

TEST REPORT

Product Name : Outdoor Fixed Security Light with remote sensor
Brand Mark : N/A
Model No. : 17000213
FCC ID : 2AQUQGB17213
Report Number : BLA-EMC-202307-A6501
Date of Sample Receipt : 2023/7/21
Date of Test : 2023/7/25 to 2023/7/31
Date of Issue : 2023/8/1
Test Standard : 47 CFR Part 15, Subpart C 15.249
Test Result : Pass

Prepared for:

GLOBE ELECTRIC COMPANY INC.

150, ONEIDA, MONTREAL, QUEBEC, CANADA, H9R 1A8

Prepared by:

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Date:

2023/8/1



REPORT REVISE RECORD

Version No.	Date	Description
00	2023/8/1	Original

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1 TEST SUMMARY

Test item	Test Requirement	Test Method	Class/Severity	Result
Radiated Emissions	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.4&6.5&6.6	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)	Pass
Restricted Band Around Fundamental Frequency	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.4&6.5&6.6	47 CFR Part 15, Subpart C 15.205 & 15.249(d) & 15.209	Pass
Field Strength of the Fundamental Signal (15.249(a))	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.5&6.6	47 CFR Part 15, Subpart C 15.249(a)	Pass
20dB Bandwidth	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	N/A
Antenna Requirement	47 CFR Part 15, Subpart C 15.249	N/A	47 CFR Part 15, Subpart C 15.203	Pass

2 GENERAL INFORMATION

Applicant	GLOBE ELECTRIC COMPANY INC.
Address	150, ONEIDA, MONTREAL, QUEBEC, CANADA, H9R 1A8
Manufacturer	GLOBE ELECTRIC COMPANY INC.
Address	150, ONEIDA, MONTREAL, QUEBEC, CANADA, H9R 1A8
Factory	N/A
Address	N/A
Product Name	Outdoor Fixed Security Light with remote sensor
Test Model No.	17000213

3 GENERAL DESCRIPTION OF E.U.T.

Hardware Version	N/A
Software Version	N/A
Frequency Range:	2418MHz
Modulation Type:	GFSK
Channel numbers:	1 (declared by the client)
Antenna Type:	PCB ANT
Antenna Gain:	-2.74dBi(Provided by the applicant)
Power Supply:	DC3V(dry accumulator1.5V*2)

4 TEST ENVIRONMENT

Environment	Temperature	Voltage
Normal	25°C	DC3V

5 TEST MODE

TEST MODE	TEST MODE DESCRIPTION
Transmitting mode	Keep the EUT in continuously transmitting mode with modulation. New battery is used during all test.

6 MEASUREMENT UNCERTAINTY

Parameter	Expanded Uncertainty (Confidence of 95%)
Radiated Emission(9kHz-30MHz)	±4.34dB
Radiated Emission(30Mz-1000MHz)	±4.24dB
Radiated Emission(1GHz-18GHz)	±4.68dB
AC Power Line Conducted Emission(150kHz-30MHz)	±3.45dB

Parameter	Expanded Uncertainty (Confidence of 95%)
Occupied Channel Bandwidth	±5 %
RF output power, conducted	±1.5 dB
Power Spectral Density, conducted	±3.0 dB
Unwanted Emissions, conducted	±3.0 dB
Temperature	±3 °C
Supply voltages	±3 %
Time	±5 %
Unwanted Radiated Emission (30MHz ~ 1000MHz)	±4.35 dB
Unwanted Radiated Emission (1GHz ~ 18GHz)	±4.44 dB

7 DESCRIPTION OF SUPPORT UNIT

Device Type	Manufacturer	Model Name	Serial No.	Remark
N/A	N/A	N/A	N/A	N/A

8 LABORATORY LOCATION

All tests were performed at:

BlueAsia of Technical Services(Shenzhen) Co., Ltd.

Building C, No. 107, Shihuan Road, Shiyuan Sub-District, Baoan District, Shenzhen, Guangdong Province, China

Telephone: TEL: +86-755-28682673 FAX: +86-755-28682673

No tests were sub-contracted.

9 TEST INSTRUMENTS LIST

Test Equipment Of Radiated Spurious Emissions					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Chamber 1	SKET	966	N/A	2020/11/10	2023/11/9
Chamber 2	SKET	966	N/A	2021/07/20	2024/07/19
Spectrum	R&S	FSP40	100817	2022/09/15	2023/09/14
Receiver	R&S	ESR7	101199	2022/09/15	2023/09/14
Receiver	R&S	ESPI7	101477	2022/07/16	2024/07/15
broadband Antenna	Schwarzbeck	VULB9168	00836 P:00227	2022/09/15	2023/09/14
Horn Antenna	Schwarzbeck	BBHA9120D	01892 P:00331	2022/09/13	2025/09/12
Amplifier	SKET	LNPA_30M01G-30	SK2021060801	2022/07/16	2024/07/15
Amplifier	SKET	PA-000318G-45	N/A	2022/09/13	2023/09/12
Amplifier	SKET	LNPA_18G40G-50	SK2022071301	2022/07/14	2024/07/13
Filter group	SKET	2.4G/5G Filter group r	N/A	2022/07/16	2024/07/15
EMI software	EZ	EZ-EMC	EEMC-3A1	N/A	N/A
Loop antenna	SCHNARZBECK	FMZB1519B	00102	2022/9/14	2025/9/13
Controller	SKET	N/A	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-02	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-03	N/A	N/A	N/A
Coaxial Cable	BlueAsia	BLA-XC-01	N/A	N/A	N/A
SignalGenerator	Agilent	N5182A	MY47420955	2022/9/7	2023/9/6
Audio Analyzer	ATS-1	Audio Precision	ATS141094	2023/07/01	2024/06/30
Electric and Magnetic Field Analyzer	EHP-200A	Narda	180ZX11016	2023/03/30	2024/03/29
Audio shielding box	SB-ABT-C35	SKET	N/A	2022/09/14	2023/09/13
1kHz calibration audio source	MCS-ABT-C35	SKET	N/A	2022/09/14	2023/09/13
Free Field Microphone	MGS MP 663	SKET	0414	2022/09/09	2023/09/08

Test Equipment Of RF Conducted Test					
Equipment	Manufacturer	Model	S/N	Cal.Date	Cal.Due
Spectrum	R&S	FSP40	100817	2022/09/15	2023/09/14

Spectrum	Agilent	N9020A	MY49100060	2022/09/07	2023/09/06
Spectrum	KEYSIGHT	N9030A	MY52350152	2022/07/01	2024/06/30
Spectrum	KEYSIGHT	N9010A	MY54330814	2022/07/01	2024/06/30
Signal Generator	Agilent	N5182A	MY47420955	2022/09/07	2023/09/06
Signal Generator	Agilent	E8257D	MY44320250	2022/07/01	2024/06/30
Signal Generator	Agilent	N5181A	MY46240904	2022/08/02	2024/08/01
Signal Generator	R&S	CMW500	132429	2022/09/07	2023/09/06
BluetoothTester	Anritsu	MT8852B	06262047872	2022/09/07	2023/09/06
Power probe	DARE	RPR3006W	14I00889SN042	2022/09/07	2023/09/06
DCPowersupply	zhaoxin	KXN-305D	20K305D1221363	2022/09/14	2023/09/13
DCPowersupply	zhaoxin	RXN-1505D	19R1505D050168	2022/09/14	2023/09/13
Audio Analyzer	Audioprecision	N/A	ATSI-41094	2022/7/1	2024/6/30
2.4GHz/5GHz RF Test software	MTS	MTS 8310	Version 2.0.0.0	N/A	N/A

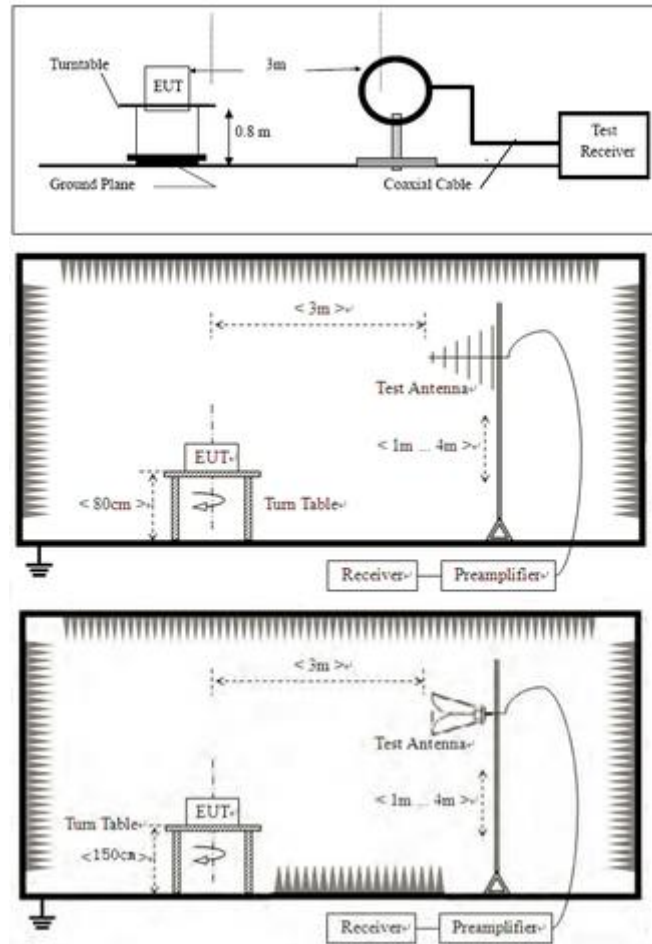
10 RADIATED EMISSIONS

Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	ANSI C63.10 (2013) Section 6.4&6.5&6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25℃
Humidity	60%

10.1 LIMITS

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F (kHz)	-	-	300
0.490MHz-1.705MHz	24000/F (kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

10.2 BLOCK DIAGRAM OF TEST SETUP

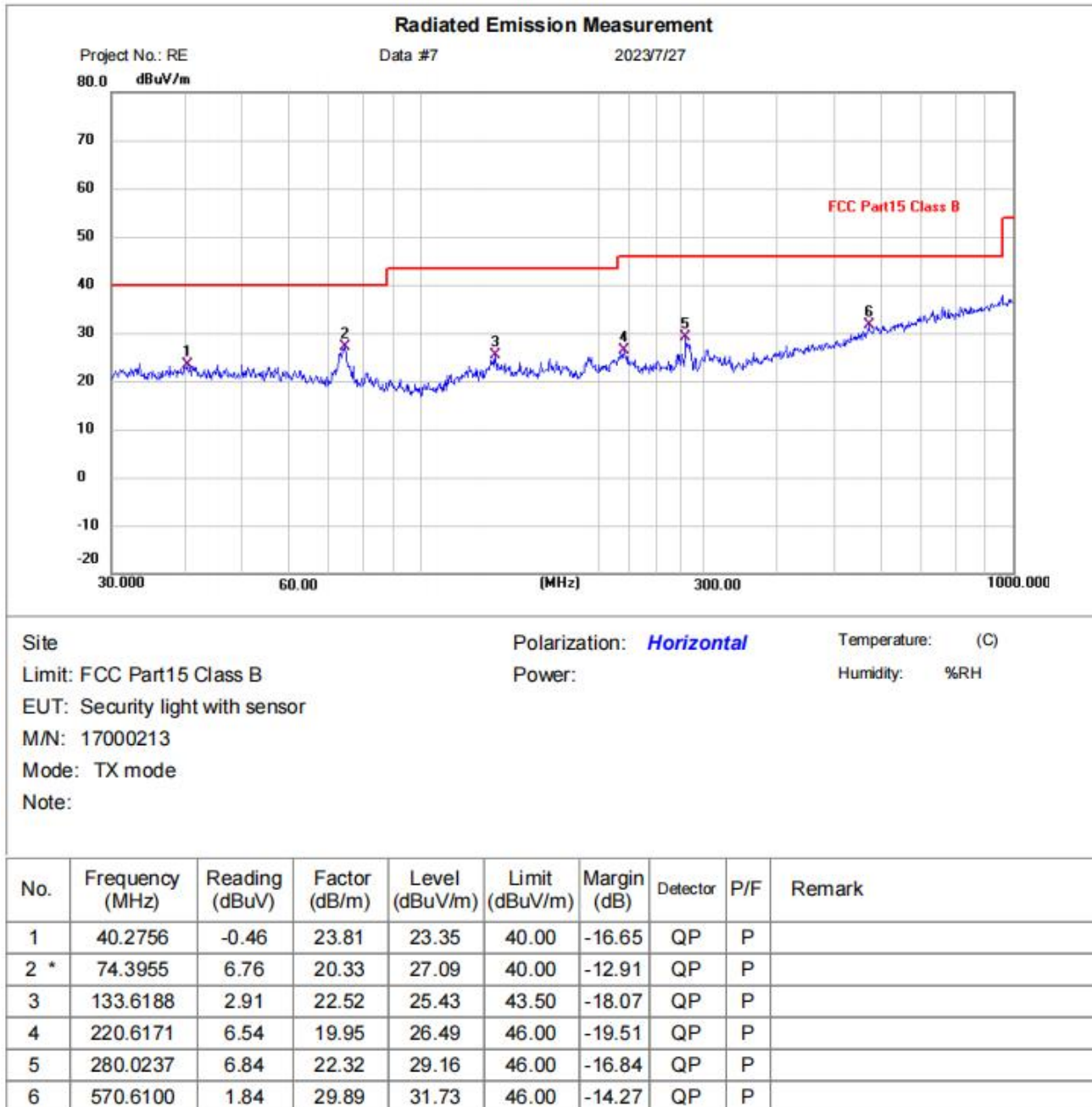


10.3 PROCEDURE

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.

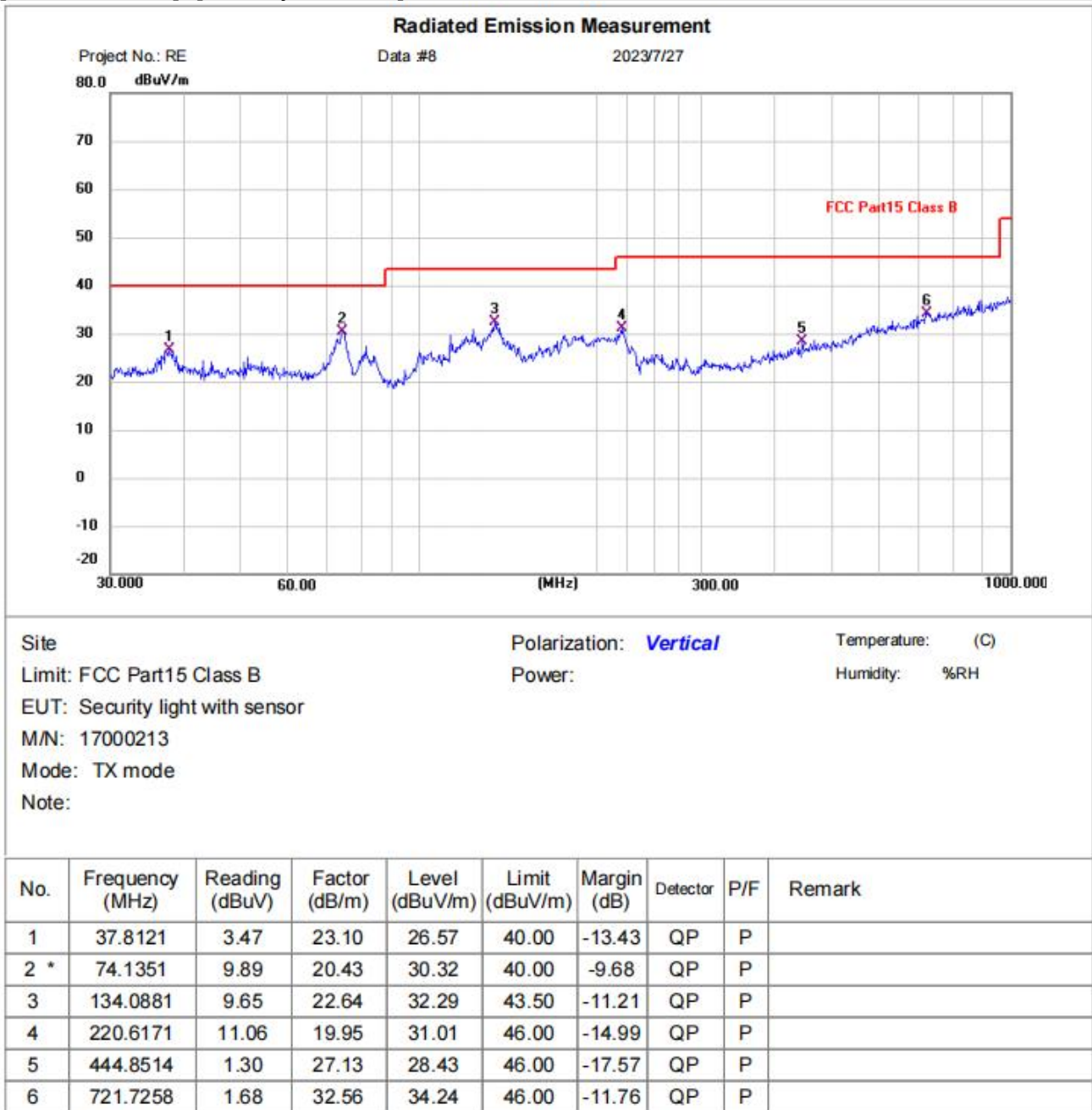
10.4 TEST DATA

[TestMode: TX]; [Polarity: Horizontal]



Test Result: Pass

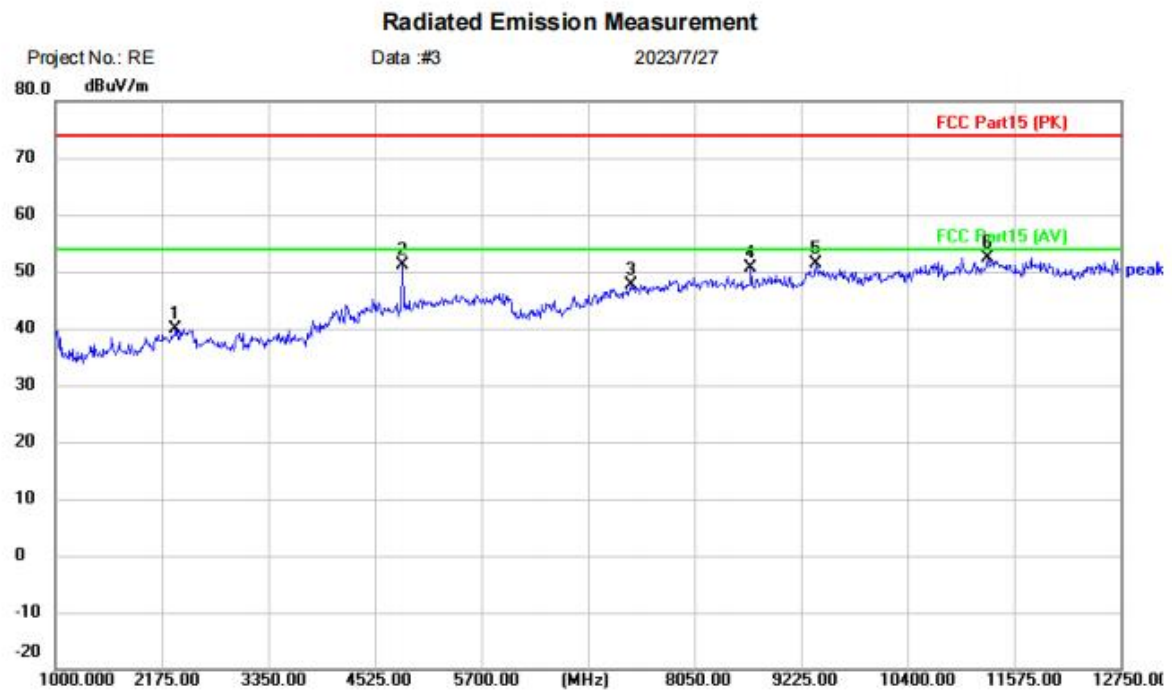
[TestMode: TX]; [Polarity: Vertical]



Test Result: Pass

Above 1GHz:

[TestMode: TX mode]; [Polarity: Horizontal]



Site Polarization: **Horizontal** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: Security light wiewh sensor

M/N: 17000213

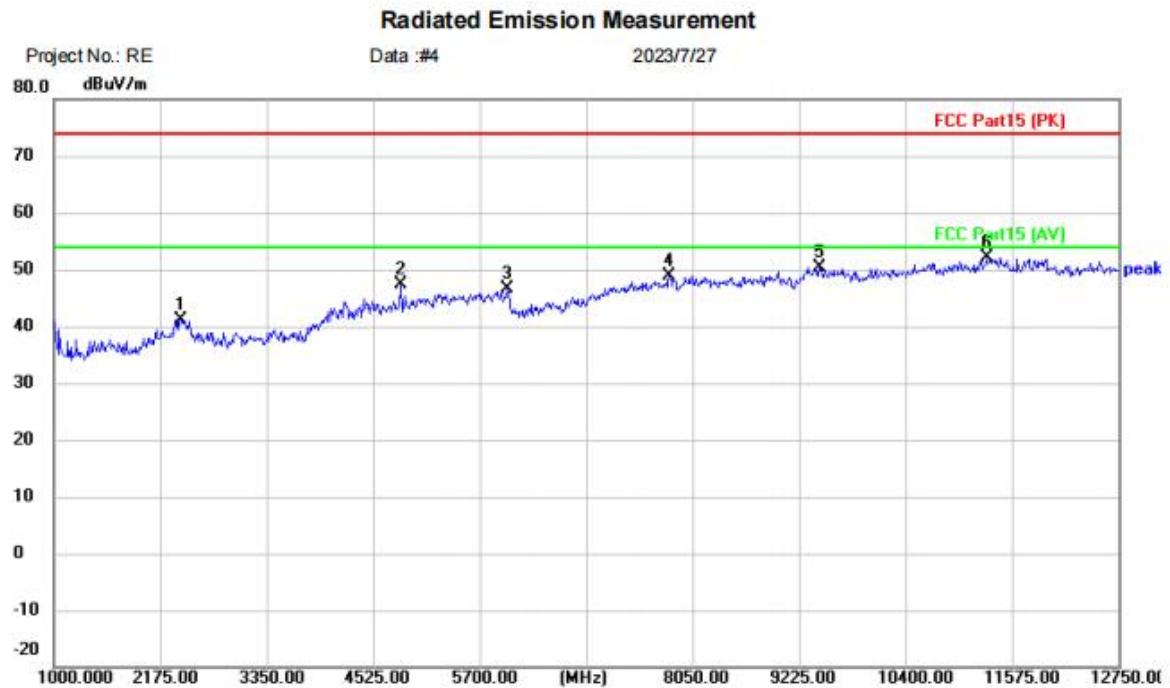
Mode: TX

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2327.750	41.93	-1.94	39.99	74.00	-34.01	peak	
2		4830.500	46.57	4.52	51.09	74.00	-22.91	peak	
3		7356.750	39.75	7.87	47.62	74.00	-26.38	peak	
4		8672.750	40.86	9.81	50.67	74.00	-23.33	peak	
5		9389.500	39.80	11.48	51.28	74.00	-22.72	peak	
6	*	11281.25	39.05	13.36	52.41	74.00	-21.59	peak	

Test Result: Pass

[TestMode: TX mode]; [Polarity: Vertical]



Site: Polarization: **Vertical** Temperature: (C)
Limit: FCC Part15 (PK) Power: Humidity: %RH
EUT: Security light wiewh sensor
M/N: 17000213
Mode: TX
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2398.250	42.78	-1.66	41.12	74.00	-32.88	peak	
2		4830.500	42.89	4.52	47.41	74.00	-26.59	peak	
3		6005.500	43.19	3.55	46.74	74.00	-27.26	peak	
4		7791.500	40.71	8.19	48.90	74.00	-25.10	peak	
5		9448.250	39.12	11.36	50.48	74.00	-23.52	peak	
6	*	11293.00	38.77	13.37	52.14	74.00	-21.86	peak	

Test Result: Pass

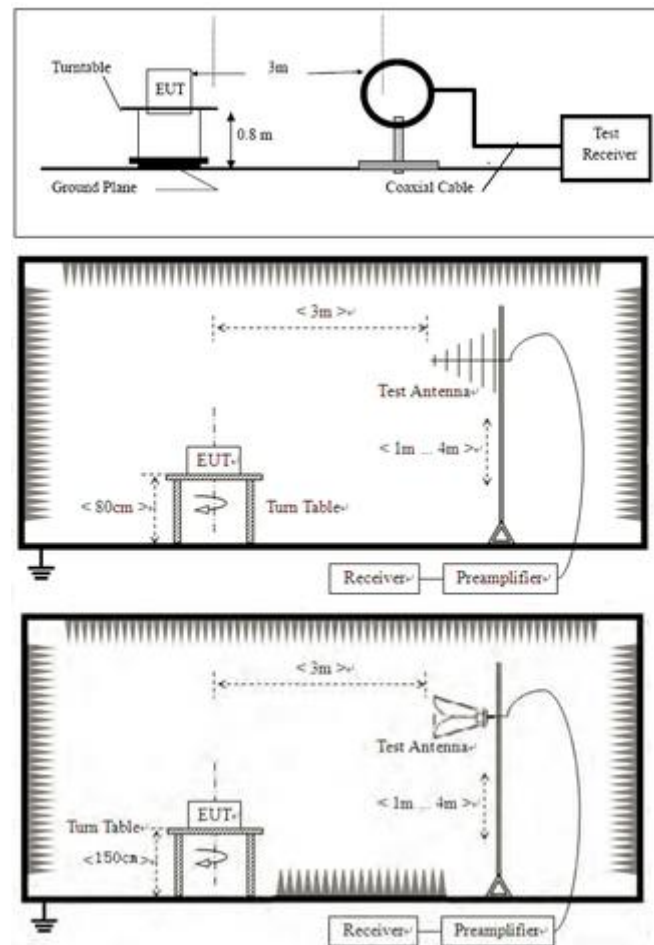
11 RESTRICTED BAND AROUND FUNDAMENTAL FREQUENCY

Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	ANSI C63.10 (2013) Section 6.4&6.5&6.6
Test Mode (Pre-Scan)	TX
Test Mode (Final Test)	TX
Tester	Charlie
Temperature	25℃
Humidity	60%

11.1 LIMITS

Frequency	Limit (dBμV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

11.2 BLOCK DIAGRAM OF TEST SETUP



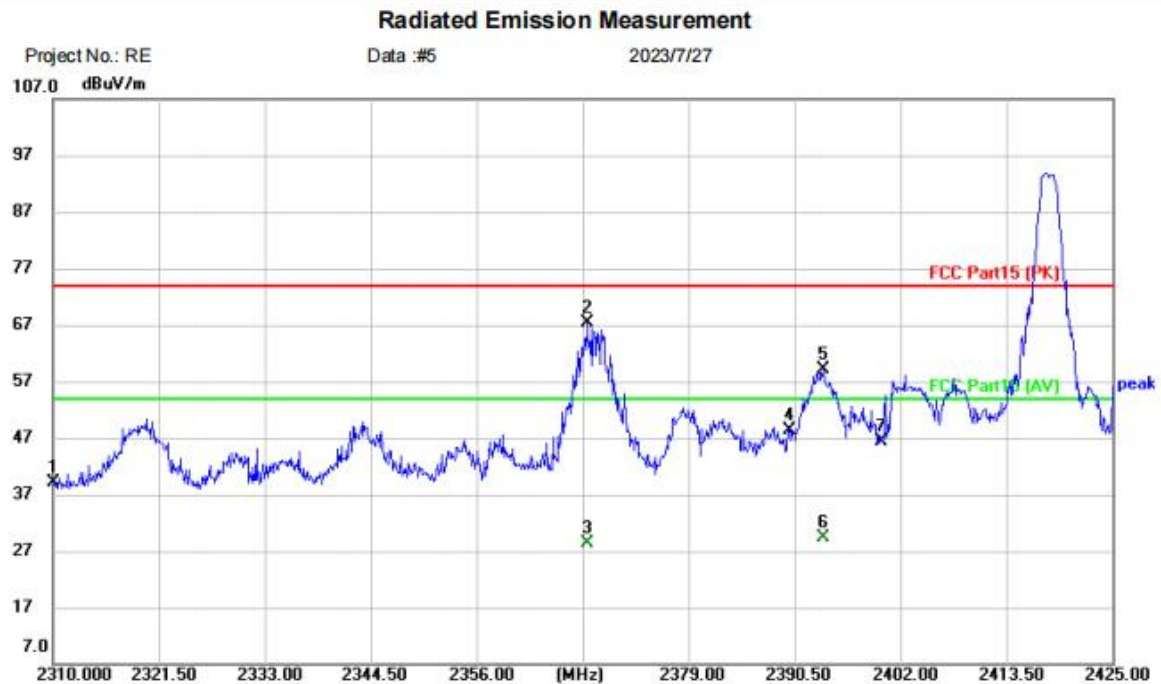
11.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
 - i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
 - j. Repeat above procedures until all frequencies measured was complete.
- Remark: $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamp Factor}$

11.4 TEST DATA

[TestMode: TX mode]; [Polarity: Horizontal]



Site Polarization: **Horizontal** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: Security light wieh sensor

M/N: 17000213

Mode: TX-L

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		2310.000	43.41	-4.40	39.01	74.00	-34.99	peak	
2	*	2367.960	71.71	-4.33	67.38	74.00	-6.62	peak	
3		2367.960	32.70	-4.33	28.37	54.00	-25.63	AVG	
4		2390.000	52.72	-4.31	48.41	74.00	-25.59	peak	
5		2393.605	63.32	-4.30	59.02	74.00	-14.98	peak	
6		2393.605	33.74	-4.30	29.44	54.00	-24.56	AVG	
7		2400.000	50.55	-4.29	46.26	74.00	-27.74	peak	

Test Result: Pass

[TestMode: TX mode]; [Polarity: Vertical]

Radiated Emission Measurement



Site Polarization: **Vertical** Temperature: (C)

Limit: FCC Part15 (PK) Power: Humidity: %RH

EUT: Security light wiew sensor

M/N: 17000213

Mode: TX-L

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1		2310.000	43.46	-4.40	39.06	74.00	-34.94	peak	
2	*	2368.305	62.17	-4.33	57.84	74.00	-16.16	peak	
3		2368.305	31.76	-4.33	27.43	54.00	-26.57	AVG	
4		2390.000	44.19	-4.31	39.88	74.00	-34.12	peak	
5		2400.000	48.00	-4.29	43.71	74.00	-30.29	peak	

Test Result: Pass

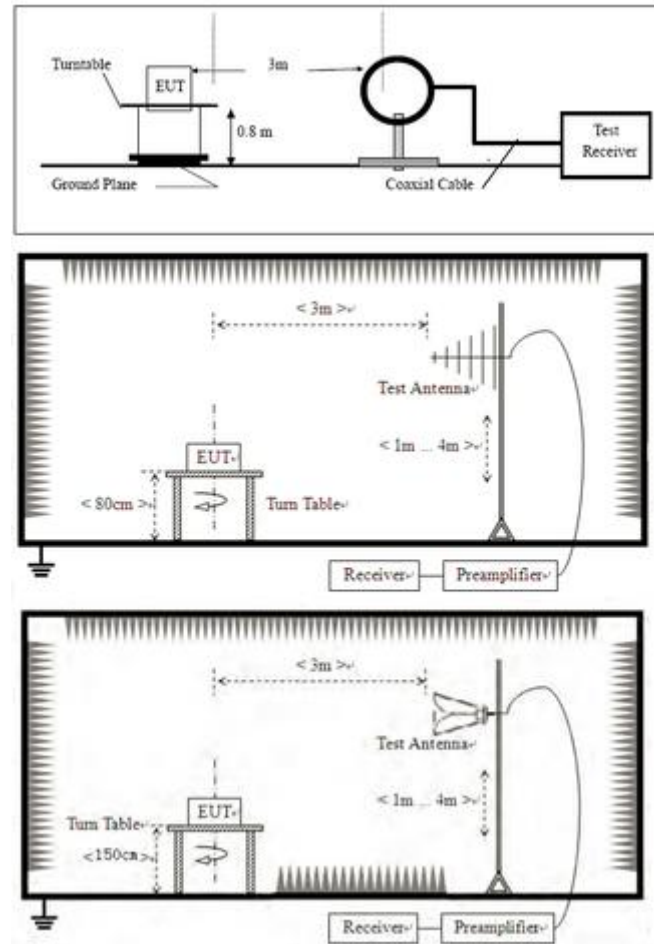
12 FIELD STRENGTH OF THE FUNDAMENTAL SIGNAL (15.249(A))

Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	ANSI C63.10 (2013) Section 6.5&6.6
Test Mode (Pre-Scan)	Operation(wireless)
Test Mode (Final Test)	Operation(wireless)
Tester	Charlie
Temperature	25℃
Humidity	60%

12.1 LIMITS

Frequency	Limit (dBμV/m @3m)	Remark
2400MHz-2483.5MHz	94.0	Average Value
	114.0	Peak Value

12.2 BLOCK DIAGRAM OF TEST SETUP



12.3 PROCEDURE

- For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
 - i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.
 - j. Repeat above procedures until all frequencies measured was complete.
- Remark: $\text{Level} = \text{Read Level} + \text{Cable Loss} + \text{Antenna Factor} - \text{Preamp Factor}$

12.4 TEST DATA

Peak value:

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
2418	101.14	-4.33	96.81	114.00	-17.19	H
2418	91.37	-4.33	87.04	114.00	-26.96	V

Average value:

Frequency (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Over Limit (dB)	Antenna Polaxis
2418	83.93	-4.33	79.6	94.00	-14.4	H
2418	87.08	-4.33	82.75	94.00	-11.25	V

NOTE: RBW 3MHz VBW 10MHz · PK detector is for PK value ,RMS detector is for AV value.

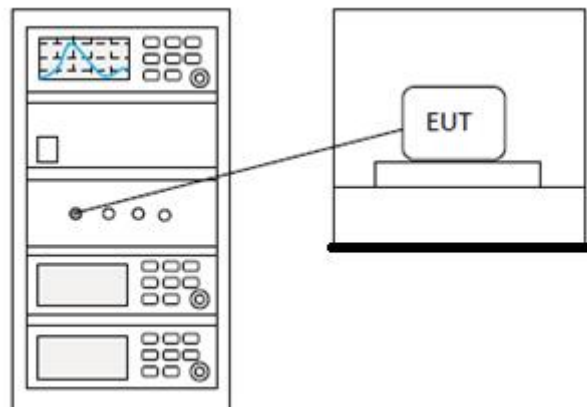
13 20DB BANDWIDTH

Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	ANSI C63.10 (2013) Section 6.9
Test Mode (Pre-Scan)	Operation(wireless)
Test Mode (Final Test)	Operation(wireless)
Tester	Charlie
Temperature	25℃
Humidity	60%

13.1 LIMITS

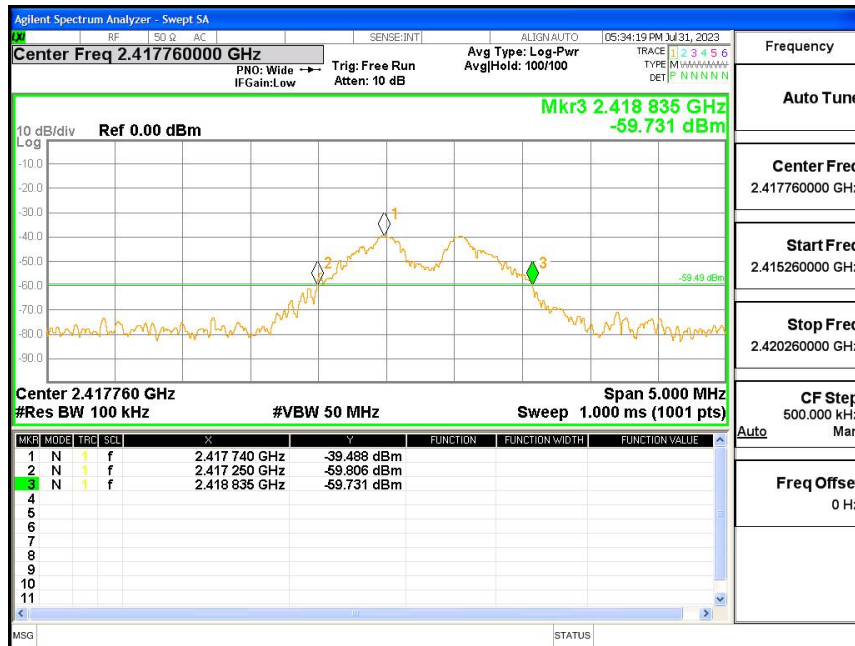
Limit:	N/A
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13.2 BLOCK DIAGRAM OF TEST SETUP



13.3 TEST DATA

Condition	Mode	Frequency (MHz)	Antenna	-20 dB Bandwidth (MHz)	Limit -20 dB Bandwidth (MHz)	Verdict
NVNT	GFSK	2418	Ant1	1.585	0.5	Pass



14 ANTENNA REQUIREMENT

Test Standard	47 CFR Part 15, Subpart C 15.249
Test Method	N/A

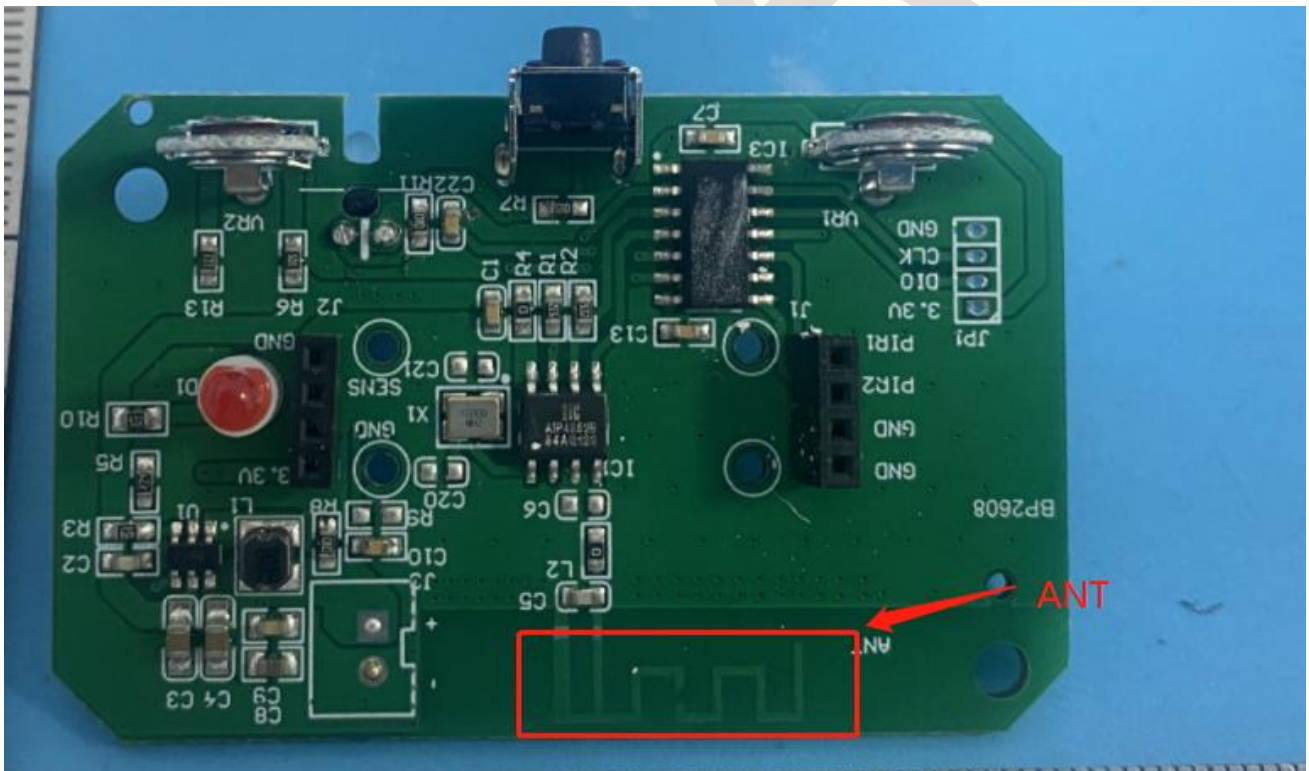
14.1 CONCLUSION

Standard 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 an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of an so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is -2.74dBi.



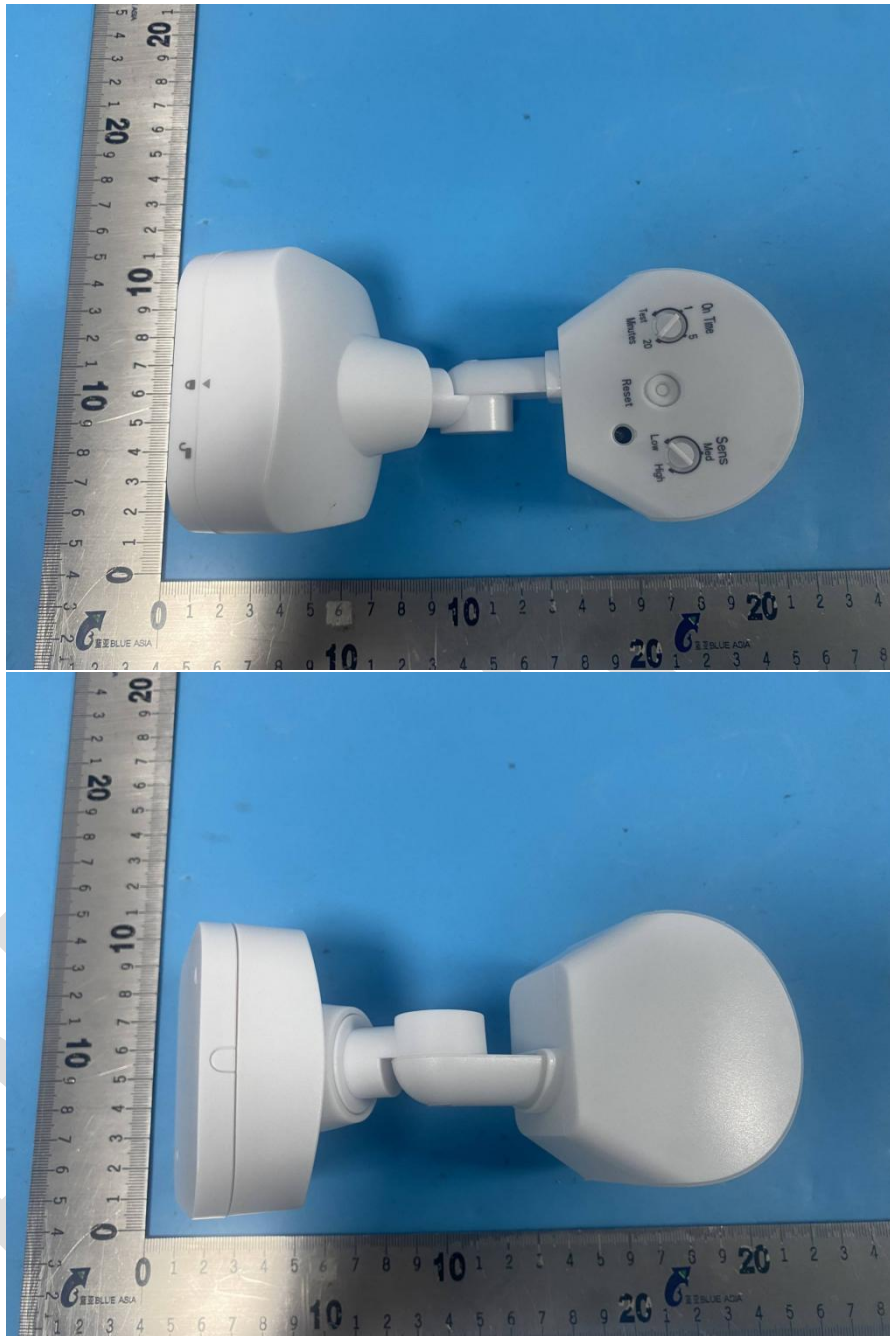
15 APPENDIX

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Radiated Emissions



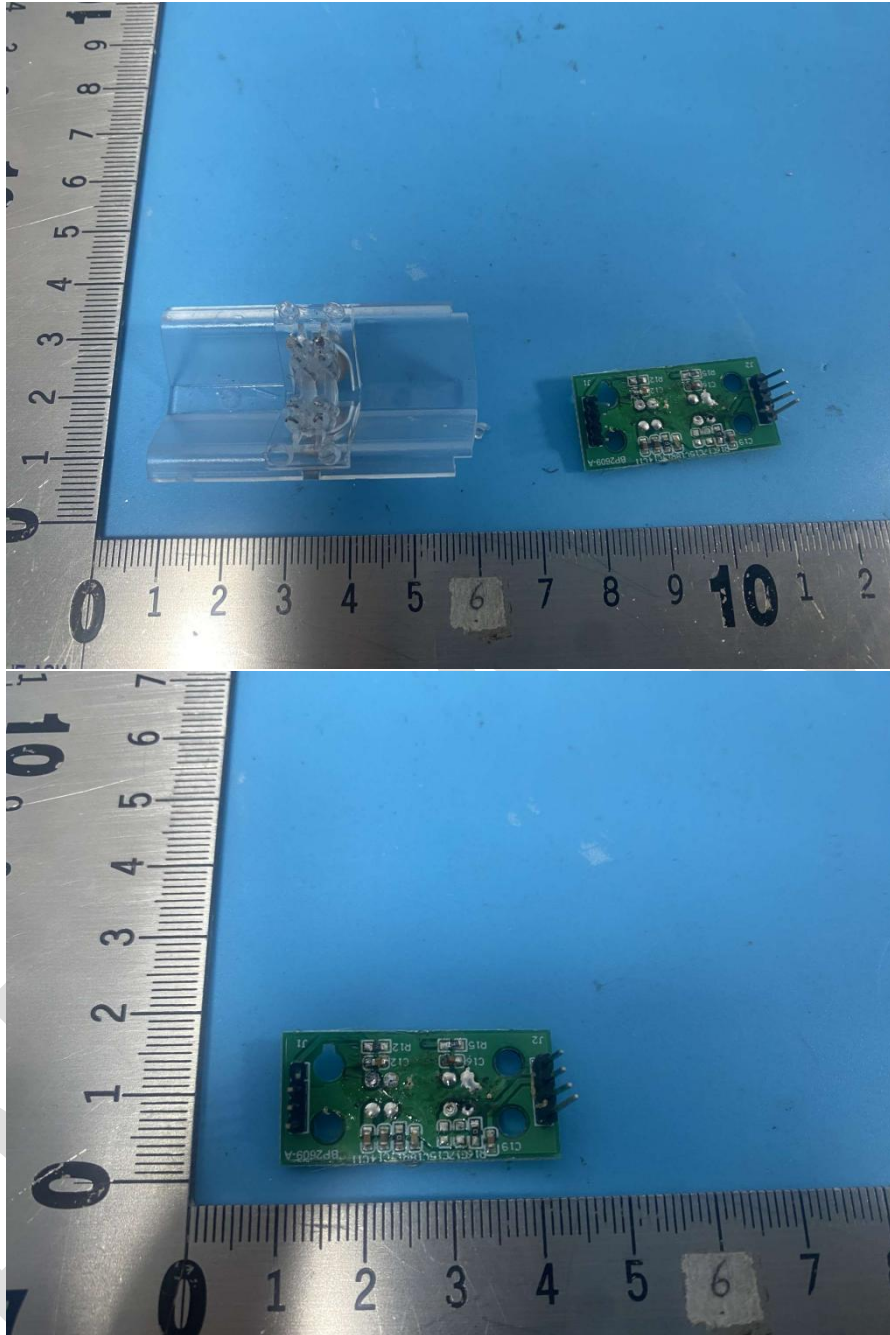
APPENDIX B: PHOTOGRAPHS OF EUT

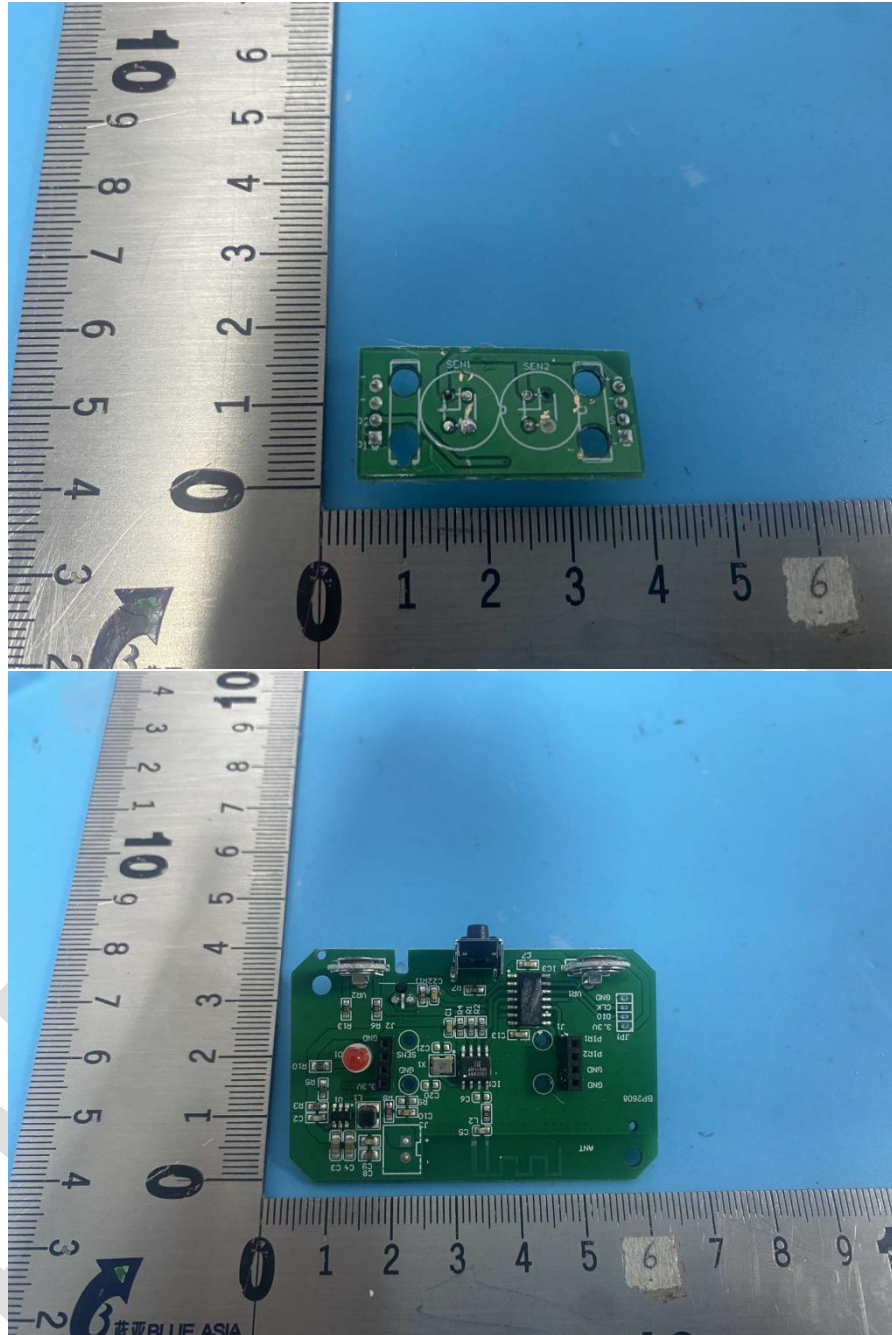


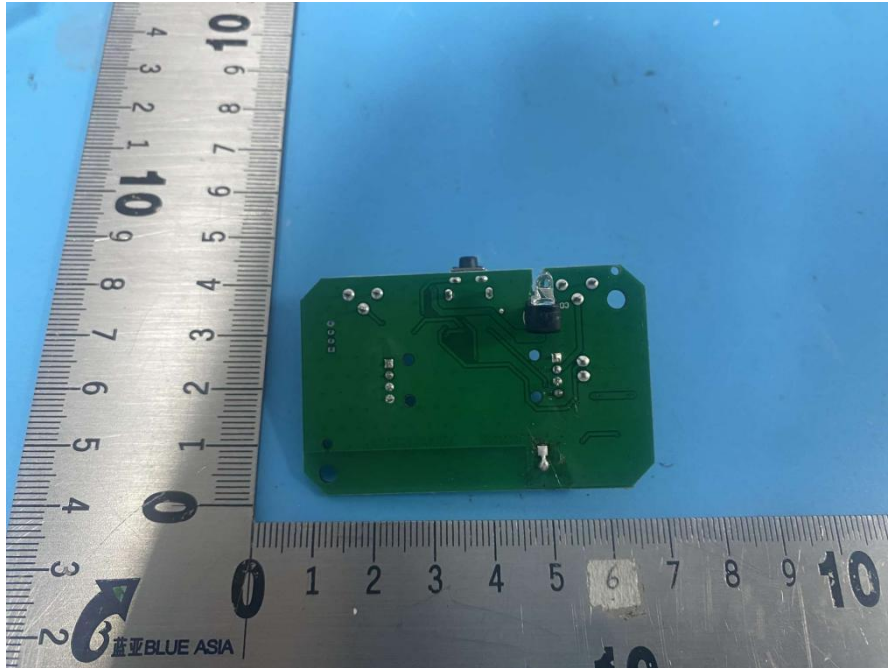












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