

Prüfbericht-Nr.: <i>Test report no.:</i>	CN213ITF 001	Auftrags-Nr.: <i>Order no.:</i>	168345016	Seite 1 von 22 <i>Page 1 of 22</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2021-11-23	
Auftraggeber: <i>Client:</i>	SPRING SUNSHINE TECHNOLOGY CO., LIMITED Room 2401-2404, 24/F., Fu Fai Commercial Centre, 27 Hillier Street, Sheung Wan, Hong Kong			
Prüfgegenstand: <i>Test item:</i>	Smart Outdoor Floodlight			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	LS270011146			
Auftrags-Inhalt: <i>Order content:</i>	FCC approval			
Prüfgrundlage: <i>Test specification:</i>	CFR47 FCC Part 15: Subpart C Section 15.247 CFR47 FCC Part 15: Subpart C Section 15.207 CFR47 FCC Part 15: Subpart C Section 15.209 CFR47 FCC Part 2.1091			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2021-11-25	Please refer to photo documents		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003170344-001, 002			
Prüfzeitraum: <i>Testing period:</i>	2021-12-03 – 2021-12-10			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	genehmigt von: <i>authorized by:</i>			
Datum: <i>Date:</i> 2021-12-23				
	Signed by: Alex Lan		Signed by: Winnie Hou	
Stellung / Position	Senior Project Engineer	Ausstellungsdatum: <i>Issue date:</i> 2021-12-23		
Stellung / Position		Department Manager		
Sonstiges / Other:				
FCC ID: 2AW95LS270011146				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged:</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specifications(s) F(ail) = failed a.m. test specifications(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

V05

Test Summary

5.1.1 ANTENNA REQUIREMENT

RESULT: Pass

5.1.2 MAXIMUM CONDUCTED OUTPUT POWER

RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY

RESULT: Pass

5.1.4 99%dB BANDWIDTH

RESULT: Pass

5.1.5 6dB BANDWIDTH

RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHz BANDWIDTH

RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION

RESULT: Pass

5.1.8 CONDUCTED EMISSION ON AC MAINS

RESULT: Pass

6.1.1 ELECTROMAGNETIC FIELDS

RESULT: Pass

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1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Photographs of the Test Set-up

Appendix B: Test Results of Conducted & Radiated Testing

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China

FCC Registration No.: 694916

IC Registration No.: 25069, CAB identifier: CN0078

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	28.09.2022
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	28.09.2022
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	28.09.2022
Power Control Unit	Tonscend	JS0806-4ADC	N/A	28.09.2022
Automation Control Unit	Tonscend	JS0806-2	21C8060396	28.09.2022
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Unwanted Emission Testing				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until
EMI Test Receiver	R&S	ESR 7	102021	10.08.2022
Signal Analyzer	R&S	FSV 40	101439	09.08.2022
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	09.08.2022
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	09.08.2022
Amplifier	R&S	SCU-18F	180070	09.08.2022
Amplifier	R&S	SCU40A	100475	09.08.2022
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	08.08.2022
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	08.08.2022
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	08.08.2022
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	13.09.2022
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A
3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	22.06.2024
Conducted Emissions testing				
Equipment	Manufacturer	Model No.	Serial No.	Cal. Until

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EMI Test Receiver	R&S	ESR3	102428	10.08.2022
Artificial Mains Network	R&S	ENV216	102333	10.08.2022
EMC32 test software	R&S	EMC32(Ver.10.50.01)	N/A	N/A

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Test Item	Uncertainty
Conducted disturbance at mains terminals	3.32 dB (150 kHz-30 MHz)
Uncertainty for Radiation Emission test (30MHz-1GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

2.7 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. Test facility located at No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, People's Republic of China. is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a Smart Outdoor Floodlight, it supports Bluetooth Low Energy wireless technology.

For details refer to the User Manual, Technical Description and Circuit Diagram.

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	Smart Outdoor Floodlight
Type Designation	LS270011146
FCC ID	2AW95LS270011146
Operating Voltage	AC 120V, 60Hz
Testing Voltage	AC 120V, 60Hz
Technical Specification of Bluetooth Low Energy	
Operating Frequency	2402 – 2480 MHz
Data rate	1Mbps
Channel Number	40 channels
Channel separation	2MHz
Modulation	GFSK
Antenna Type	ceramic chip antenna
Smart Antenna Systems:	Not Applicable
Number of Antenna	1
Antenna Gain	2.15dBi

Table 3: RF Channel and Frequency of Bluetooth Low Energy

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
00	2402.00	10	2422.00	20	2442.00	30	2462.00
01	2404.00	11	2424.00	21	2444.00	31	2464.00
02	2406.00	12	2426.00	22	2446.00	32	2466.00
03	2408.00	13	2428.00	23	2448.00	33	2468.00
04	2410.00	14	2430.00	24	2450.00	34	2470.00
05	2412.00	15	2432.00	25	2452.00	35	2472.00
06	2414.00	16	2434.00	26	2454.00	36	2474.00
07	2416.00	17	2436.00	27	2456.00	37	2476.00
08	2418.00	18	2438.00	28	2458.00	38	2478.00
09	2420.00	19	2440.00	29	2460.00	39	2480.00

3.3 Independent Operation Modes

The basic operation modes are:

- A. On, transmitting mode
 - 1. Low channel
 - 2. Middle channel
 - 3. High channel
- B. On, Operating
- C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- Block Diagram
- FCC/IC Label and Location Info
- Operation Description
- Photo Document
- Schematics
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All testing were performed according to the procedures in ANSI C63.10: 2013.

4.3 Special Accessories and Auxiliary Equipment

Table 4: List of Accessories and Auxiliary Equipment

Description	Manufacturer	Model	S/N
Notebook	Lenovo	ThinkPad X260	N/A

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 30MHz)

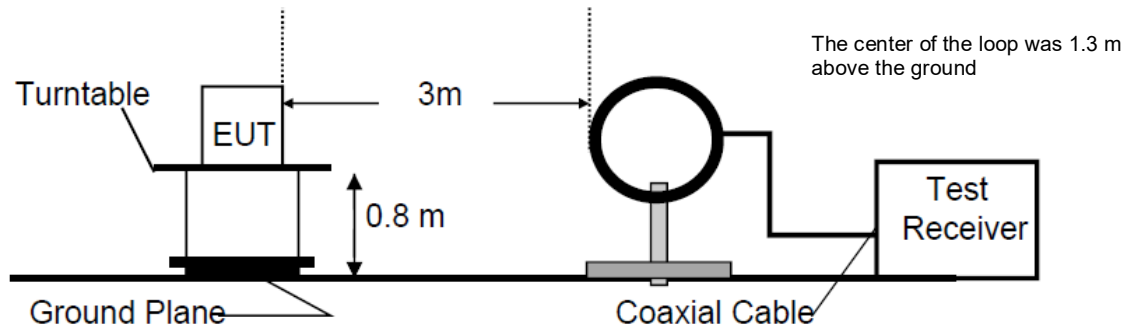


Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

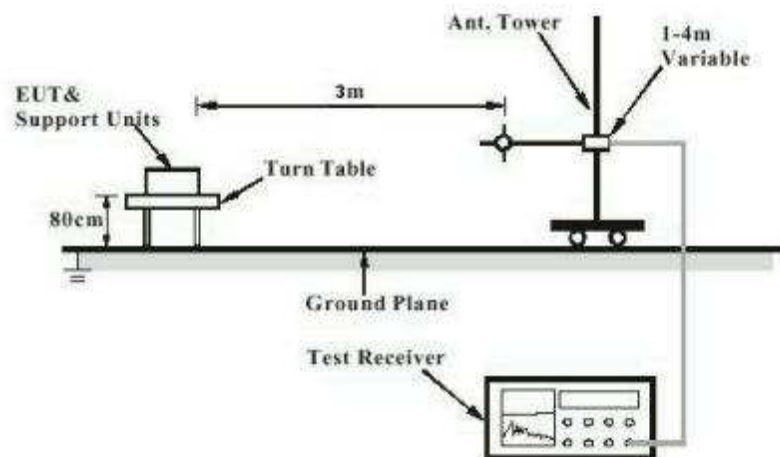


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

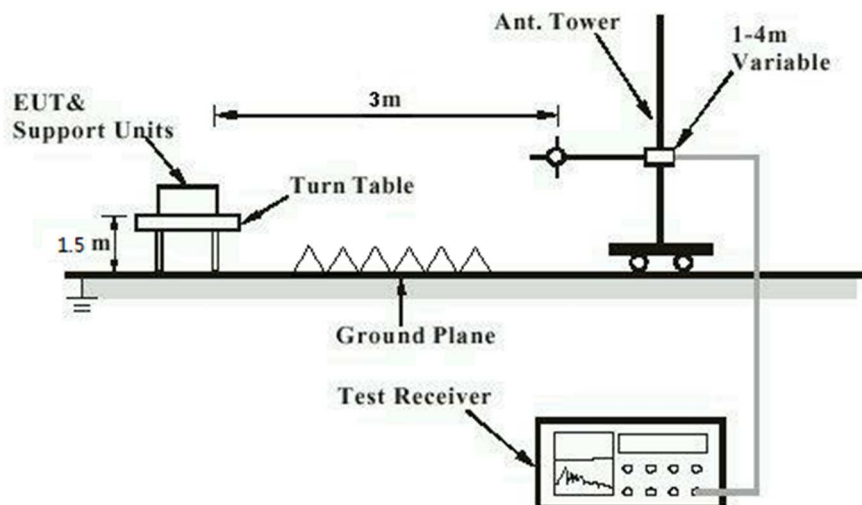


Diagram of Measurement Configuration for Mains Conduction Measurement

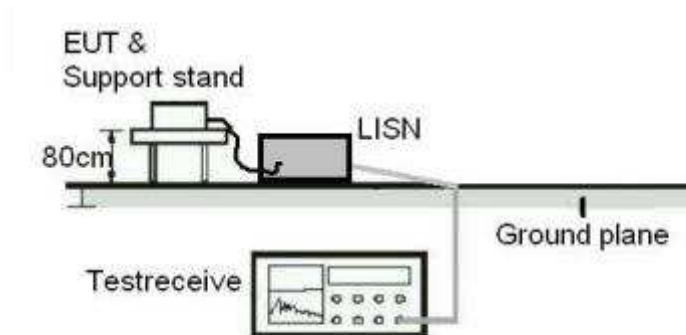
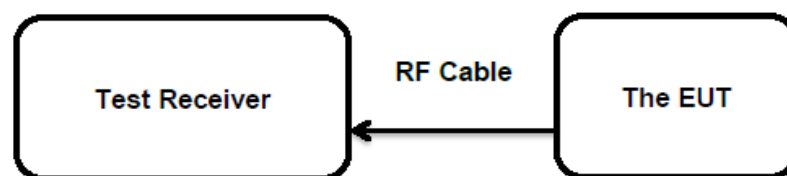


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT:

Pass

Test Specification

Test standard	:	FCC Part 15.247(b)(4) and Part 15.203
Limit	:	the use of antennas with directional gains that do not exceed 6 dBi

According to the manufacturer declared, the EUT has an ceramic chip antenna , the directional gain of antenna is 2.15 dBi, and the antenna connector is designed with permanent attachment and no consideration of replacement. Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Conducted Output Power

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(b)(3)
Basic standard	: ANSI C63.10: 2013
Limits	: < 1 Watt (Maximum Conducted Power)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2021-12-10
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 26.4 °C
Relative humidity	: 46.1 %
Atmospheric pressure	: 101 kPa

For details refer to following test result.

Table 5: Test Result of Maximum Conducted Output Power, 1Mbps

Channel	Channel Frequency (MHz)	Conducted Average Output Power		Limit
		(dBm)	(W)	(W)
Low Channel	2402	9.03	0.00800	1
Middle Channel	2440	8.80	0.00759	1
High Channel	2480	8.73	0.00746	1

5.1.3 Conducted Power Spectral Density

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.247(e)
Basic standard	: ANSI C63.10: 2013
Limits	: 8 dBm / 3kHz
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2021-12-10
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 26.4 °C
Relative humidity	: 46.1 %
Atmospheric pressure	: 101 kPa

For details refer to following test result.

Table 6: Test Result of Power Spectral Density, 1Mbps

Channel	Channel Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
Low Channel	2402	-0.35	8
Middle Channel	2440	-1.17	8
High Channel	2480	-0.83	8

Note: The cable loss is taken into account in results.

For the measurement records, refer to the appendix B.

5.1.4 99%dB Bandwidth

RESULT:**Pass****Test Specification**

Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-12-10
Input voltage : AC 120V, 60Hz
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 26.4 °C
Relative humidity : 46.1 %
Atmospheric pressure : 101 kPa

Table 7: Test Result of 99% Bandwidth, 1Mbps

Channel	Channel Frequency (MHz)	99% Bandwidth (MHz)	Limit (MHz)	Result
Low Channel	2402	1.0240	/	Pass
Mid Channel	2440	1.0186	/	Pass
High Channel	2480	1.0267	/	Pass

For the measurement records, refer to the appendix B.

5.1.5 6dB Bandwidth

RESULT:**Pass****Test Specification**

Test standard : FCC Part 15.247(a)(2)
Basic standard : ANSI C63.10: 2013
Kind of test site : Shielded Room

Test Setup

Date of testing : 2021-12-10
Input voltage : AC 120V, 60Hz
Operation mode : A
Test channel : Low / Middle / High
Ambient temperature : 26.4 °C
Relative humidity : 46.1 %
Atmospheric pressure : 101 kPa

Table 8: Test Result of 6dB Bandwidth, 1Mbps

Channel	Channel Frequency (MHz)	-6dB Bandwidth (kHz)	Limit (kHz)	Result
Low Channel	2402	668	500	Pass
Mid Channel	2440	668	500	Pass
High Channel	2480	672	500	Pass

For the measurement records, refer to the appendix B.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth**RESULT:****Pass****Test Specification**

Test standard	: FCC Part 15.247(d)
Basic standard	: ANSI C63.10: 2013
Limits	: 20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2021-12-10
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 26.4 °C
Relative humidity	: 46.1 %
Atmospheric pressure	: 101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix B.

5.1.7 Radiated Spurious Emission

RESULT:

Pass

Test Specification

Test standard	: FCC Part 15.247(d) & FCC Part 15.205
Basic standard	: ANSI C63.10: 2013
Limits	: Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	: 3m Semi-anechoic Chamber

Test Setup

Date of testing	: 2021-12-10
Input voltage	: AC 120V, 60Hz
Operation mode	: A
Test channel	: Low / Middle / High
Ambient temperature	: 23 °C
Relative humidity	: 56 %
Atmospheric pressure	: 101 kPa

Remark:

Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix B.

5.1.8 Conducted Emission on AC Mains

RESULT:**Pass****Test Specification**

Test standard	: FCC Part 15.207(a)
Basic standard	: ANSI C63.10: 2013
Frequency range	: 0.15 – 30MHz
Limits	: FCC Part 15.207(a)
Kind of test site	: Shielded Room

Test Setup

Date of testing	: 2021-12-03
Input voltage	: AC 120V/60Hz
Operation mode	: B
Earthing	: Connected
Ambient temperature	: 24.7 °C
Relative humidity	: 52 %
Atmospheric pressure	: 101 kPa

For the measurement records, refer to the appendix B.

6 Safety Human Exposure

6.1 Radio Frequency Exposure Compliance

6.1.1 Electromagnetic Fields

RESULT:**Pass****Test Specification**

Test standard

: FCC KDB Publication 447498 v06

CFR47 FCC Part 2: Section 2.1091

CFR47 FCC Part 1: Section 1.1310

FCC requirement:

The measured maximum conducted output power of the EUT is 9.03dBm $\approx$ 8.0mW, which is far below the SAR exclusion threshold level 10mW (SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and $\leq$ 50 mm), hence the EUT is excluded from SAR evaluation according to FCC KDB publication 447498 D01: Mobile and Portable RF Exposure. Guidance v06.

7 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix A.

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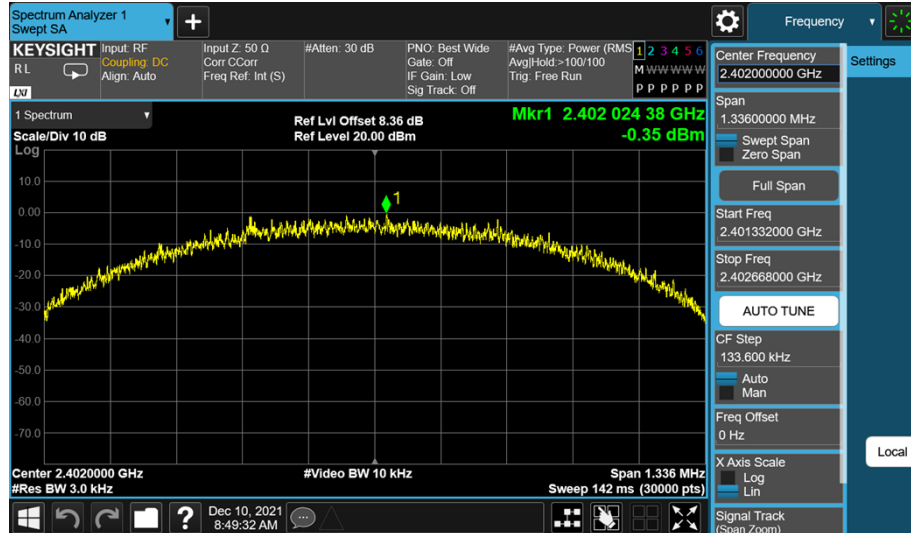
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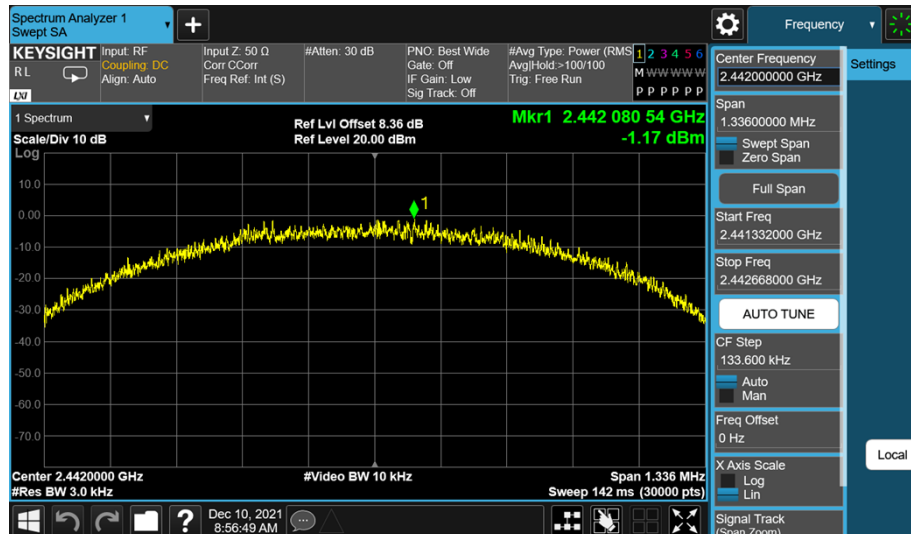
Appendix B.1: Conducted Power Spectral Density

BLE, 1Mbps

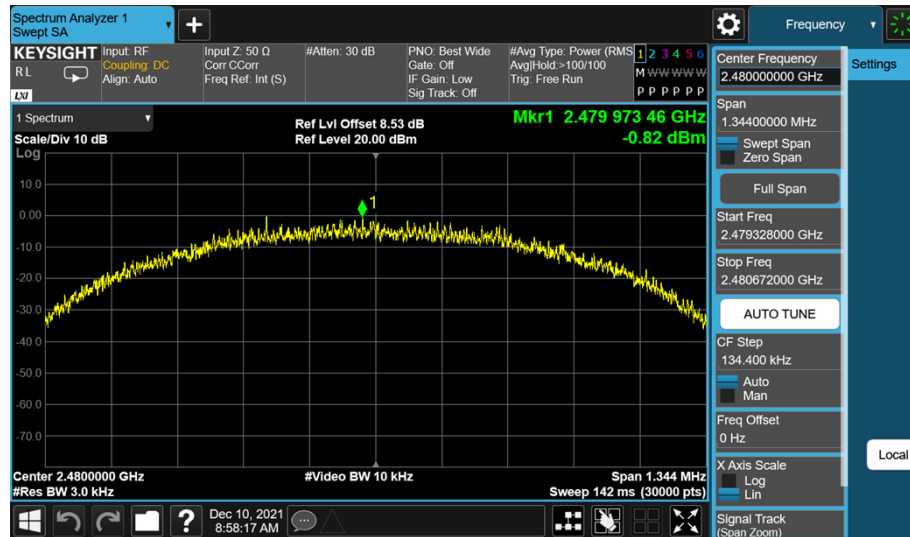
Low Channel



Middle Channel



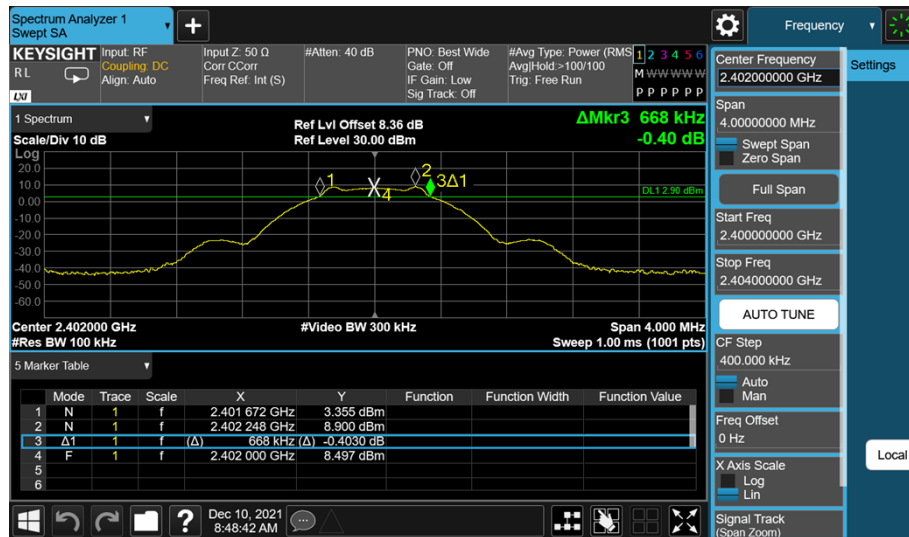
High Channel



Appendix B.2: 6dB Bandwidth

BLE, 1Mbps

Low Channel



Middle Channel



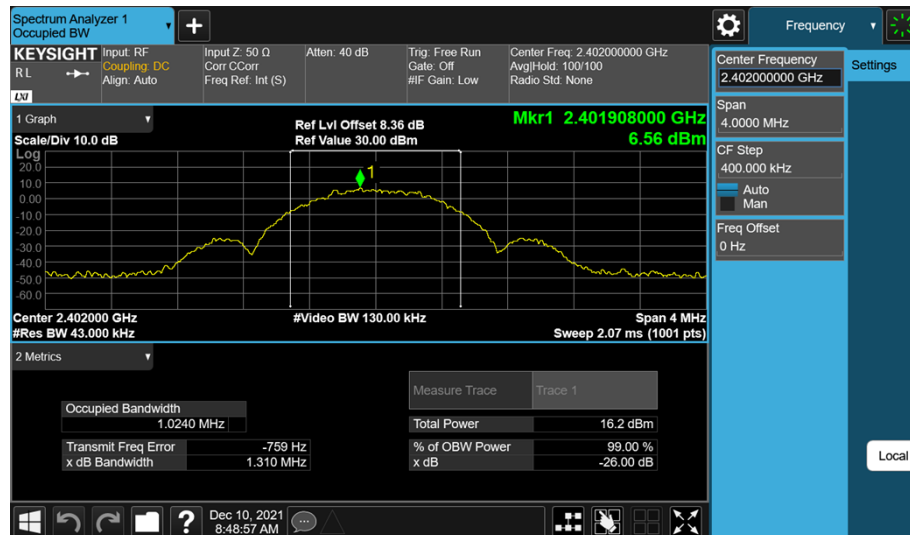
High Channel



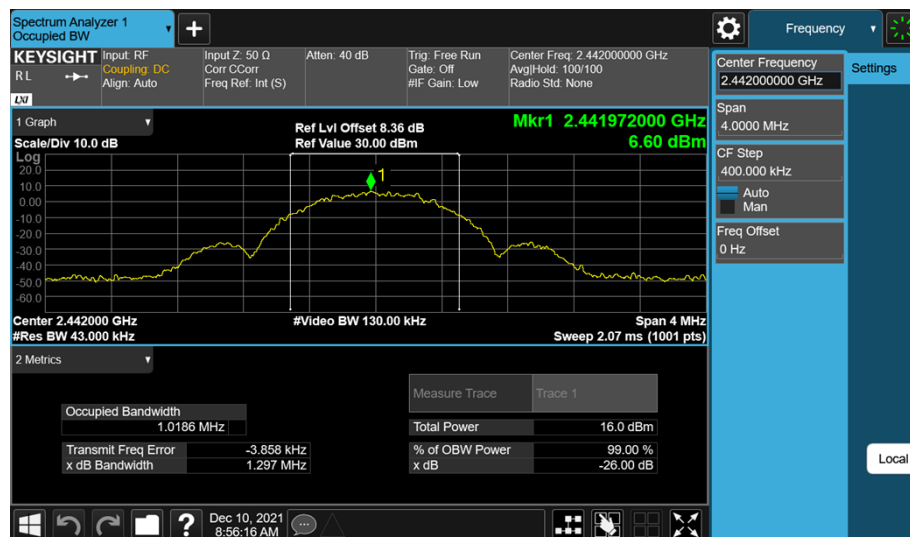
Appendix B.3: 99% Bandwidth

BLE, 1Mbps

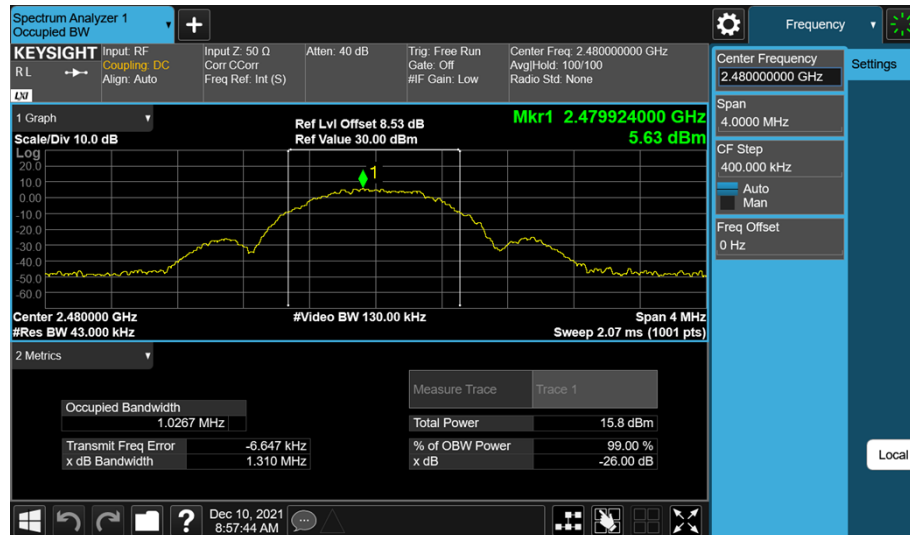
Low Channel



Middle Channel



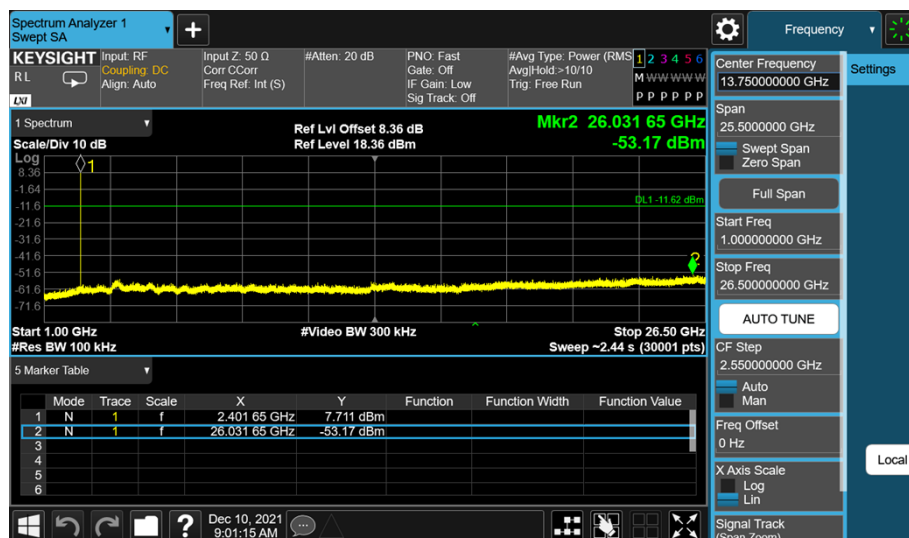
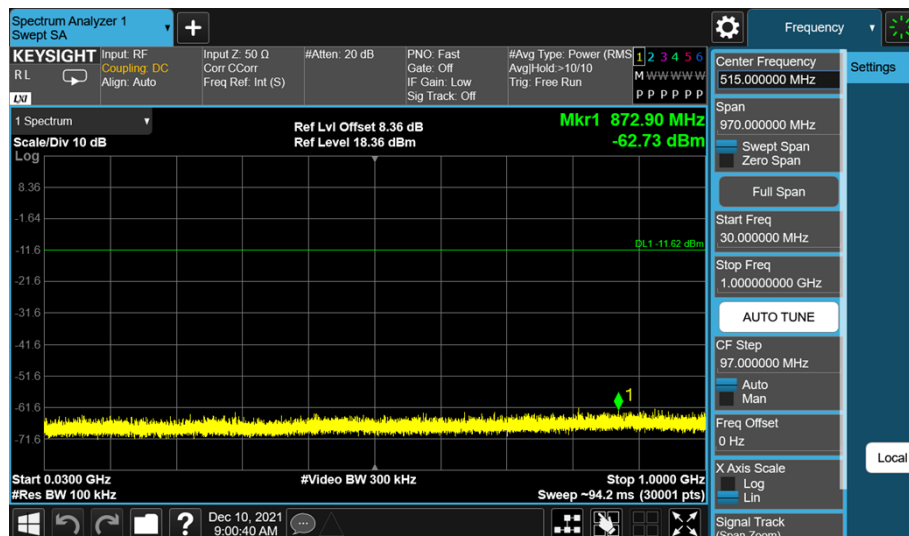
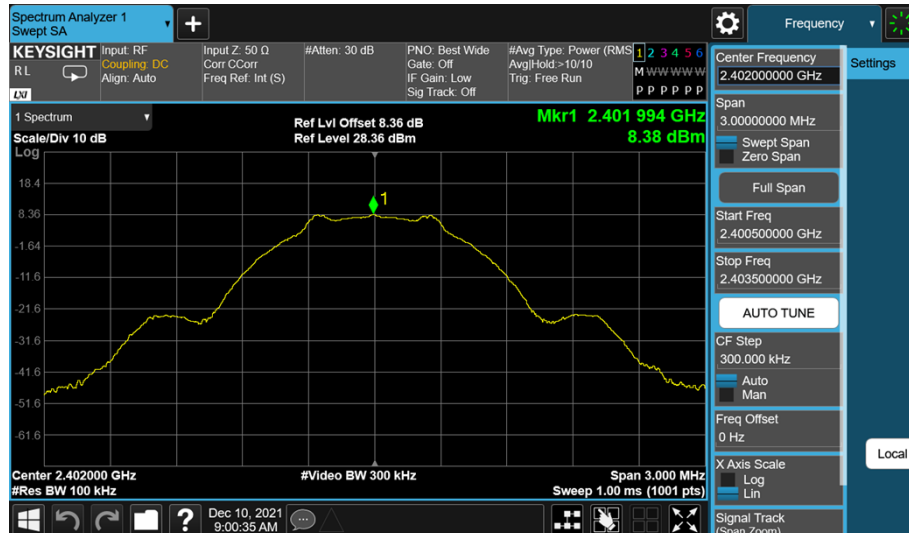
High Channel

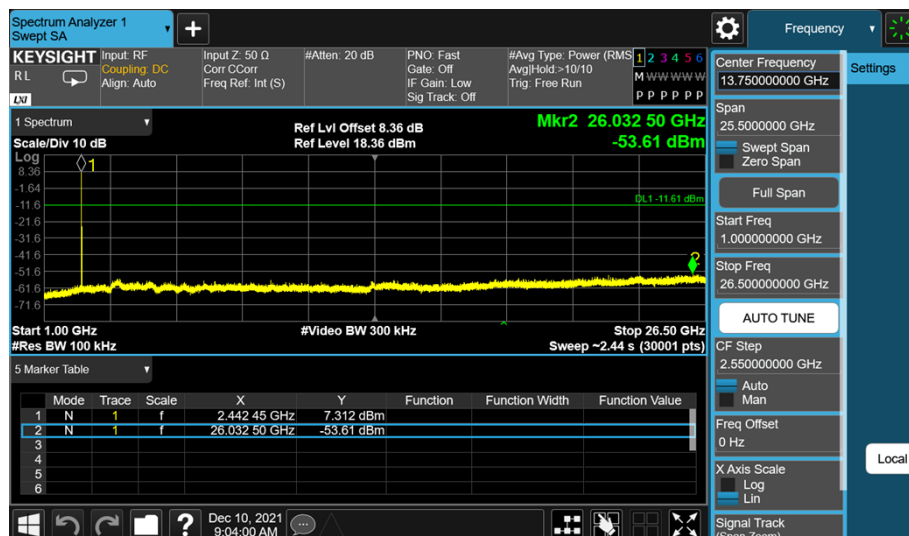
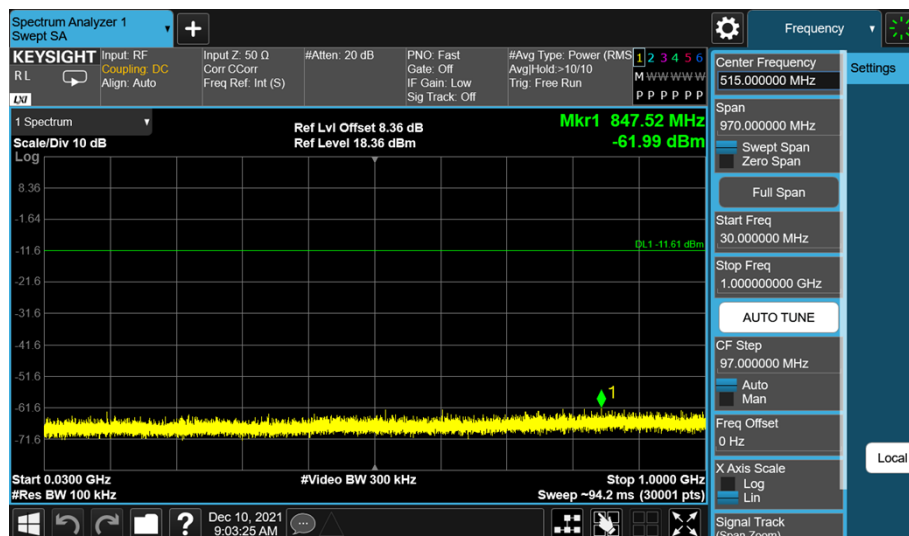
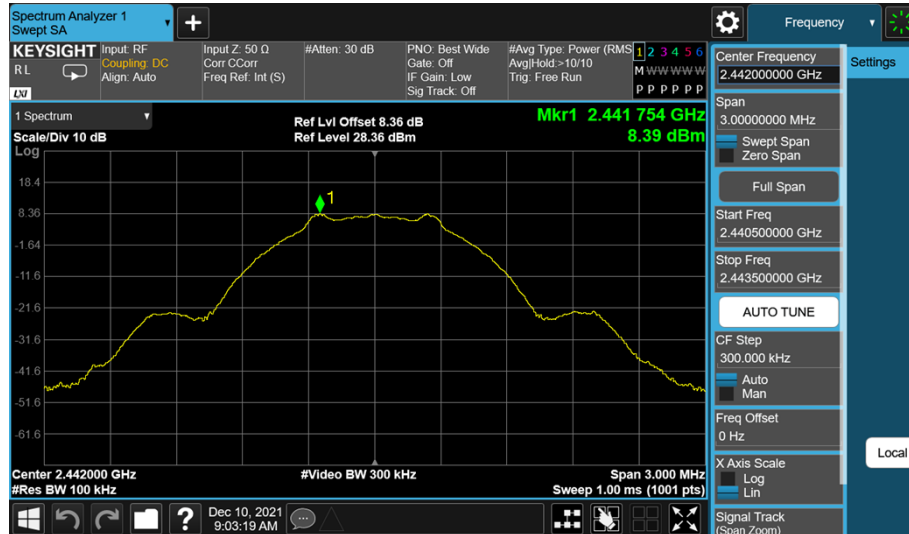


Appendix B.4: Conducted Spurious Emissions Measured in 100 kHz Bandwidth

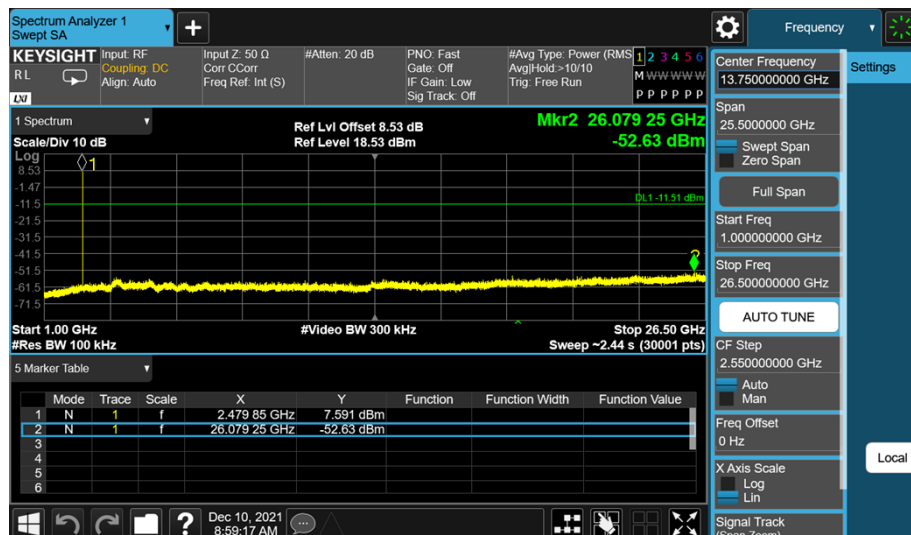
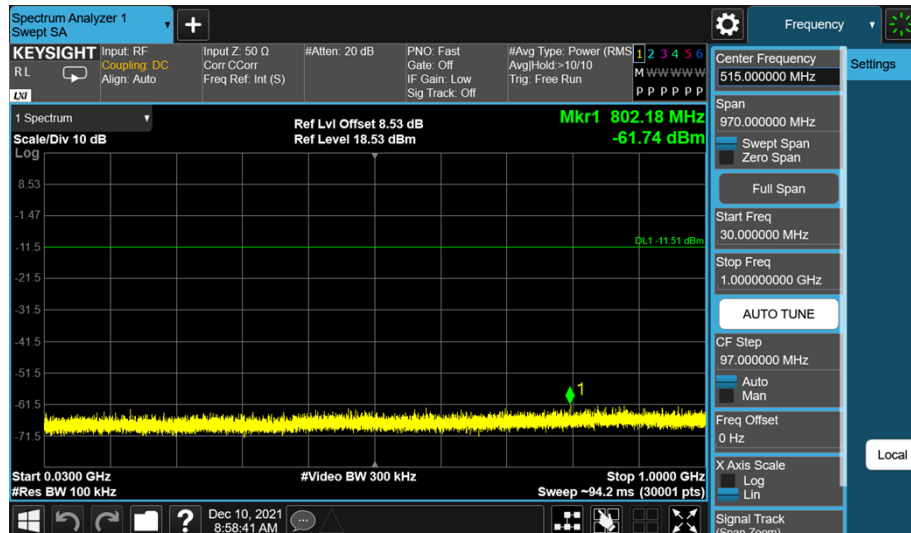
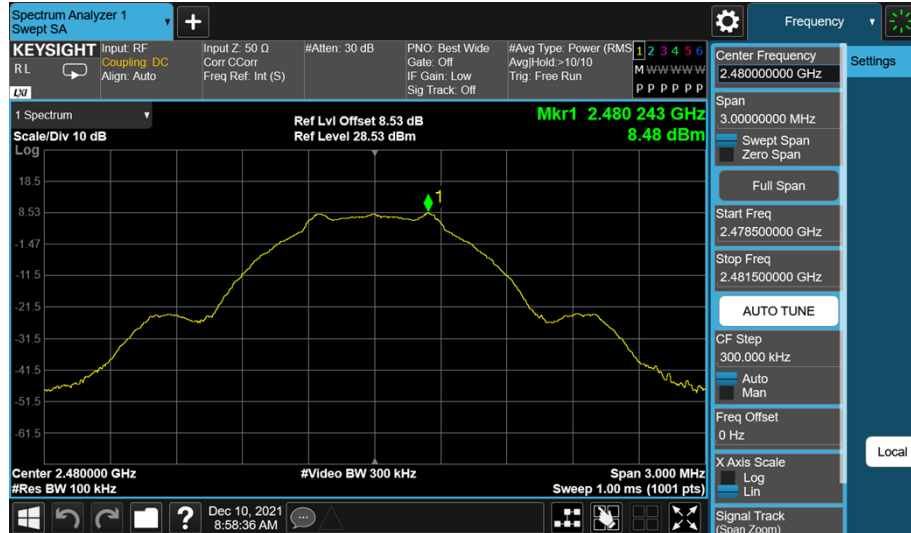
BLE, 1Mbps

Low Channel

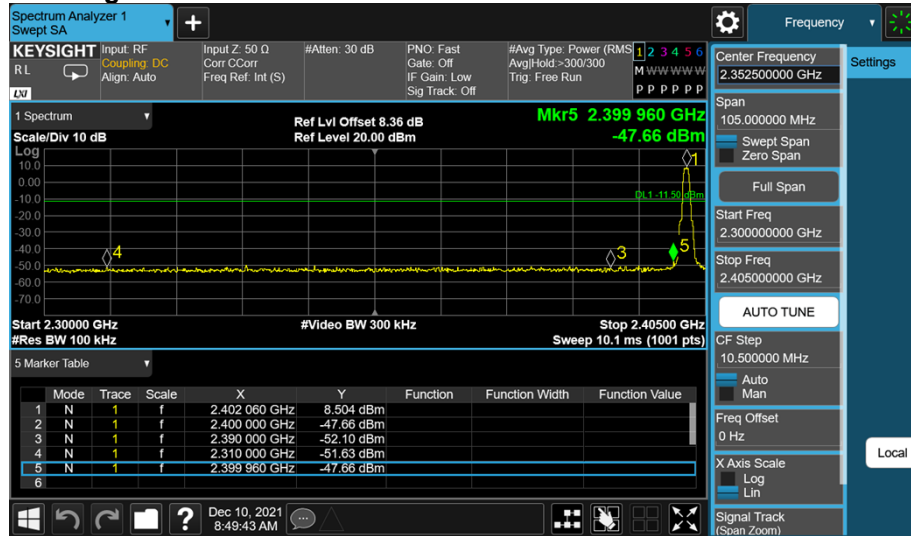


Middle Channel


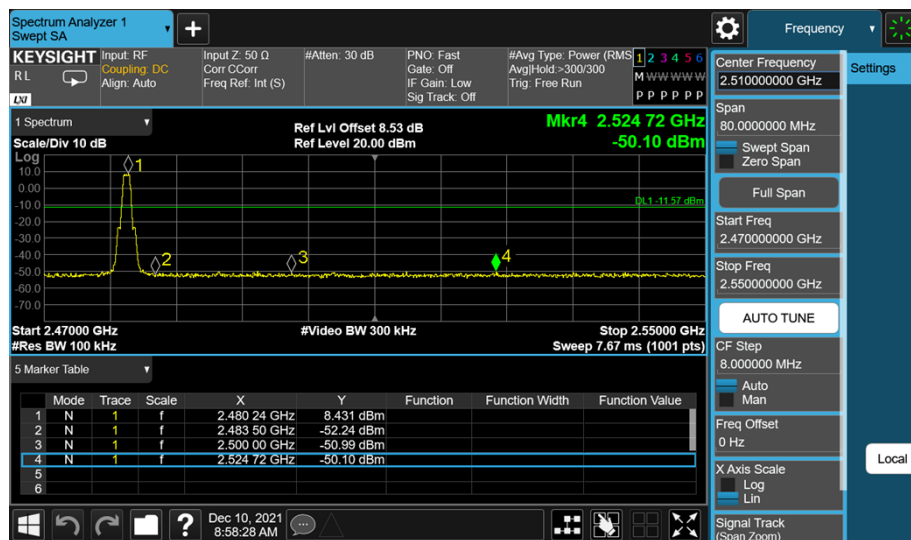
High Channel



Low Channel_Band Edge



High Channel_Band Edge



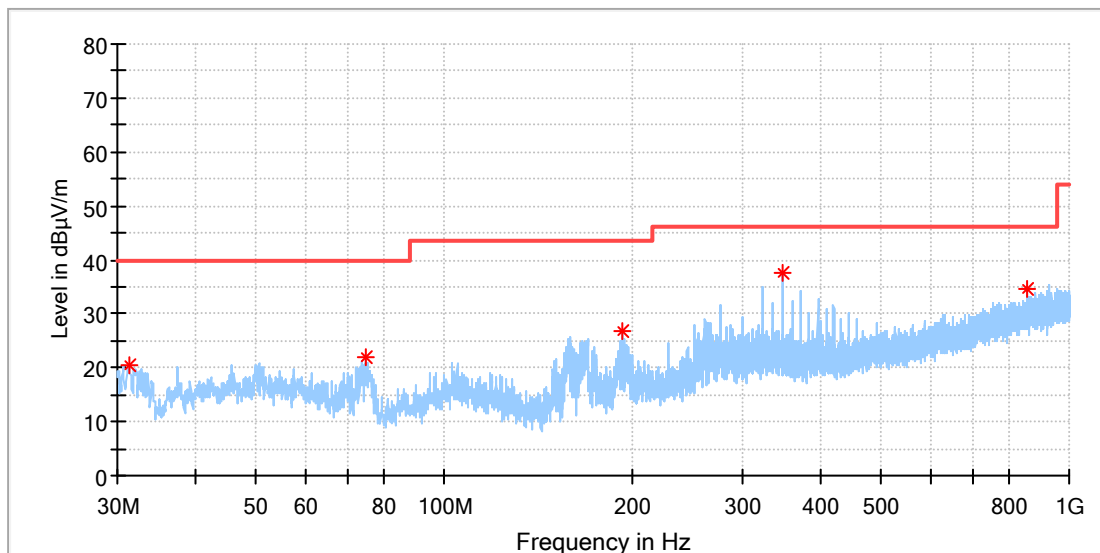
Appendix B.5: Test Results of Radiated Spurious Emissions

Note 1: Testing was carried out within frequency range 9 kHz to the tenth harmonics. The measurement results below 30MHz and above 18GHz were greater than 20dB below the limit, so only the radiated spurious emissions from 30MHz to 18GHz were reported.

BLE, 1Mbps

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_Low channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

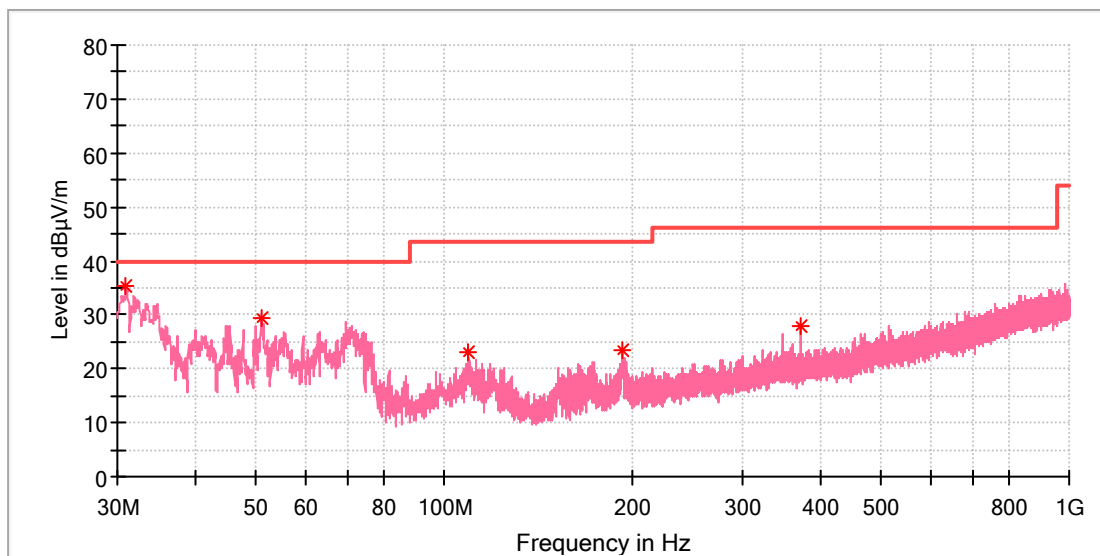


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.358000	20.59	40.00	19.41	100.0	H	231.0	-22.8
74.959500	21.84	40.00	18.16	100.0	H	0.0	-23.4
192.717500	26.77	43.50	16.73	100.0	H	62.0	-19.3
348.014500	37.56	46.00	8.44	100.0	H	299.0	-14.8
854.839500	34.49	46.00	11.51	100.0	H	242.0	-5.4

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_Low channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

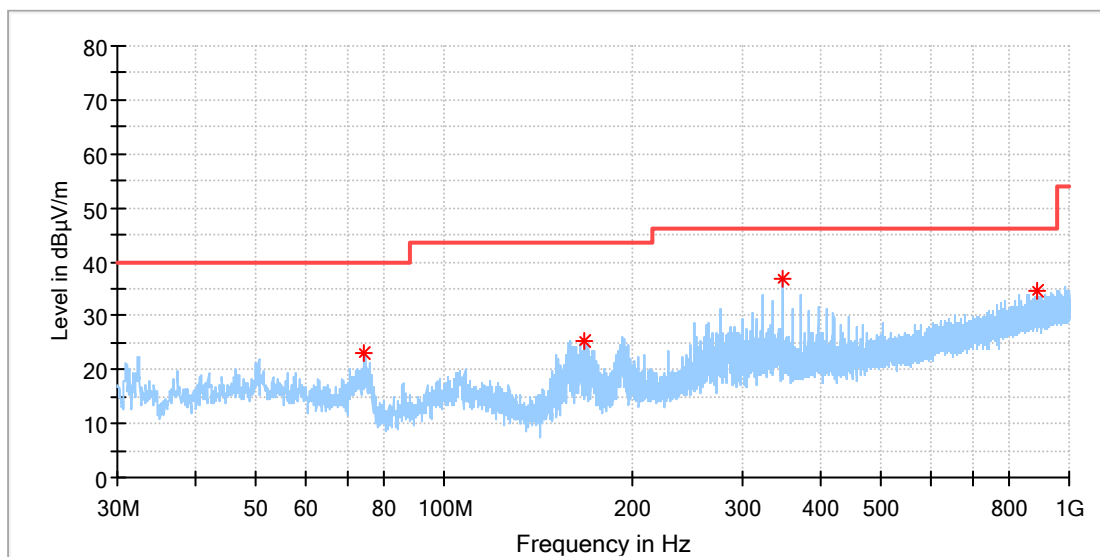


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.970000	35.22	40.00	4.78	100.0	V	192.0	-22.8
51.000500	29.21	40.00	10.79	100.0	V	212.0	-18.3
109.491500	23.22	43.50	20.28	100.0	V	19.0	-19.0
192.669000	23.31	43.50	20.19	100.0	V	310.0	-19.3
372.022000	27.85	46.00	18.15	100.0	V	0.0	-14.4

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_High channel
Order No./Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

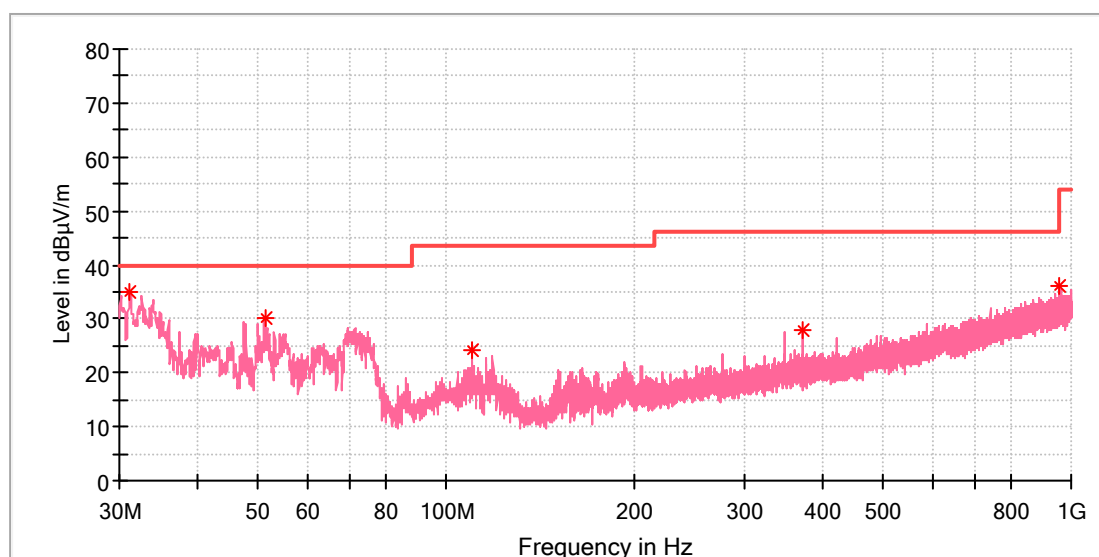


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
74.620000	22.94	40.00	17.06	100.0	H	223.0	-23.3
168.128000	25.35	43.50	18.15	100.0	H	277.0	-21.3
348.014500	36.98	46.00	9.02	100.0	H	288.0	-14.8
888.353000	34.42	46.00	11.58	100.0	H	246.0	-5.1

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_High channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

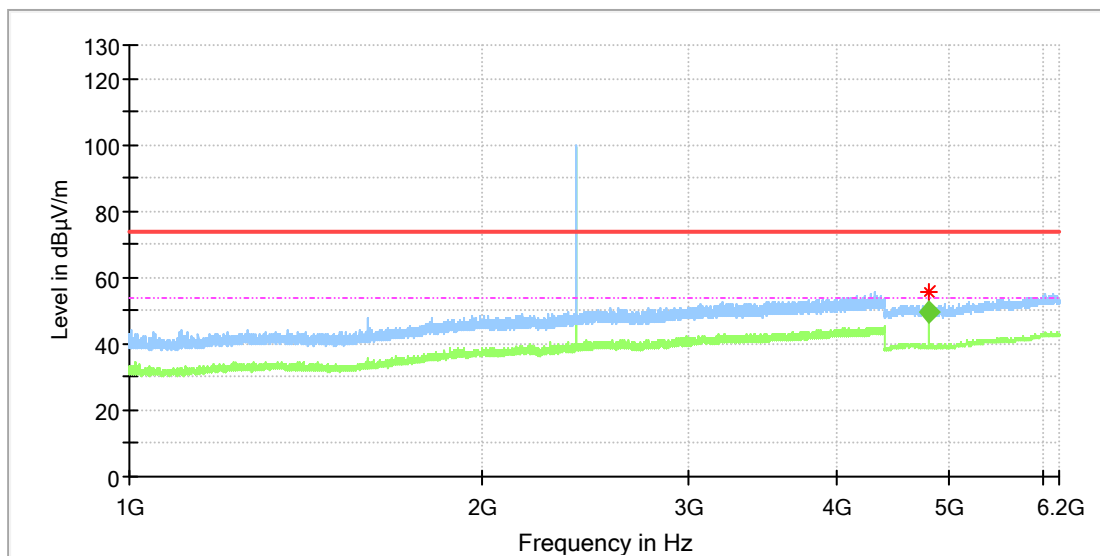


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
31.115500	34.93	40.00	5.07	100.0	V	246.0	-22.8
51.243000	30.06	40.00	9.94	100.0	V	298.0	-18.3
109.831000	24.23	43.50	19.27	100.0	V	36.0	-19.1
372.022000	27.91	46.00	18.09	100.0	V	0.0	-14.4
953.246000	35.97	46.00	10.03	100.0	V	149.0	-4.3

EUT Information

EUT Name: Smart Outdoor Floodlight
 Model: LS270011146
 Test Mode: BLE_Low channel
 Order No/Sample No: 168345016/A003170344-001
 Test Voltage:: AC 120V, 60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin



Critical_Freqs

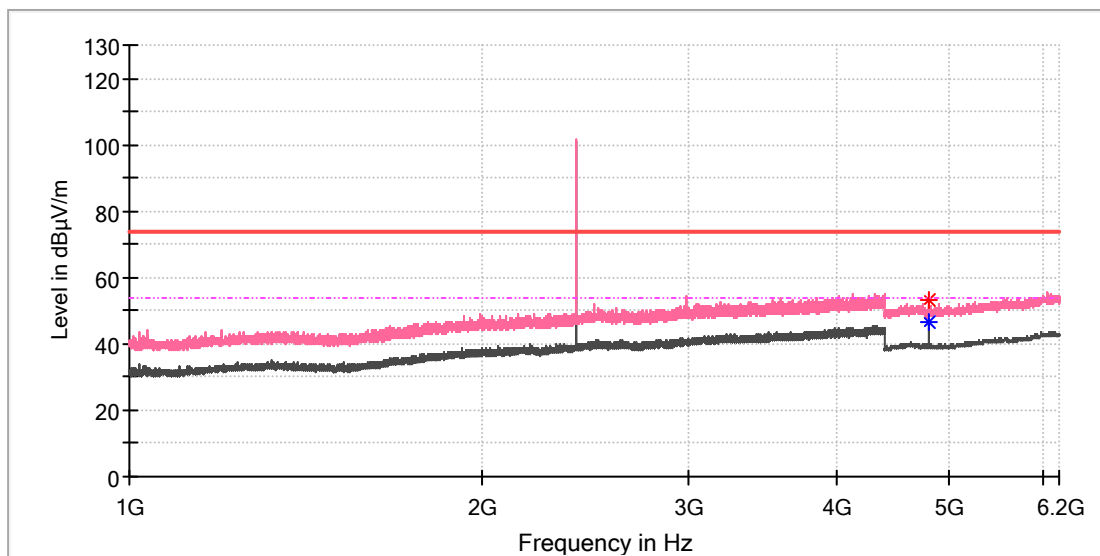
Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4804.000000	55.71	---	74.00	18.29	100.0	H	62.0	11.8

Final_Result

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.819444	49.71	54.00	4.29	105.0	H	57.0	11.8

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_Low channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

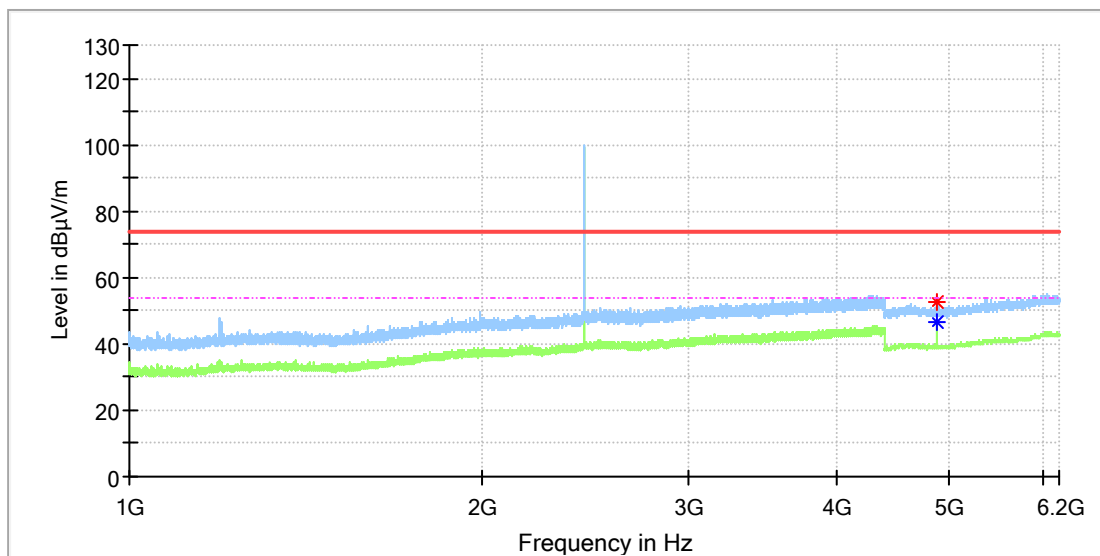


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4803.500000	53.18	---	74.00	20.82	100.0	V	196.0	11.8
4804.000000	---	46.37	54.00	7.63	100.0	V	196.0	11.8

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_Mid channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

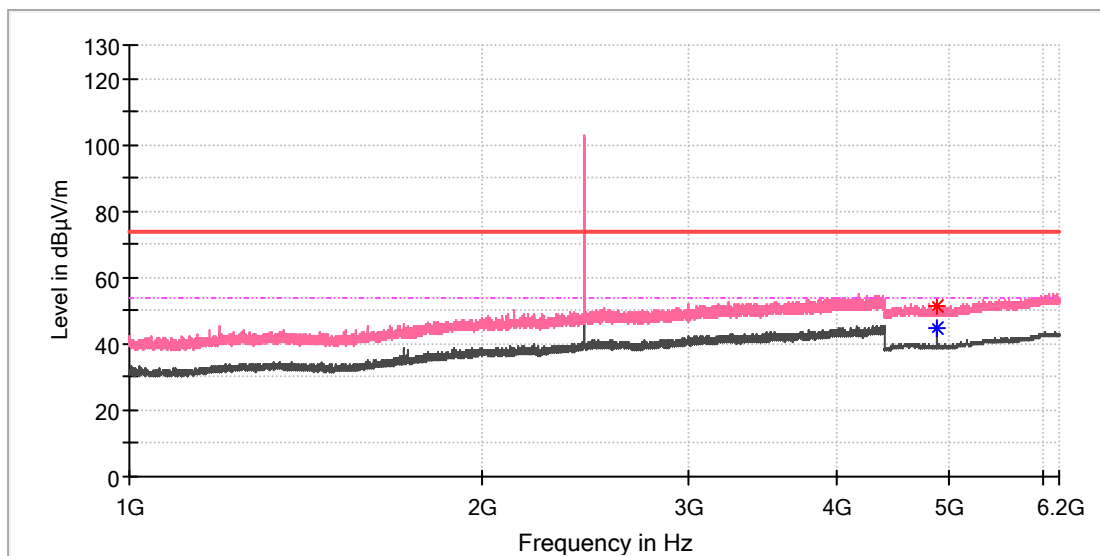


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4883.500000	52.73	---	74.00	21.27	100.0	H	54.0	11.8
4884.000000	---	46.73	54.00	7.27	100.0	H	54.0	11.8

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_Mid channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

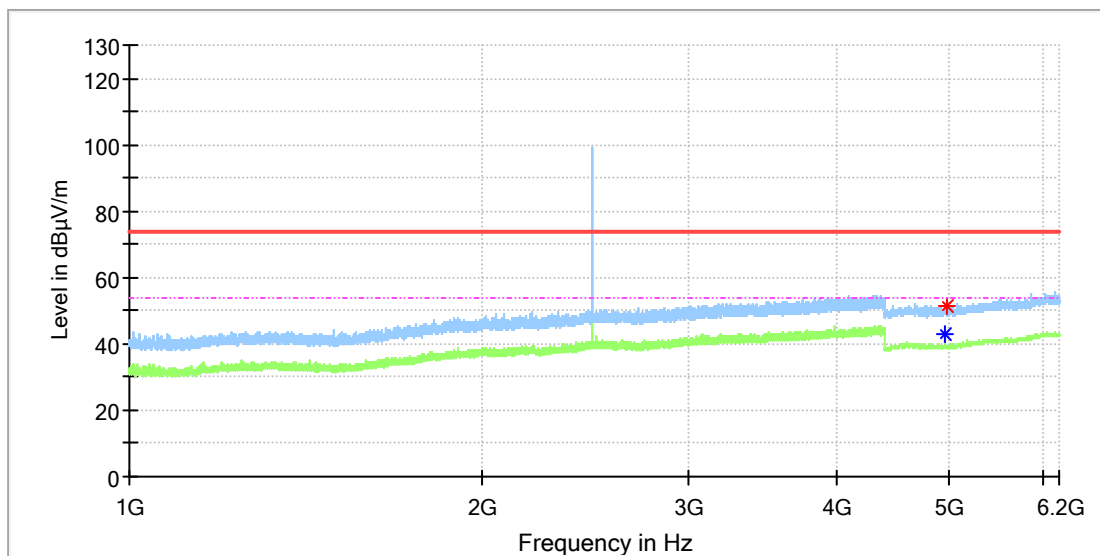


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4883.500000	51.50	---	74.00	22.50	100.0	V	201.0	11.8
4884.000000	---	44.88	54.00	9.12	100.0	V	201.0	11.8

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_High channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

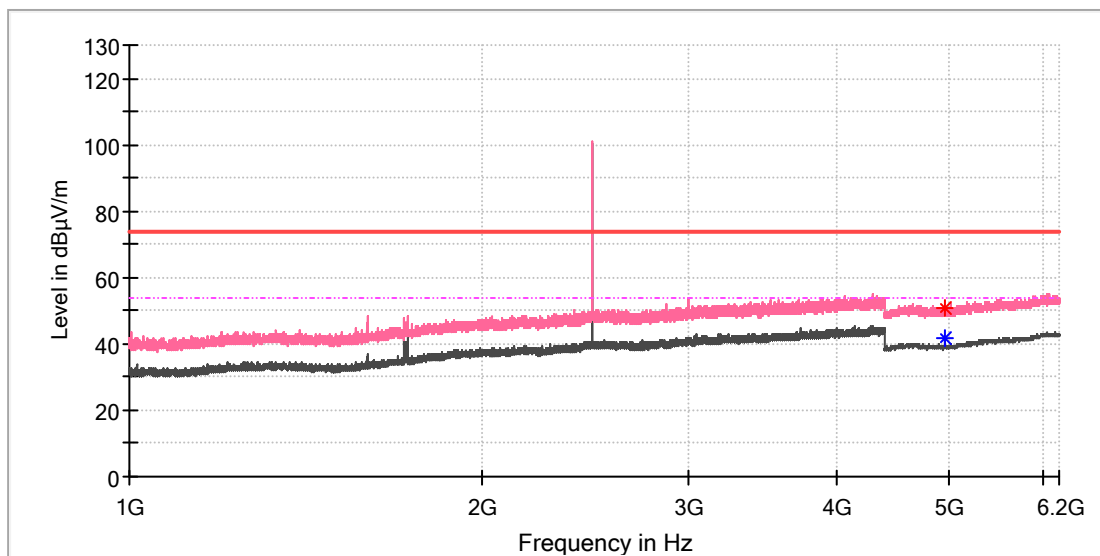


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4960.000000	---	42.77	54.00	11.23	100.0	H	62.0	11.8
4969.500000	51.29	---	74.00	22.71	100.0	H	135.0	11.8

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_High channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

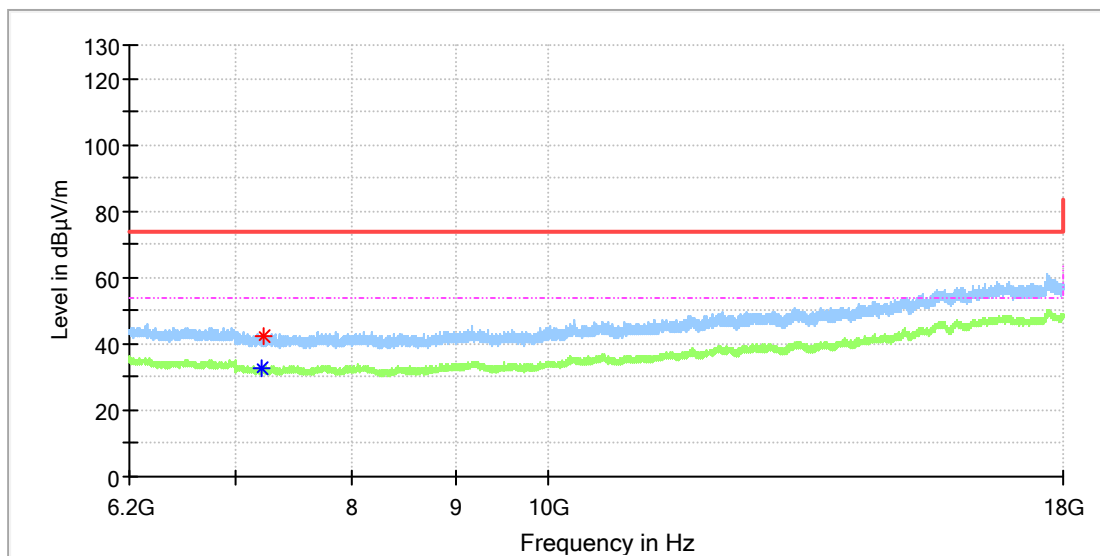


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
4959.000000	50.93	---	74.00	23.07	100.0	V	202.0	11.8
4960.000000	---	41.44	54.00	12.56	100.0	V	54.0	11.8

EUT Information

EUT Name: Smart Outdoor Floodlight
 Model: LS270011146
 Test Mode: BLE_Low channel
 Order No/Sample No: 168345016/A003170344-001
 Test Voltage:: AC 120V, 60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

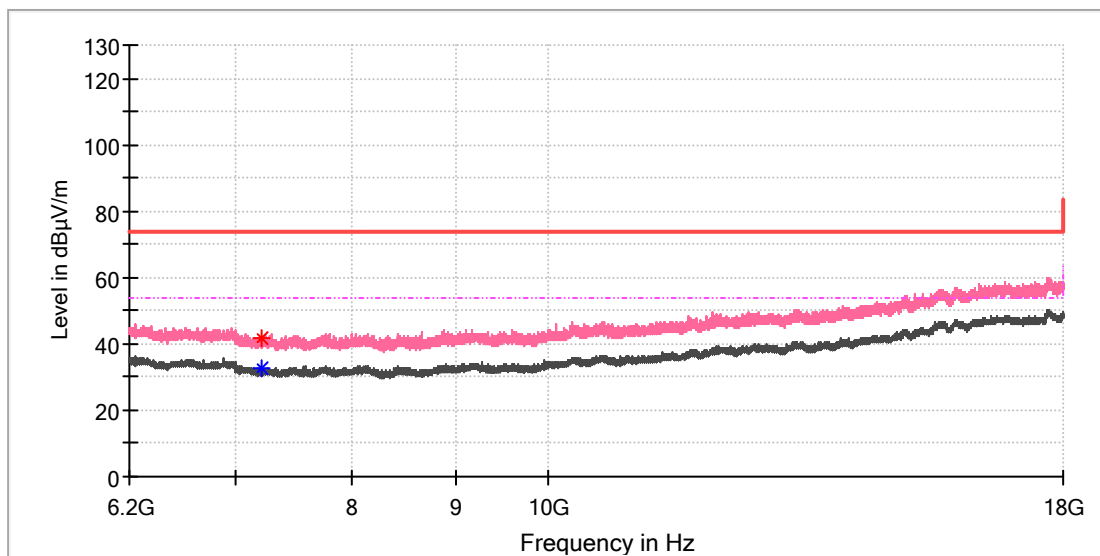


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7205.950000	---	32.88	54.00	21.12	100.0	H	280.0	8.8
7229.550000	42.37	---	74.00	31.63	100.0	H	169.0	8.6

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_Low channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

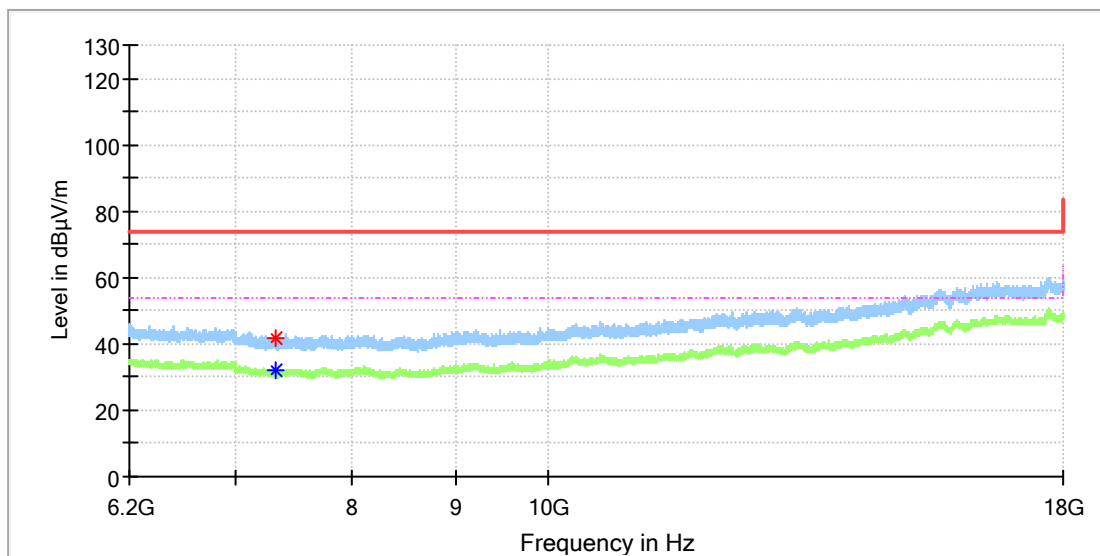


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7202.016667	41.72	---	74.00	32.28	100.0	V	135.0	8.8
7216.275000	---	32.57	54.00	21.43	100.0	V	95.0	8.7

EUT Information

EUT Name: Smart Outdoor Floodlight
 Model: LS270011146
 Test Mode: BLE_Mid channel
 Order No/Sample No: 168345016/A003170344-001
 Test Voltage:: AC 120V, 60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

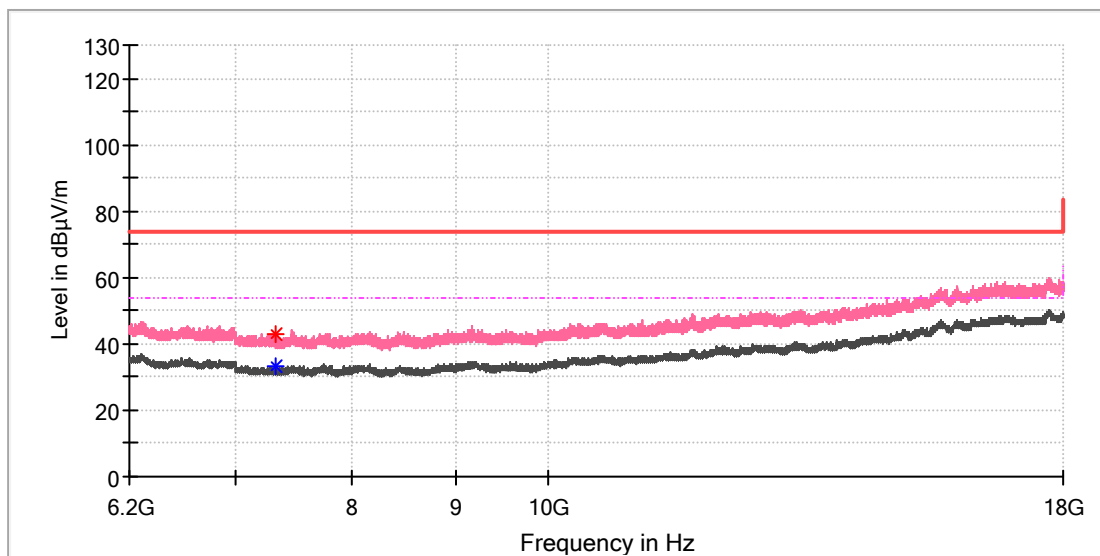


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7319.033333	41.95	---	74.00	32.05	100.0	H	134.0	8.2
7325.425000	---	32.27	54.00	21.73	100.0	H	149.0	8.2

EUT Information

EUT Name: Smart Outdoor Floodlight
 Model: LS270011146
 Test Mode: BLE_Mid channel
 Order No/Sample No: 168345016/A003170344-001
 Test Voltage:: AC 120V, 60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

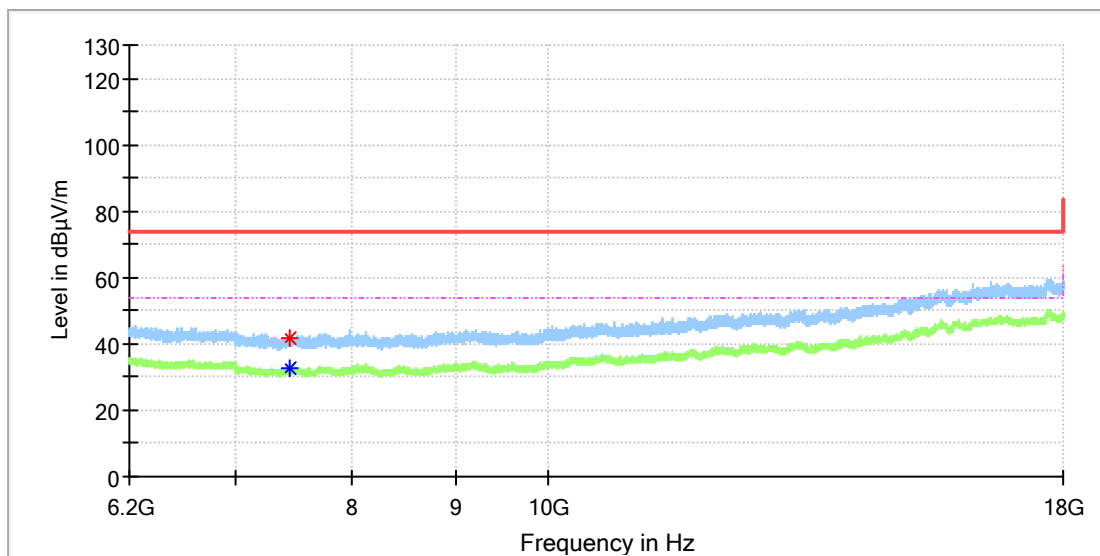


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7324.933333	---	33.51	54.00	20.49	100.0	V	259.0	8.2
7325.916667	42.95	---	74.00	31.05	100.0	V	172.0	8.2

EUT Information

EUT Name: Smart Outdoor Floodlight
 Model: LS270011146
 Test Mode: BLE_High channel
 Order No/Sample No: 168345016/A003170344-001
 Test Voltage:: AC 120V, 60Hz
 Remark: Temp 23 Humi:56%
 Test Standard: FCC 15.247
 Tested By: Kei Zhang
 Reviewed By: Terry Yin

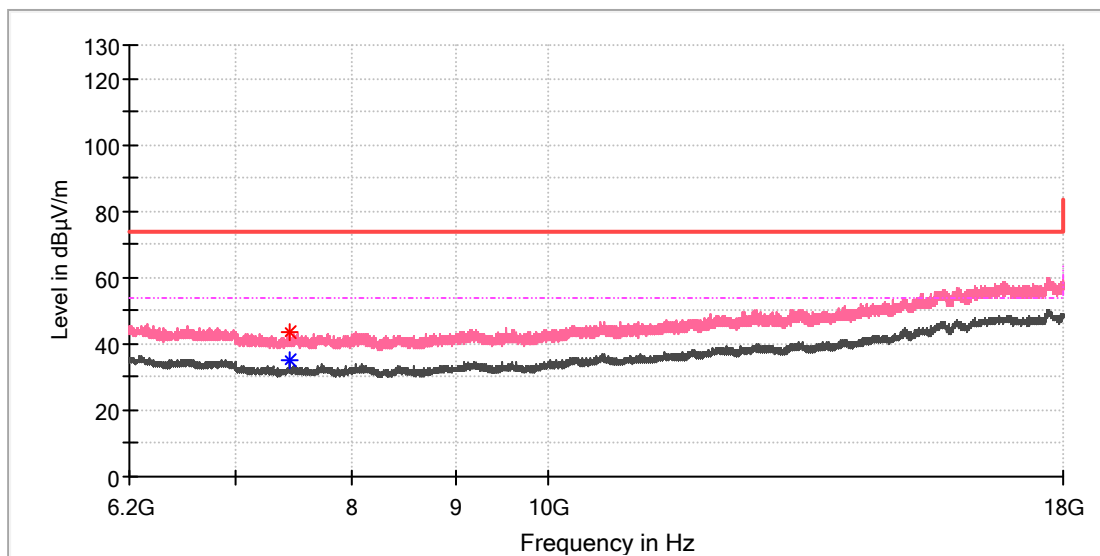


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7440.966667	41.58	---	74.00	32.42	100.0	H	288.0	8.4
7440.966667	---	32.95	54.00	21.05	100.0	H	288.0	8.4

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_High channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



Critical_Freqs

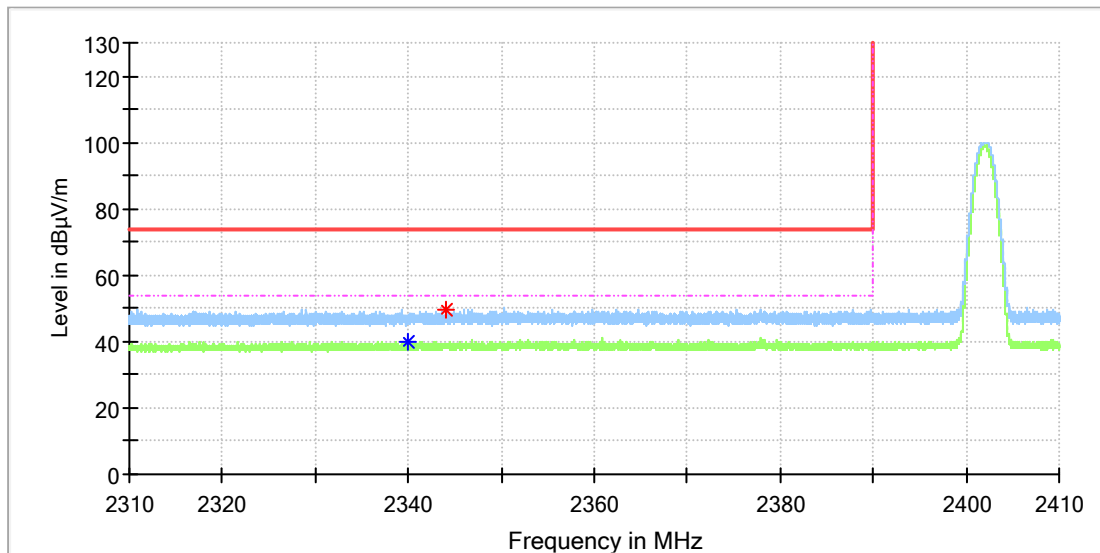
Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
7439.491667	43.46	---	74.00	30.54	100.0	V	104.0	8.4
7439.491667	---	35.21	54.00	18.79	100.0	V	104.0	8.4

Appendix B.6: Test Results of Radiated Emissions in Restricted Bands

BLE, 1Mbps

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_Low channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

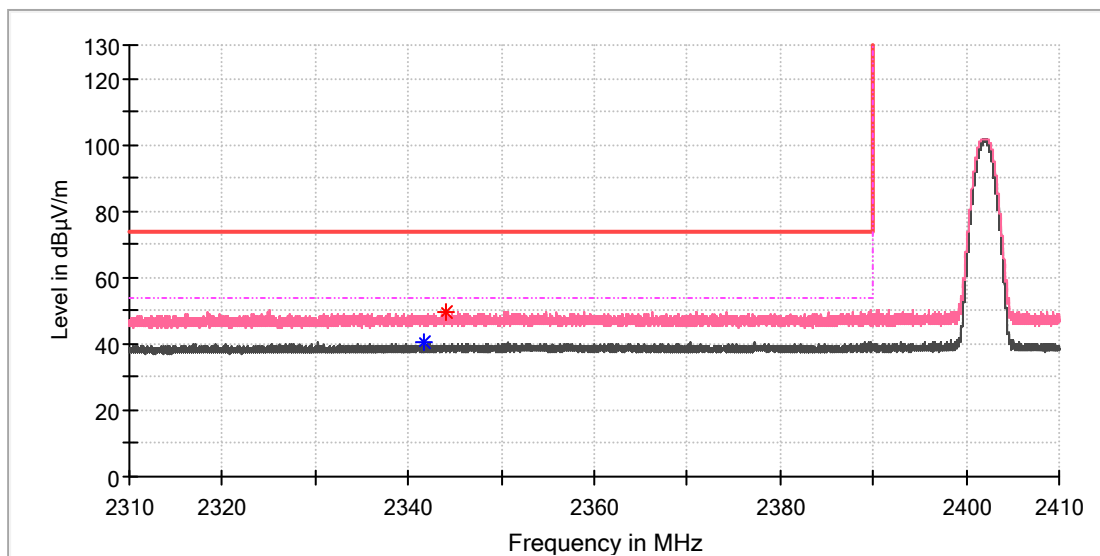


Critical Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2339.955000	---	39.63	54.00	14.37	100.0	H	87.0	6.8
2344.045000	49.85	---	74.00	24.15	100.0	H	308.0	6.9

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_Low channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

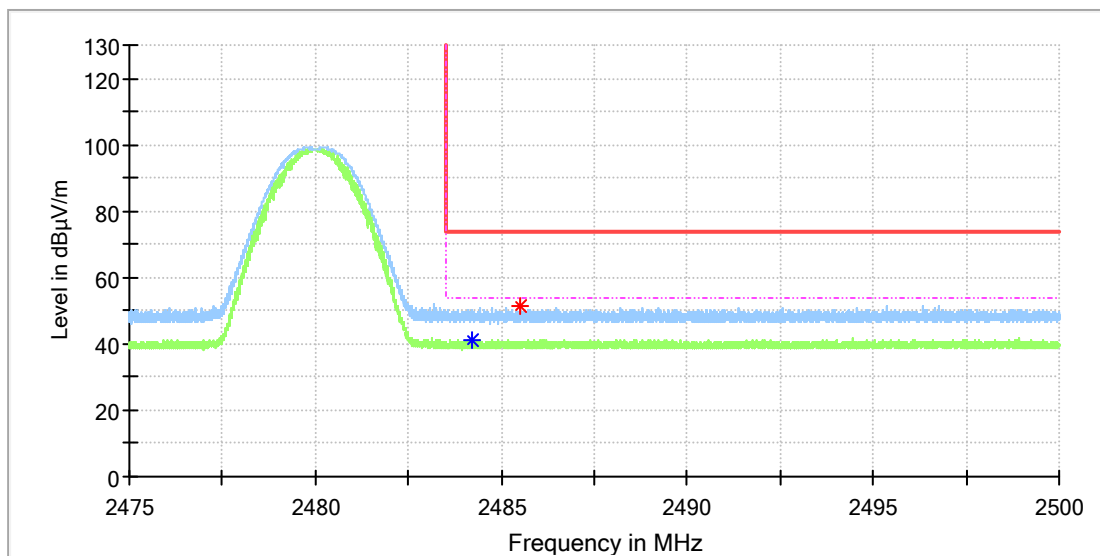


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2341.695000	---	40.29	54.00	13.71	100.0	V	87.0	6.8
2344.150000	49.87	---	74.00	24.13	100.0	V	30.0	6.9

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_High channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin

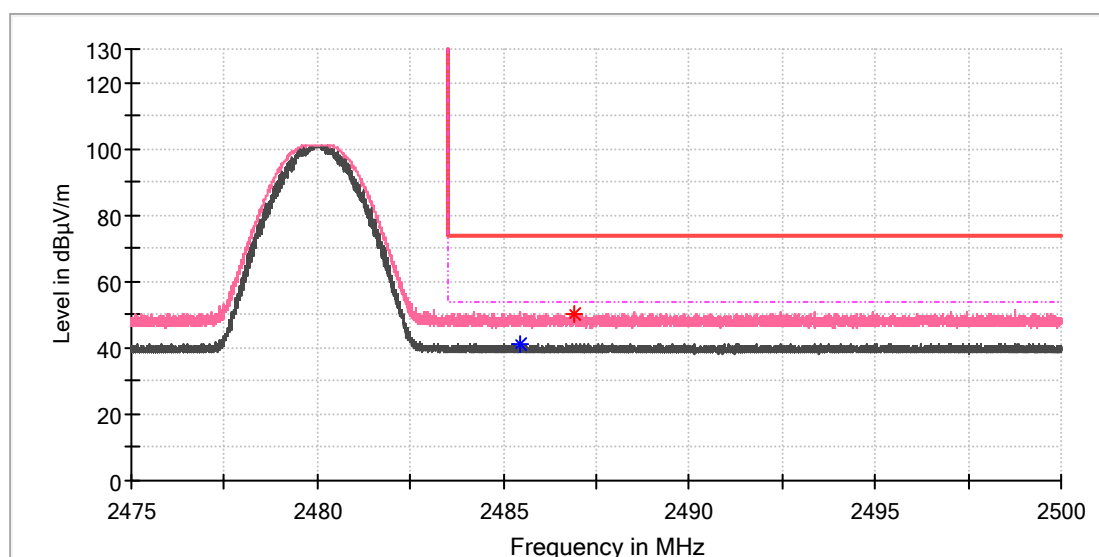


Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2484.220000	---	41.02	54.00	12.98	100.0	H	317.0	7.4
2485.487500	51.16	---	74.00	22.84	100.0	H	82.0	7.4

EUT Information

EUT Name:	Smart Outdoor Floodlight
Model:	LS270011146
Test Mode:	BLE_High channel
Order No/Sample No:	168345016/A003170344-001
Test Voltage::	AC 120V, 60Hz
Remark:	Temp 23 Humi:56%
Test Standard:	FCC 15.247
Tested By:	Kei Zhang
Reviewed By:	Terry Yin



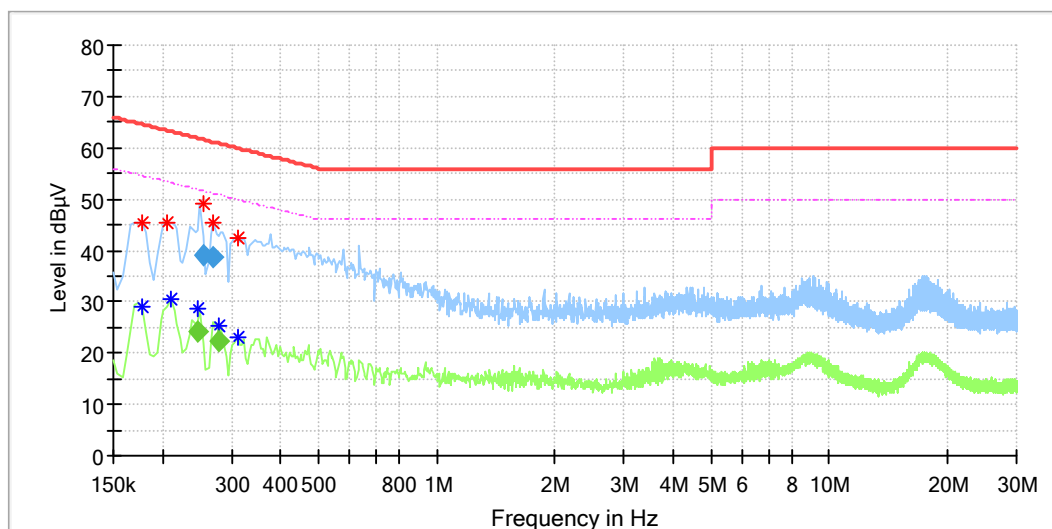
Critical_Freqs

Frequency (MHz)	MaxPeak (dBμV/m)	Average (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2485.457500	---	41.05	54.00	12.95	100.0	V	18.0	7.4
2486.926250	50.41	---	74.00	23.59	100.0	V	194.0	7.4

Appendix B.7: Test Results of Conducted Emissions on AC Mains

EUT Information

EUT Name: Smart Outdoor Floodlight
 Order No: 168345016_P00507445
 Model: LS270011146
 Test mode: on
 Test Voltage: AC 120V/60Hz
 Test By: Jianhua Lu
 Review By: Gary Chen
 Remark: SR2



Critical Freqs

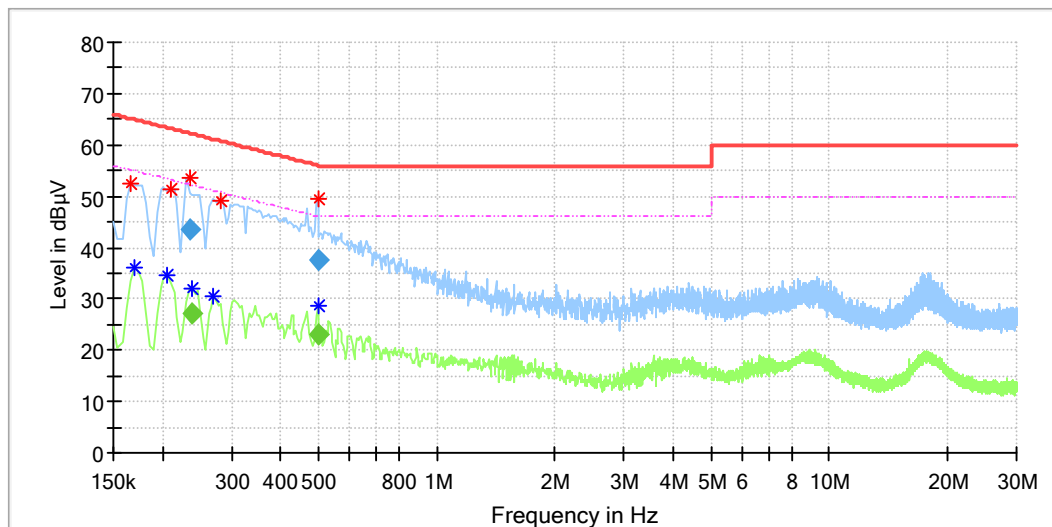
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.178000	---	29.08	54.58	25.50	L1	9.9
0.178000	45.54	---	64.58	19.04	L1	9.9
0.206000	45.51	---	63.37	17.86	L1	9.9
0.210000	---	30.58	53.21	22.63	L1	9.9
0.245500	---	28.65	51.76	23.11	L1	9.9
0.253500	49.25	---	61.76	12.51	L1	9.9
0.269500	45.28	---	61.12	15.84	L1	9.9
0.277500	---	25.46	51.00	25.53	L1	9.9
0.310000	---	23.23	49.97	26.74	L1	9.9
0.310000	42.59	---	59.97	17.38	L1	9.9

Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.245500	---	24.30	51.91	27.60	1000.0	9.000	L1	9.9
0.253500	39.11	---	61.64	22.53	1000.0	9.000	L1	9.9
0.269500	38.67	---	61.13	22.46	1000.0	9.000	L1	9.9
0.277500	---	22.51	50.89	28.38	1000.0	9.000	L1	9.9

EUT Information

EUT Name: Smart Outdoor Floodlight
 Order No: 168345016_P00507445
 Model: LS270011146
 Test mode: on
 Test Voltage: AC 120V/60Hz
 Test By: Jianhua Lu
 Review By: Gary Chen
 Remark: SR2



Critical Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.166000	52.38	---	65.16	12.78	N	9.8
0.170000	---	36.06	54.96	18.90	N	9.8
0.206000	---	34.54	53.37	18.82	N	9.8
0.210000	51.35	---	63.21	11.86	N	9.8
0.234500	53.46	---	62.45	8.99	N	9.8
0.237500	---	32.08	52.17	20.09	N	9.8
0.270000	---	30.63	51.12	20.49	N	9.8
0.282000	49.20	---	60.76	11.56	N	9.8
0.497500	49.44	---	56.10	6.66	N	9.8
0.501500	---	28.77	46.03	17.26	N	9.8

Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.234500	43.62	---	62.29	18.67	1000.0	9.000	N	9.8
0.237500	---	27.21	52.18	24.97	1000.0	9.000	N	9.8
0.497500	37.72	---	56.04	18.32	1000.0	9.000	N	9.8
0.501500	---	22.90	46.00	23.10	1000.0	9.000	N	9.8