

# Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC149802

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# **FCC Radio Test Report** FCC ID: 2AEP6XM-JPLB1

# **Original Grant**

Report No. TB-FCC149802

HangZhou XiongMai Technology CO., LTD **Applicant** 

**Equipment Under Test (EUT)** 

**EUT Name** Smart LED Colorful Bulb

Model No. XM-JPLB1

Series No. XM-JPLB, XM-JPLB2, JPLB, JPLB1, JPLB2

**Brand Name** XM

**Receipt Date** 2016-09-07

2016-09-08 to 2016-09-26 **Test Date** 

**Issue Date** 2016-09-27

FCC Part 15, Subpart C (15.247:2015) **Standards** 

**Test Method** ANSI C63.10: 2013

Conclusions **PASS** 

In the configuration tested, the EUT complied with the standards specified above,

The EUT technically complies with the FCC and IC requirements

**Test/Witness Engineer** 

Approved&

**Authorized** 

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

TB-RF-074-1.0

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# 1. General Information about EUT

#### 1.1 Client Information

**Applicant**: HangZhou XiongMai Technology CO., LTD

Address : 9th Floor, Building 9, Yinhu Innovation Center, No.9 FuXian Road,

YinHu Street, Hangzhou, China

Manufacturer : HangZhou XiongMai Technology CO., LTD

Address : No.2 Dong Qiao Road, Dongzhou Industrial, Fuyang District,

Hangzhou, China

## 1.2 General Description of EUT (Equipment Under Test)

EUT Name	1	Smart LED Colorful B	Bulb	
Models No.	1	XM-JPLB1, XM-JPLB	B, XM-JPLB2, JPLB, JPLB1, JPLB2	
Model Difference	:		e only difference is model name for commercial	
II CONTRACTOR	1000	Operation Frequency 802.11b/g/n(HT20): 2 802.11n(HT40): 2422	412MHz~2462MHz	
	T.	Number of Channel:	802.11b/g/n(HT20):11 channels see note(3) 802.11n(HT40): 7 channels see note(3)	
Product Description		RF Output Power:	802.11b: 8.53 dBm 802.11g: 8.20 dBm 802.11n (HT20): 7.99 dBm 802.11n (HT40): 7.42 dBm	
1133		Antenna Gain:	2 dBi PCB Antenna	
			Modulation Type:	802.11b:CCk,DQPSK,DBPSK; 802.11g:64-QAM,QPSK,BPSK 802.11n:64-QAM,16-QAM,QPSK,BPSK
		Bit Rate of Transmitter:	802.11b:11/5.5/2/1 Mbps 802.11g:54/48/36/24/18/12/9/6 Mbps 802.11n:up to 150Mbps	
Power Supply		AC Voltage supplied	from power network.	
Power Rating		Input: AC 100~240V,	50/60Hz, 3W	
Connecting I/O Port(S)	:	Please refer to the Us	ser's Manual	

#### Note:

(1) This Test Report is FCC Part 15.247 for 802.11b/g/n, the test procedure follows the FCC



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KDB 558074 D01 DTS Meas Guidance v03r05.

(2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

(3) Channel List:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	05	2432	09	2452
02	2417	06	2437	10	2457
03	2422	07	2442	11	2462
04	2427	80	2447		

Note:CH 01~CH 11 for 802.11b/g/n(HT20) CH 03~CH 09 for 802.11n(HT40)

- (4) The Antenna information about the equipment is provided by the applicant.
- 1.3 Block Diagram Showing the Configuration of System Tested

TX Mode

EUT

1.4 Description of Support Units

The EUT has been test as an independent unit





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1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For	Conducted Test
Final Test Mode	Description
Mode 1	TX B Mode

	For Radiated Test
Final Test Mode	Description
Mode 2	TX Mode B Mode Channel 01/06/11
Mode 3	TX Mode G Mode Channel 01/06/11
Mode 4	TX Mode N(HT20) Mode Channel 01/06/11
Mode 4	TX Mode N(HT40) Mode Channel 03/06/09

#### Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

802.11b Mode: CCK (1 Mbps) 802.11g Mode: OFDM (6 Mbps)

802.11n (HT20) Mode: MCS 0 (6.5 Mbps) 802.11n (HT40) Mode: MCS 0 (13 Mbps)

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a stationary unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.



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1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of WLAN.

Test Software Version		N/A	
Channel	CH 01	CH 06	CH 11
IEEE 802.11b DSSS	DEF	DEF	DEF
IEEE 802.11g OFDM	DEF	DEF	DEF
IEEE 802.11n (HT20)	DEF	DEF	DEF
Channel	CH 03	CH 06	CH 09
IEEE 802.11n (HT40)	DEF	DEF	DEF

# 1.7 Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U <sub>Lab</sub> )
	Level Accuracy:	
Conducted Emission	9kHz~150kHz	±3.42 dB
	150kHz to 30MHz	±3.42 dB
Dedicted Emission	Level Accuracy:	.4 CO dD
Radiated Emission	9kHz to 30 MHz	±4.60 dB
Dedicted Emission	Level Accuracy:	.4.40 dD
Radiated Emission	30MHz to 1000 MHz	±4.40 dB
Radiated Emission	Level Accuracy:	±4.20 dB
Radiated Emission	Above 1000MHz	±4.20 UB



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## 1.7 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

#### **CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

#### FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

#### IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.







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# 2. Test Summary

	FCC Part	: 15 Subpart C(15.247)/ RSS 247	Issue 1	
Standa	rd Section	Tool How	Tural area (A)	4
FCC	IC	Test Item	Judgment	Remark
15.203	1	Antenna Requirement	PASS	N/A
15.207	RSS-GEN 7.2.4	Conducted Emission	PASS	N/A
15.205	RSS-GEN 7.2.2	Restricted Bands	PASS	N/A
15.247(a)(2)	RSS 247 5.2 (1)	6dB Bandwidth	PASS	N/A
15.247(b)	RSS 247 5.4 (4)	Peak Output Power	PASS	N/A
15.247(e)	RSS 247 5.2 (2)	Power Spectral Density	PASS	N/A
15.247(d)	RSS 247 5.5	Transmitter Radiated Spurious Emission	PASS	N/A

**Note:** "/" for no requirement for this test item.

N/A is an abbreviation for Not Applicable.





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# 3. Test Equipment

Conducte	d Emission Te	st			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 22, 2016	Jul. 21, 2017
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 22, 2016	Jul. 21, 2017
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 22, 2016	Jul. 21, 2017
LISN	Rohde & Schwarz	ENV216	101131	Jul. 22, 2016	Jul. 21, 2017
Radiation	<b>Emission Tes</b>	t			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 22, 2016	Jul. 21, 2017
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 22, 2016	Jul. 21, 2017
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 20, 2016	Mar. 19, 201
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar. 20, 2016	Mar. 19, 201
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 19, 2016	Mar. 18, 201
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar. 19, 2016	Mar. 18, 201
Pre-amplifier	Sonoma	310N	185903	Mar. 20, 2016	Mar. 19, 201
Pre-amplifier	HP	8449B	3008A00849	Mar. 26, 2016	Mar. 25, 201
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 26, 2016	Mar. 25, 201
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna C	Conducted Em	ission			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 22, 2016	Jul. 21, 2017
EMI Test Receiver	Rohde & Schwarz	ESCI	100010/007	Jul. 22, 2016	Jul. 21, 2017
Power Meter	Anritsu	ML2495A	25406005	Jul. 22, 2016	Jul. 21, 2017
Power Sensor	Anritsu	ML2411B	25406005	Jul. 22, 2016	Jul. 21, 2017



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# 4. Conducted Emission Test

#### 4.1 Test Standard and Limit

4.1.1Test Standard FCC Part 15.207

#### 4.1.2 Test Limit

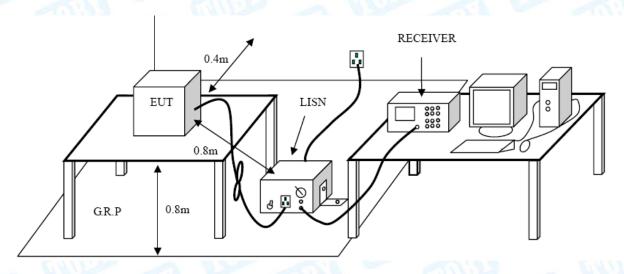
#### **Conducted Emission Test Limit**

THE PROPERTY OF THE PARTY OF TH	Maximum RF Line Voltage (dBμV)		
Frequency	Quasi-peak Level	Average Level	
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

#### Notes:

- (1) \*Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.2 Test Setup



#### 4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.



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I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

## 4.4 EUT Operating Mode

Please refer to the description of test mode.

#### 4.5 Test Data

Please see the next page.





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EUT:	Sma	rt LED Color	ful Bulb	Model	Name:	X	M-JPLB1
Temperature	<b>25</b> °C		33	Relativ	ve Humic	dity: 5	5%
Test Voltage	: AC 1	20V/60Hz		18	67	TIME	
Terminal:	Line	2	Mile		1 6		
Test Mode:	TX B	Mode		MILE		- N	HUL
Remark:	Only	worse case	is reported			33	
90.0 dBuV							
						QP: AVG:	
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- W W	A. M. M.	W. W. O. W.					AVI
-10	0.5	W. W. V. T.	(MHz)	5			
-10 0.150	0.5		(MHz)	5			30.000
0.150		Reading	Correct	Measure-	Limit	Over	
	Freq.	Reading Level		_			
0.150	Freq.	Level	Correct Factor	Measure- ment	Limit dBu∨	Over	30.000
0.150 No. Mk.	Freq.	Level dBuV	Correct Factor	Measure- ment	dBuV 62.45	Over dB	30.000 Detector
0.150 No. Mk.	Freq. MHz 0.2300	dBuV 22.19	Correct Factor dB	Measure- ment dBuV 32.21	dBu√ 62.45 52.45	Over dB -30.24	30.000  Detector  QP
0.150 No. Mk.	Freq. MHz 0.2300 0.2300	dBuV 22.19 15.33	Correct Factor dB 10.02 10.02	Measure- ment dBuV 32.21 25.35	dBuV 62.45 52.45 59.15	Over dB -30.24 -27.10	30.000  Detector  QP  AVG
0.150  No. Mk.  1 2 3	Freq. MHz 0.2300 0.2300 0.3420	Level dBuV 22.19 15.33 25.06	Correct Factor dB 10.02 10.02	Measure- ment dBuV 32.21 25.35 35.08	dBuV 62.45 52.45 59.15 49.15	Over dB -30.24 -27.10 -24.07	30.000  Detector  QP  AVG
0.150  No. Mk.  1 2 3 4	Freq. MHz 0.2300 0.2300 0.3420 0.3420	Level  dBuV  22.19  15.33  25.06  17.93	Correct Factor dB 10.02 10.02 10.02	Measure- ment  dBuV  32.21  25.35  35.08  27.95	Limit  dBuV  62.45  52.45  59.15  49.15  56.00	Over dB -30.24 -27.10 -24.07 -21.20	Detector QP AVG QP AVG
0.150  No. Mk.  1 2 3 4 5	Freq. MHz 0.2300 0.2300 0.3420 0.3420 0.5660	Level  dBuV  22.19  15.33  25.06  17.93  26.34	Correct Factor  dB  10.02  10.02  10.02  10.02  10.05	Measure- ment  dBuV  32.21  25.35  35.08  27.95  36.39	Limit  dBuV  62.45  52.45  59.15  49.15  56.00  46.00	Over dB -30.24 -27.10 -24.07 -21.20 -19.61	30.000  Detector  QP  AVG  QP  AVG  QP  AVG
0.150  No. Mk.  1 2 3 4 5 6 *	Freq. MHz 0.2300 0.2300 0.3420 0.3420 0.5660 0.5660	Level  dBuV  22.19  15.33  25.06  17.93  26.34  17.00	Correct Factor dB 10.02 10.02 10.02 10.02 10.05	Measure- ment  dBuV  32.21  25.35  35.08  27.95  36.39  27.05	Limit  dBuV  62.45  52.45  59.15  49.15  56.00  46.00  56.00	Over dB -30.24 -27.10 -24.07 -21.20 -19.61 -18.95	Detector QP AVG QP AVG QP AVG
0.150  No. Mk.  1 2 3 4 5 6 * 7	Freq. MHz 0.2300 0.2300 0.3420 0.3420 0.5660 0.5660 0.7940	Level  dBuV  22.19  15.33  25.06  17.93  26.34  17.00  21.05	Correct Factor  dB  10.02  10.02  10.02  10.02  10.05  10.05	Measure- ment  dBuV  32.21  25.35  35.08  27.95  36.39  27.05  31.15	Limit  dBuV  62.45  52.45  59.15  49.15  56.00  46.00  46.00	Over dB -30.24 -27.10 -24.07 -21.20 -19.61 -18.95 -24.85	Detector QP AVG QP AVG QP AVG AVG
0.150  No. Mk.  1 2 3 4 5 6 * 7 8	Freq. MHz 0.2300 0.2300 0.3420 0.3420 0.5660 0.5660 0.7940 0.7940	Level  dBuV  22.19  15.33  25.06  17.93  26.34  17.00  21.05  11.37	Correct Factor  dB  10.02  10.02  10.02  10.05  10.05  10.10  10.10	Measure-ment  dBuV  32.21  25.35  35.08  27.95  36.39  27.05  31.15  21.47	Limit  dBuV  62.45  52.45  59.15  49.15  56.00  46.00  56.00  56.00	Over dB -30.24 -27.10 -24.07 -21.20 -19.61 -18.95 -24.85 -24.53	JOURN
0.150  No. Mk.  1 2 3 4 5 6 * 7 8 9	Freq.  MHz  0.2300  0.2300  0.3420  0.3420  0.5660  0.7940  0.7940  1.0260	Level  dBuV  22.19  15.33  25.06  17.93  26.34  17.00  21.05  11.37  18.34	Correct Factor  dB  10.02  10.02  10.02  10.05  10.05  10.10  10.10  10.06	Measure- ment  dBuV  32.21  25.35  35.08  27.95  36.39  27.05  31.15  21.47  28.40	Limit  dBuV  62.45  52.45  59.15  49.15  56.00  46.00  56.00  46.00  46.00	Over dB -30.24 -27.10 -24.07 -21.20 -19.61 -18.95 -24.53 -27.60	30.000  Detector  QP  AVG  QP  AVG  QP  AVG  QP  AVG





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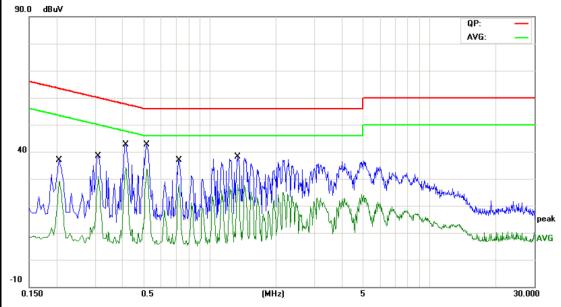
EUT:	T: Smart LED Colorful Bulb			Model Na	XI	XM-JPLB1	
emperature:	25 ℃	CHILD S	3	Relative	Humidit	y: 55	5%
Test Voltage:	AC 120\	V/60Hz			(GAL)	1133	
Terminal:	Neutral		DIO.				ma'
Test Mode:	TX B Mo	ode		MILES		2 N	MALE
Remark:	Only wo	rse case is	reported	6	and in	35	
90.0 dBuV							
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0.150	F	Reading Level	Correct I	5 Measure- ment	Limit	Over	A A HARMAN
0.150 No. Mk.		_		Measure-	Limit		A A HARMAN
0.150 No. Mk.	Freq.	Level	Correct I	Measure- ment		Over	30.000
0.150 No. Mk. F	Freq. MHz	dBuV	Correct I Factor	Measure- ment	dBuV	Over dB	30.000
0.150  No. Mk. F  1 0 2 0	Freq. MHz 2300	dBuV 21.47	Correct I Factor dB	Measure- ment dBuV 31.58	dBu√ 62.45 52.45	Over dB -30.87	30.000  Detecto
0.150  No. Mk. F  1 0 2 0 3 0	Freq. MHz 2300	Level dBuV 21.47 15.27	Correct Factor  dB  10.11  10.11	Measurement dBuV 31.58 25.38	dBuV 62.45 52.45 59.15	Over dB -30.87 -27.07	30.000  Detecto
0.150  No. Mk.  1 0 2 0 3 0 4 0	Freq. MHz 2300 2300 3420	Level dBuV 21.47 15.27 25.42	Correct Factor  dB  10.11  10.11  10.07	Measure- ment dBuV 31.58 25.38 35.49	dBuV 62.45 52.45 59.15 49.15	Over dB -30.87 -27.07 -23.66	30.000  Detecto  QP  AVC
0.150  No. Mk. F  1 0 2 0 3 0 4 0 5 0	Freq. MHz 2300 2300 3420	Level dBuV 21.47 15.27 25.42 18.29	Correct Factor  dB  10.11  10.11  10.07  10.07	Measure- ment  dBuV  31.58  25.38  35.49  28.36	dBuV 62.45 52.45 59.15 49.15 56.00	Over dB -30.87 -27.07 -23.66 -20.79	30.000  Detecto  QP  AVC
0.150  No. Mk.  1	Freq. MHz 2300 2300 3420 3420 5660	Level dBuV 21.47 15.27 25.42 18.29 26.89	Correct Factor  dB  10.11  10.11  10.07  10.07  10.02	Measure- ment dBuV 31.58 25.38 35.49 28.36 36.91	dBuV 62.45 52.45 59.15 49.15 56.00 46.00	Over dB -30.87 -27.07 -23.66 -20.79 -19.09	30.000  Detecto  QP  AVC  QP  AVC
0.150  No. Mk.  1	Freq. MHz 2300 2300 3420 3420 5660	Level dBuV 21.47 15.27 25.42 18.29 26.89 17.09	Correct Factor  dB  10.11  10.11  10.07  10.07  10.02	Measure- ment  dBuV  31.58  25.38  35.49  28.36  36.91  27.11	dBuV 62.45 52.45 59.15 49.15 56.00 46.00	Over dB -30.87 -27.07 -23.66 -20.79 -19.09 -18.89	Detecto  QP  AVC  QP  AVC
0.150  No. Mk.  1	Freq. MHz 2300 2300 3420 3420 5660 5660	Level dBuV 21.47 15.27 25.42 18.29 26.89 17.09 21.59	Correct Factor  dB  10.11  10.11  10.07  10.07  10.02  10.02  10.06	Measure- ment  dBuV  31.58  25.38  35.49  28.36  36.91  27.11  31.65	dBuV 62.45 52.45 59.15 49.15 56.00 46.00 46.00	Over dB -30.87 -27.07 -23.66 -20.79 -19.09 -18.89 -24.35	30.000  Detecto  QP  AVC  QP  AVC
0.150  No. Mk.  1	Freq. MHz 2300 2300 3420 3420 5660 7940	Level  dBuV  21.47  15.27  25.42  18.29  26.89  17.09  21.59  11.82  18.74	Correct Factor  dB  10.11  10.11  10.07  10.07  10.02  10.02  10.06  10.06  10.16	Measure- ment dBuV 31.58 25.38 35.49 28.36 36.91 27.11 31.65 21.88 28.90	dBuV 62.45 52.45 59.15 49.15 56.00 46.00 46.00 56.00	Over dB -30.87 -27.07 -23.66 -20.79 -19.09 -18.89 -24.35 -24.12	Detecto QP AVC QP AVC
0.150  No. Mk.  1	Freq. MHz 2300 2300 3420 3420 5660 7940 7940 0260	Level  dBuV  21.47  15.27  25.42  18.29  26.89  17.09  21.59  11.82	Correct Factor  dB  10.11  10.11  10.07  10.07  10.02  10.02  10.06	Measure- ment dBuV 31.58 25.38 35.49 28.36 36.91 27.11 31.65 21.88	dBuV 62.45 52.45 59.15 49.15 56.00 46.00 56.00 46.00	Over dB -30.87 -27.07 -23.66 -20.79 -19.09 -18.89 -24.35 -24.12 -27.10	Detecto QP AVC QP AVC QP AVC





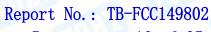
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EUT:	Smart LED Colorful Bulb	Model Name :	XM-JPLB1				
Temperature:	<b>25</b> ℃	Relative Humidity:	55%				
Test Voltage:	AC 240V/60Hz		70				
Terminal:	Line						
Test Mode:	TX B Mode		All De				
Remark:	Only worse case is reported						
90.0 dBuV							



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB	dBu∨	dBu∀	dB	Detector
1		0.2060	24.82	10.02	34.84	63.36	-28.52	QP
2		0.2060	18.56	10.02	28.58	53.36	-24.78	AVG
3		0.3100	26.32	10.02	36.34	59.97	-23.63	QP
4		0.3100	20.16	10.02	30.18	49.97	-19.79	AVG
5		0.4140	30.25	10.02	40.27	57.57	-17.30	QP
6		0.4140	24.15	10.02	34.17	47.57	-13.40	AVG
7		0.5140	30.43	10.03	40.46	56.00	-15.54	QP
8	*	0.5140	22.96	10.03	32.99	46.00	-13.01	AVG
9		0.7220	23.80	10.12	33.92	56.00	-22.08	QP
10		0.7220	17.20	10.12	27.32	46.00	-18.68	AVG
11		1.3340	24.08	10.06	34.14	56.00	-21.86	QP
12		1.3340	17.57	10.06	27.63	46.00	-18.37	AVG

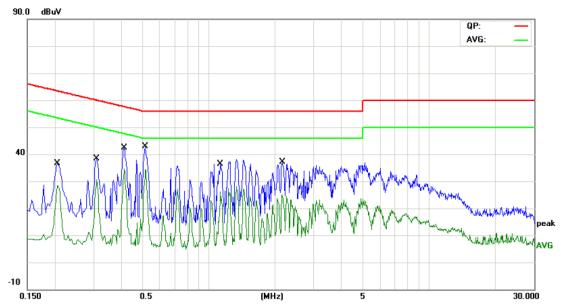
<sup>\*:</sup>Maximum data x:Over limit !:over margin





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EUT:	Smart LED Colorful Bulb	Model Name :	XM-JPLB1
Temperature:	<b>25</b> ℃	Relative Humidity:	55%
Test Voltage:	AC 240V/60Hz		19
Terminal:	Neutral		
Test Mode:	TX B Mode		HILL
Remark:	Only worse case is reported		
90.0 dBuV			



No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	Detector
1	0.2060	24.62	10.02	34.64	63.36	-28.72	QP
2	0.2060	18.62	10.02	28.64	53.36	-24.72	AVG
3	0.3100	26.15	10.02	36.17	59.97	-23.80	QP
4	0.3100	20.04	10.02	30.06	49.97	-19.91	AVG
5	0.4140	29.83	10.02	39.85	57.57	-17.72	QP
6	0.4140	23.76	10.02	33.78	47.57	-13.79	AVG
7	0.5140	30.19	10.03	40.22	56.00	-15.78	QP
8 *	0.5140	22.83	10.03	32.86	46.00	-13.14	AVG
9	1.1300	21.33	10.06	31.39	56.00	-24.61	QP
10	1.1300	15.48	10.06	25.54	46.00	-20.46	AVG
11	2.1580	21.40	10.05	31.45	56.00	-24.55	QP
12	2.1580	14.49	10.05	24.54	46.00	-21.46	AVG

<sup>\*:</sup>Maximum data x:Over limit !:over margin



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# 5. Radiated Emission Test

### 5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.209

5.1.2 Test Limit

### Radiated Emission Limits (9kHz~1000MHz)

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

### Radiated Emission Limit (Above 1000MHz)

Frequency	Class A (dBuV	/m)(at 3 M)	Class B (dBuV/m)(at 3 M)			
(MHz)	Peak	Average	Peak	Average		
Above 1000	80	60	74	54		

#### Note:

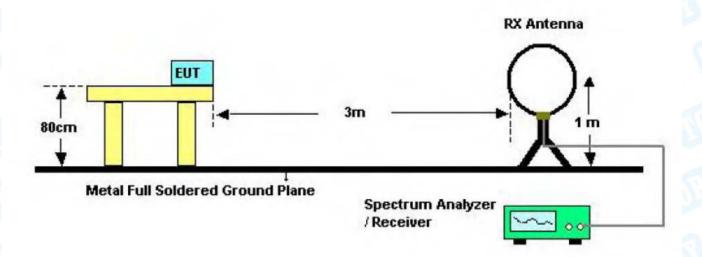
- (1) The tighter limit applies at the band edges.
- (2) Emission Level(dBuV/m)=20log Emission Level(uV/m)



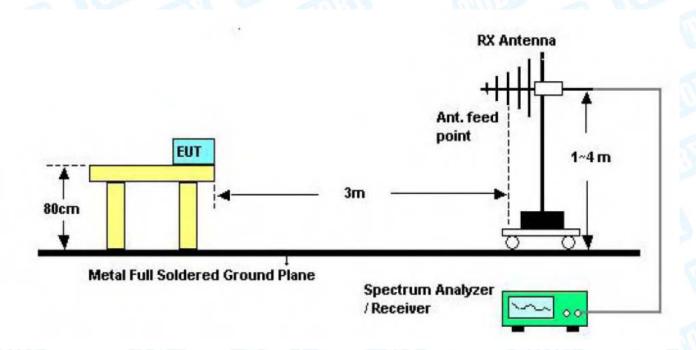


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# 5.2 Test Setup



Below 30MHz Test Setup

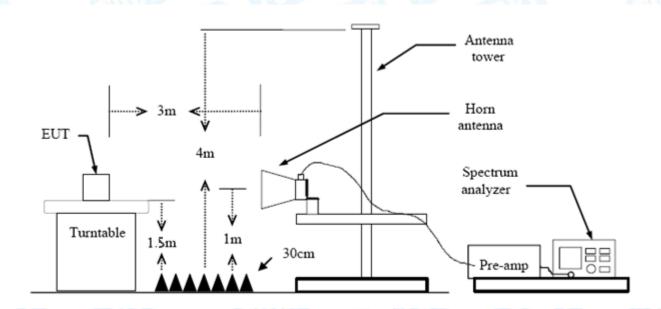


Below 1000MHz Test Setup





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Above 1GHz Test Setup

#### 5.3 Test Procedure

- (1) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (2) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (3) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (4) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (5) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (6) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (7) For the actual test configuration, please see the test setup photo.

# 5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.



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### 5.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.

Test data please refer the following pages.





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UT:	Smart LED C	olorful Bulb	Model:	del:			XM-JPLB1	
emperature:	25 ℃	M'3D	Relative F	lumidity	<b>7:</b> 5!	5%		
est Voltage:	AC 120V/60H	łz		Gall	197	)		
Ant. Pol.	Horizontal	A William		6			M	
est Mode:	TX B Mode 2412MHz							
Remark:	Only worse case is reported							
80.0 dBuV/m								
30	Mary Aller Mary Law	2 1 X X	3 Mary Market Ma	(RF)FCC 15	Mary 6	liation gin -6 dE		
-20 30.000 40 5	0 60 70 80	(MHz)	300	400 50	0 600		1000.0	

N	lo. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		109.4116	33.55	-21.86	11.69	43.50	-31.81	peak
2		189.7384	38.08	-20.54	17.54	43.50	-25.96	peak
3		307.8312	43.63	-16.35	27.28	46.00	-18.72	peak
4		403.2500	36.70	-12.35	24.35	46.00	-21.65	peak
5		499.4246	37.04	-11.20	25.84	46.00	-20.16	peak
6	*	554.8253	39.80	-9.50	30.30	46.00	-15.70	peak

<sup>\*:</sup>Maximum data x:Over limit !:over margin





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UT:	Smar	t LED Colorfu	ll Bulb	Model:		XM-JF	PLB1	
emperature	e: 25 °C			Relative	Humidity:	55%	BAR	
est Voltage	e: AC 1:	20V/60Hz						
nt. Pol.	Vertic	al	White .		630	1	M	
est Mode:	TX B	Mode 2412M	Hz	WILL ST		18	1 less	
Remark:	Only	worse case is	reported					
80.0 dBuV/m								
30 Mynaman M	**************************************		3 AMARIAN AMAR	Landon ment of the party of the	(RF)FCC 15C 3	Margin -6 dl	B	
30.000 40	50 60 7	0 80	(MHz)	300	400 500	600 700	1000.000	
No. Mk.	Freq.	Reading Level	Correct 1 Factor	Measure- ment	Limit	Over		
	MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detect	
1	78.4133	50.67	-23.40	27.27	40.00	-12.73	peal	
2	124.5690	48.88	-22.27	26.61	43.50	-16.89	pea	
_			-20.53	20.57	43.50	-22.93	pea	
3	190.4050	41.10	20.00					
3						-15.83	pea	
3	392.0951	43.04	-12.87	30.17	46.00	-15.83 -3.84		
3 4 5 *		43.04 51.66				-15.83 -3.84 -4.30	peal peal peal	





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_		Smart LED Colorful Bulb			Model:		XM-J	PLB1		
Tempe	rature:	25 °	С	(E)		13	Relative	Humidity:	55%	
Test Vo	oltage:	AC 1	120V	/60H	łz					
Ant. Po	ol.	Hori	zonta	al		AHO:		62	A	
Test M	ode:	TX E	3 Mo	de 2	437N	lHz	WILL DO		1	Market
Remar	k:	Only	wor	se c	ase is	reported	-	CITI'S	3	
80.0 dB	uV/m									
-20 30.000	40 5	50 60	70 80		2 X	(MHz)	300	(RF)FCC 15C	Margin -6	
	MI	_		Read Lev	_	Correct Factor	Measure- ment	Limit	Over	
No.	IVIK.	Freq.								
No.		MHz		dBu	IV	dB/m	dBuV/m	dBuV/m	dB	Detecto
No.				dBu	IV	dB/m -23.06		dBuV/m 40.00	dB -17.05	Detecto
	84	MHz			ı∨ 01		dBuV/m			
1	84	MHz 4.7018	)	46.0	ı∨ 01 99	-23.06	dBuV/m 22.95	40.00	-17.05	peal
1 2	84 10 18	MHz 4.7018 9.7960	) 1	46.0 45.9	ı∨ 01 99	-23.06 -21.86	dBuV/m 22.95 24.13	40.00 43.50	-17.05 -19.37	peal peal
1 2 3	84 10 18 * 30	MHz 4.7018 9.7960 9.7384	1 2	46.0 45.9 49.3	01 99 32	-23.06 -21.86 -20.54	dBuV/m 22.95 24.13 28.78	40.00 43.50 43.50	-17.05 -19.37 -14.72	peal peal peal





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	<b>25</b> ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		9
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2437MHz		HALL
Remark:	Only worse case is reported		



No	o. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	60.2800	57.73	-24.59	33.14	40.00	-6.86	peak
2		78.4133	55.46	-23.40	32.06	40.00	-7.94	peak
3		122.8340	57.24	-22.34	34.90	43.50	-8.60	peak
4		193.7726	50.65	-20.35	30.30	43.50	-13.20	peak
5		400.4318	41.12	-12.33	28.79	46.00	-17.21	peak
6		554.8251	45.63	-9.50	36.13	46.00	-9.87	peak

<sup>\*:</sup>Maximum data x:Over limit !:over margin





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EU1	Γ:		Sma	art L	ED	Color	ful Bulb	Model:		XM-	JPLB1
Ten	perat	ture:	25	$\mathbb{C}$	6		(18)	Relative	Humidit	y: 55%	5
Tes	t Volta	age:	AC	120	V/60	)Hz	- Con		CU	1133	
Ant	. Pol.		Hor	izon	tal		I THE		1 6		MAN!
Tes	t Mod	e:	TX	ВМ	ode	2462	MHz	O Min		a 1	
Ren	nark:		Only	y wc	rse	case	is reported				
80.0	) dBuV	/m									
30	hilling garang	www.	<b>, , , , , , , , , ,</b>		- Amada Car	2	Name of the second seco	* A Commonweal of the Commonwe	(RF)FCC	Margin	
-20 30	0.000	40 5	50 60	70	80		(MHz)	300	400 5	00 600 70	0 1000.00
N	lo. M	k. F	Freq.	ı	Rea Le	ding vel	Correct Factor	 easure- ment	Limit	Over	
			MHz		dB	u∨	dB/m	dBuV/m	dBuV/m	dB	Detecto
1		60	.2800		49	.89	-24.59	25.30	40.00	-14.70	) peak
2		109	.7960	)	51	.54	-21.86	29.68	43.50	-13.82	2 peak
3		191	1.0738	3	50	.94	-20.50	30.44	43.50	-13.0	o peak
4	*	306	3.7536	6	49	.44	-16.39	33.05	46.00	-12.9	5 peak
5		404	1.6664	1	38	.97	-12.36	26.61	46.00	-19.39	
6		554	1.8251		38	.71	-9.50	29.21	46.00	-16.79	
	aximum		x:Over lii		!:ove	r margii	 1				,





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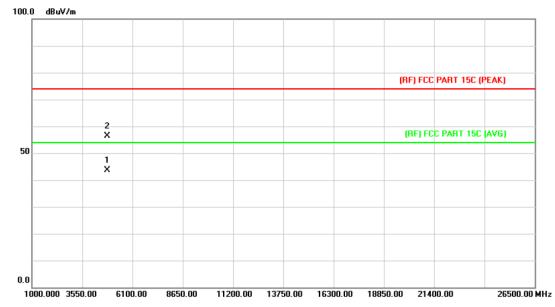
	Smart L	ED Colorful	Bulb	Model:		XM-JF	PLB1
Temperature:	25 ℃	Carl'	N	Relative H	lumidity:	55%	J. British
Test Voltage:	AC 120	V/60Hz	100	11	THE	13.9	
Ant. Pol.	Vertical	1	Miles				1.0
Test Mode:	TX B M	ode 2462MH	Ηz	WILL S		1/1/1	Mes
Remark:	Only wo	rse case is	reported	-	CITI'S		
80.0 dBuV/m							
					(RF)FCC 15C	3M Radiation	
						Margin -6	dB
				5		6	
30	1	3	À	, A		*	
	~^	2	$\mathcal{N}$	/ / /		Jane Land	my photographic
hack margarety Whyter of	had had	1 . J. J. J.	many	, Aura	V		
Made and Mary							
-20 30.000 40	50 60 70	0 80	(MHz)	300	400 500	600 700	1000.00
	50 60 70				400 500	600 700	1000.00
30.000 40		Reading Level	(MHz)  Correct Factor	Measure- ment	400 500 Limit	600 700 Over	1000.00
30.000 40 No. Mk.	50 60 70 Freq.	Reading	Correct Factor	Measure-			1000.00
30.000 40 No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detecto
No. Mk.	Freq. MHz	Reading Level dBuV 51.95	Correct Factor dB/m -24.60	Measure- ment dBuV/m 27.35	Limit dBuV/m 40.00	Over dB -12.65	Detector peal
No. Mk.  1 59 2 78	Freq. MHz 0.2325 3.1389	Reading Level dBuV 51.95 45.97	Correct Factor dB/m -24.60 -23.40	Measure- ment dBuV/m 27.35 22.57	Limit dBuV/m 40.00 40.00	Over  dB  -12.65  -17.43	Detector peal
No. Mk.  1 59 2 78 3 109	Freq. MHz 0.2325 3.1389 9.0284	Reading Level dBuV 51.95 45.97 46.99	Correct Factor dB/m -24.60 -23.40 -21.85	Measure- ment dBuV/m 27.35 22.57 25.14	Limit dBuV/m 40.00 40.00 43.50	Over  dB -12.65 -17.43 -18.36	Detector peal peal peal
No. Mk.  1 59 2 78 3 109 4 * 192	Freq. MHz 0.2325 0.1389 0.0284 0.4183	Reading Level dBuV 51.95 45.97	Correct Factor dB/m -24.60 -23.40	Measure- ment dBuV/m 27.35 22.57	Limit dBuV/m 40.00 40.00	Over  dB  -12.65  -17.43	Detector peal
No. Mk.  1 59 2 78 3 109 4 * 192	Freq. MHz 0.2325 3.1389 9.0284	Reading Level dBuV 51.95 45.97 46.99	Correct Factor dB/m -24.60 -23.40 -21.85	Measure- ment dBuV/m 27.35 22.57 25.14	Limit dBuV/m 40.00 40.00 43.50	Over  dB -12.65 -17.43 -18.36	Detector peal peal peal





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	25 °C Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX B Mode 2412MHz		ABOVE				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						



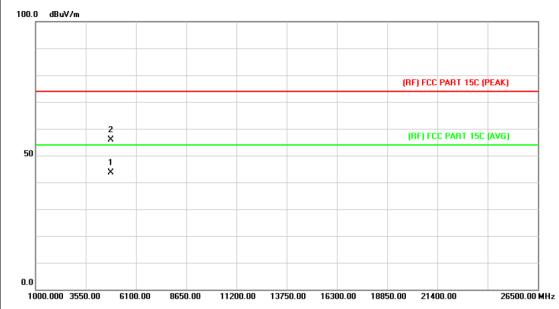
No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4823.654	30.09	13.56	43.65	54.00	-10.35	AVG
2		4824.021	42.86	13.56	56.42	74.00	-17.58	peak





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX B Mode 2412MHz		THE PARTY OF				
Remark:	No report for the emission which more than 10 dB below the						
	prescribed limit.						



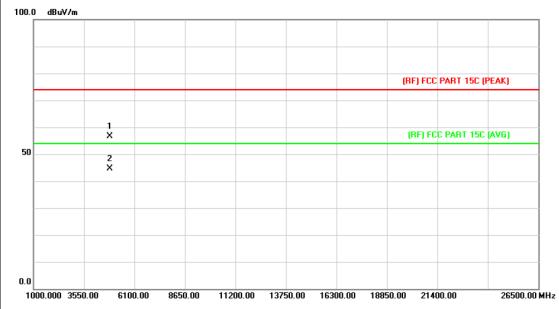
No	o. M	k. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4823.897	30.19	13.56	43.75	54.00	-10.25	AVG
2		4824.652	42.33	13.56	55.89	74.00	-18.11	peak





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	<b>25</b> ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz	il and	9				
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX B Mode 2437MHz		HILL				
Remark:	No report for the emission wh	nich more than 10 dB belo	w the				
	prescribed limit.	130					



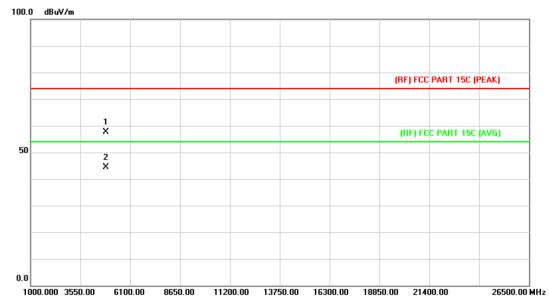
1	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4873.899	42.73	13.86	56.59	74.00	-17.41	peak
2		*	4874.065	30.76	13.86	44.62	54.00	-9.38	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	25 ℃	25 °C Relative Humidity: 55%					
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical						
Test Mode:	TX B Mode 2437MHz		Allan				
Remark:	No report for the emission wh	ich more than 10 dB belo	w the				
	prescribed limit.						



No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.584	43.83	13.86	57.69	74.00	-16.31	peak
2	*	4874.254	30.46	13.86	44.32	54.00	-9.68	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz	il carrie	9			
Ant. Pol.	Horizontal					
Test Mode:	TX B Mode 2462MHz		HILL			
Remark:	No report for the emission wh	nich more than 10 dB belo	w the			
	prescribed limit.					



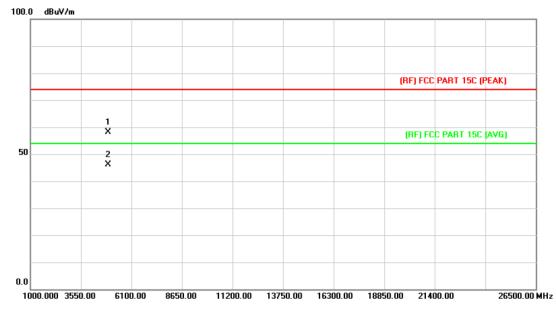
	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4923.514	31.97	14.15	46.12	54.00	-7.88	AVG
2			4924.021	44.08	14.15	58.23	74.00	-15.77	peak





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1		
Temperature:	<b>25</b> ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60Hz	illim)	3		
Ant. Pol.	Vertical				
Test Mode:	TX B Mode 2462MHz		Hilliam		
Remark: No report for the emission which more than 10 dB below the prescribed limit.					
400 0 ID VI					



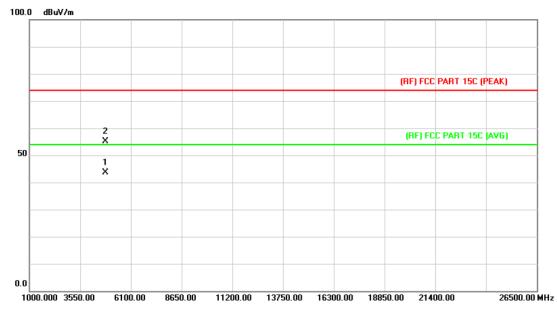
No.	Mk.	Freq.	_		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.987	43.97	14.15	58.12	74.00	-15.88	peak
2	*	4924.354	32.06	14.15	46.21	54.00	-7.79	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	CIII:	10
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2412MHz		HILL
Remark:	No report for the emission which limit.	more than 10 dB below	w the prescribed



No	. Mk	. Freq.	_		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4823.687	30.12	13.56	43.68	54.00	-10.32	AVG
2		4824.556	41.52	13.56	55.08	74.00	-18.92	peak





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	25 ℃	°C Relative Humidity: ₹					
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz					
Ant. Pol.	Vertical						
Test Mode:	TX G Mode 2412MHz		HALL				
Remark: No report for the emission which more than 10 dB below the prescribed limit.							



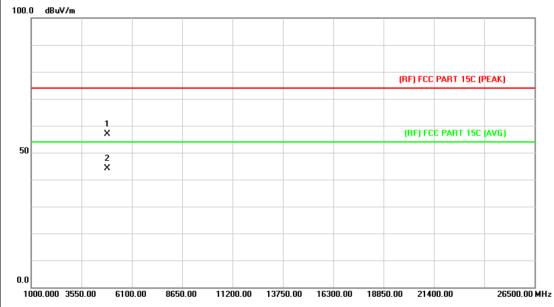
No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.654	41.90	13.56	55.46	74.00	-18.54	peak
2	*	4824.622	31.21	13.56	44.77	54.00	-9.23	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1	
Temperature:	55%			
Test Voltage:	AC 120V/60Hz		3	
Ant. Pol.	Horizontal			
Test Mode:	TX G Mode 2437MHz		HALL	
Remark: No report for the emission which more than 10 dB below the prescribed limit.				



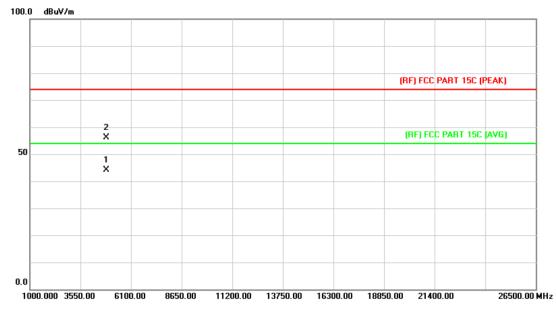
No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.735	43.01	13.86	56.87	74.00	-17.13	peak
2	*	4874.035	30.39	13.86	44.25	54.00	-9.75	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	25 °C Relative Humidity:		55%				
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz					
Ant. Pol.	Vertical						
Test Mode:	TX G Mode 2437MHz		HALL				
Remark: No report for the emission which more than 10 dB below the prescribed limit.							



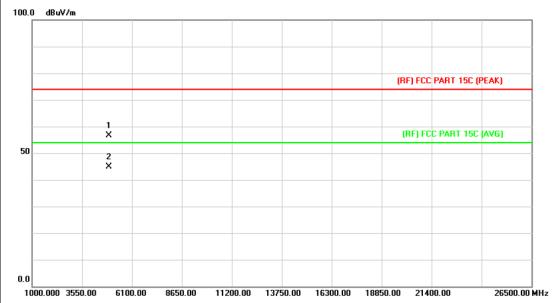
	No.	Mk.	Freq.			Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4873.854	30.37	13.86	44.23	54.00	-9.77	AVG
2			4874.685	42.35	13.86	56.21	74.00	-17.79	peak





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EUT:	Smart LED Colorful Bulb Model:		XM-JPLB1				
Temperature:	25 ℃ Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX G Mode 2462MHz		ALL LAND				
Remark:	No report for the emission wh	nich more than 10 dB belo	w the				
	prescribed limit.						



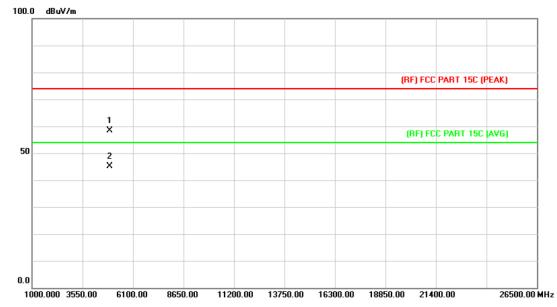
N	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.608	42.39	14.15	56.54	74.00	-17.46	peak
2	*	4923.987	30.74	14.15	44.89	54.00	-9.11	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	25 ℃	25 °C Relative Humidity: 55%					
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX G Mode 2462MHz		HILL				
Remark:	No report for the emission wh	No report for the emission which more than 10 dB below the					
	prescribed limit.						



No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4923.574	44.18	14.15	58.33	74.00	-15.67	peak
2	*	4923.621	30.89	14.15	45.04	54.00	-8.96	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	<b>25</b> ℃	55%					
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal	Horizontal					
Test Mode:	TX N(HT20) Mode 2412MHz		HILL				
Remark:	No report for the emission which more than 10 dB below the						
	prescribed limit.						



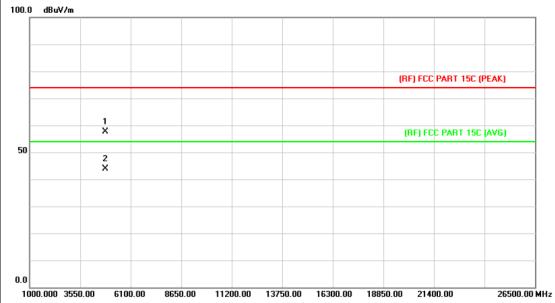
No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4823.587	30.22	13.56	43.78	54.00	-10.22	AVG
2		4824.351	43.69	13.56	57.25	74.00	-16.75	peak





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	25 ℃ Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX N(HT20) Mode 2412MHz		HALL				
Remark:	No report for the emission which	more than 10 dB below	w the				
	prescribed limit.						



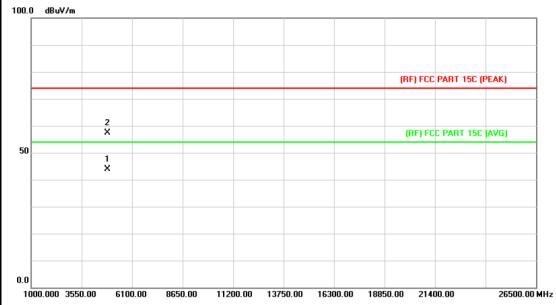
No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4823.684	44.09	13.56	57.65	74.00	-16.35	peak
2	*	4824.521	30.41	13.56	43.97	54.00	-10.03	AVG





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EUT:	Smart LED Colorful Bulb	XM-JPLB1					
Temperature:	25 °C Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Horizontal						
Test Mode:	TX N(HT20) Mode 2437MHz		A STATE OF THE STA				
Remark:	No report for the emission whic	h more than 10 dB below	w the				
	prescribed limit.						



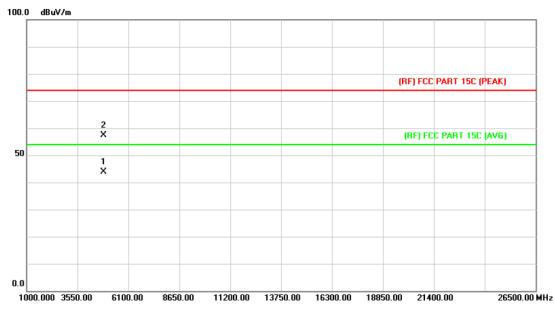
N	o. Mł	κ. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4873.985	30.01	13.86	43.87	54.00	-10.13	AVG
2		4874.025	43.52	13.86	57.38	74.00	-16.62	peak





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EUT:	Smart LED Colorful Bulb Model:						
Temperature:	25 °C Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX N(HT20) Mode 2437MHz		HALL				
Remark:	No report for the emission wh	ich more than 10 dB belo	w the				
	prescribed limit.						



N	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4873.608	29.96	13.86	43.82	54.00	-10.18	AVG
2			4874.621	43.40	13.86	57.26	74.00	-16.74	peak





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Smart LED Colorful Bulb	Model:	XM-JPLB1			
<b>25</b> ℃	Relative Humidity:	55%			
AC 120V/60Hz		19			
Horizontal					
TX N(HT20) Mode 2462MHz		Alka			
No report for the emission which more than 10 dB below the prescribed limit.					
	25 °C AC 120V/60Hz Horizontal TX N(HT20) Mode 2462MHz No report for the emission which	25 °C Relative Humidity:  AC 120V/60Hz  Horizontal  TX N(HT20) Mode 2462MHz  No report for the emission which more than 10 dB below			



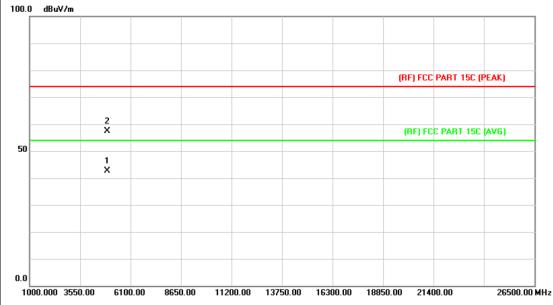
No	o. MI	k. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4923.854	28.71	14.15	42.86	54.00	-11.14	AVG
2		4924.341	42.74	14.15	56.89	74.00	-17.11	peak





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	0 (15001 (151		XM-JPLB1			
EUT:	Smart LED Colorful Bulb Model: XM-					
Temperature:	25 ℃ Relative Humidity: 55%					
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Vertical					
Test Mode:	TX N(HT20) Mode 2462MHz					
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					



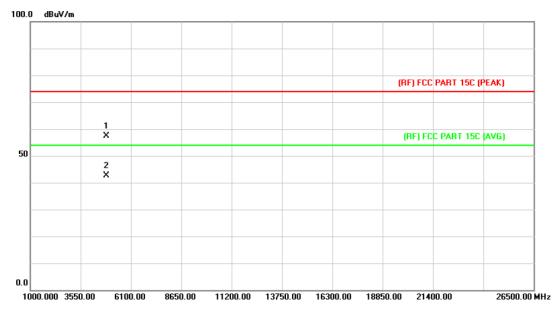
N	o. M	k. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4923.874	28.42	14.15	42.57	54.00	-11.43	AVG
2		4924.084	43.20	14.15	57.35	74.00	-16.65	peak





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EUT:	Smart LED Colorful Bulb Model: XM-JF						
Temperature:	25 °C Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz					
Ant. Pol.	Horizontal						
Test Mode:	TX N(HT40) Mode 2422MHz		Allan				
Remark:	No report for the emission wh	No report for the emission which more than 10 dB below the					
	prescribed limit.						



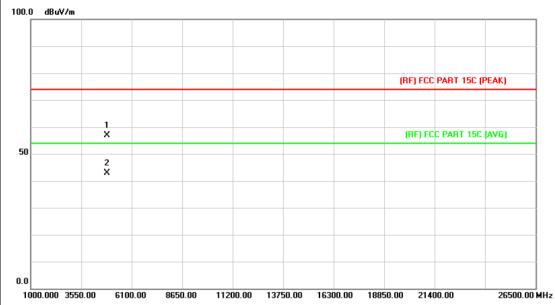
No	. Mk.	Freq.			Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4844.054	43.64	13.68	57.32	74.00	-16.68	peak
2	*	4844.321	28.89	13.68	42.57	54.00	-11.43	AVG





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EUT:	Smart LED Colorful Bulb	XM-JPLB1						
Temperature:	25 ℃	25 ℃ Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz						
Ant. Pol.	Vertical	Vertical						
Test Mode:	TX N(HT40) Mode 2422MHz		A B D P					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.							



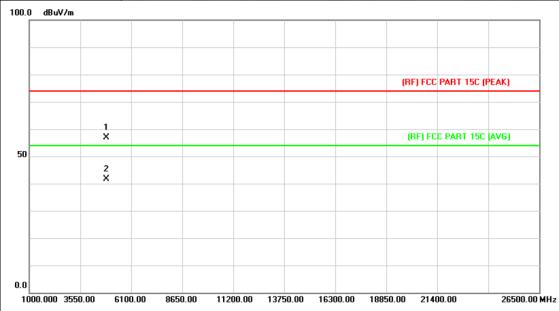
No	. Mk	. Freq.			Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4843.956	43.19	13.68	56.87	74.00	-17.13	peak
2	*	4844.221	29.14	13.68	42.82	54.00	-11.18	AVG





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EUT:	Smart LED Colorful Bulb	XM-JPLB1						
Temperature:	25 ℃	°C Relative Humidity: 55%						
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz						
Ant. Pol.	Horizontal							
Test Mode:	TX N(HT40) Mode 2437MHz		Hilliam					
Remark:	No report for the emission which	No report for the emission which more than 10 dB below the						
	prescribed limit.							



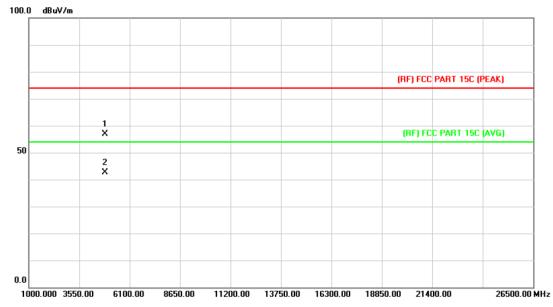
	No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4873.984	43.01	13.86	56.87	74.00	-17.13	peak
2		*	4874.521	27.70	13.86	41.56	54.00	-12.44	AVG





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EUT:	Smart LED Colorful Bulb	art LED Colorful Bulb <b>Model</b> : XM-JP					
Temperature:	25 ℃	°C Relative Humidity: 55%					
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz					
Ant. Pol.	Vertical						
Test Mode:	TX N(HT40) Mode 2437MHz		Hilliam				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						



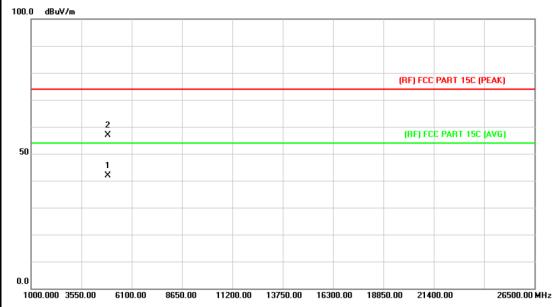
No.	Mk.	Freq.	_		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4873.691	43.12	13.86	56.98	74.00	-17.02	peak
2	*	4874.674	28.79	13.86	42.65	54.00	-11.35	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1			
Temperature:	25 °C	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz		33			
Ant. Pol.	Horizontal					
Test Mode:	TX N(HT40) Mode 2452MHz		HILL			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					



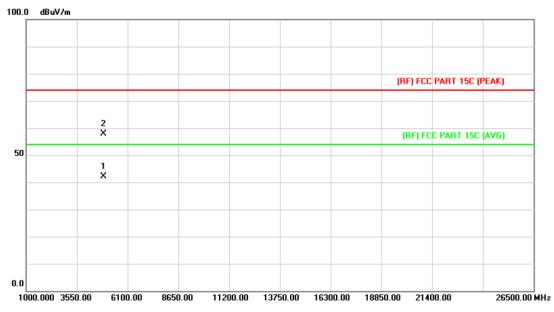
No	. Mk	. Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4903.574	27.83	14.03	41.86	54.00	-12.14	AVG
2		4904.054	42.95	14.03	56.98	74.00	-17.02	peak





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	<b>25</b> ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz	illin)	3				
Ant. Pol.	Vertical	Vertical					
Test Mode:	TX N(HT40) Mode 2452MHz		HILL				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						



No	o. Mł	κ. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4903.841	28.21	14.03	42.24	54.00	-11.76	AVG
2		4904.671	43.91	14.03	57.94	74.00	-16.06	peak



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# 6. Restricted Bands Requirement

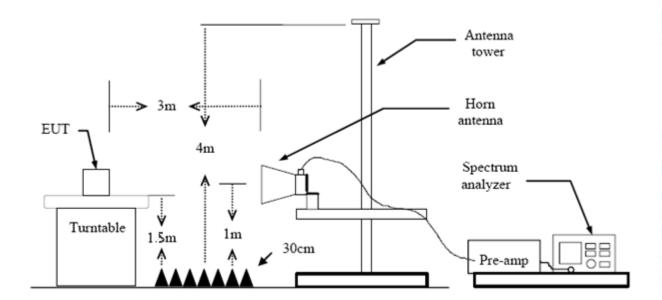
#### 6.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

6.1.2 Test Limit

Restricted Frequency	Class B (dB	suV/m)(at 3 M)
Band (MHz)	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

### 6.2 Test Setup



#### 6.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.



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(4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

## 6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

#### 6.5 Test Data

Please see the next page.

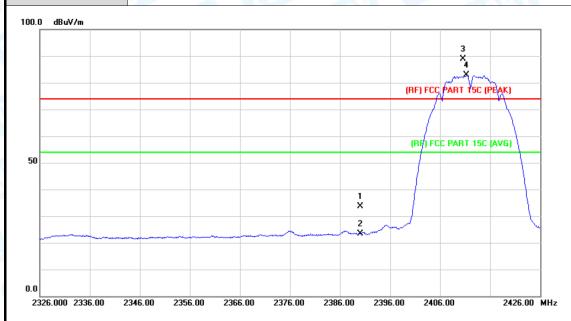




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## (1) Radiation Test

EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	AC 120V/60Hz	AC 120V/60Hz					
Ant. Pol.	Horizontal	WILL DO	HILL				
Test Mode:	TX B Mode 2412MHz	TX B Mode 2412MHz					
Remark:	N/A	- 13V					



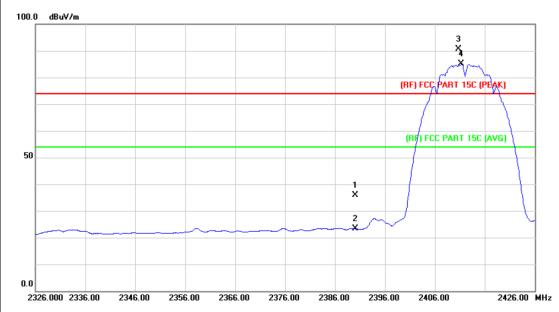
No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	32.80	0.77	33.57	74.00	-40.43	peak
2		2390.000	22.66	0.77	23.43	54.00	-30.57	AVG
3	Χ	2410.600	88.12	0.86	88.98	Fundamental	Frequency	peak
4	*	2411.300	81.94	0.86	82.80	Fundamental	Frequency	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2412MHz		HILL
Remark:	N/A		



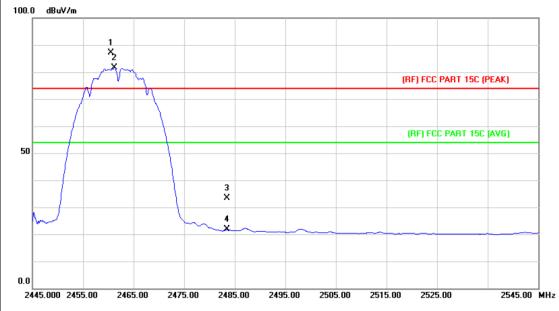
No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	35.00	0.77	35.77	74.00	-38.23	peak
2		2390.000	22.51	0.77	23.28	54.00	-30.72	AVG
3	Χ	2410.700	89.70	0.86	90.56	Fundamental	Frequency	peak
4	*	2411.300	84.16	0.86	85.02	Fundamental	Frequency	AVG





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EUT:	Smart LED Colorful Bulb	XM-JPLB1				
Temperature:	<b>25</b> ℃	Relative Humidity:	55%			
Test Voltage:	AC 120V/60Hz					
Ant. Pol.	Horizontal					
Test Mode:	TX B Mode 2462MHz					
Remark:	N/A					



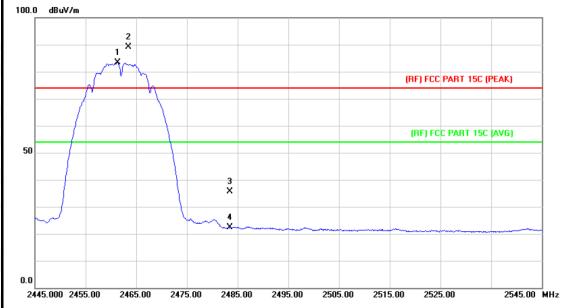
No	o. Mł	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2460.600	86.19	1.06	87.25	Fundamenta	l Frequency	peak
2	*	2461.200	80.46	1.07	81.53	Fundamenta	l Frequency	AVG
3		2483.500	32.26	1.17	33.43	74.00	-40.57	peak
4		2483.500	20.59	1.17	21.76	54.00	-32.24	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	and i	3
Ant. Pol.	Vertical		
Test Mode:	TX B Mode 2462MHz		Hilling
Remark:	N/A		



No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2461.300	82.21	1.07	83.28	Fundamenta	l Frequency	AVG
2	X	2463.400	88.05	1.08	89.13	Fundamenta	l Frequency	peak
3		2483.500	34.54	1.17	35.71	74.00	-38.29	peak
4		2483.500	21.12	1.17	22.29	54.00	-31.71	AVG





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UT:			Sma	rt LED Colo	rful Bulb	Mode	l:	XM-	JPLB1
emp	eratu	re:	25 °	C	33	Relati	ve Humidity	: 55%	Billion
est V	/oltag	e:	AC 1	20V/60Hz		1980	(IIII)	33	
\nt. F	Pol.		Horiz	zontal	. Allo		1 67	-	a
est N	Mode:		TX	Mode 241	2MHz	THE STATE		H.A.	1 leave
Rema	rk:		N/A	Alle			CITI'S		_ (
110.0	dBuV/m								
								3	
							(RF) FCC PAR	× 4	
									$\rightarrow$
						1	(RF) FCC PAI	RT 15C (AVG)	$\dashv$
50						×			
						2 X			
****									
-10									
2323.	.000 233	3.00 23	343.00	2353.00 236	33.00 2373.00	2383.00 23	393.00 2403.00	24	23.00 MHz
No	. Mk	. Fre	eq.	Reading Level	Correct Factor		Limit	Over	
		MH	łz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detecto
		2390.	000	49.94	0.77	50.71	74.00	-23.29	peak
1							E4.00	40.04	
2		2390.	000	33.39	0.77	34.16	54.00	-19.84	AVG
	X	2390. 2410.		33.39 86.84	0.77	34.16 87.70	54.00 Fundamental F		AVG





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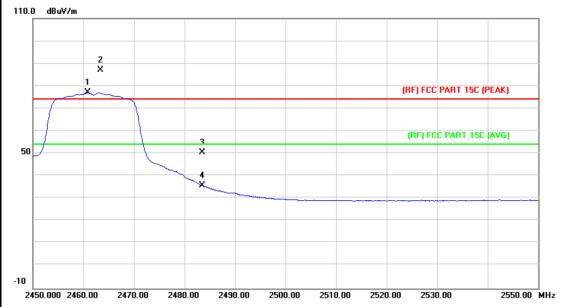
EUT:			Sma	rt LE	D Co	lorful	Bulb			Model: XM-JPL					-JPLE	31
Гетр	eratu	re:	25 °C	C	CIL		)			Relat	ive H	umid	lity:	55%	6	J
Test \	/oltag	e:	AC 1	20V	/60Hz	7		(T)				(61)				n.
۱nt. I	Pol.		Verti	cal		9	11.7	فالرا						M		
Test I	Mode:		TX C	Э Мо	de 24	12MF	Ηz		6	W.E			4	187	تعليا	
Rema	ırk:		N/A				45	3	1		e	M				1
110.0	dBuV/m															_
														4		
														3 X		
											(	RF) FCC	PART	15C (REA)	0	-
50										1 X		(RF) FØ	C PAR	T 15C (AVI	i) \	
30										^						
										2 X						
-10																
	.000 233	3.00 2	2343.00	2353	.00 2	2363.00	2373	3.00	2383	.00 2	393.00	2403	3.00		2423.00	MH
				Re	ading	g C	Corre	ct	Mea	sure-						
No	. Mk	. Fr	eq.		evel	_	Facto	or	m	ent	Li	mit	(	Over		
					ID 17				dBi	uV/m	di	3uV/m	<u> </u>	dB	Dete	ecto
		M	Hz	(	lBu∀		dB/m		ub	uv/III	u	Ju v/II	•			
1		M 2390			9.22		0.77			9.99		4.00		24.01	pe	ak
1 2			.000	4					49		7		-	24.01 19.85		ak /G
	*	2390	0.000	3	9.22		0.77		49 34	9.99	7	4.00 4.00	-		Α\	





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	(inter-	3
Ant. Pol.	Horizontal		
Test Mode:	TX G Mode 2462MHz		HILL
Remark:	N/A		



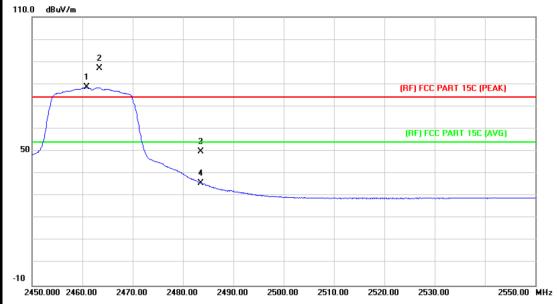
No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2460.900	75.98	1.06	77.04	Fundamenta	I Frequency	AVG
2	Χ	2463.400	86.00	1.08	87.08	Fundamenta	I Frequency	peak
3		2483.500	49.18	1.17	50.35	74.00	-23.65	peak
4		2483.500	34.69	1.17	35.86	54.00	-18.14	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	illin)	3
Ant. Pol.	Vertical		
Test Mode:	TX G Mode 2462MHz		HILL
Remark:	N/A		



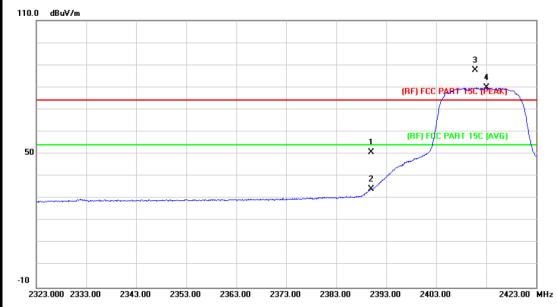
N	o. MI	k. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	2460.900	77.46	1.06	78.52	Fundamental	Frequency	AVG
2	X	2463.400	85.95	1.08	87.03	Fundamental	Frequency	peak
3		2483.500	48.79	1.17	49.96	74.00	-24.04	peak
4		2483.500	34.60	1.17	35.77	74.00	-38.23	peak





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	<b>25</b> ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		9
Ant. Pol.	Horizontal		
Test Mode:	TX N(HT20) Mode 2412MHz		Allen
Remark:	N/A		



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	49.94	0.77	50.71	74.00	-23.29	peak
2		2390.000	33.39	0.77	34.16	54.00	-19.84	AVG
3	Χ	2410.800	86.84	0.86	87.70	Fundamenta	l Frequency	peak
4	*	2413.100	78.86	0.86	79.72	Fundamenta	I Frequency	AVG





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EUT	T:		Sma	rt LED	Color	rful Bulb		Mo	Model: XM-JPI				
Гem	peratu	re:	25 °	С	M	N		Re	lativ	e Humidi	ty: 55	5%	
Test	t Voltag	e:	AC 1	120V/6	0Hz	A	50			CUI	113		
۹nt.	. Pol.		Verti	cal		111				10			
Test	t Mode:		TXN	\(HT20	) Moc	de 2412I	ИНz	(111)	M		2 /	R. D. San	
Ren	nark:		N/A	113	a land		SIN	60			1911		
110.0	dBuV/m												
											4		
										4951500	X 3		
										(RF) FCC P	ART 15C (RE	AKI	
										(DE) Edo			
50									1 X	(RF) FUC	PART 15C (A	VGJ	
									2				
									×				
-10													
23	23.000 233	3.00 2	2343.00	2353.00	2363	3.00 237	3.00	2383.00	239	33.00 2403.0	00	2423.00 MH	
				Dan	alian ar	0	-4	NA					
N	lo. Mk	Fr	eq.	Rea Le		Corre Fact		Measu ment		Limit	Over		
	10. IVIII		Hz	dBı				dBuV/		dBuV/m	dB	Detecto	
						dB/m							
		2390		49.		0.77		49.9		74.00	-24.0		
1		ാമവ	.000	33.	38	0.77		34.1	5	54.00	-19.8	5 AVG	
2		2390						77.7	2	Fundamenta	l Frequency	AVC	
	*	2413	.100	76.	86	0.86	,	11.11	_		ii i requerioj	, , , ,	





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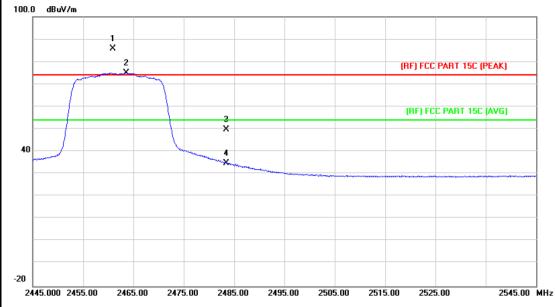
UT:		Smar	t LED	Colorf	ul Bulb	N. P.	Мо	del:			XM-	JPLE	31
emperatu	ire:	25 ℃			13	Jen	Rel	lativ	e Humi	dity:	55%		H
est Voltaç	ge:	AC 12	20V/60	Hz			1		(2)	$M_{ij}$	19		n.
nt. Pol.		Horiz	ontal		B.H.	Sec.			1 6		and the		
est Mode	:	TX N	(HT20)	Mode	e 2462N	lHz	1111	W		-	All		
Remark:		N/A	AB	No.	-		6		600	130			
00.0 dBuV/m													_
40	2 X 1 X			3 X 4							15C (PEAK)		3
2445.000 245	55.00 24	65.00	2475.00	2485.0	00 2495.	00 25	505.00	251	5.00 252	25.00	25	545.00	           
	. F.,	. ~	Read		Corre		easu		Limit	_	Over		
NIO MAI	<. Fre	<del>.</del> q.	Lev	ei	Facto	)I.	ment	L				<b>D</b> :	_
No. M			· · ·				arn. N.C.			m	dB	Dete	ecto
	MH	- Hz	dBu		dB/m		dBuV/i		dBuV/i	"			
1 *	MH 2460.	1z .700	75.8	89	1.06		76.9	5	dBuV/i			A۱	۷G
	MH	1z .700		89				5		ntal Fred	quency		
1 *	MH 2460.	700 800	75.8	89 36	1.06		76.9	5	Fundame	ntal Fred	quency		ak





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	and it	
Ant. Pol.	Vertical		
Test Mode:	TX N(HT20) Mode 2462MHz		HILL
Remark:	N/A		
· · · · · · · · · · · · · · · · · · ·			



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2460.900	84.60	1.06	85.66	Fundamenta	l Frequency	peak
2	*	2463.600	73.98	1.08	75.06	Fundamenta	I Frequency	AVG
3		2483.500	48.59	1.17	49.76	74.00	-24.24	peak
4		2483.500	33.59	1.17	34.76	54.00	-19.24	AVG





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UT:		Smart LED Colorful Bulb Model: XN						XM-JPLE	M-JPLB1	
Tempe	rature:	25 °C				Relativ	e Humidity:	55%		
est V	oltage:	AC 1	20V/60Hz		180		an l	9		
nt. P	ol.	Horiz	zontal	113	Section 1		1 Com			
est M	ode:	TXN	I(HT40) Mod	de 2422N	ИHz	MILL DO	2	Hilling		
Remar	k:	N/A	ABO			10:13				
100.0 d	lBuV/m								_	
							3 3			
							4 (ŘE) FCC PART 1	<del>5c (Pea</del> k)		
									-	
							(RF) FCC PART	15C (AVG)		
50				1 X						
				2						
			- Laboratoria							
0.0 2346.0	00 2356.00	2366.00	2376.00 238	86.00 2396	5.00 240	06.00 241	6.00 2426.00	2446.00	_ мн	
No.	Mk.	Freq.	Reading Level	Correc		asure- nent	Limit O	ver		
		MHz	dBu∀	dB/m	dE	3uV/m	dBuV/m	dB Dete	ecto	

0.77

0.77

0.89

0.89

44.38

31.98

90.34

78.66

74.00

54.00

Fundamental Frequency

Fundamental Frequency

-29.62

-22.02

peak

AVG

peak

AVG

**Emission Level= Read Level+ Correct Factor** 

43.61

31.21

89.45

77.77

2390.000

2390.000

2418.800

2420.300

1

2

3

4

Χ





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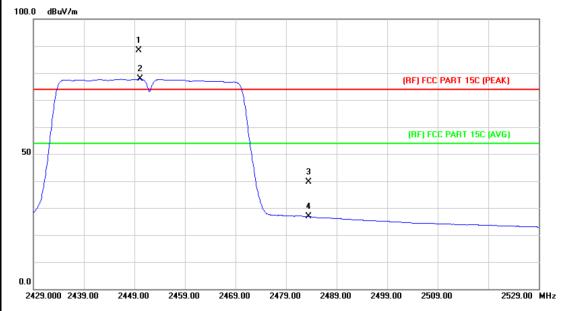
EUT:			Sma	rt LED	Colo	rful Bulb		Model		XM-	JPLB1
Tem	peratui	e:	25 °	C		33		Relativ	e Humidity	<b>y</b> : 55%	BAR
Test	Voltag	e:	AC 1	120V/6	0Hz		file?				
Ant.	Pol.		Verti	cal		P. H.	1				
Test	Mode:		TXN	N(HT40	) Mod	de 2422N	ИHz	THE PARTY OF THE P			Mes
Rem	ark:		N/A	Mil	1		A.				_ (
100.0	dBuV/m										
									3 3		
-									(OF) FCC PAI	RT 15C (PEAK)	
							1		V		
									(RF) FCC PA	ART 15C (AVG	
50											+
-						1 X					$\dashv$
						2					
-						_ X					
-											
0.0	46.000 235i	6.00 2	366.00	2376.00	238	6.00 2396	5.00 24	06.00 24	16.00 2426.00	24	146.00 MH;
201				2010.00	200	2.00			2120.00		. 10.00
					· ·		-1 14				
N	lo. Mk.	Fr	eq.	Rea Le	ding	Corre Fact		easure- ment	Limit	Over	
- 1	O. IVIK.										Dataata
			Hz		u∨	dB/m		IBuV/m	dBuV/m	dB	Detecto
1		2390	.000	38.	.60	0.77	,	39.37	74.00	-34.63	peak
2		2390	.000	26.	.57	0.77		27.34	54.00	-26.66	AVG
3	Х	2419	.300	85.	72	0.89		36.61	Fundamental F	requency	peak
4	*	2420	200	75.	01	0.89	-	75.90			AVG
		0				3.00			Fundamental F	-requency	





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1					
Temperature:	<b>25</b> ℃	Relative Humidity:	55%					
Test Voltage:	AC 120V/60Hz							
Ant. Pol.	Horizontal							
Test Mode:	TX N(HT40) Mode 2452MHz							
Remark:	N/A							



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2449.900	87.33	1.02	88.35	Fundamental	Frequency	peak
2	*	2450.100	76.74	1.02	77.76	Fundamental	Frequency	AVG
3		2483.500	38.50	1.17	39.67	74.00	-34.33	peak
4		2483.500	25.70	1.17	26.87	54.00	-27.13	AVG





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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1						
Temperature:	25 ℃	Relative Humidity:	55%						
Test Voltage: AC 120V/60Hz									
Ant. Pol. Vertical									
Test Mode:	TX N(HT40) Mode 2452MHz		MATERIAL						
Remark:	N/A								
100.0 dBuV/m									
	×								
	2	(RF) FCC PART 15	ic (Peak)						

Ì		×						
ŀ		2 X				(RF) FCC	PART 15C (F	PEAK)
		V						
						(BE) EC	C PART 15C	(AVC)
- 1				<del>                                     </del>		(nr) rc	C PART 15C	MVUJ
50	+				-			
ŀ					X 3			
	/				4 ×	 		
0.0								

No.	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2449.700	85.30	1.02	86.32	Fundamenta	l Frequency	peak
2	*	2450.200	74.34	1.02	75.36	Fundamenta	l Frequency	AVG
3		2483.500	36.46	1.17	37.63	74.00	-36.37	peak
4		2483.500	25.07	1.17	26.24	54.00	-27.76	AVG

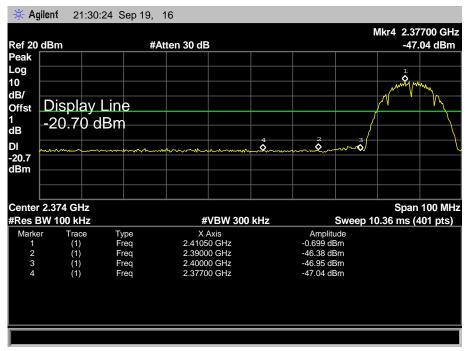


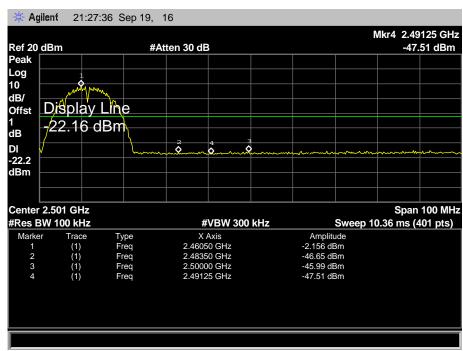


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## (2) Conducted Test

EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1						
Temperature:	25 ℃ Relative Humidity: 55%								
Test Voltage:	AC 120V/60Hz								
Test Mode:	TX B Mode 2412MHz / TX B Mo	TX B Mode 2412MHz / TX B Mode 2462MHz							
Remark:	The EUT is programed in continuously transmitting mode								



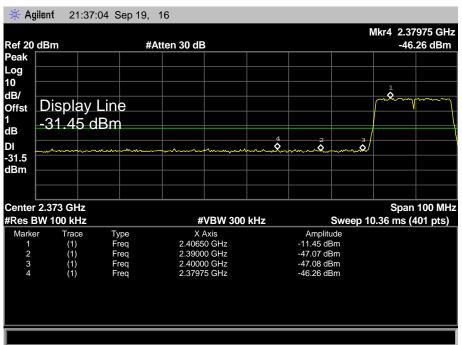


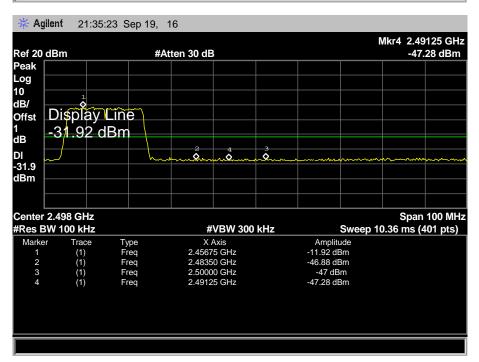




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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1					
Temperature:	25 ℃ Relative Humidity: 55%							
Test Voltage:	AC 120V/60Hz							
Test Mode:	TX G Mode 2412MHz / TX G Mode 2462MHz							
Remark:	The EUT is programed in continuously transmitting mode							



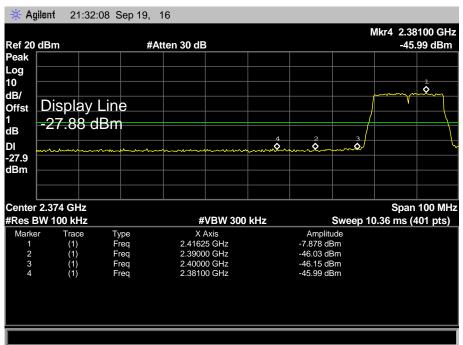


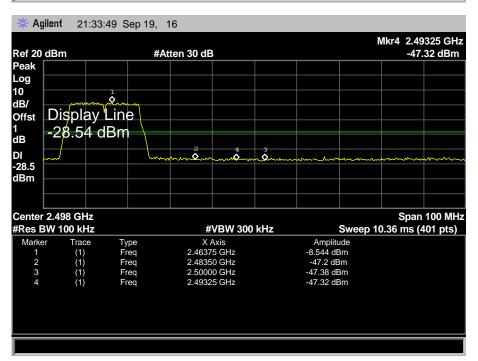




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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1						
Temperature:	25 ℃ Relative Humidity: 55%								
Test Voltage:	AC 120V/60Hz								
Test Mode:	TX N(HT20) Mode 2412MHz / TX N(HT20) Mode 2462MHz								
Remark:	The EUT is programed in continuously transmitting mode								



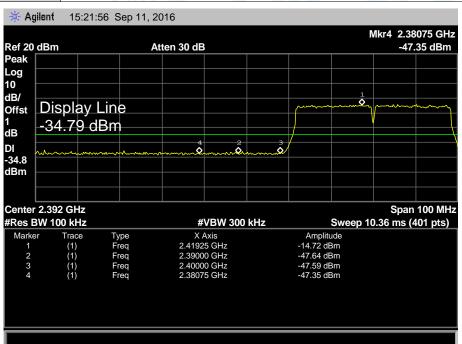


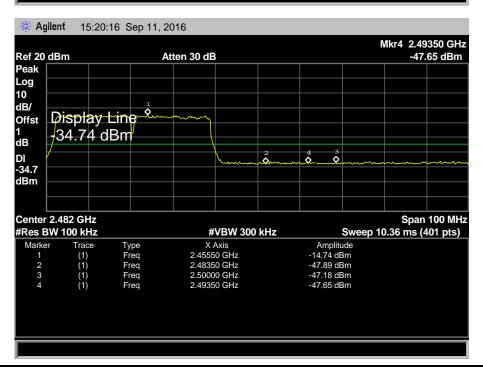




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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1						
Temperature:	25 ℃ Relative Humidity: 55%								
Test Voltage:	AC 120V/60Hz								
Test Mode:	TX N(HT40) Mode 2422MHz / TX N(HT40) Mode 2452MHz								
Remark:	The EUT is programed in continuously transmitting mode								







Report No.: TB-FCC149802

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## 7. Bandwidth Test

## 7.1 Test Standard and Limit

7.1.1 Test Standard FCC Part 15.247 (a)(2)

7.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210					
Test Item	Test Item Limit Frequency Range(MHz)				
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5			

## 7.2 Test Setup



## 7.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) The bandwidth is measured at an amplitude level reduced 6dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
- (3)Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:100 kHz, and Video Bandwidth:300 kHz, Detector: Peak, Sweep Time set auto.

## 7.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, middle and high channel for the test.



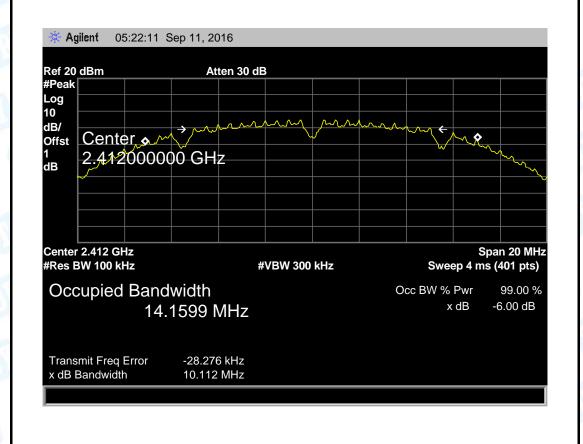


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## 7.5 Test Data

EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1	
Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	AC 120V/60Hz			
Test Mode:	TX 802.11B Mode			
Channel frequence	hannel frequency 6dB Bandwidth 99% Bandwidth		Limit	
(MHz)	(MHz)	(MHz)	(MHz)	
2412	10.112	14.1599		
2437	9.988	14.2788	>=0.5	
2462	9.765	14.2831		

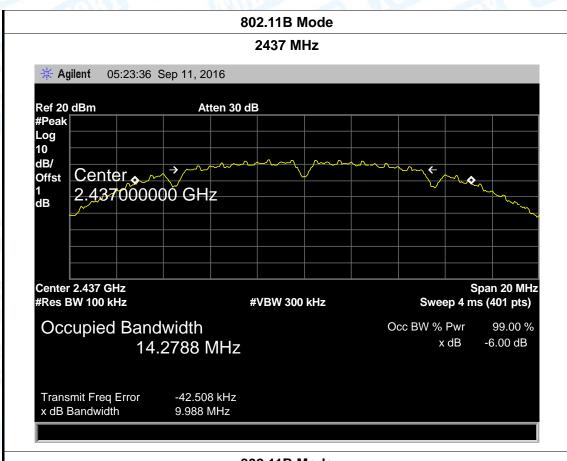
#### 802.11B Mode







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#### 802.11B Mode 2462 MHz \* Agilent 05:24:40 Sep 11, 2016 Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Center >/ Offst 2.462000000 GHz 1 dB Center 2.462 GHz Span 20 MHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 4 ms (401 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 14.2831 MHz Transmit Freq Error -43.910 kHz x dB Bandwidth 9.765 MHz

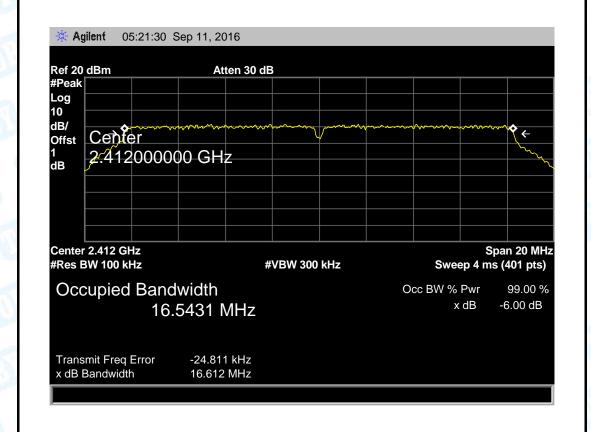




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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60Hz				
Test Mode:	ode: TX 802.11G Mode				
Channel frequen	cy 6dB Bandwidth	y 6dB Bandwidth 99% Bandwidth Limi			
(MHz)	(MHz)	(MHz)	(MHz)		
2412	16.612	16.5431			
2437	16.601	16.4828	>=0.5		
2462 16.611		16.5433			
	802.11G	Mode			

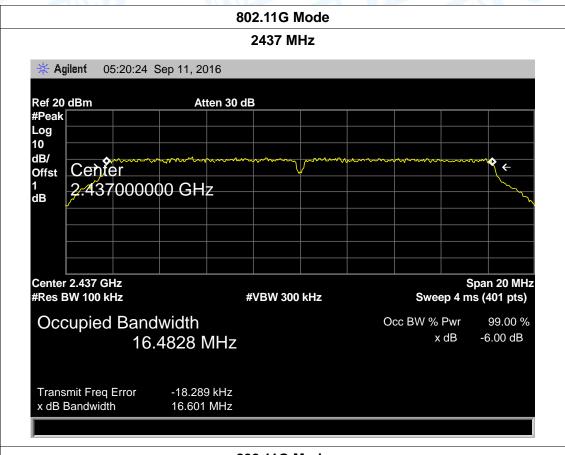
#### 302.11G Mode



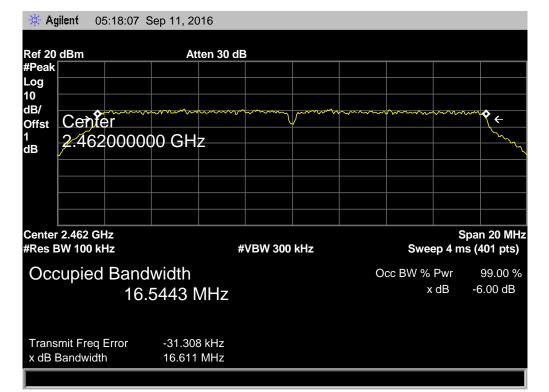


TOBY

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## 802.11G Mode



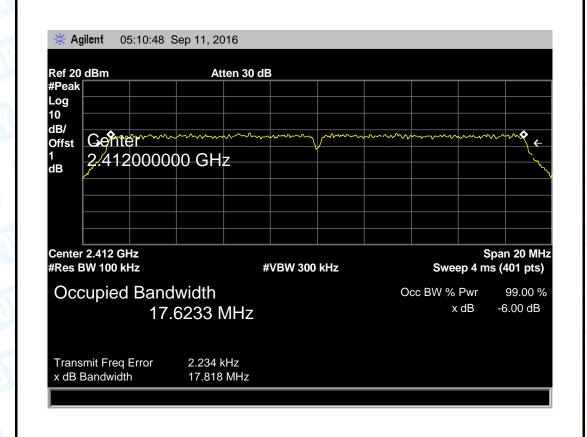




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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz	The state of the	
Test Mode:	TX 802.11N(HT20) Mode		A WILLIAM
Channel frequen	ncy 6dB Bandwidth 99% Bandwidth L		Limit
(MHz)	(MHz)	(MHz)	(MHz)
2412	17.818	17.6233	
2437	17.830	17.6259	>=0.5
2462 17.829		17.6389	
	802.11N(HT	(20) Mode	,

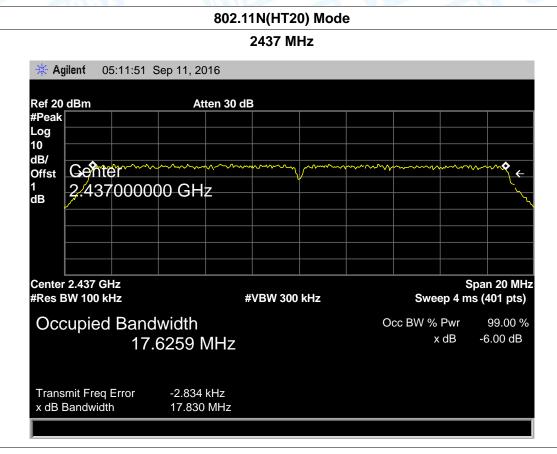
#### )2.11N(HT20) Mod







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#### 802.11N(HT20) Mode 2462 MHz \* Agilent 05:13:21 Sep 11, 2016 Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Genter Offst 1 dB 2.462000000 GHz Center 2.462 GHz Span 20 MHz #Res BW 100 kHz **#VBW 300 kHz** Sweep 4 ms (401 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 17.6389 MHz Transmit Freq Error -3.475 kHz x dB Bandwidth 17.829 MHz

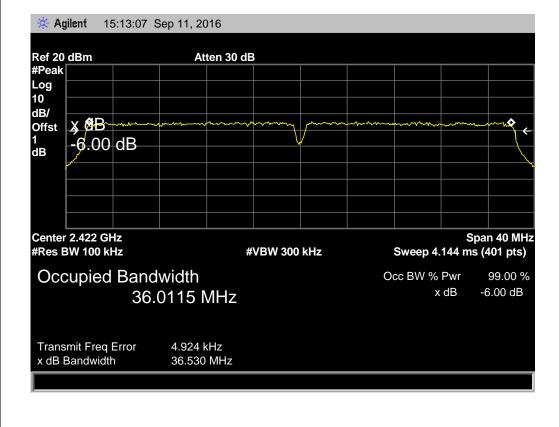




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EUT:	Smart LED Colorful Bulb	Model:	XM-JPLB1		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	AC 120V/60Hz	110			
Test Mode:	TX 802.11N(HT40) Mode				
Channel frequence	cy 6dB Bandwidth 99% Bandwidth Limit				
(MHz)	(MHz)	(MHz)	(MHz)		
2422	36.530	36.0115			
2437	36.518	35.9964	>=0.5		
2452	36.528	36.0185			
802.11N(HT20) Mode					

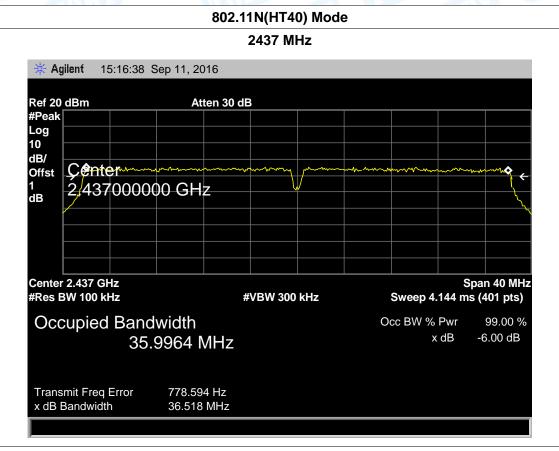
#### 1114(11120) 1110







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#### 802.11N(HT40) Mode 2452 MHz \* Agilent 15:17:21 Sep 11, 2016 Ref 20 dBm Atten 30 dB #Peak Log 10 dB/ Center~ Offst 1 dB 2,452000000 GHz Center 2.452 GHz Span 40 MHz #Res BW 100 kHz Sweep 4.144 ms (401 pts) **#VBW 300 kHz** Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 36.0185 MHz Transmit Freq Error -13.251 kHz x dB Bandwidth 36.528 MHz



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# 8. Peak Output Power Test

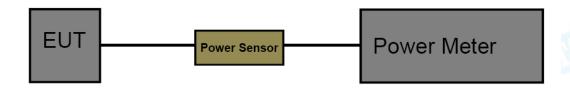
## 8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247 (b)

8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-210				
Test Item Limit Frequency Range(MH				
Peak Output Power	1 Watt or 30 dBm	2400~2483.5		

## 8.2 Test Setup



## 8.3 Test Procedure

The measurement is according to section 9.1.2 of KDB 558074 D01 DTS Meas Guidance v03r05.

The EUT was connected to RF power meter via a broadband power sensor as show the block above. The power sensor video bandwidth is greater than or equal to the DTS bandwidth of the equipment.

## 8.4 EUT Operating Condition

The EUT was set to continuously transmitting in the max power during the test.





8.5 Test Data

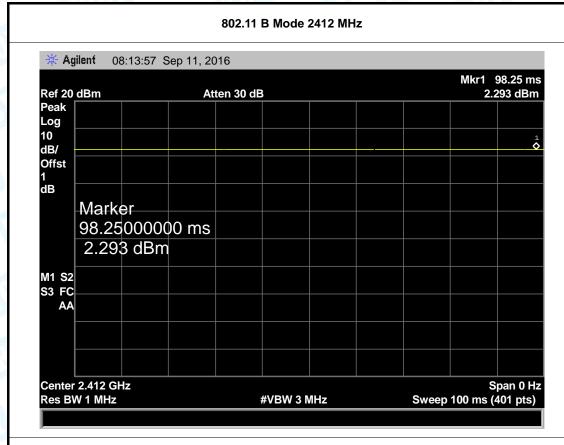
EUT:	Smart LED Colorful Bu	lb Model Name :	XM-JPLB1
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 120V/60Hz		
Mode	Channel frequency (MHz)	Test Result (dBm)	Limit (dBm)
	2412	8.42	
802.11b	2437	8.53	
	2462	8.51	
802.11g	2412	8.13	
	2437	8.20	
	2462	8.14	30
000 44	2412	7.98	30
802.11n (HT20)	2437	7.99	
(11120)	2462	7.89	
000 44	2422	7.42	
802.11n	2437	7.38	
(HT40)	2452	7.29	
	Resul	t: PASS	

Duty Cycle				
Mode	Channel frequency (MHz)	Test Result		
	2412			
802.11b	2437			
	2462			
	2412			
802.11g	2437			
	2462	- 000/		
000 44	2412	>98%		
802.11n (HT20)	2437			
(11120)	2462			
000 44m	2422			
802.11n	2437			
(HT40)	2452			
Please see belo	w plots			

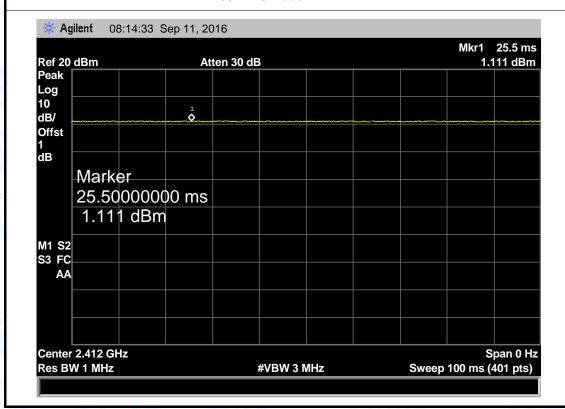




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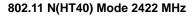


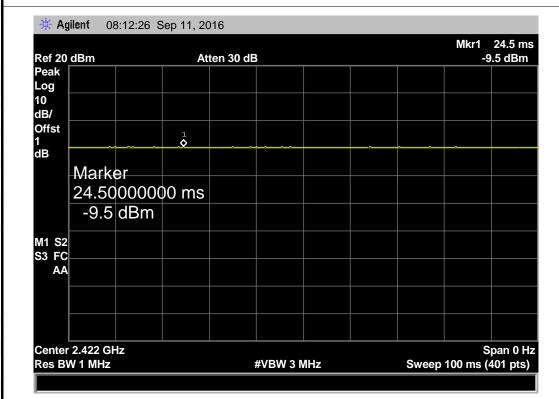






802.11 N(HT20) Mode 2412 MHz **Agilent** 08:19:05 Sep 11, 2016 Mkr1 53.5 ms Ref 20 dBm Atten 30 dB -2.658 dBm Peak Log 10 dB/ Offst 1 dB Marker 53.50000000 ms -2.658 dBm M1 S2 S3 FC AA Center 2.412 GHz Span 0 Hz Res BW 1 MHz #VBW 3 MHz Sweep 100 ms (401 pts)







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# 9. Power Spectral Density Test

## 9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.247 (e)

9.1.2 Test Limit

FCC Part 15 Subpart C(15.247)					
Test Item Limit Frequency Range(MHz)					
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5			

## 9.2 Test Setup



## 9.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v03r05.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser center frequency to DTS channel center frequency.
- (3) Set the span to 1.5 times the DTS bandwidth.
- (4) Set the RBW to: 3 kHz(5) Set the VBW to: 10 kHz
- (6) Detector: peak(7) Sweep time: auto
- (8) Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

## 9.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, middle and high channel for the test.



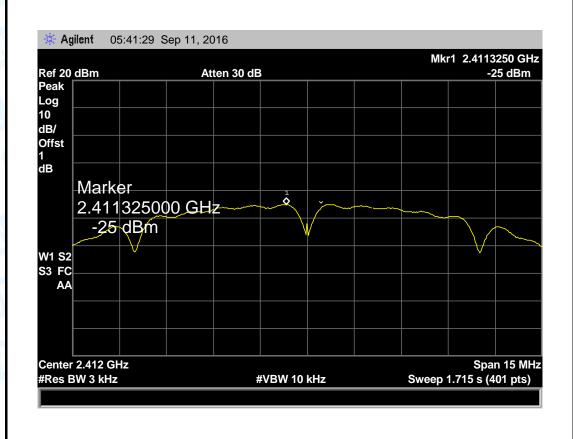


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## 9.5 Test Data

EUT:	Smart LE	D Colorful Bulb	Model:	XM-JPLB1		
Temperature:	25 ℃		Relative Humidity:	55%		
Test Voltage:	AC 120V/	60Hz				
Test Mode:	TX 802.11	802.11B Mode				
Channel Freq	uency	Power D	Power Density Limit			
(MHz)		(3 kHz/dBm)		(3 kHz/dBm) (dB		(dBm)
2412	2412		00			
2437		-25.7	76	8		
2462		-26.69				
		802 11B	Mode			

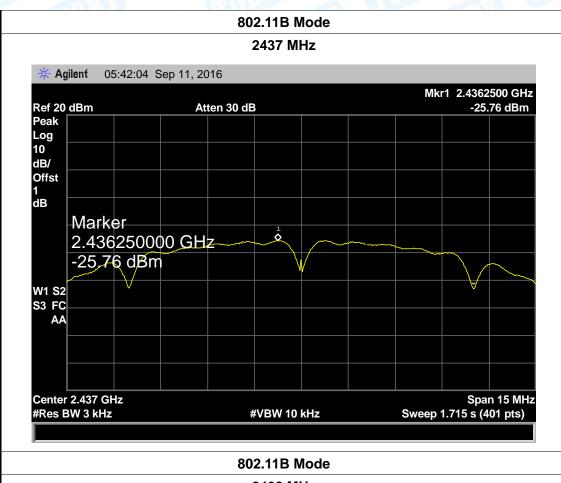
#### 802.11B Mode

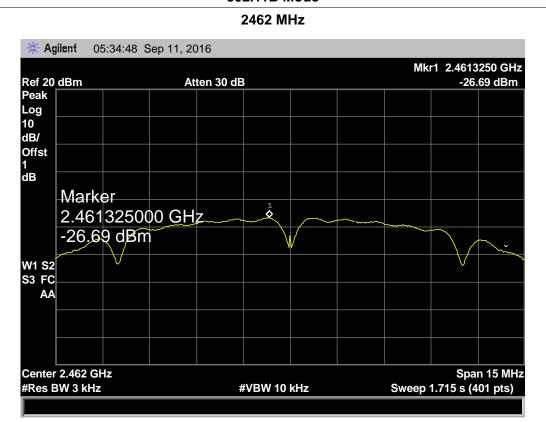






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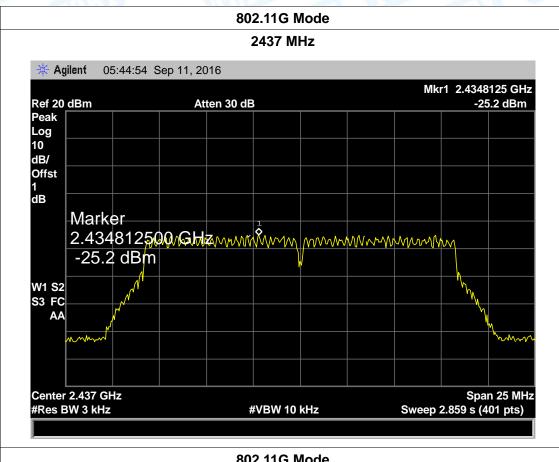
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EUT:	Smart LE	D Colorful Bulb Model:			XM-JPL	B1		
Temperature:	emperature: 25 °C		Tempera	ature:		25 ℃	All Division	
Test Voltage:	AC 120V/	60Hz	1 SEG		611	1130		
Test Mode:	TX 802.11	IG Mode			62			
Channel Freq	luency	Power D	ensity			Limit		
(MHz)		(3 kHz/dBm)			(dBm)		)	
2412		-26.26						
2437		-25.20				8		
2462		-25.	56					
		802.11G	Mode	,				
		2412	ИHz					
* Agilent 05	:44:13 Sep 11	, 2016						
Pof 20 dRm		Atton 30 dB			Mk	r1 2.4110		
Ref 20 dBm Peak		Atten 30 dB				-26.	26 dBm	





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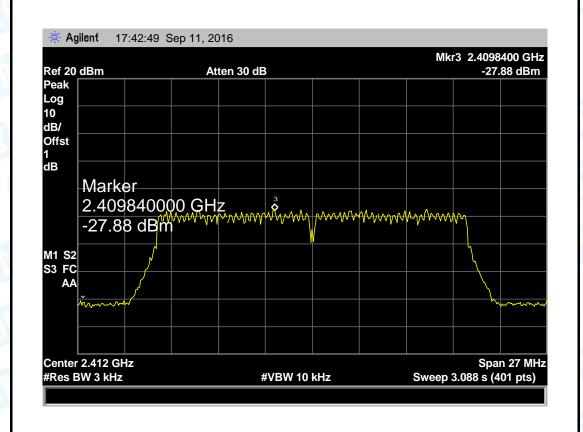
802.11G Mode 2462 MHz \* Agilent 05:45:39 Sep 11, 2016 Mkr1 2.4611250 GHz -25.56 dBm Ref 20 dBm Atten 30 dB Peak Log 10 dB/ Offst 1 dB Marker -25.56 dBm W1 S2 S3 FC AA Center 2.462 GHz Span 25 MHz #Res BW 3 kHz #VBW 10 kHz Sweep 2.859 s (401 pts)





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Smart LED Colorful Bulb		Model:	XM-JPLB1	
25 ℃		Temperature:	25 ℃	
AC 120V/	AC 120V/60Hz		THE	
TX 802.1	TX 802.11N(HT20) Mode			
uency	Power Density		Limit	
MHz) (3 kHz/dBm) (d		(dBm)		
	-27.8	8		
	-28.18		8	
	-25.3	7		
	802.11N(HT2	0) Mode		
	25 ℃ AC 120V/	25 °C AC 120V/60Hz TX 802.11N(HT20) Mode uency Power De (3 kHz/d -27.86 -28.16	25 °C Temperature:  AC 120V/60Hz  TX 802.11N(HT20) Mode  uency Power Density (3 kHz/dBm)  -27.88	







W1 S2 S3 FC AA

Center 2.462 GHz

#Res BW 3 kHz

2437 MHz 🔆 Agilent 05:48:00 Sep 11, 2016 Mkr1 2.4347725 GHz Ref 20 dBm -28.18 dBm Atten 30 dB Peak Log 10 dB/ Offst 1 dB Marker 2.434772500 GHz -28.18 dBm M1 S2 S3 FC AA Center 2.437 GHz Span 27 MHz #Res BW 3 kHz Sweep 3.088 s (401 pts) #VBW 10 kHz 802.11N(HT20) Mode 2462 MHz 🔆 Agilent 05:47:03 Sep 11, 2016 Mkr1 2.4597725 GHz -28.37 dBm Ref 20 dBm Atten 30 dB Peak Log 10 dB/ Offst 1 dB Marker 2.459772500 GHz -28.37 dBm

#VBW 10 kHz

802.11N(HT20) Mode

Span 27 MHz

Sweep 3.088 s (401 pts)





Center 2.422 GHz #Res BW 3 kHz Page: 93 of 95

:	Smart LI	ED Colorful Bulb	Model:	XM-JPLB1
perature:	25 ℃		Temperature:	25 ℃
Voltage:	AC 120\	//60Hz	20	
t Mode:	TX 802.11N(HT40) Mode			
Channel Frequency		Power Density		Limit
(MHz)		(3 kHz/	(3 kHz/dBm)	
2422		-28.8	83	
2437		-28.88		8
2452		-28.	-28.17	
		802.11N(HT	40) Mode	
		2422 [	MHz	
	7:32:49 Sep 1	1, 2016	MHz	Mkr3 2.43850 GH
* Agilent 17 Ref 20 dBm Peak	7:32:49 Sep 1		MHz	Mkr3 2.43850 GH -28.83 dBm
Ref 20 dBm Peak Log	7:32:49 Sep 1	1, 2016	MHz	
Ref 20 dBm Peak Log 10 dB/	7:32:49 Sep 1	1, 2016	MHz	
Ref 20 dBm Peak Log	7:32:49 Sep 1	1, 2016	MHz	
Ref 20 dBm Peak Log 10 dB/ Offst 1 dB		1, 2016	MHz	
Ref 20 dBm Peak Log 10 dB/ Offst 1 dB Marke	ər	Atten 30 dB	MHz	
Ref 20 dBm Peak Log 10 dB/ Offst 1 dB Marke 2.438	er 500000	Atten 30 dB	MHz	
Ref 20 dBm Peak Log 10 dB/ Offst 1 dB Marke 2.438	er 500000	Atten 30 dB	MHz	
Ref 20 dBm Peak Log 10 dB/ Offst 1 dB Marke 2.438	er 500000	Atten 30 dB	MHz	

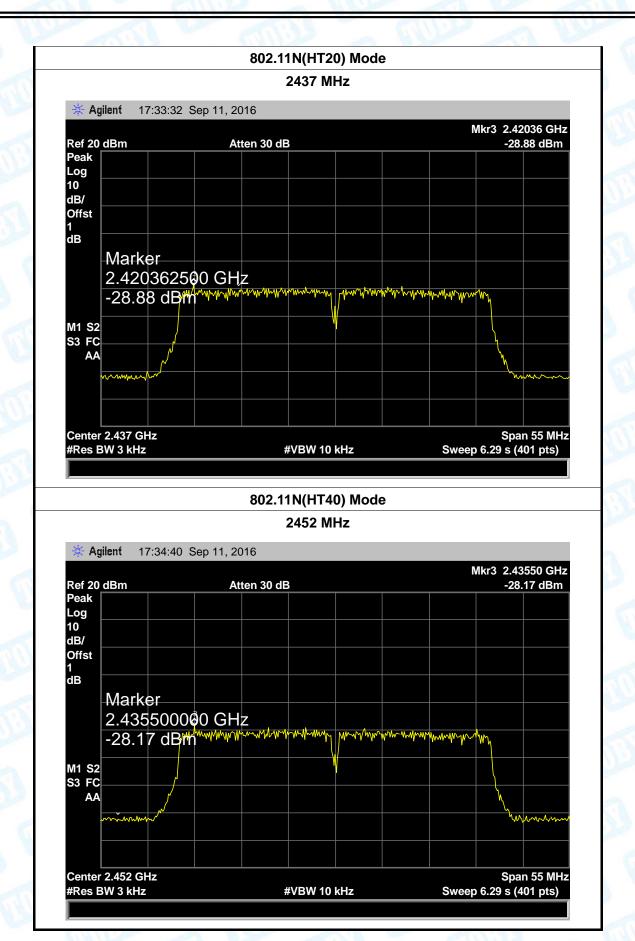
#VBW 10 kHz

Span 55 MHz Sweep 6.29 s (401 pts)





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10. Antenna Requirement

## 10.1 Standard Requirement

10.1.1 Standard FCC Part 15.203

## 10.1.2 Requirement

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

### 10.2 Antenna Connected Construction

The directional gains of the antenna used for transmitting is 2 dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

## Result

The EUT antenna is a PCB Antenna. It complies with the standard requirement.

	Antenna Type
	▶ Permanent attached antenna
Em.	□ Unique connector antenna
	□ Professional installation antenna