APPLICATION CERTIFICATION FCC Part 15C
On Behalf of
Elec-Tech International Co., Ltd.

LED Horticultural Luminaire
Model No.: 554031XX(XX=00~99)

FCC ID: XZH-5540312018

Prepared for	:	Elec-Tech International Co., Ltd.
Address	:	No.1 Jinfeng Road, Tangjiawan Town, Xiangzhou Dist, Zhuhai City, Guangdong Province, China
Prepared by	:	Shenzhen Accurate Technology Co., Ltd.
Address	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China
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Report No.	:	ATE20180949
Date of Test	:	May 22-24, 2018
Date of Report	:	June 8, 2018

TABLE OF CONTENTS

Description Page

Test Report Certification

Applicant	:	Elec-Tech International Co., Ltd.
Manufacturer	:	ETI Solid State Lighting (Zhuhai) Ltd
EUT Description	:	LED Horticultural Luminaire
Model No.	:	554031XX(XX=00~99)
Trade Name	:	ETI, Commercial Electric, Hampton Bay

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10: 2013

The EUT was tested according to DTS test procedure of Apr 05, 2017 KDB558074 D01 DTS Meas Guidance v04 for compliance to FCC 47CFR 15.247 requirements

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

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Shenzhen Accurate Technology Co., Ltd.

Date of Test :	May 22-24, 2018
Date of Report :	June 8, 2018

Prepared by : (Bob Wang Engineer)

Approved & Authorized Signer : (Sean Liu, Manager)

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

EUT	:	LED Horticultural Luminaire
Model Number	:	554031XX(XX=00~99) (Note: XX = 00-99, which represents different LED color temperature, Therefore only model 55403101 is tested for EMC tests.)
Modulation Type	:	ZigBee
Frequency Range	:	2405-2480MHz
Number of Channels	:	16
Channel Spacing	:	5 MHz
Antenna Gain	:	0dBi
Antenna Type	:	Ceramic Antenna
Rating	:	AC 120-277V; 50/60Hz, 500W for all models
Applicant	:	Elec-Tech International Co., Ltd.
Address	:	No.1 Jinfeng Road, Tangjiawan Town, Xiangzhou Dist, Zhuhai City, Guangdong Province, China
Manufacturer	:	ETI Solid State Lighting (Zhuhai) Ltd
Address	:	No.1, Zhongzhu Road South, Science & Technology Innovation Coast, High Tech District, Zhuhai City, Guangdong Prov., China
Date of sample receiver	:	May 20, 2018
Date of Test	:	May 22-24, 2018
Sample No.	:	1800768

1.2.Carrier Frequency of Channels

Channel	Frequceny (MHz)	Channel	Frequceny (MHz)	Channel	Frequceny (MHz)
11	2405	17	2435	23	2465
12	2410	18	2440	24	2470
13	2415	19	2445	25	2475
14	2420	20	2450	26	2480
15	2425	21	2455		
16	2430	22	2460		

1.3.Special Accessory and Auxiliary Equipment

N/A

1.4.Description of Test Facility

EMC Lab	:	Recognition of accreditation by Federal Communications Commission (FCC) The Designation Number is CN1189 The Registration Number is 708358 Listed by Innovation, Science and Economic Development Canada (ISEDC) The Registration Number is 5077A-2 Accredited by China National Accreditation Service for Conformity Assessment (CNAS) The Registration Number is CNAS L3193 Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 4297.01
Name of Firm	:	Shenzhen Accurate Technology Co., Ltd.
Site Location	:	1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

1.5.Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty (9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty (30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty (Above 1GHz)	=	4.06dB, k=2

2. MEASURING DEVICE AND TEST EQUIPMENT

Table 1: List of Test and Measurement Equipment

Kind of equipment	Manufacturer	Type	S/N	Calibrated dates	Calibrated until
EMI Test Receiver	Rohde&Schwarz	ESCS30	100307	Jan. 06, 2018	1 Year
EMI Test Receiver	Rohde&Schwarz	ESPI3	101526/003	Jan. 06, 2018	1 Year
Spectrum Analyzer	Agilent	E7405A	MY45115511	Jan. 06, 2018	1 Year
Pre-Amplifier	Rohde&Schwarz	CBLU1183540-01	3791	Jan. 06, 2018	1 Year
Loop Antenna	Schwarzbeck	FMZB1516	1516131	Jan. 06, 2018	1 Year
Bilog Antenna	Schwarzbeck	VULB9163	9163-323	Jan. 06, 2018	1 Year
Horn Antenna	Schwarzbeck	BBHA9120D	9120D-655	Jan. 06, 2018	1 Year
Horn Antenna	Schwarzbeck	BBHA9170	9170-359	Jan. 06, 2018	1 Year
LISN	Rohde&Schwarz	ESH3-Z5	100305	Jan. 06, 2018	1 Year
LISN	Schwarzbeck	NSLK8126	8126431	Jan. 06, 2018	1 Year
Highpass Filter	Wainwright Instruments	WHKX3.6/18G-10SS	N/A	Jan. 06, 2018	1 Year
Band Reject Filter	Wainwright Instruments	WRCG2400/2485-2375/2510-60/11SS	N/A	Jan. 06, 2018	1 Year
RF COAXIAL CABLE	SUHNER	N-5m(Frequency range:9KHz-26.5GHz)	NO.3	Jan. 06, 2018	1 Year
RF COAXIAL CABLE	SUHNER	N-5m(Frequency range:9KHz-26.5GHz)	NO.4	Jan. 06, 2018	1 Year
RF COAXIAL CABLE	SUHNER	N-1m(Frequency range:9KHz-26.5GHz)	NO.5	Jan. 06, 2018	1 Year
RF COAXIAL CABLE	SUHNER	N-1m(Frequency range:9KHz-26.5GHz)	NO.6	Jan. 06, 2018	1 Year
Temporary antenna connector	NTGS	14AE	N/A	May 22, 2018	N/A

Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

3. OPERATION OF EUT DURING TESTING

3.1.Operating Mode

The mode is used: **Transmitting mode**

Low Channel: 2405MHz
Middle Channel: 2445MHz
High Channel: 2480MHz

Note: Its duty cycle setting is greater than 98%.

3.2.Configuration and peripherals

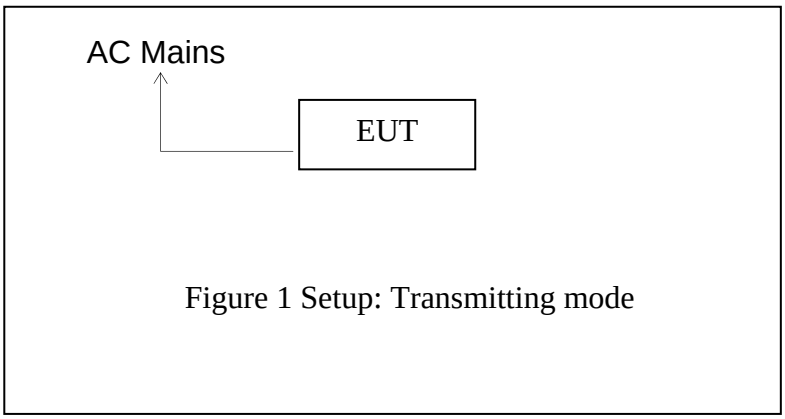


Figure 1 Setup: Transmitting mode

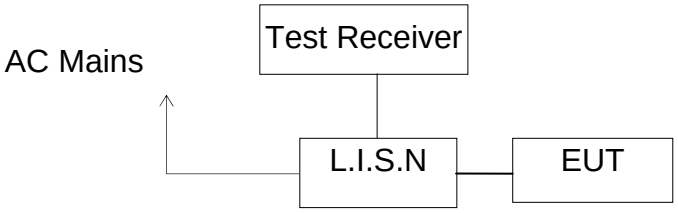
4. TEST PROCEDURES AND RESULTS

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

5. POWER LINE CONDUCTED MEASUREMENT

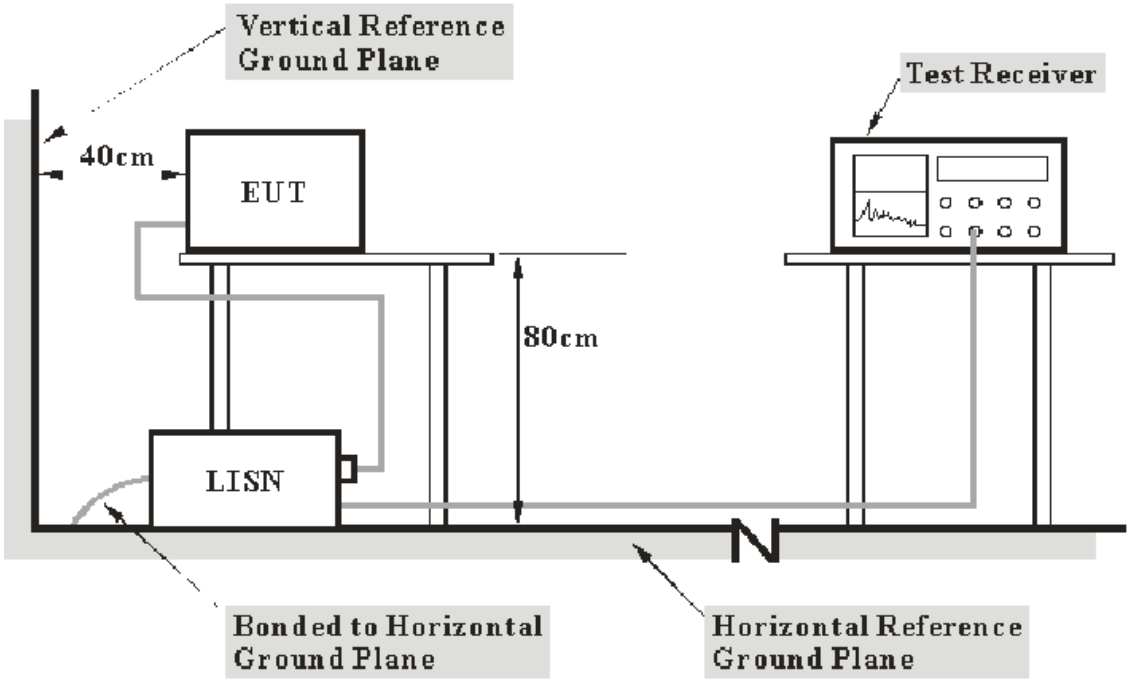
5.1.Block Diagram of Test

5.1.1.Block diagram of connection between the EUT and simulators



(EUT: LED Horticultural Luminaire)

5.1.2. Test System Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

5.2.Power Line Conducted Emission Measurement Limits

Frequency (MHz)	Limit dB(μV)	
	Quasi-peak Level	Average Level
0.15 - 0.50	66.0 – 56.0 *	56.0 – 46.0 *
0.50 - 5.00	56.0	46.0
5.00 - 30.00	60.0	50.0
NOTE1: The lower limit shall apply at the transition frequencies. NOTE2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

5.3.Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.Operating Condition of EUT

5.4.1.Setup the EUT and simulator as shown as Section 5.1.

5.4.2.Turn on the power of all equipment.

5.4.3.Let the EUT work in test mode and measure it.

5.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10 on Conducted Emission Measurement.
The bandwidth of test receiver (R & S ESCS30) is set at 9kHz.

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

5.6. Data Sample

Frequency (MHz)	Transducer value (dB)	QuasiPeak Level (dBμV)	Average Level (dBμV)	QuasiPeak Limit (dBμV)	Average Limit (dBμV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
XX.XXXX	10.7	40.50	30.20	57.0	47.0	16.2	16.5	Pass

Frequency(MHz) = Emission frequency in MHz
Transducer value(dB) = Insertion loss of LISN + Cable Loss
Level(dBμV) = Quasi-peak Reading/Average Reading + Transducer value
Limit (dBμV) = Limit stated in standard
Margin = Limit (dBμV) - Level (dBμV)

Calculation Formula:
Margin = Limit (dBμV) - Level (dBμV)

5.7. Power Line Conducted Emission Measurement Results

PASS.

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

Test mode : On(AC 120V/60Hz)
EUT mode : 55403101

MEASUREMENT RESULT: "947-03_fin"

2018-5-24 10:27

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.258000	46.90	10.9	62	14.6	QP	L1	GND
0.422000	49.30	11.0	57	8.1	QP	L1	GND
1.206000	45.60	11.2	56	10.4	QP	L1	GND
4.960000	40.10	11.4	56	15.9	QP	L1	GND
6.065000	43.20	11.5	60	16.8	QP	L1	GND
15.015000	34.20	11.6	60	25.8	QP	L1	GND

MEASUREMENT RESULT: "947-03_fin2"

2018-5-24 10:27

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.318000	41.90	10.9	50	7.9	AV	L1	GND
0.422000	42.70	11.0	47	4.7	AV	L1	GND
1.102000	37.70	11.1	46	8.3	AV	L1	GND
4.960000	33.70	11.4	46	12.3	AV	L1	GND
6.040000	36.90	11.5	50	13.1	AV	L1	GND
15.015000	27.30	11.6	50	22.7	AV	L1	GND

MEASUREMENT RESULT: "947-04_fin"

2018-5-24 10:30

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.264000	48.60	10.9	61	12.7	QP	N	GND
0.428000	49.20	11.0	57	8.1	QP	N	GND
1.002000	46.30	11.1	56	9.7	QP	N	GND
4.050000	43.40	11.4	56	12.6	QP	N	GND
6.075000	44.70	11.5	60	15.3	QP	N	GND
20.230000	28.50	11.7	60	31.5	QP	N	GND

MEASUREMENT RESULT: "947-04_fin2"

2018-5-24 10:30

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.318000	42.10	10.9	50	7.7	AV	N	GND
0.426000	43.30	11.0	47	4.0	AV	N	GND
0.954000	38.10	11.1	46	7.9	AV	N	GND
3.735000	37.60	11.4	46	8.4	AV	N	GND
5.950000	38.30	11.5	50	11.7	AV	N	GND
19.985000	22.70	11.7	50	27.3	AV	N	GND

Test mode : On(AC 277V/60Hz)
EUT mode : 55403101

MEASUREMENT RESULT: "947-06_fin"

2018-5-24 10:35

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.270000	47.00	10.9	61	14.1	QP	L1	GND
0.424000	48.30	11.0	57	9.1	QP	L1	GND
0.962000	45.30	11.1	56	10.7	QP	L1	GND
4.880000	40.00	11.4	56	16.0	QP	L1	GND
5.780000	44.00	11.5	60	16.0	QP	L1	GND
15.630000	32.60	11.7	60	27.4	QP	L1	GND

MEASUREMENT RESULT: "947-06_fin2"

2018-5-24 10:35

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.320000	41.50	10.9	50	8.2	AV	L1	GND
0.424000	42.00	11.0	47	5.4	AV	L1	GND
1.276000	37.10	11.2	46	8.9	AV	L1	GND
4.910000	33.60	11.4	46	12.4	AV	L1	GND
5.935000	38.10	11.5	50	11.9	AV	L1	GND
14.840000	25.70	11.6	50	24.3	AV	L1	GND

MEASUREMENT RESULT: "947-05_fin"

2018-5-24 10:33

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.270000	47.20	10.9	61	13.9	QP	N	GND
0.580000	47.00	11.0	56	9.0	QP	N	GND
1.164000	45.90	11.2	56	10.1	QP	N	GND
3.690000	44.40	11.4	56	11.6	QP	N	GND
6.275000	44.90	11.5	60	15.1	QP	N	GND
20.300000	27.20	11.7	60	32.8	QP	N	GND

MEASUREMENT RESULT: "947-05_fin2"

2018-5-24 10:33

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.320000	41.80	10.9	50	7.9	AV	N	GND
0.424000	42.40	11.0	47	5.0	AV	N	GND
1.108000	37.20	11.2	46	8.8	AV	N	GND
3.825000	37.80	11.4	46	8.2	AV	N	GND
6.095000	39.20	11.5	50	10.8	AV	N	GND
20.240000	20.80	11.7	50	29.2	AV	N	GND

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

ACCURATE TECHNOLOGY CO.,LTD

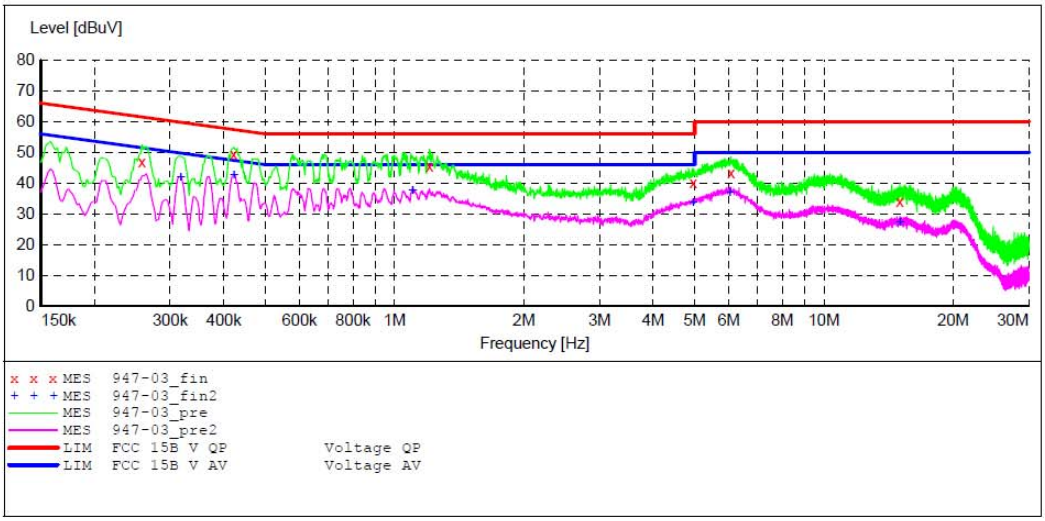
CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                LED Horticultural Luminaire M/N:55403101
Manufacturer:       ETI Solid State Lighting (Zhuhai) Ltd
Operating Condition: On
Test Site:          2#Shielding Room
Operator:           KEVIN
Test Specification: L  120V/60Hz
Comment:            Report NO.:ATE20180949
Start of Test:      2018-5-24 / 10:23:34
```

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

Short Description: _SUB_STD_VTERM2 1.70

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



MEASUREMENT RESULT: "947-03_fin"

2018-5-24 10:27

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.258000	46.90	10.9	62	14.6	QP	L1	GND
0.422000	49.30	11.0	57	8.1	QP	L1	GND
1.206000	45.60	11.2	56	10.4	QP	L1	GND
4.960000	40.10	11.4	56	15.9	QP	L1	GND
6.065000	43.20	11.5	60	16.8	QP	L1	GND
15.015000	34.20	11.6	60	25.8	QP	L1	GND

MEASUREMENT RESULT: "947-03_fin2"

2018-5-24 10:27

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.318000	41.90	10.9	50	7.9	AV	L1	GND
0.422000	42.70	11.0	47	4.7	AV	L1	GND
1.102000	37.70	11.1	46	8.3	AV	L1	GND
4.960000	33.70	11.4	46	12.3	AV	L1	GND
6.040000	36.90	11.5	50	13.1	AV	L1	GND
15.015000	27.30	11.6	50	22.7	AV	L1	GND

ACCURATE TECHNOLOGY CO.,LTD

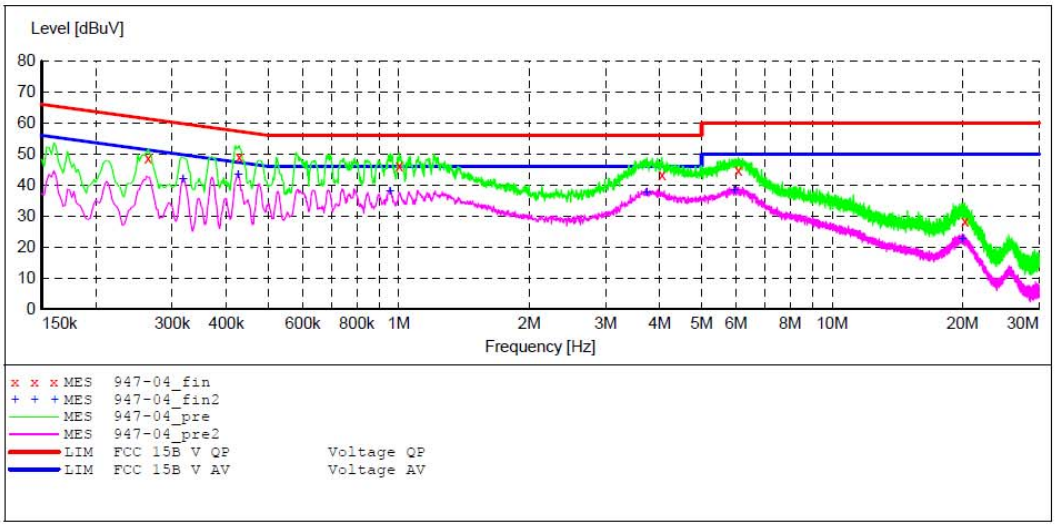
CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                  LED Horticultural Luminaire M/N:55403101
Manufacturer:         ETI Solid State Lighting (Zhuhai) Ltd
Operating Condition:  On
Test Site:            2#Shielding Room
Operator:             KEVIN
Test Specification:   N  120V/60Hz
Comment:              Report NO.:ATE20180949
Start of Test:        2018-5-24 / 10:29:03
```

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

Short Description: _SUB_STD_VTERM2 1.70

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



MEASUREMENT RESULT: "947-04_fin"

2018-5-24 10:30

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.264000	48.60	10.9	61	12.7	QP	N	GND
0.428000	49.20	11.0	57	8.1	QP	N	GND
1.002000	46.30	11.1	56	9.7	QP	N	GND
4.050000	43.40	11.4	56	12.6	QP	N	GND
6.075000	44.70	11.5	60	15.3	QP	N	GND
20.230000	28.50	11.7	60	31.5	QP	N	GND

MEASUREMENT RESULT: "947-04_fin2"

2018-5-24 10:30

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.318000	42.10	10.9	50	7.7	AV	N	GND
0.426000	43.30	11.0	47	4.0	AV	N	GND
0.954000	38.10	11.1	46	7.9	AV	N	GND
3.735000	37.60	11.4	46	8.4	AV	N	GND
5.950000	38.30	11.5	50	11.7	AV	N	GND
19.985000	22.70	11.7	50	27.3	AV	N	GND

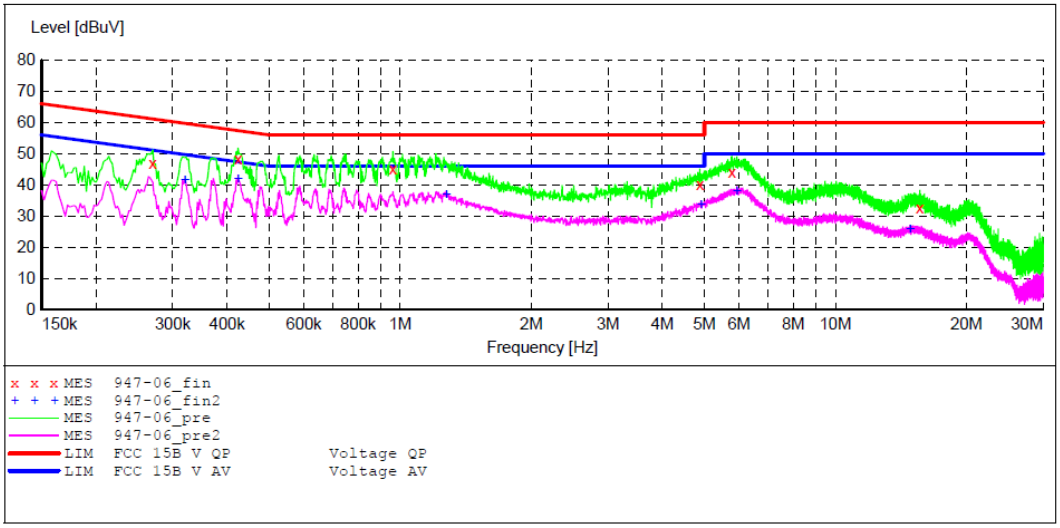
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                  LED Horticultural Luminaire M/N:55403101
Manufacturer:         ETI Solid State Lighting (Zhuhai) Ltd
Operating Condition:  On
Test Site:            2#Shielding Room
Operator:             KEVIN
Test Specification:   L   277V/60Hz
Comment:              Report NO.:ATE20180949
Start of Test:        2018-5-24 / 10:34:04
```

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

```
  Short Description:              _SUB_STD_VTERM2 1.70
  Start       Stop        Step        Detector  Meas.     IF       Transducer
  Frequency   Frequency   Width                 Time      Bandw.
  150.0 kHz   30.0 MHz    4.5 kHz     QuasiPeak 1.0 s     9 kHz    NSLK8126 2008
                                      Average
```



MEASUREMENT RESULT: "947-06_fin"

2018-5-24 10:35

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.270000	47.00	10.9	61	14.1	QP	L1	GND
0.424000	48.30	11.0	57	9.1	QP	L1	GND
0.962000	45.30	11.1	56	10.7	QP	L1	GND
4.880000	40.00	11.4	56	16.0	QP	L1	GND
5.780000	44.00	11.5	60	16.0	QP	L1	GND
15.630000	32.60	11.7	60	27.4	QP	L1	GND

MEASUREMENT RESULT: "947-06_fin2"

2018-5-24 10:35

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.320000	41.50	10.9	50	8.2	AV	L1	GND
0.424000	42.00	11.0	47	5.4	AV	L1	GND
1.276000	37.10	11.2	46	8.9	AV	L1	GND
4.910000	33.60	11.4	46	12.4	AV	L1	GND
5.935000	38.10	11.5	50	11.9	AV	L1	GND
14.840000	25.70	11.6	50	24.3	AV	L1	GND

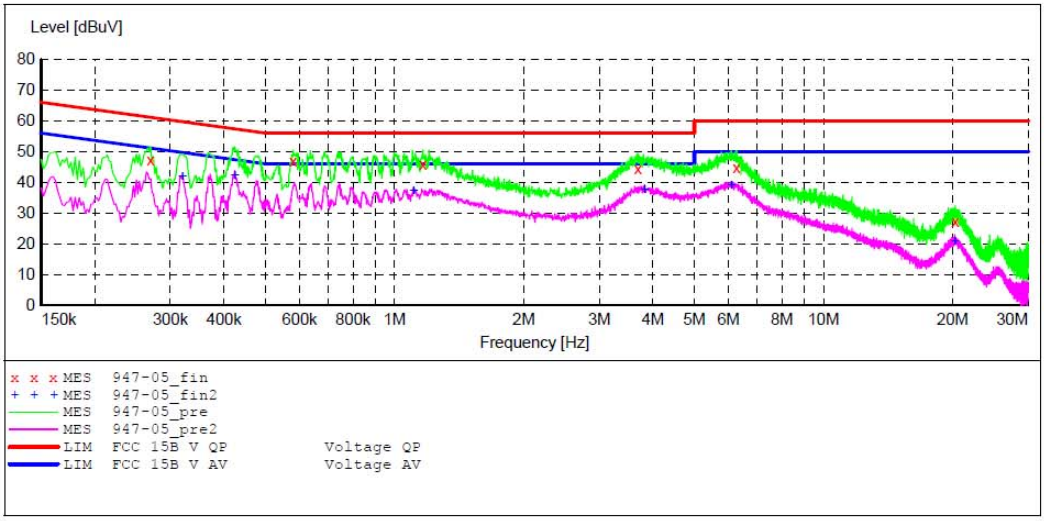
ACCURATE TECHNOLOGY CO.,LTD

CONDUCTED EMISSION STANDARD FCC PART 15B

```
EUT:                 LED Horticultural Luminaire M/N:55403101
Manufacturer:        ETI Solid State Lighting (Zhuhai) Ltd
Operating Condition: On
Test Site:           2#Shielding Room
Operator:            KEVIN
Test Specification:  N   277V/60Hz
Comment:             Report NO.:ATE20180949
Start of Test:       2018-5-24 / 10:31:54
```

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

```
Short Description:          _SUB_STD_VTERM2 1.70
Start      Stop       Step      Detector  Meas.     IF       Transducer
Frequency  Frequency  Width               Time      Bandw.
150.0 kHz  30.0 MHz   4.5 kHz   QuasiPeak 1.0 s     9 kHz    NSLK8126 2008
                                Average
```



MEASUREMENT RESULT: "947-05_fin"

2018-5-24 10:33

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.270000	47.20	10.9	61	13.9	QP	N	GND
0.580000	47.00	11.0	56	9.0	QP	N	GND
1.164000	45.90	11.2	56	10.1	QP	N	GND
3.690000	44.40	11.4	56	11.6	QP	N	GND
6.275000	44.90	11.5	60	15.1	QP	N	GND
20.300000	27.20	11.7	60	32.8	QP	N	GND

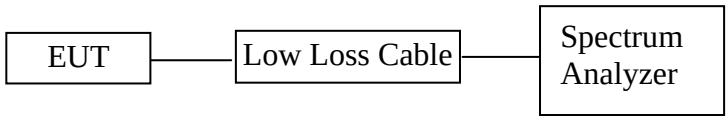
MEASUREMENT RESULT: "947-05_fin2"

2018-5-24 10:33

Frequency MHz	Level dBuV	Transd dB	Limit dBuV	Margin dB	Detector	Line	PE
0.320000	41.80	10.9	50	7.9	AV	N	GND
0.424000	42.40	11.0	47	5.0	AV	N	GND
1.108000	37.20	11.2	46	8.8	AV	N	GND
3.825000	37.80	11.4	46	8.2	AV	N	GND
6.095000	39.20	11.5	50	10.8	AV	N	GND
20.240000	20.80	11.7	50	29.2	AV	N	GND

6. 6DB BANDWIDTH MEASUREMENT

6.1.Block Diagram of Test Setup



(EUT: LED Horticultural Luminaire)

6.2.The Requirement For Section 15.247(a)(2)

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

6.3.EUT Configuration on Measurement

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

6.4.Operating Condition of EUT

6.4.1.Setup the EUT and simulator as shown as Section 5.1.

6.4.2.Turn on the power of all equipment.

6.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2445MHz, and 2480MHz TX frequency to transmit.

6.5.Test Procedure

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

6.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

6.5.3.The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

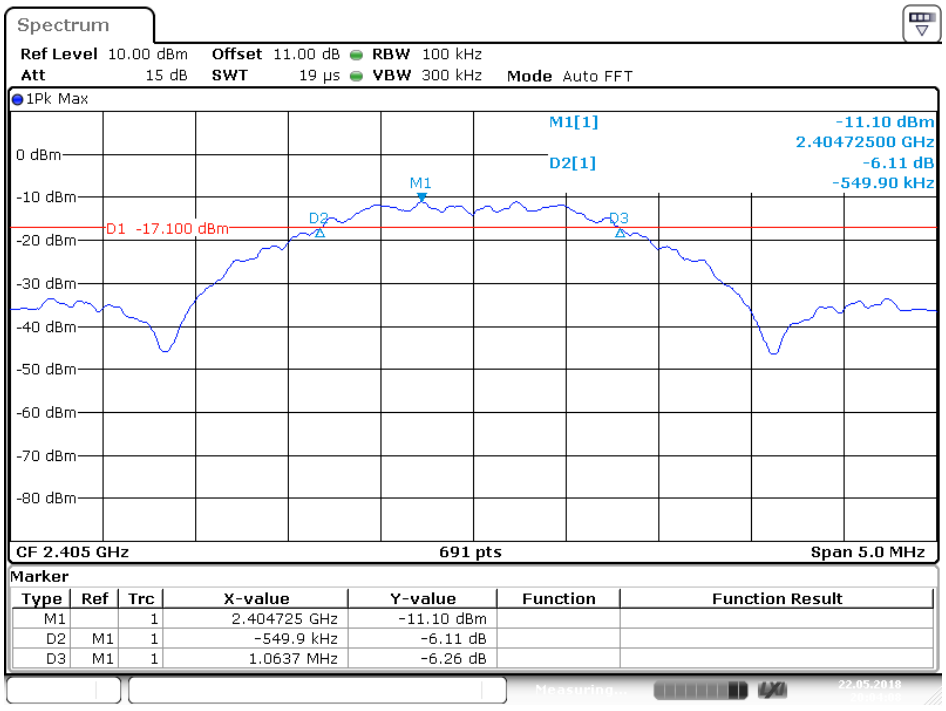
6.6.Test Result

Test Lab: Shielding room
Test Engineer: Bob

Channel	Frequency (MHz)	6 dB Bandwith (MHz)	Minimum Limit(MHz)	Result
11	2405	1.614	0.5	PASS
19	2445	1.614	0.5	PASS
26	2480	1.614	0.5	PASS

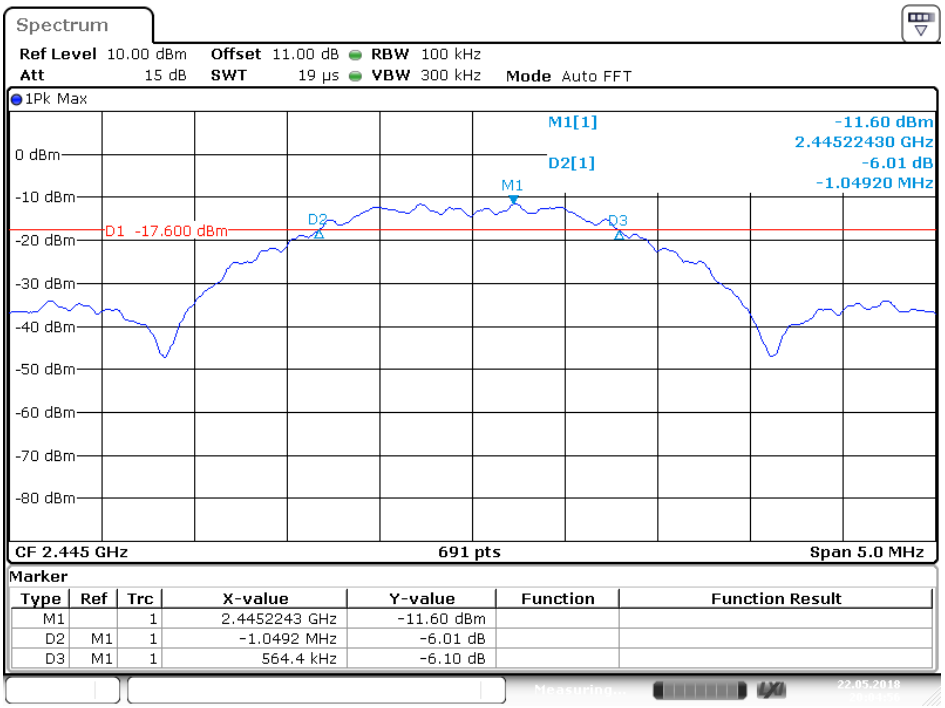
The spectrum analyzer plots are attached as below.

channel 11



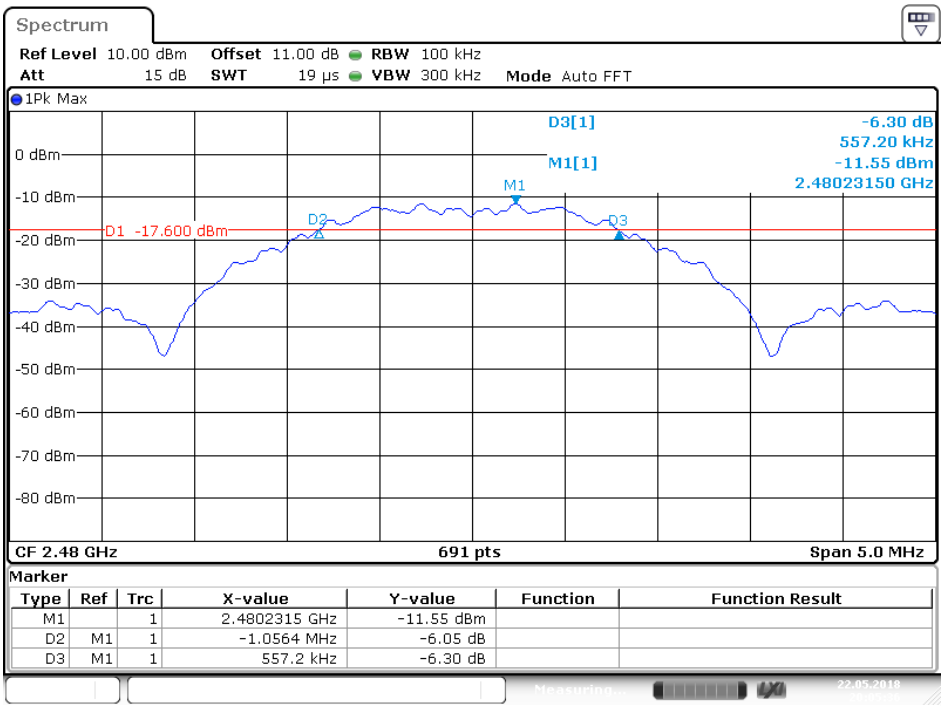
Date: 22.MAY.2018 20:04:08

channel 19



Date: 22.MAY.2018 20:04:56

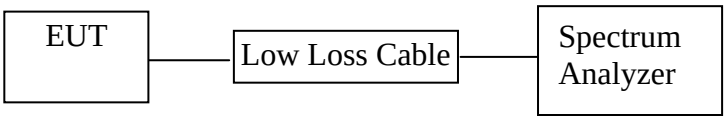
channel 26



Date: 22.MAY.2018 20:05:37

7. MAXIMUM PEAK OUTPUT POWER

7.1.Block Diagram of Test Setup



(EUT: LED Horticultural Luminaire)

7.2.The Requirement For Section 15.247(b)(3)

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

7.3.EUT Configuration on Measurement

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

7.4.Operating Condition of EUT

7.4.1.Setup the EUT and simulator as shown as Section 6.1.

7.4.2.Turn on the power of all equipment.

7.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2445MHz, and 2480MHz TX frequency to transmit.

7.5.Test Procedure

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

7.5.2.Set RBW of spectrum analyzer to 1 MHz and VBW to 3MHz.

7.5.3.Measurement the maximum peak output power.

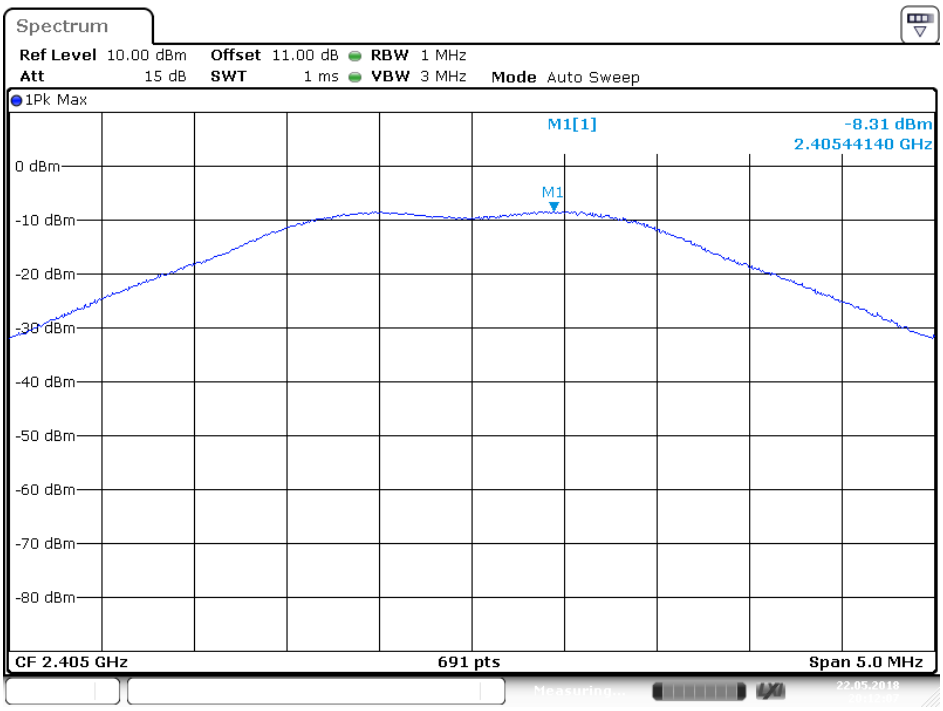
7.6.Test Result

Test Lab: Shielding room
Test Engineer: Bob

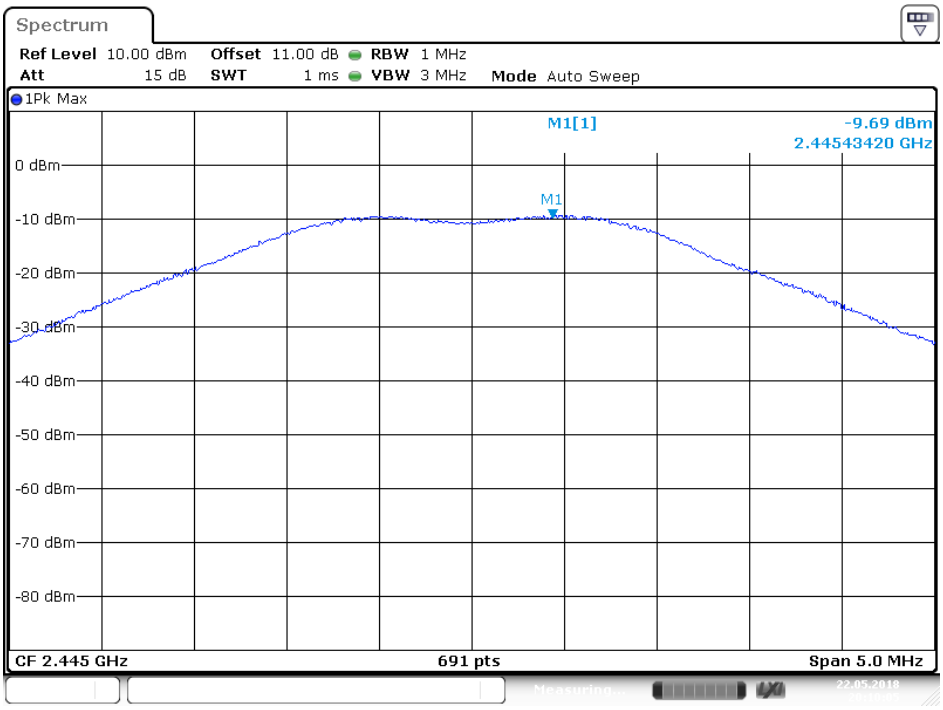
Channel	Frequency (MHz)	Peak Power Output (dBm)	Peak Power Limit (dBm)	Result
11	2405	-8.31	30	PASS
19	2445	-9.69	30	PASS
26	2480	-9.06	30	PASS

The spectrum analyzer plots are attached as below.

channel 11

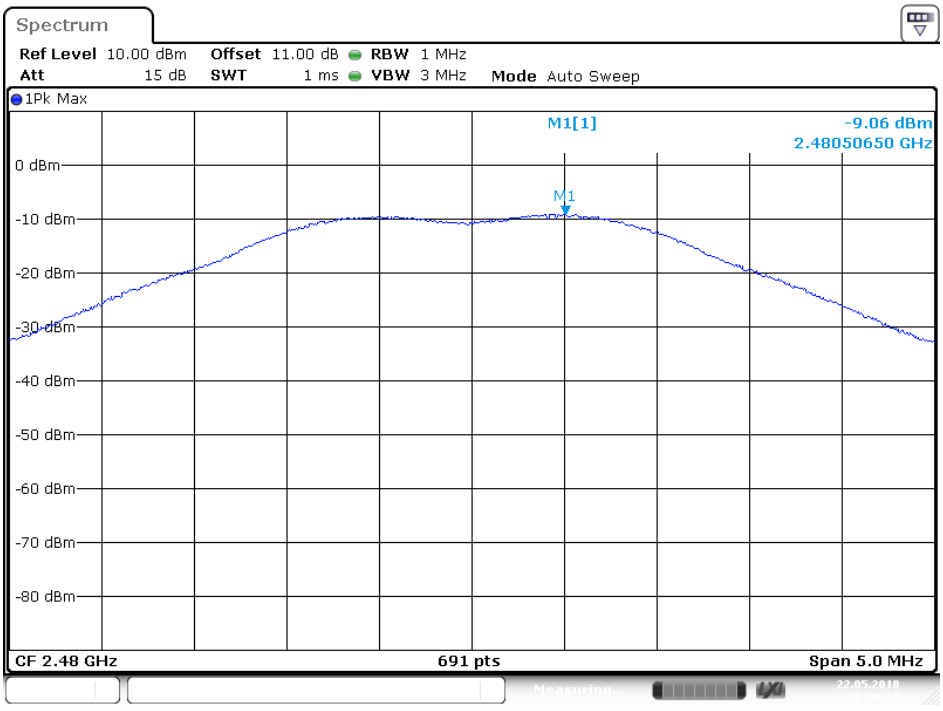


channel 19



Date: 22.MAY.2018 20:10:06

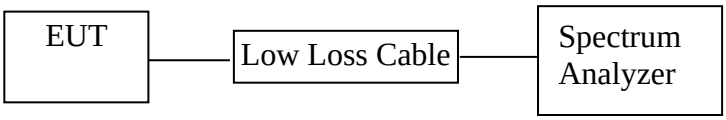
channel 26



Date: 22.MAY.2018 20:09:13

8. POWER SPECTRAL DENSITY MEASUREMENT

8.1.Block Diagram of Test Setup



(EUT: LED Horticultural Luminaire)

8.2.The Requirement For Section 15.247(e)

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

8.3.EUT Configuration on Measurement

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

8.4.Operating Condition of EUT

8.4.1.Setup the EUT and simulator as shown as Section 7.1.

8.4.2.Turn on the power of all equipment.

8.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2445MHz, and 2480MHz TX frequency to transmit.

8.5.Test Procedure

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

8.5.2.Measurement Procedure PKPSD:

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

1. Set analyzer center frequency to DTS channel center frequency.
2. Set the span to 1.5 times the DTS channel bandwidth.
3. Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz.
4. Set the VBW ≥ 3 x RBW.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level.
10. If measured value exceeds limit, reduce RBW (no less than 3kHz) and repeat.

8.5.4.Measurement the maximum power spectral density.

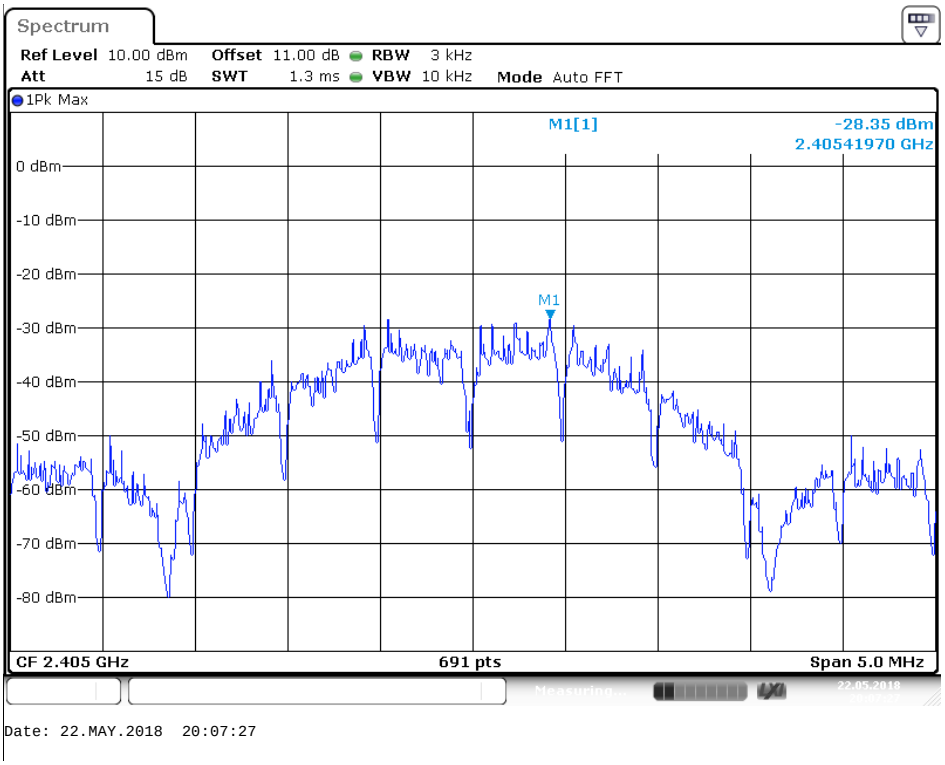
8.6.Test Result

Test Lab: Shielding room
Test Engineer: Star

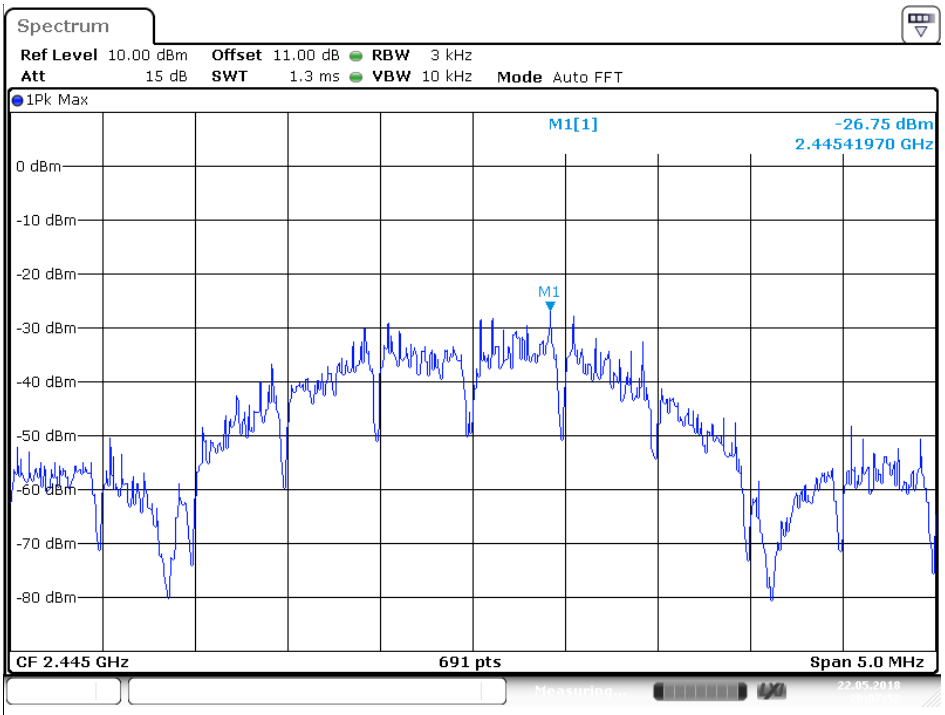
Channel	Frequency (MHz)	PSD (dBm/3KHz)	Limit (dBm/3KHz)	Result
11	2405	-28.35	8	PASS
19	2445	-26.75	8	PASS
26	2480	-28.02	8	PASS

The spectrum analyzer plots are attached as below.

channel 11

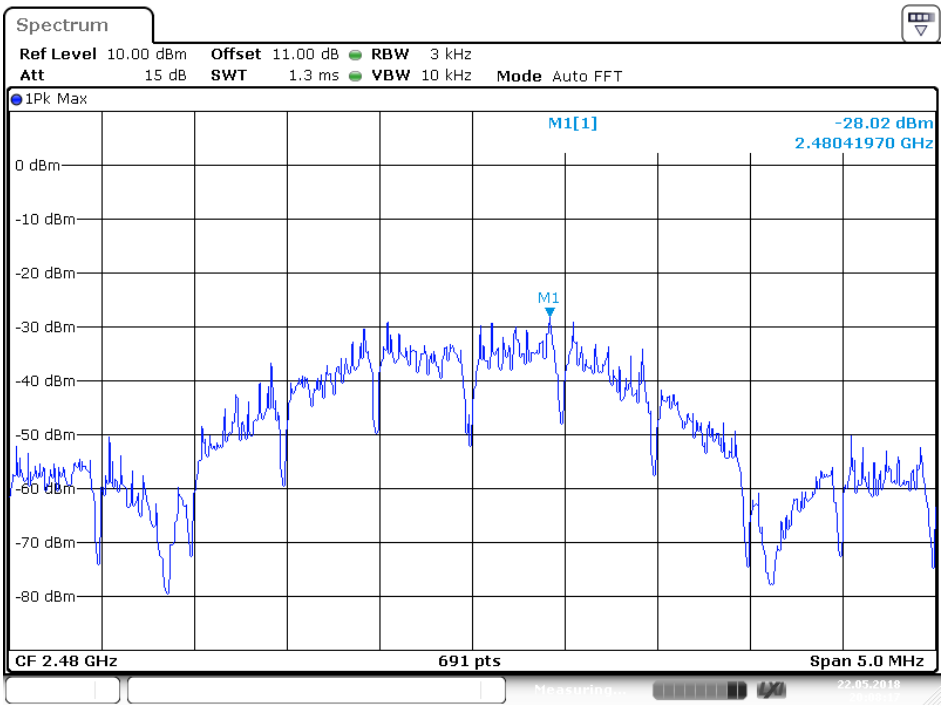


channel 19



Date: 22.MAY.2018 20:07:53

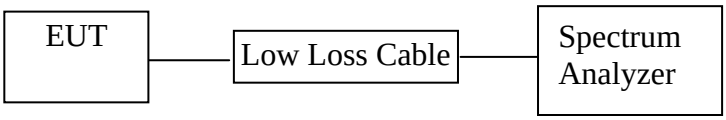
channel 26



Date: 22.MAY.2018 20:08:18

9. BAND EDGE COMPLIANCE TEST

9.1.Block Diagram of Test Setup



(EUT: LED Horticultural Luminaire)

9.2.The Requirement For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

9.3.EUT Configuration on Measurement

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

9.4.Operating Condition of EUT

9.4.1.Setup the EUT and simulator as shown as Section 8.1.

9.4.2.Turn on the power of all equipment.

9.4.3.Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2480MHz TX frequency to transmit.

9.5.Test Procedure

Conducted Band Edge:

9.5.1.The transmitter output was connected to the spectrum analyzer via a low loss cable.

9.5.2.Set RBW of spectrum analyzer to 100 kHz and VBW to 300 kHz.

9.5.3. Radiate Band Edge:

9.5.4.The EUT is placed on a turntable, which is 1.5m above the ground plane and worked at highest radiated power.

9.5.5.The turntable was rotated for 360 degrees to determine the position of maximum emission level.

9.5.6.EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.

9.5.7.Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:

9.5.8.RBW=1MHz, VBW=1MHz

9.5.9.The band edges was measured and recorded.

9.6.Test Result

Pass.

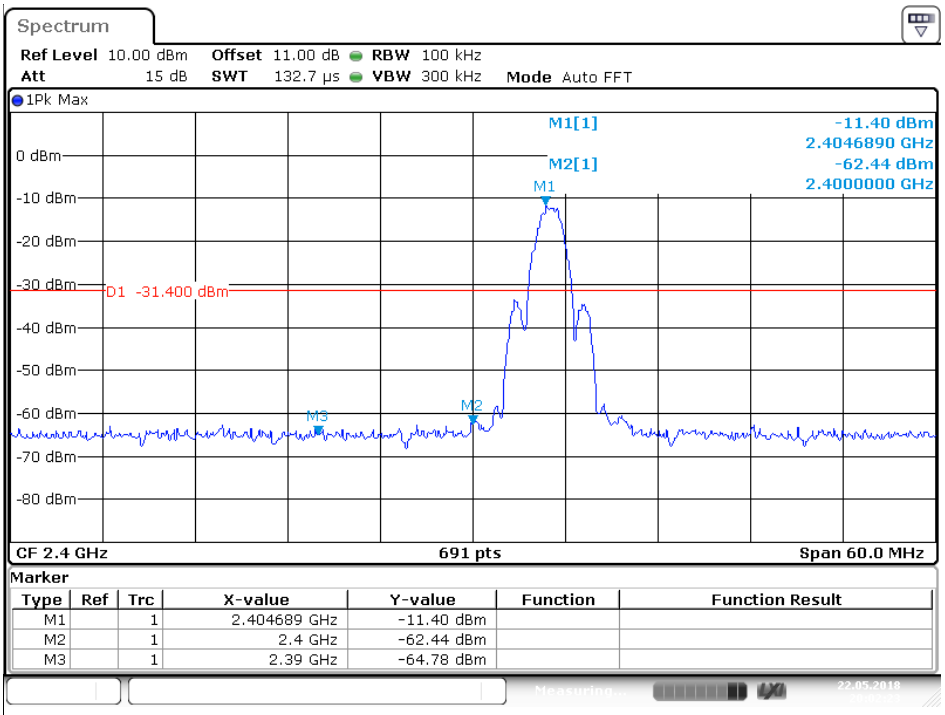
Test Lab: Shielding room
Test Engineer: Bob

Conducted Band Edge Result

Channel	Frequency	Delta peak to band emission	Limit(dBc)
11	2.405GHz	51.04	＞20
26	2.480GHz	47.05	＞20

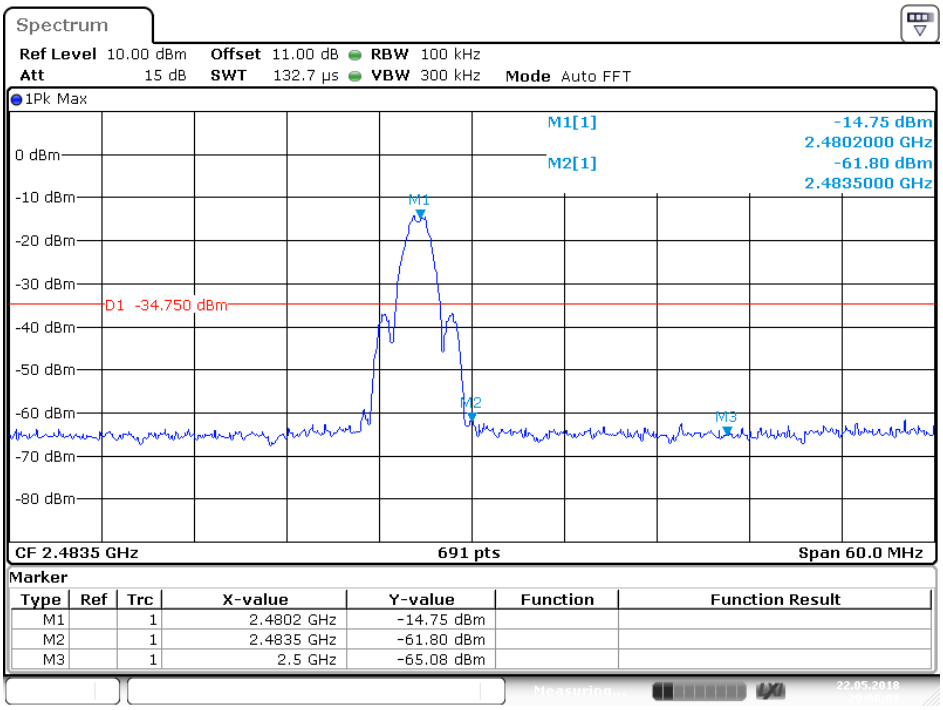
The spectrum analyzer plots are attached as below.

channel 11



Date: 22.MAY.2018 20:02:24

channel 26



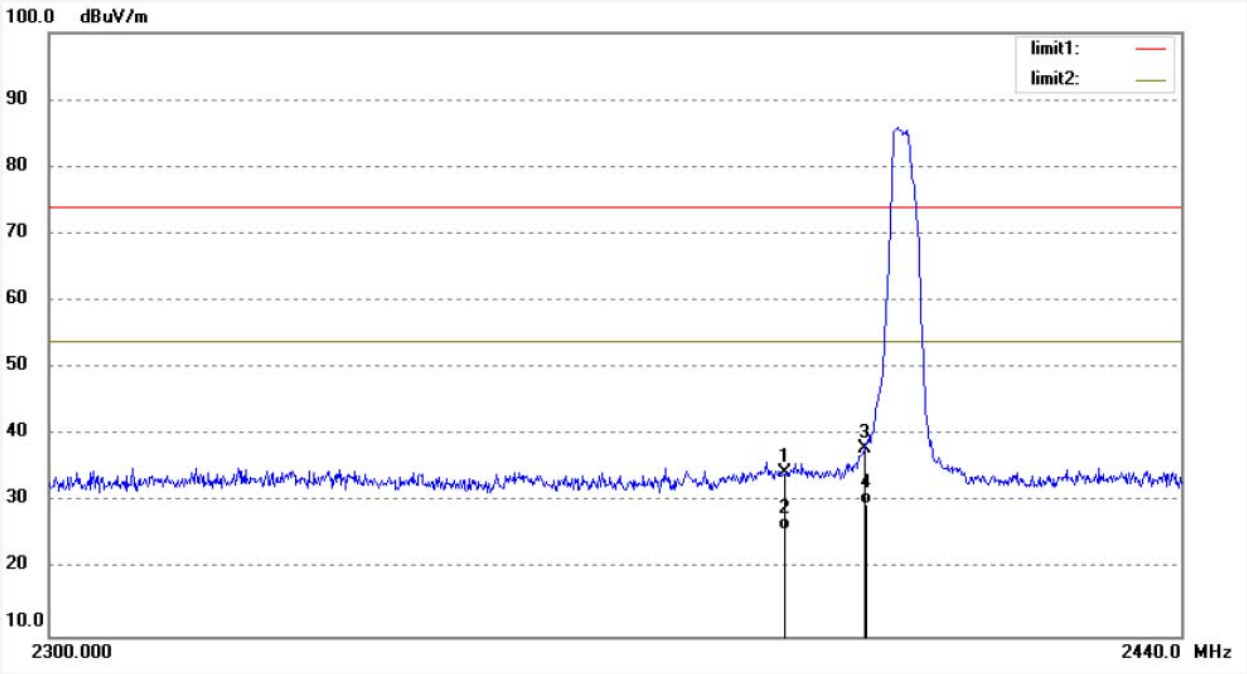
Date: 22.MAY.2018 20:00:08

Radiated Band Edge Result

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star2016 #2580	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 18/05/24/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 11/14/55
EUT: LED Horticultural Luminaire	Engineer Signature: Bob
Mode: TX 2405MHz	Distance: 3m
Model: 55403101	
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd	

Note: Report NO.:ATE20180949



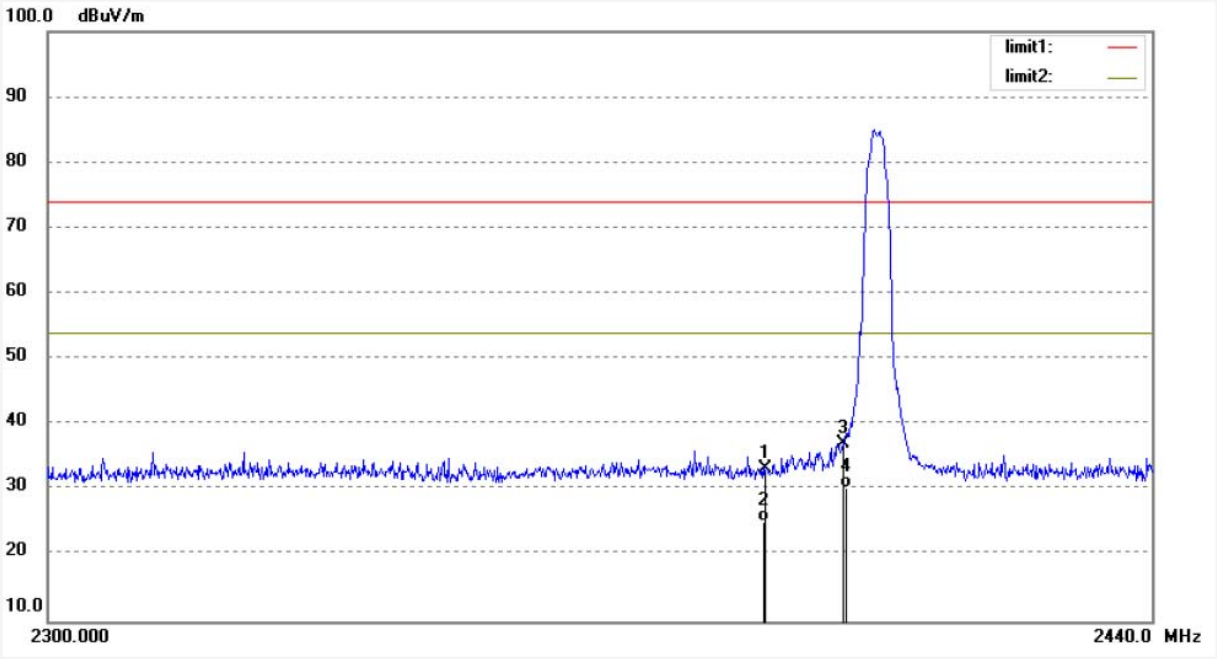
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	42.31	-8.00	34.31	74.00	-39.69	peak	150	142	
2	2390.000	33.85	-8.00	25.85	54.00	-28.15	AVG	150	333	
3	2400.000	45.92	-7.97	37.95	74.00	-36.05	peak	150	215	
4	2400.000	37.69	-7.97	29.72	54.00	-24.28	AVG	150	159	

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star2016 #2579
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: LED Horticultural Luminaire
Mode: TX 2405MHz
Model: 55403101
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 18/05/24/
Time: 11/16/07
Engineer Signature: Bob
Distance: 3m

Note: Report NO.:ATE20180949



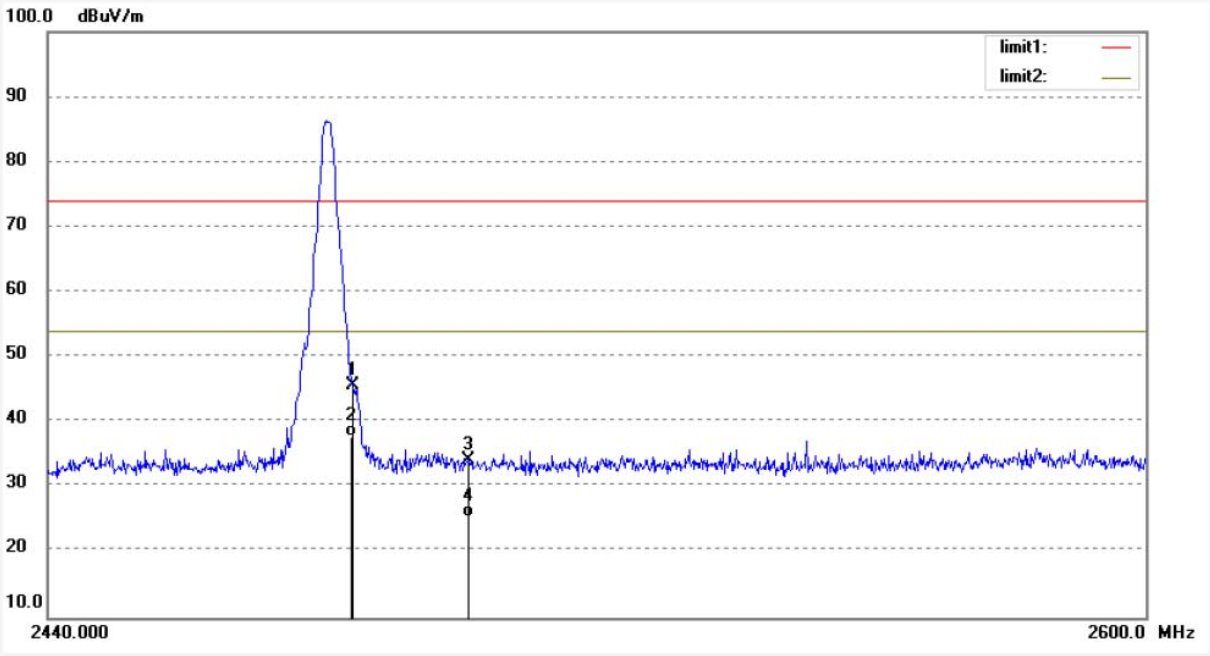
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2390.000	41.23	-8.00	33.23	74.00	-40.77	peak	200	182	
2	2390.000	33.12	-8.00	25.12	54.00	-28.88	AVG	200	201	
3	2400.000	45.03	-7.97	37.06	74.00	-36.94	peak	200	177	
4	2400.000	38.24	-7.97	30.27	54.00	-23.73	AVG	200	103	

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star2016 #2578
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 25 C / 55 %
EUT: LED Horticultural Luminaire
Mode: TX 2480MHz
Model: 55403101
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 18/05/24/
Time: 11/20/04
Engineer Signature: Bob
Distance: 3m

Note: Report NO.:ATE20180949

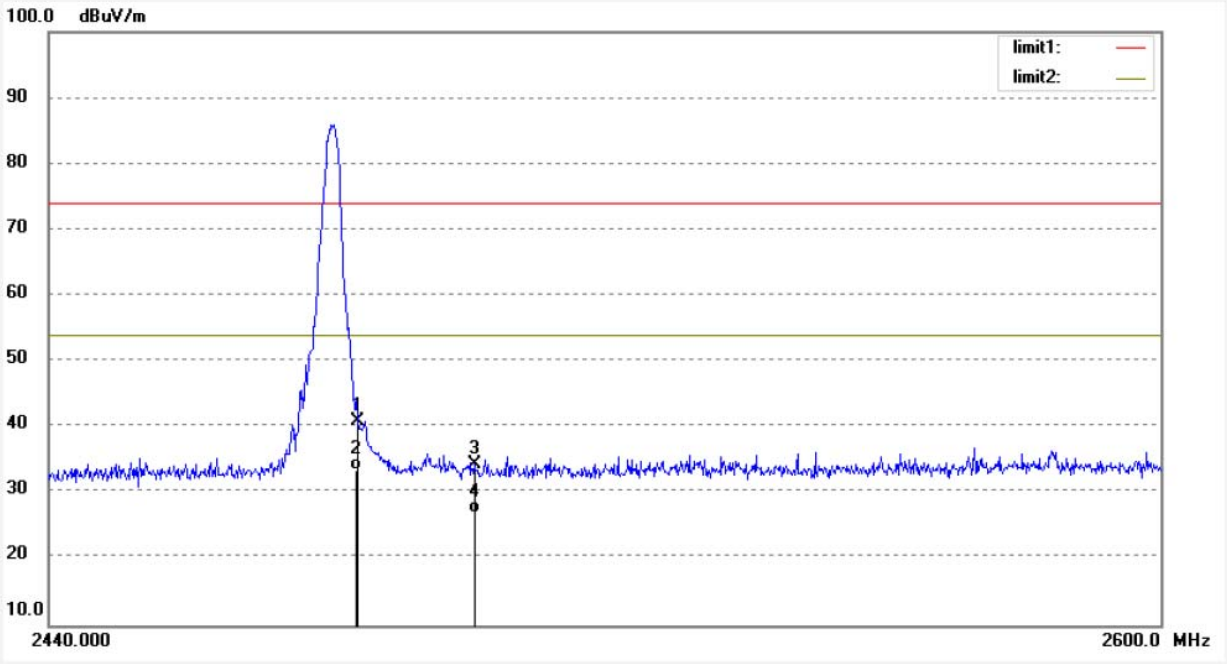


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	53.52	-7.76	45.76	74.00	-28.24	peak	150	299	
2	2483.500	45.46	-7.76	37.70	54.00	-16.30	AVG	150	154	
3	2500.000	42.01	-7.71	34.30	74.00	-39.70	peak	150	223	
4	2500.000	33.09	-7.71	25.38	54.00	-28.62	AVG	150	147	

ACCURATE TECHNOLOGY CO., LTD.
F1,Bldg,A,Changyuan New Material Port Keyuan Rd,
Science & Industry Park,Nanshan Shenzhen,P.R.China
Site: 1# Chamber
Tel:+86-0755-26503290
Fax:+86-0755-26503396

Job No.: star2016 #2577	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 18/05/24/
Temp.(C)/Hum.(%) 25 C / 55 %	Time: 11/18/27
EUT: LED Horticultural Luminaire	Engineer Signature: Bob
Mode: TX 2480MHz	Distance: 3m
Model: 55403101	
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd	

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2483.500	48.77	-7.76	41.01	74.00	-32.99	peak	200	177	
2	2483.500	41.26	-7.76	33.50	54.00	-20.50	AVG	200	120	
3	2500.000	42.19	-7.71	34.48	74.00	-39.52	peak	200	139	
4	2500.000	34.72	-7.71	27.01	54.00	-26.99	AVG	200	225	

Note:

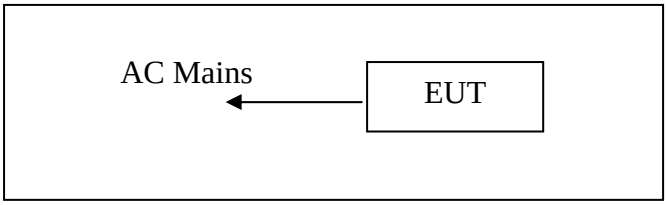
1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. The field strength is calculated by adding the antenna factor, high pass filter loss(if used) and cable loss, and subtracting the amplifier gain(if any)from the measured reading. The basic equation calculation is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

   Result = Reading + Corrected Factor

10.RADIATED SPURIOUS EMISSION TEST

10.1.Block Diagram of Test Setup

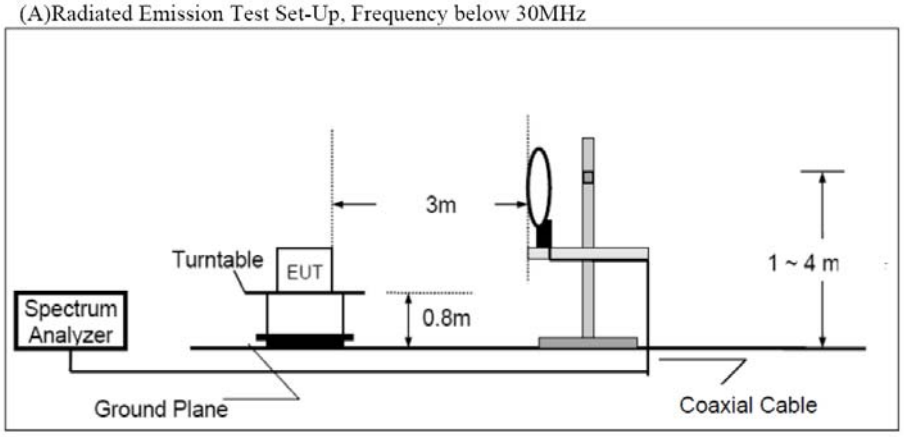
10.1.1.Block diagram of connection between the EUT and peripherals



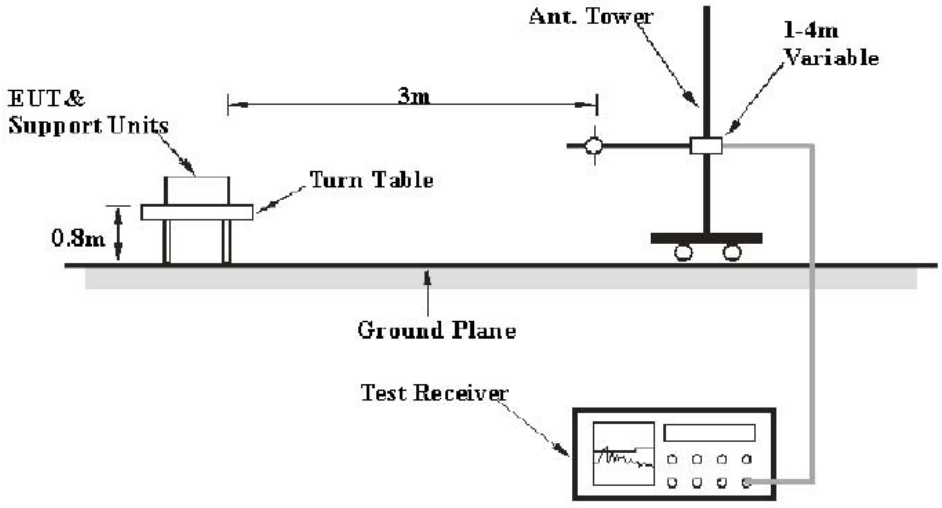
Setup: Transmitting mode

10.1.2.Semi-Anechoic Chamber Test Setup Diagram

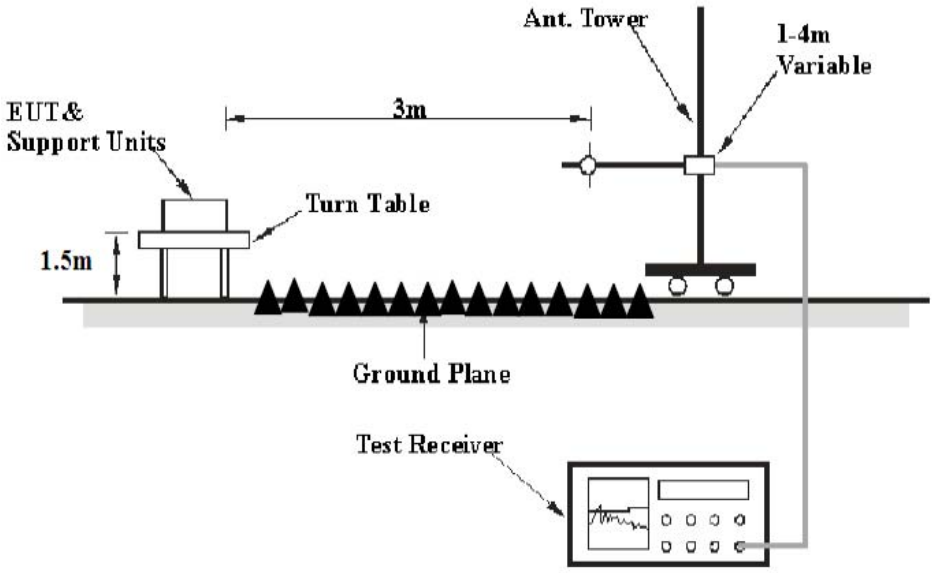
(A)Radiated Emission Test Set-Up, Frequency below 30MHz



(B)Radiated Emission Test Set-Up, Frequency 30MHz-1GHz



(C) Radiated Emission Test Set-Up, Frequency above 1GHz



10.2.The Limit For Section 15.247(d)

Section 15.247(d): In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

10.3. Restricted bands of operation

10.3.1. FCC Part 15.205 Restricted bands of operation

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

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

[1]Until February 1, 1999, this restricted band shall be 0.490-0.510
[2]Above 38.6

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

10.4. Configuration of EUT on Measurement

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

10.5. Operating Condition of EUT

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

10.5.2. Turn on the power of all equipment.

10.5.3. Let the EUT work in TX modes measure it. The transmit frequency are 2405-2480MHz. We select 2405MHz, 2445MHz, and 2480MHz TX frequency to transmit.

10.6. Test Procedure

The EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground(Below 1GHz). The EUT and its simulators are placed on a turntable, which is 1.5 meter high above ground(Above 1GHz). The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bi-log antenna) is used as receiving antenna. Both horizontal and vertical polarizations of the antenna are set on measurement. In order to find the maximum emission levels, all of the EUT location must be manipulated according to ANSI C63.10:2013 on radiated emission measurement. This EUT was tested in 3 orthogonal positions and the worst case position data was reported.

The bandwidth of test receiver is set at 9 kHz in below 30MHz. and set at 120 kHz in 30-1000MHz, and 1MHz in above 1000MHz.

The final measurement in band 9-90 kHz, 110-490 kHz and above 1000MHz is performed with Average detector. Except those frequency bands mention above, the final measurement for frequencies below 1000MHz is performed with Quasi Peak detector.
The field strength is calculated by adding the antenna factor, and cable loss, and subtracting the amplifier gain from the measured reading.

10.7.Data Sample

Frequency (MHz)	Reading (dBμv)	Factor (dB/m)	Result (dBμv/m)	Limit (dBμv/m)	Margin (dB)	Remark
X.XX	43.85	-22.22	21.63	43.5	-21.87	QP

Frequency(MHz) = Emission frequency in MHz
Reading(dBμv) = Uncorrected Analyzer/Receiver reading
Factor (dB/m) = Antenna factor + Cable Loss – Amplifier gain
Result(dBμv/m) = Reading(dBμv) + Factor(dB/m)
Limit (dBμv/m) = Limit stated in standard
Margin (dB) = Result(dBμv/m) - Limit (dBμv/m)
QP = Quasi-peak Reading

Calculation Formula:
Margin(dB) = Result (dBμV/m)–Limit(dBμV/m)
Result(dBμV/m)= Reading(dBμV)+ Factor(dB/m)

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the limit.

10.8.The Field Strength of Radiation Emission Measurement Results

Pass.

Test Lab: 3m Anechoic chamber
Test Engineer: Bob

The frequency range from 9kHz to 26.5GHz is checked.

Note: 1. Emissions attenuated more than 20 dB below the permissible value are not reported.
2. *: Denotes restricted band of operation.
3. The radiation emissions from 9kHz-30MHz and 18-26.5GHz are not reported, because the test values lower than the limits of 20dB.

The spectrum analyzer plots are attached as below.

Below 1GHz

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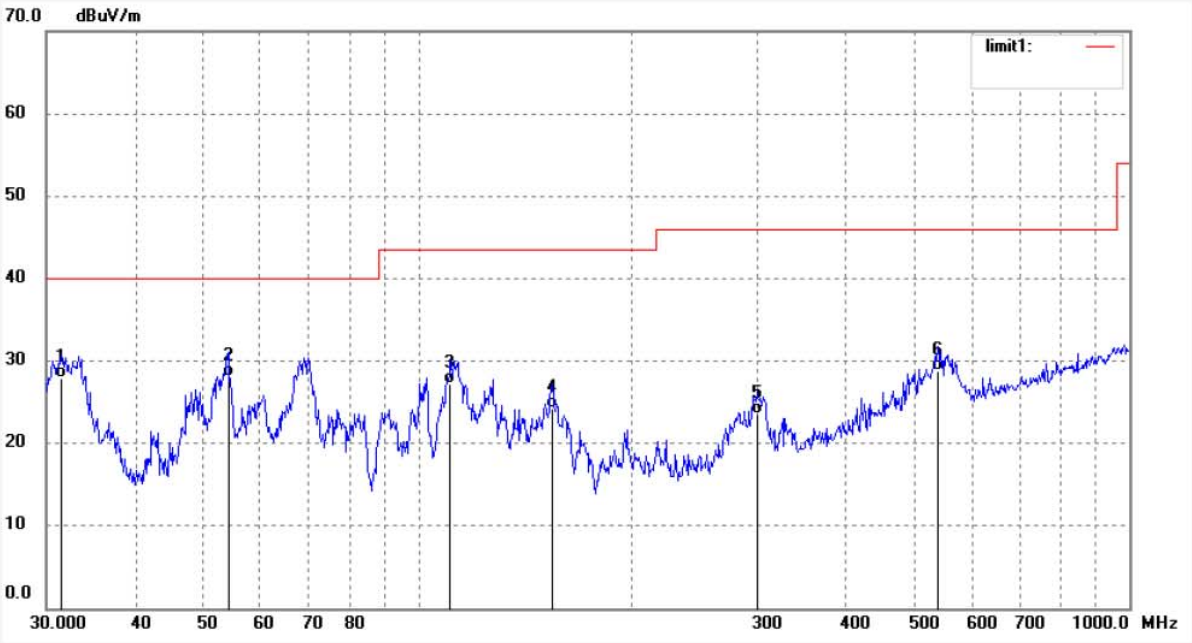
Job No.: NTC #856
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: LED Horticultural Luminaire
Mode: TX 2405MHz
Model: 55403101
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 18/05/24/
Time: 12/19/42
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.5095	37.29	-9.38	27.91	40.00	-12.09	QP	200	142	
2	54.0711	40.91	-12.89	28.02	40.00	-11.98	QP	200	136	
3	110.9571	40.87	-13.67	27.20	43.50	-16.30	QP	200	111	
4	154.2786	39.27	-14.98	24.29	43.50	-19.21	QP	200	214	
5	299.3158	32.52	-9.01	23.51	46.00	-22.49	QP	200	321	
6	537.5891	32.15	-3.38	28.77	46.00	-17.23	QP	200	14	

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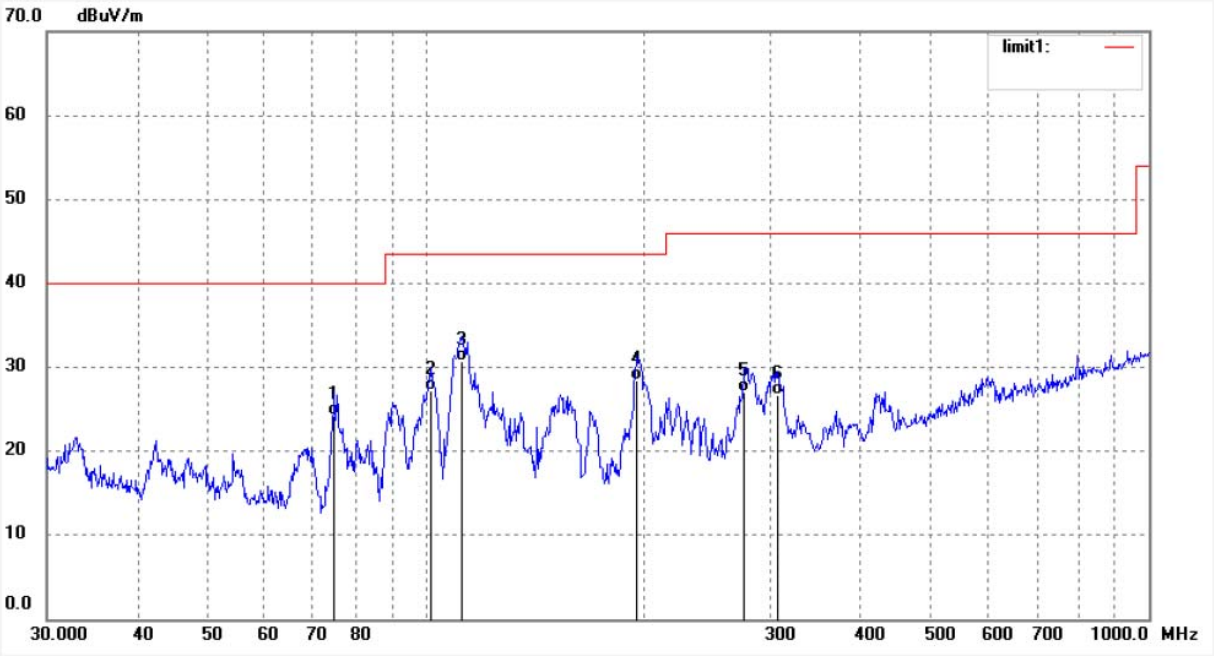
Job No.: NTC #857
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: LED Horticultural Luminaire
Mode: TX 2405MHz
Model: 55403101
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 18/05/24/
Time: 12/21/57
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	74.9191	40.86	-16.70	24.16	40.00	-15.84	QP	200	164	
2	102.0014	40.51	-13.38	27.13	43.50	-16.37	QP	200	146	
3	112.1305	44.17	-13.50	30.67	43.50	-12.83	QP	200	01	
4	195.8220	40.75	-12.30	28.45	43.50	-15.05	QP	200	164	
5	276.1235	36.72	-9.70	27.02	46.00	-18.98	QP	200	168	
6	306.7536	35.54	-8.85	26.69	46.00	-19.31	QP	200	321	

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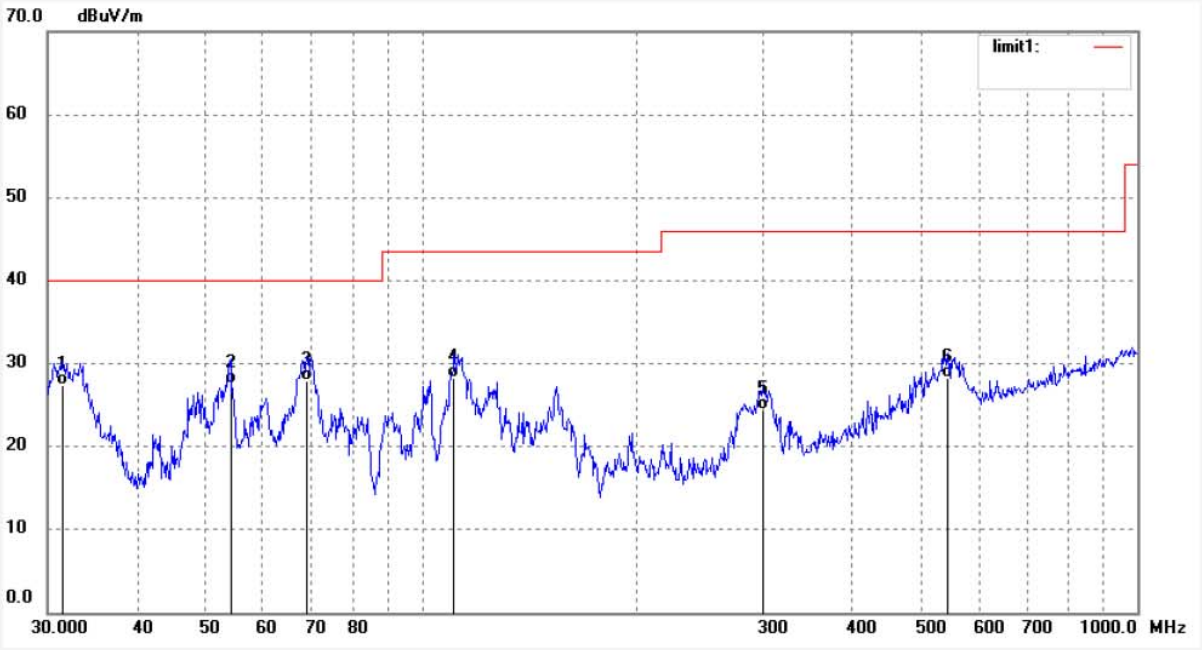
Job No.: NTC #858	Polarization: Vertical
Standard: FCC Class B 3M Radiated	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 18/05/24/
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 12/19/42
EUT: LED Horticultural Luminaire	Engineer Signature:
Mode: TX 2445MHz	Distance: 3m
Model: 55403101	
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd	

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	31.5091	36.79	-9.38	27.41	40.00	-12.59	QP	200	14	
2	54.0711	40.53	-12.89	27.64	40.00	-12.36	QP	200	211	
3	69.1140	43.87	-16.00	27.87	40.00	-12.13	QP	200	333	
4	110.9569	41.91	-13.67	28.24	43.50	-15.26	QP	200	146	
5	299.3158	33.49	-9.01	24.48	46.00	-21.52	QP	200	121	
6	543.2740	31.53	-3.27	28.26	46.00	-17.74	QP	200	223	

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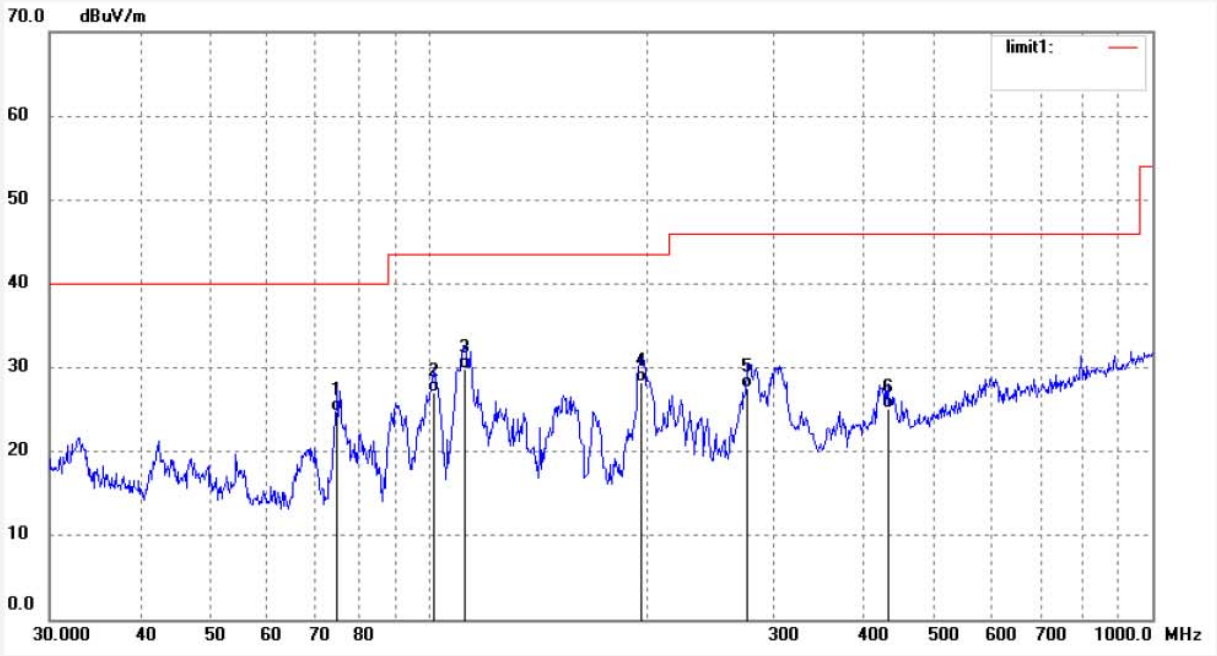
Job No.: NTC #859
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: LED Horticultural Luminaire
Mode: TX 2445MHz
Model: 55403101
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 18/05/24/
Time: 12/21/57
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	74.9191	41.52	-16.70	24.82	40.00	-15.18	QP	200	14	
2	102.0014	40.41	-13.38	27.03	43.50	-16.47	QP	200	222	
3	112.1303	43.37	-13.50	29.87	43.50	-13.63	QP	200	214	
4	197.1999	40.49	-12.29	28.20	43.50	-15.30	QP	200	222	
5	276.1235	37.31	-9.70	27.61	46.00	-18.39	QP	200	144	
6	431.0316	30.73	-5.60	25.13	46.00	-20.87	QP	200	234	

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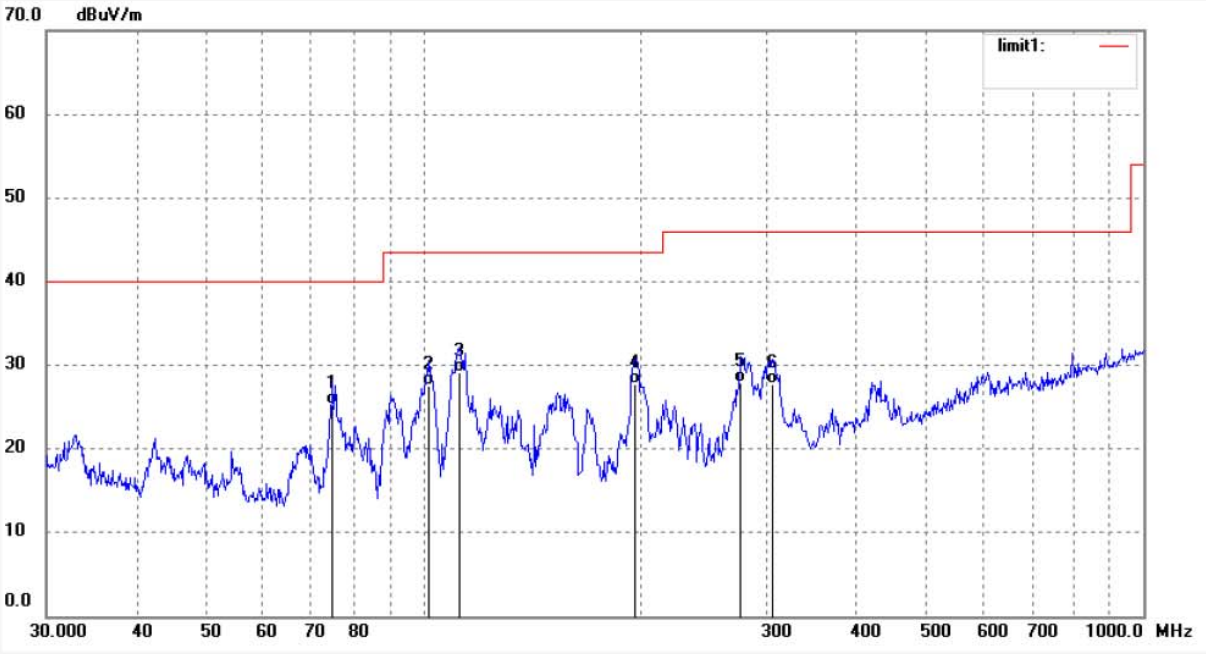
Job No.: NTC #860
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: LED Horticultural Luminaire
Mode: TX 2480MHz
Model: 55403101
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd

Polarization: Horizontal
Power Source: AC 120V/60Hz
Date: 18/05/24/
Time: 12/21/57
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	74.9191	41.96	-16.70	25.26	40.00	-14.74	QP	200	111	
2	102.0014	40.89	-13.38	27.51	43.50	-15.99	QP	200	144	
3	112.1303	42.68	-13.50	29.18	43.50	-14.32	QP	200	146	
4	197.1999	40.02	-12.29	27.73	43.50	-15.77	QP	200	223	
5	276.1235	37.68	-9.70	27.98	46.00	-18.02	QP	200	111	
6	305.6800	36.61	-8.90	27.71	46.00	-18.29	QP	200	31	

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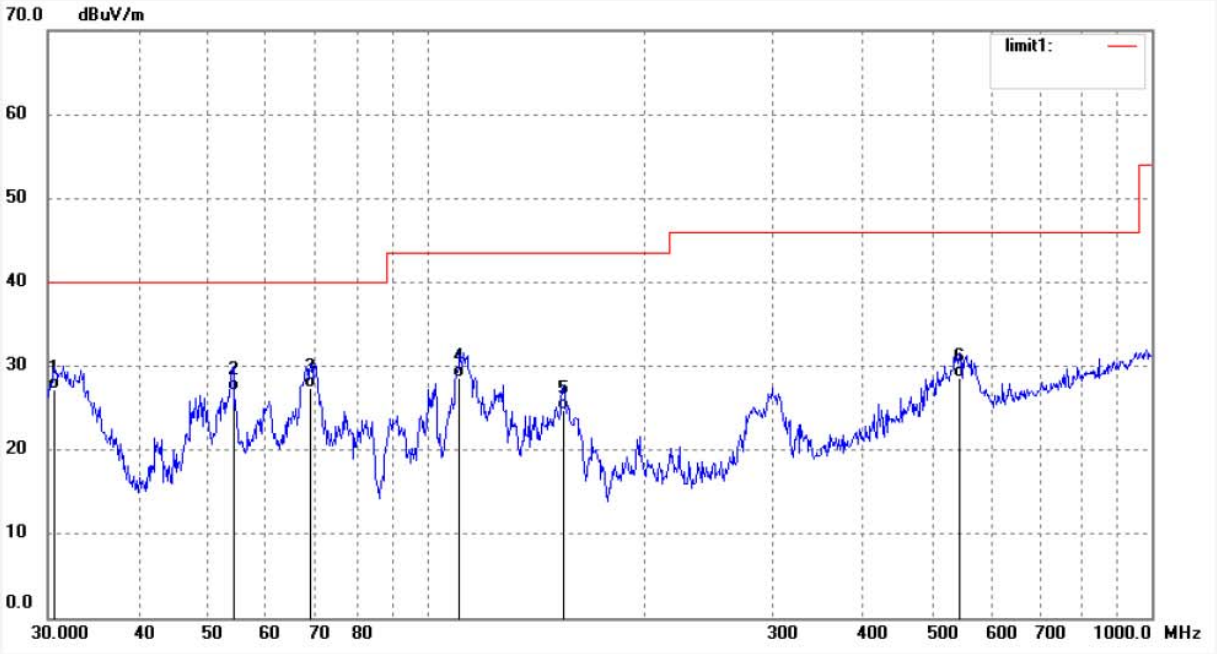
Job No.: NTC #861
Standard: FCC Class B 3M Radiated
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: LED Horticultural Luminaire
Mode: TX 2480MHz
Model: 55403101
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 18/05/24/
Time: 12/19/42
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	30.6371	36.28	-9.11	27.17	40.00	-12.83	QP	200	321	
2	54.0711	39.86	-12.89	26.97	40.00	-13.03	QP	200	221	
3	69.1140	43.41	-16.00	27.41	40.00	-12.59	QP	200	222	
4	110.9569	42.35	-13.67	28.68	43.50	-14.82	QP	200	146	
5	154.2786	39.72	-14.98	24.74	43.50	-18.76	QP	200	211	
6	543.2740	31.89	-3.27	28.62	46.00	-17.38	QP	200	111	

Above 1GHz

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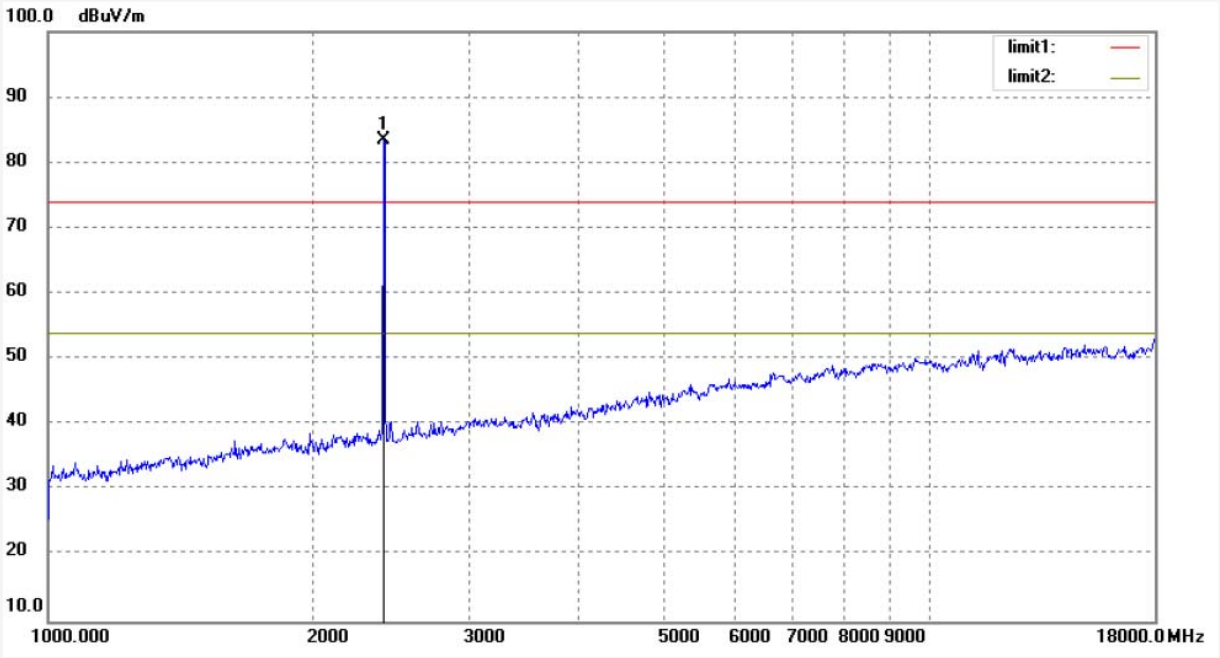
Job No.: NTC #823	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2018-5-22
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 20:38:08
EUT: LED Horticultural Luminaire	Engineer Signature:
Mode: TX 2405MHz	Distance: 3m
Model: 55403101	
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd	

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2405.000	82.53	0.88	83.41			peak	200	222	

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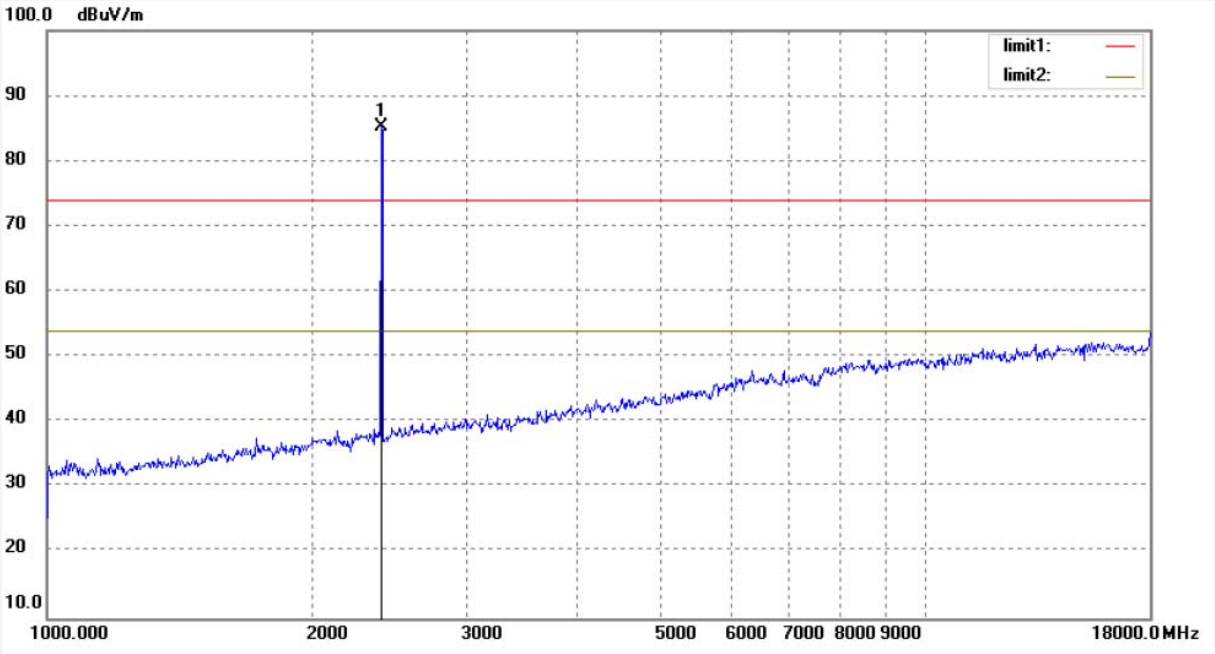
Job No.: NTC #824	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2018-5-22
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 20:39:26
EUT: LED Horticultural Luminaire	Engineer Signature:
Mode: TX 2405MHz	Distance: 3m
Model: 55403101	
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd	

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2405.000	84.40	0.88	85.28			peak	200	111	

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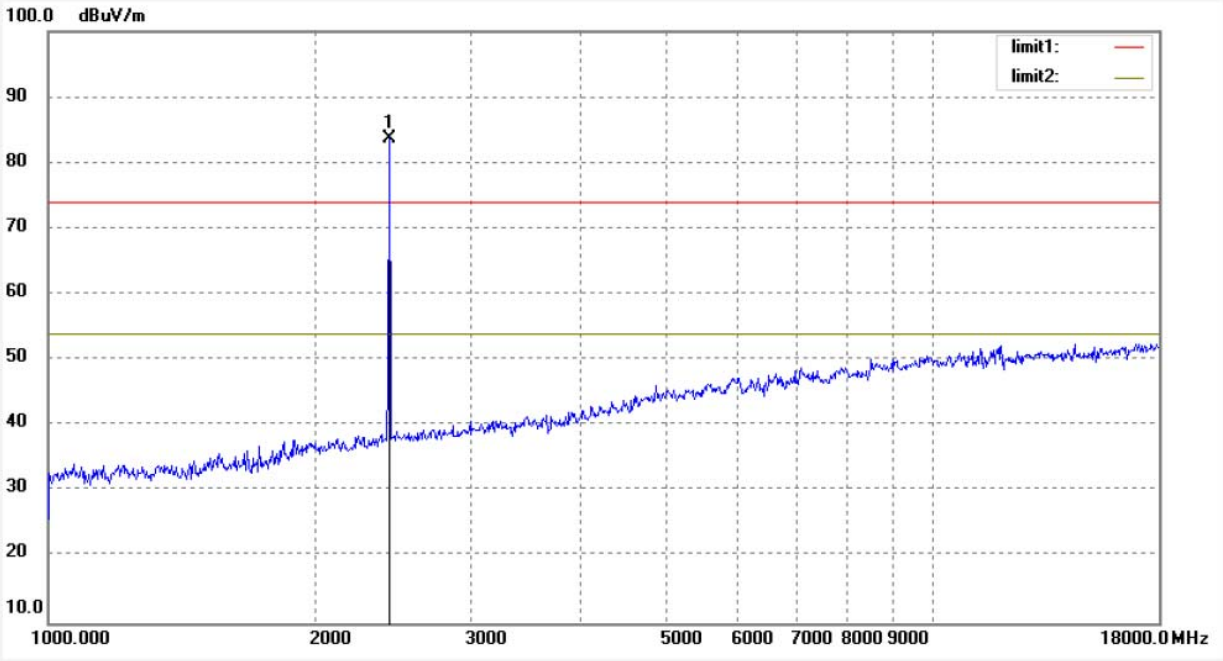
Job No.: NTC #825	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2018-5-22
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 20:41:09
EUT: LED Horticultural Luminaire	Engineer Signature:
Mode: TX 2445MHz	Distance: 3m
Model: 55403101	
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd	

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2445.000	82.63	1.00	83.63			peak	200	221	

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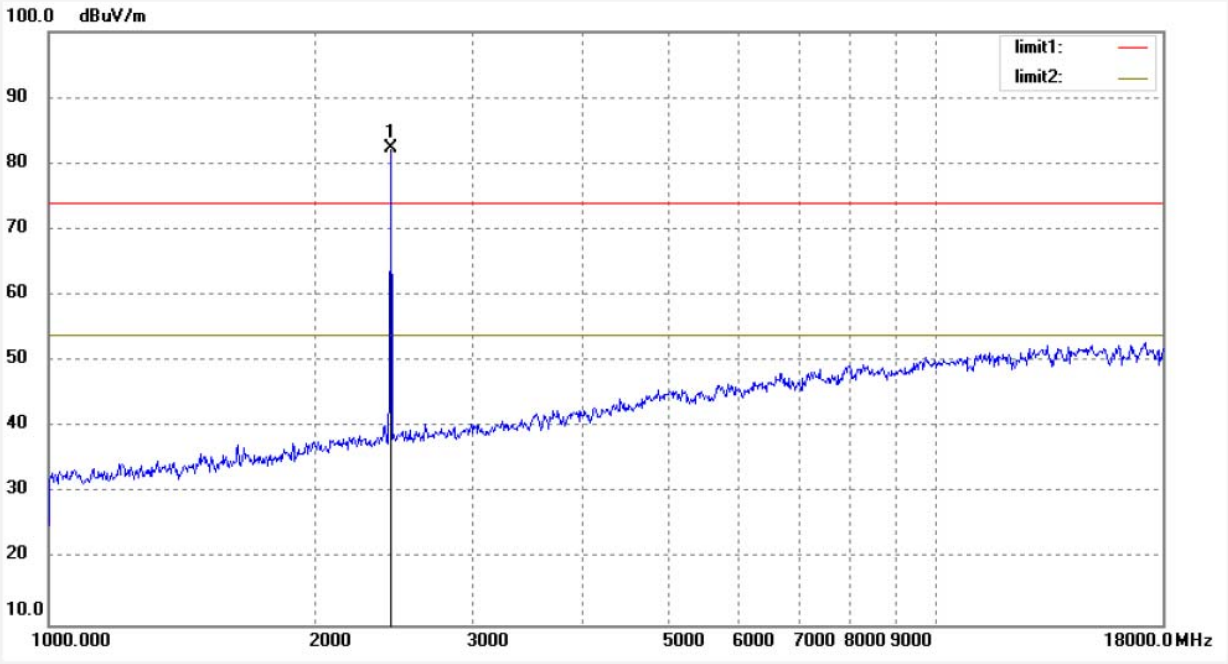
Job No.: NTC #826
Standard: FCC PK
Test item: Radiation Test
Temp.(C)/Hum.(%) 23 C / 48 %
EUT: LED Horticultural Luminaire
Mode: TX 2445MHz
Model: 55403101
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd

Polarization: Vertical
Power Source: AC 120V/60Hz
Date: 2018-5-22
Time: 20:42:34
Engineer Signature:
Distance: 3m

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2445.000	81.25	1.00	82.25			peak	200	111	

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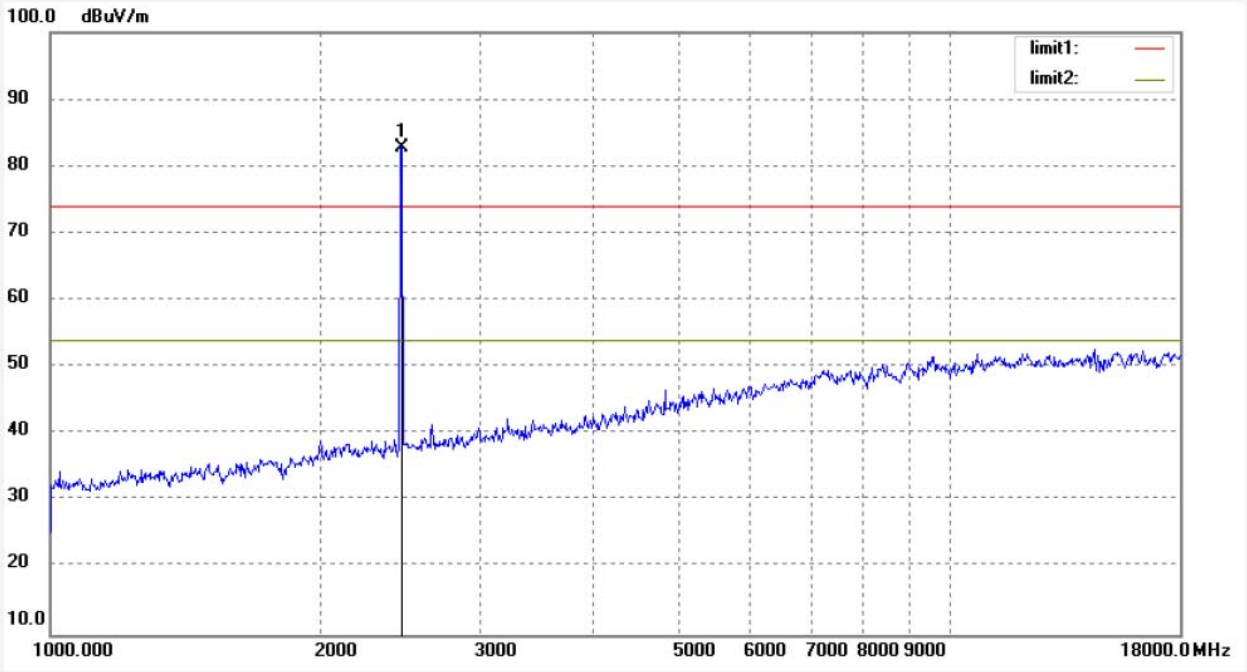
Job No.: NTC #827	Polarization: Vertical
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2018-5-22
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 20:44:15
EUT: LED Horticultural Luminaire	Engineer Signature:
Mode: TX 2480MHz	Distance: 3m
Model: 55403101	
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd	

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	81.76	1.09	82.85			peak	200	195	

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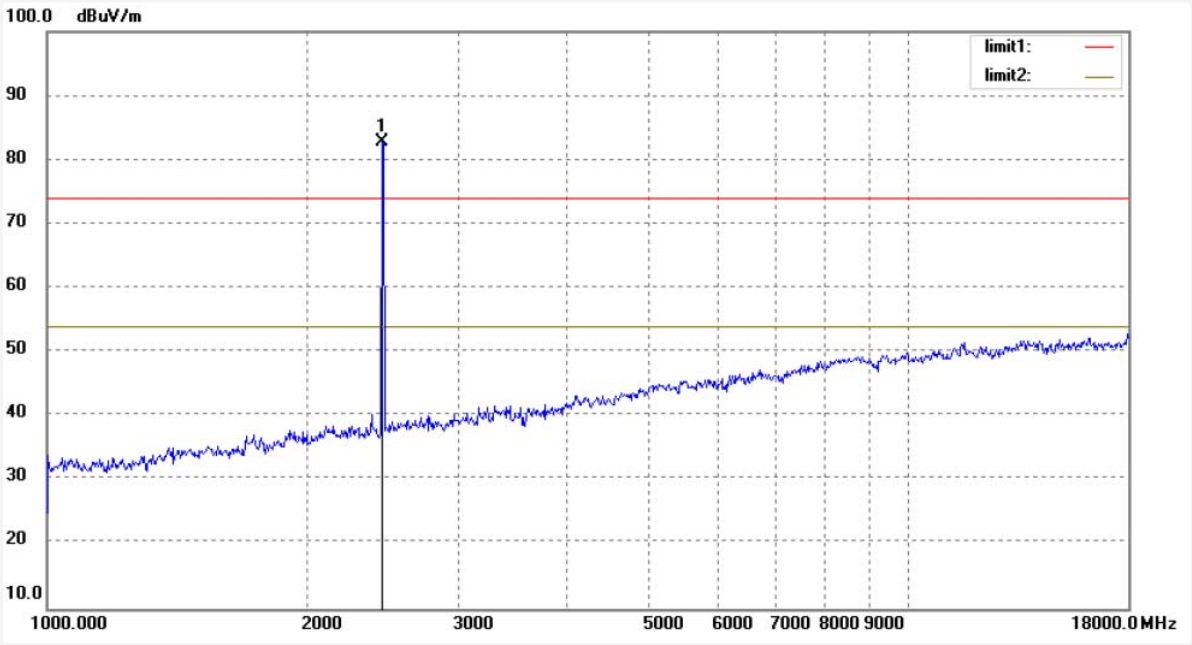
Job No.: NTC #828	Polarization: Horizontal
Standard: FCC PK	Power Source: AC 120V/60Hz
Test item: Radiation Test	Date: 2018-5-22
Temp.(C)/Hum.(%) 23 C / 48 %	Time: 20:45:02
EUT: LED Horticultural Luminaire	Engineer Signature:
Mode: TX 2480MHz	Distance: 3m
Model: 55403101	
Manufacturer: ETI Solid State Lighting (Zhuhai) Ltd	

Note: Report NO.:ATE20180949



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Degree (deg.)	Remark
1	2480.000	81.71	1.09	82.80			peak	200	202	

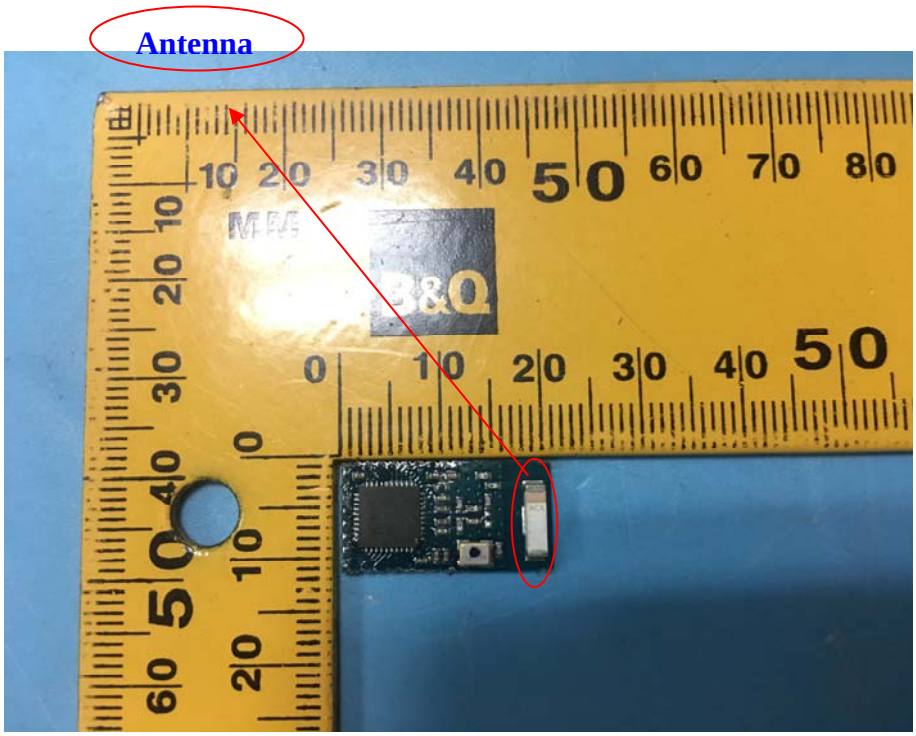
11. ANTENNA REQUIREMENT

11.1. The Requirement

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

11.2. Antenna Construction

Device is equipped with permanent attached antenna, which isn't displaced by other antenna. The Antenna gain of EUT is 0dBi. Therefore, the equipment complies with the antenna requirement of Section 15.203.



******* End of Test Report *******