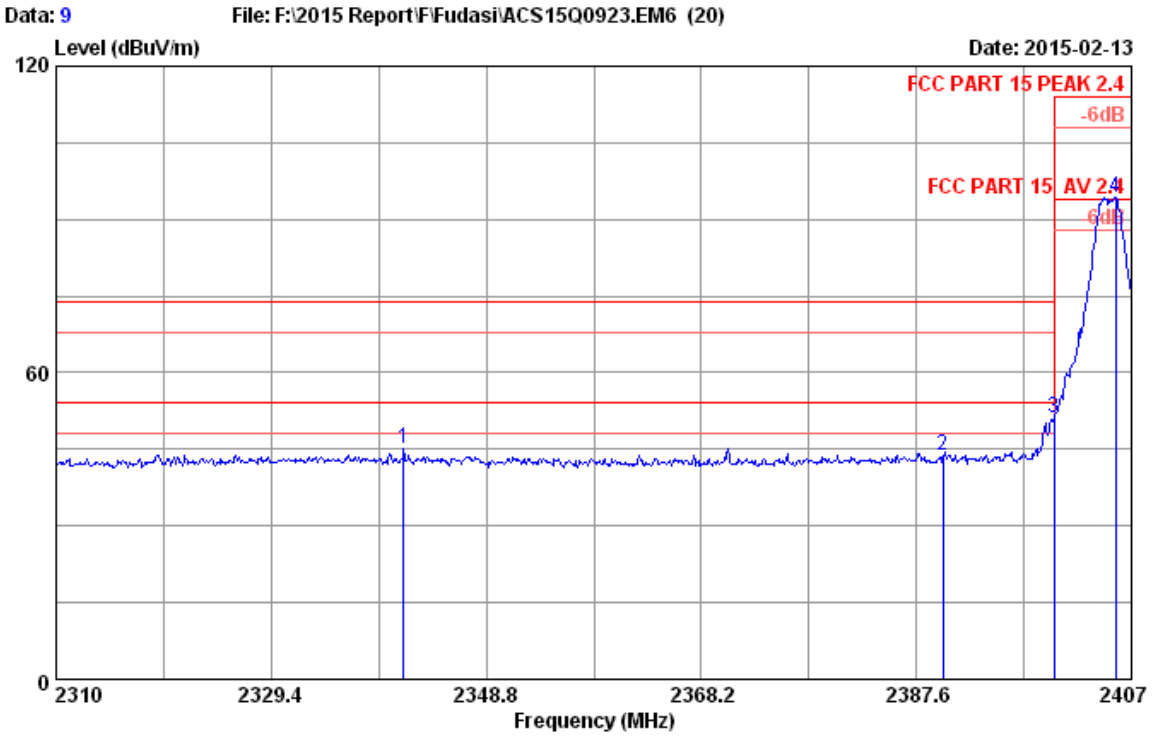
1. The EUT is placed on a turntable, which is 0.8m above the ground plane and worked at highest radiated power.
2. The turntable was rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out 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 -60.273 dB, 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.

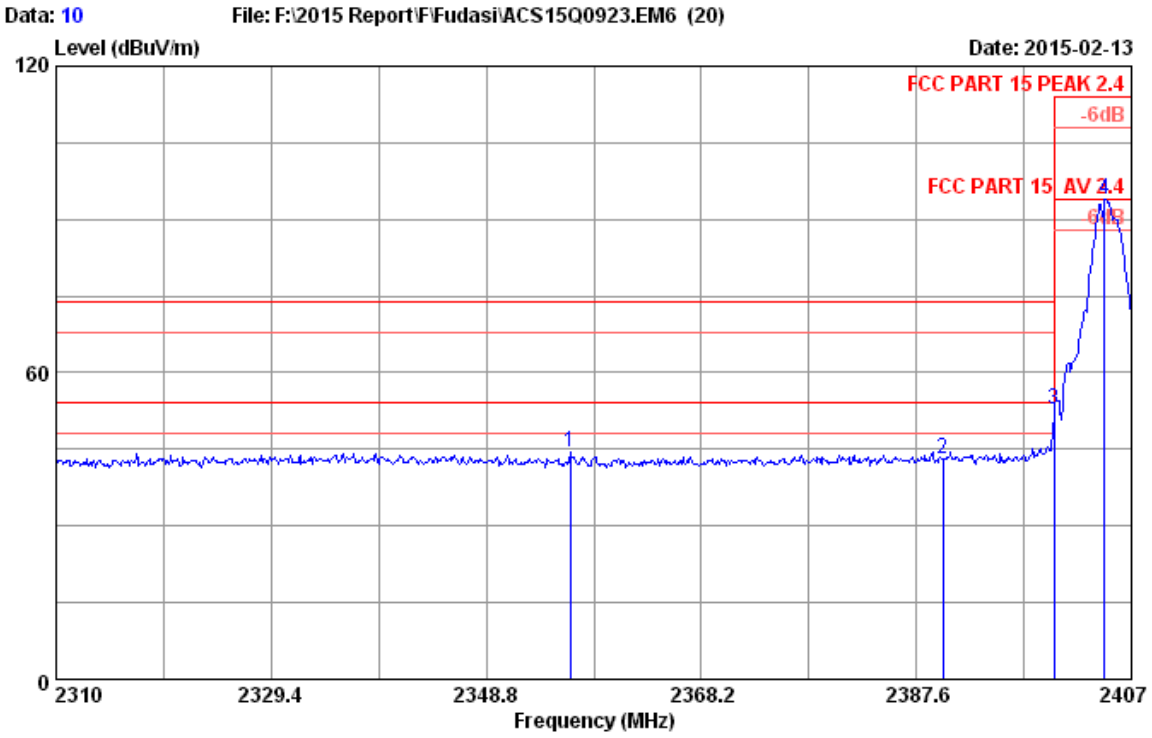


Site no. : 3m Chamber Data no. : 9
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2405MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2341.331	28.05	5.71	35.70	46.99	45.05	74.00	28.95	Peak
2	2390.000	28.16	5.78	35.70	45.41	43.65	74.00	30.35	Peak
3	2400.000	28.18	5.80	35.70	52.95	51.23	74.00	22.77	Peak
4	2405.545	28.19	5.81	35.70	95.93	94.23	114.00	19.77	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
2405.545	94.23	-60.273	33.957	94	Pass

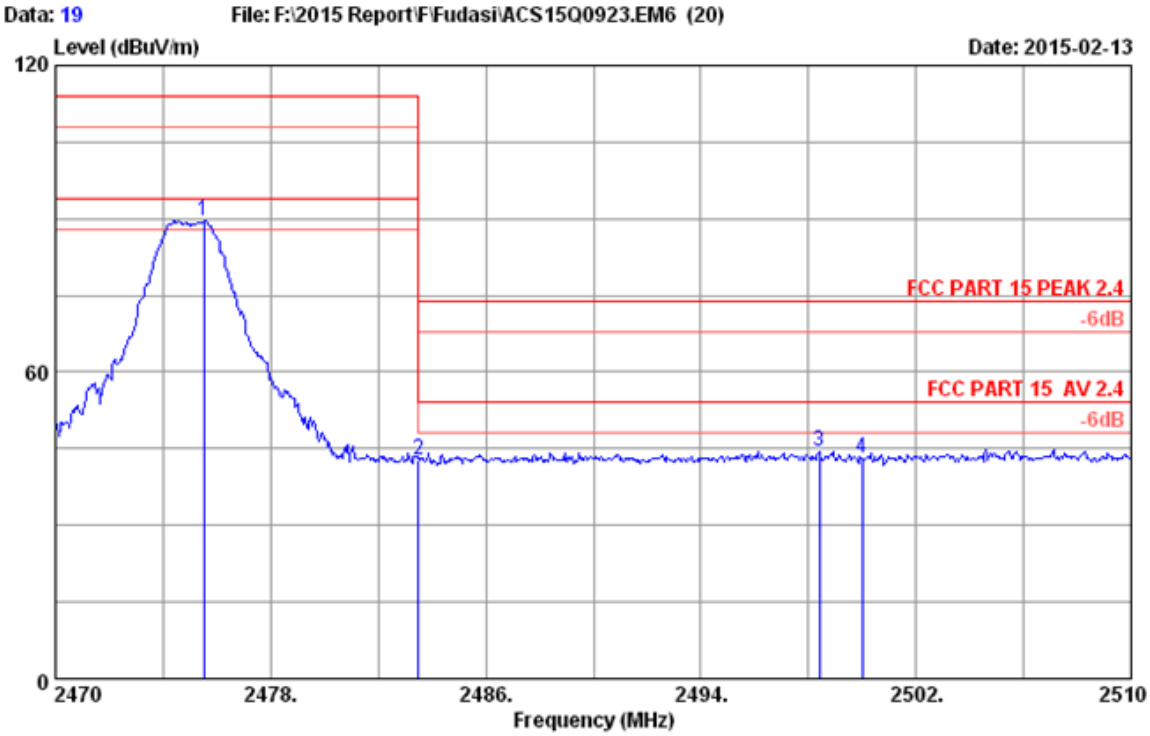


Site no. : 3m Chamber Data no. : 10
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2405MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2356.366	28.08	5.73	35.70	46.36	44.47	74.00	29.53	Peak
2	2390.000	28.16	5.78	35.70	44.98	43.22	74.00	30.78	Peak
3	2400.000	28.18	5.80	35.70	54.54	52.82	74.00	21.18	Peak
4	2404.575	28.19	5.80	35.70	95.71	94.00	114.00	20.00	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.

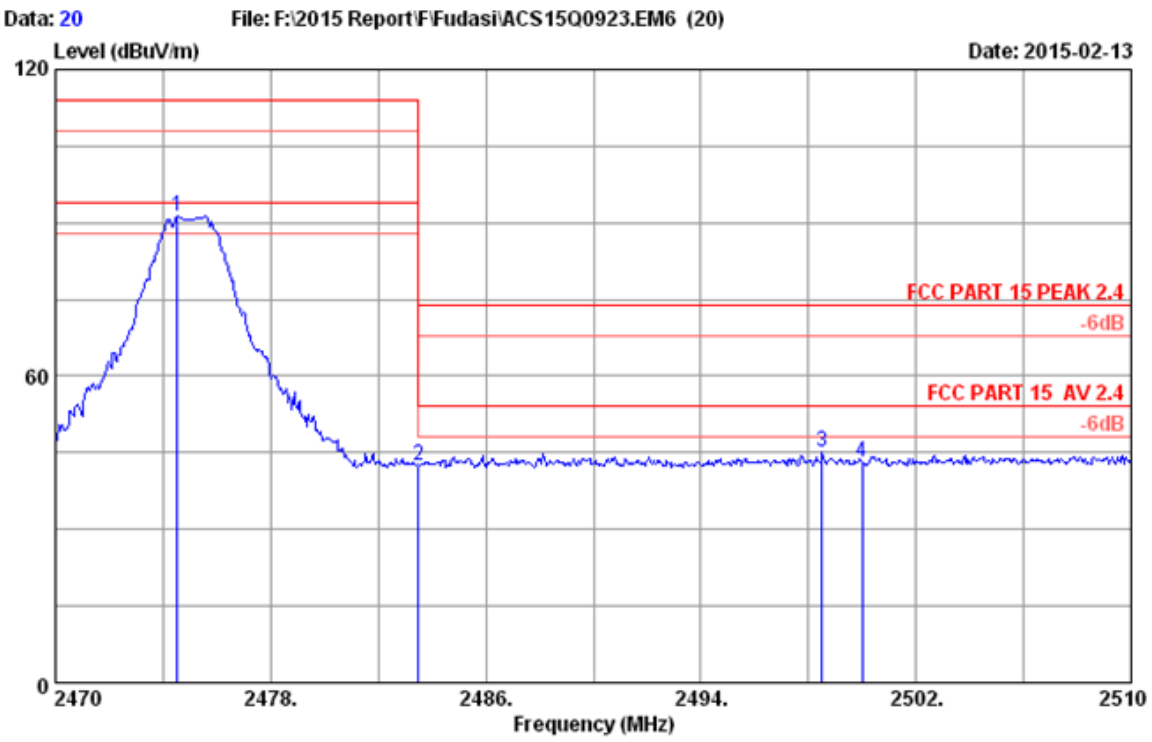
Frequency（MHz）	Peak level（dBuv/m）	Duty cycle factor (dB)	AV level (dBuv/m)	Limit(dBuv/m)	Conclusion
2404.575	94.00	-60.273	33.727	94	Pass



Site no. : 3m Chamber Data no. : 19
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : HORIZONTAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2475MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2475.520	28.35	5.91	35.70	90.98	89.54	114.00	24.46	Peak
2	2483.500	28.36	5.92	35.70	44.28	42.86	74.00	31.14	Peak
3	2498.400	28.40	5.94	35.70	45.95	44.59	74.00	29.41	Peak
4	2500.000	28.40	5.94	35.70	44.52	43.16	74.00	30.84	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. : 20
Dis. / Ant. : 3m 2014 3115 (4580) Ant. pol. : VERTICAL
Limit : FCC PART 15 PEAK 2.4
Env. / Ins. : 22.5*C/51.6%
Engineer : Leo-Li
EUT : Phottix Laso TTL Flash Trigger Transmitter
Power rating : DC 3V
Test Mode : 2475MHz Tx
M/N : Laso(T)

No.	Freq. (MHz)	Ant. Factor (dB/m)	Cable Loss (dB)	AMP factor (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2474.520	28.34	5.91	35.70	92.66	91.21	114.00	22.79	Peak
2	2483.500	28.36	5.92	35.70	44.02	42.60	74.00	31.40	Peak
3	2498.520	28.40	5.94	35.70	46.36	45.00	74.00	29.00	Peak
4	2500.000	28.40	5.94	35.70	44.42	43.06	74.00	30.94	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.

7. ANTENNA REQUIREMENT

RESULT : PASS

Test Date : Feb.13~17, 2015

Test standard : FCC Part 15.203

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

According to the manufacturer declared, the EUT has an internal antenna, the directional gain of antenna is 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. RADIO FRREQUENCY EXPOSURE COMPLIANCE

RESULT : PASS

Test standard : FCC KDB Publication 447498 D01 V05

Since maximum peak output power of the transmitter is<10mW, i.e.0.009346mW<10mW, hence the EUT is excluded from SAR evaluation according to FCC KDB Publication 447498 D01:General RF Exposure Guidance V05.

9. DEVIATION TO TEST SPECIFICATIONS

[NONE]