

# FCC REPORT

**Applicant:** ASmart LIGHT CO.,LTD  
**Address of Applicant:** 506 N GARFIELD AVE SUITE#210 ALHAMBRA,CA 91801 USA  
**Equipment Under Test (EUT)**  
Product Name: Microwave motion Sensor  
Model No.: HB01DMS  
Trade mark: ASmart  
**FCC ID:** 2AW5A-HB01DMS  
**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249  
**Date of sample receipt:** 19 Jan., 2021  
**Date of Test:** 19 Jan., to 29 Oct., 2021  
**Date of report issued:** 30 Oct., 2021  
**Test Result:** PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang  
Laboratory Manager

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 and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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**2 Version**

Version No.	Date	Description
00	20 Oct., 2021	Original
01	30 Oct., 2021	1. Updated test data on page 20 to 23. 2. Updated test frequency on page 5/14/15. 3. Updated test data on page 17/18.

Tested by:

Janet Wei

Test Engineer

Date:

20 Oct., 2021

Reviewed by:

Winner Zhang

Project Engineer

Date:

20 Oct., 2021

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## 4 Test Summary

Test Items	Section in CFR 47	Result
Antenna requirement	15.203/15.249 (a)	Pass
AC Power Line Conducted Emission	15.207	Pass
Field Strength Of The Fundamental Signal	15.249 (a)	Pass
Radiated Spurious Emission	15.249(a)(d)/15.209	Pass
20dB Bandwidth	15.215 (c)	Pass
Band Edge	15.249(a)(d)	Pass
<b>Remark:</b> 1. Pass: Meet the requirement. 2. N/A: Not Applicable for Non-adaptive equipment. 3. The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).		
<b>Test Method:</b>	ANSI C63.10-2013 KDB 558074 D01 15.249 Meas Guidance v05r02	

## 5 General Information

### 5.1 Client Information

Applicant:	ASmart LIGHT CO.,LTD
Address:	506 N GARFIELD AVE SUITE#210 ALHAMBRA,CA 91801 USA
Manufacturer:	ASmart LIGHT CO.,LTD
Address:	506 N GARFIELD AVE SUITE#210 ALHAMBRA,CA 91801 USA

### 5.2 General Description of E.U.T.

Product Name:	Microwave motion Sensor
Model No.:	HB01DMS
Operation Frequency:	5731.1-5859.1 MHz
Channel numbers:	Infinite (Customer claims)
Modulation technology:	FMCW
Antenna Type:	Internal Antenna
Antenna gain:	-0.61 dBi
Power supply:	DC 12V
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

Operation Frequency each of channel		
Frequency	Frequency	Frequency
5731.1 MHz	5805.0 MHz	5859.1 MHz
<i>Note:</i> In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test.		

### 5.3 Test environment and mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Transmitting mode	Keep the EUT in continuous transmitting with modulation
<p>The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y &amp; Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.</p>	

### 5.4 Description of Support Units

Manufacturer	Description	Model	S/N	FCC ID/DoC
LENOVO	Laptop	SL510	2847A65	DoC
EBYTE	Test suite	E25 D1	N/A	N/A
Sunshiny	Adapter	XS-1201000SCN	N/A	N/A

### 5.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%)
Conducted Emission (9kHz ~ 150KHz) for V-AMN	3.11 dB
Conducted Emission (150kHz ~ 30MHz) for V-AMN	2.62 dB
Conducted Emission (150kHz ~ 30MHz) for AAN	3.54 dB
Radiated Emission (30MHz ~ 1GHz) for 3m SAC	4.45 dB
Radiated Emission (1GHz ~ 18GHz) for 3m SAC	5.34 dB
Radiated Emission (18GHz ~ 40GHz) for 3m SAC	5.34 dB

### 5.6 Additions to, deviations, or exclusions from the method

No
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### 5.7 Laboratory Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC - Designation No.: CN1211</b> JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.</li> <li>● <b>ISED – CAB identifier.: CN0021</b> The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.</li> <li>● <b>A2LA - Registration No.: 4346.01</b> This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/4346-01.pdf">https://portal.a2la.org/scopepdf/4346-01.pdf</a></li> </ul>
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## 5.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://www.ccis-cb.com>

## 5.9 Test Instruments list

Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
3m SAC	ETS	RFD-100	Q1984	04-14-2021	04-13-2024
BiConiLog Antenna	SCHWARZBECK	VULB9163	9163-1246	03-07-2021	03-06-2022
Biconical Antenna	SCHWARZBECK	VUBA 9117	9117#359	06-17-2021	06-17-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	912D-916	03-07-2021	03-06-2022
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9170	1067	04-02-2021	04-01-2022
Broad-Band Horn Antenna	SCHWARZBECK	BBHA9170	1068	04-02-2021	04-01-2022
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-03-2021	03-02-2022
Spectrum analyzer	Keysight	N9010B	MY60240202	11-27-2020	11-26-2021
Low Pre-amplifier	SCHWARZBECK	BBV9743B	00305	03-07-2021	03-06-2022
High Pre-amplifier	SKET	LNPA_0118G-50	MF280208233	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-1G-NN-8M	JYT3M-1	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-18G-NN-8M	JYT3M-2	03-07-2021	03-06-2022
Cable	Qualwave	JYT3M-1G-BB-5M	JYT3M-3	03-07-2021	03-06-2022
Cable	Bost	JYT3M-40G-SS-8M	JYT3M-4	04-02-2021	04-01-2022
EMI Test Software	Tonscend	TS+	Version:3.0.0.1		

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI 3	101189	03-03-2021	03-02-2022
LISN	Rohde & Schwarz	ENV432	101602	04-06-2021	04-05-2022
LISN	Rohde & Schwarz	ESH3-Z5	843862/010	06-18-2020	06-17-2022
ISN	Schwarzbeck	CAT3 8158	#96	03-03-2021	03-02-2022
ISN	Schwarzbeck	CAT5 8158	#166	03-03-2021	03-02-2022
ISN	Schwarzbeck	NTFM 8158	#126	03-03-2021	03-02-2022
RF Switch	TOP PRECISION	RSU0301	N/A	03-03-2021	03-02-2022
Cable	Bost	JYTCE-1G-NN-2M	JYTCE-1	03-03-2021	03-02-2022
Cable	Bost	JYTCE-1G-BN-3M	JYTCE-2	03-03-2021	03-02-2022
EMI Test Software	AUDIX	E3	Version: 6.110919b		

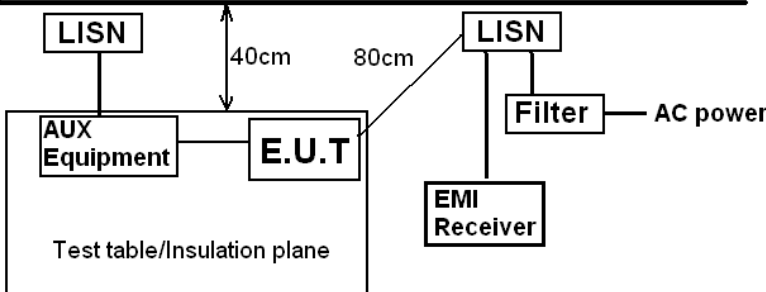
## 6 Test results and Measurement Data

### 6.1 Antenna requirement:

<b>Standard requirement:</b>	FCC Part 15 C Section 15.203 /249(a)
<p>15.203 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, 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.</p> <p>15.249(a) requirement: (i) Systems operating in the 5725-5875 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.</p>	
<b>E.U.T Antenna:</b>	
The antenna is an Internal antenna which cannot replace by end-user, the best-case gain of the antenna is -0.61 dBi.	

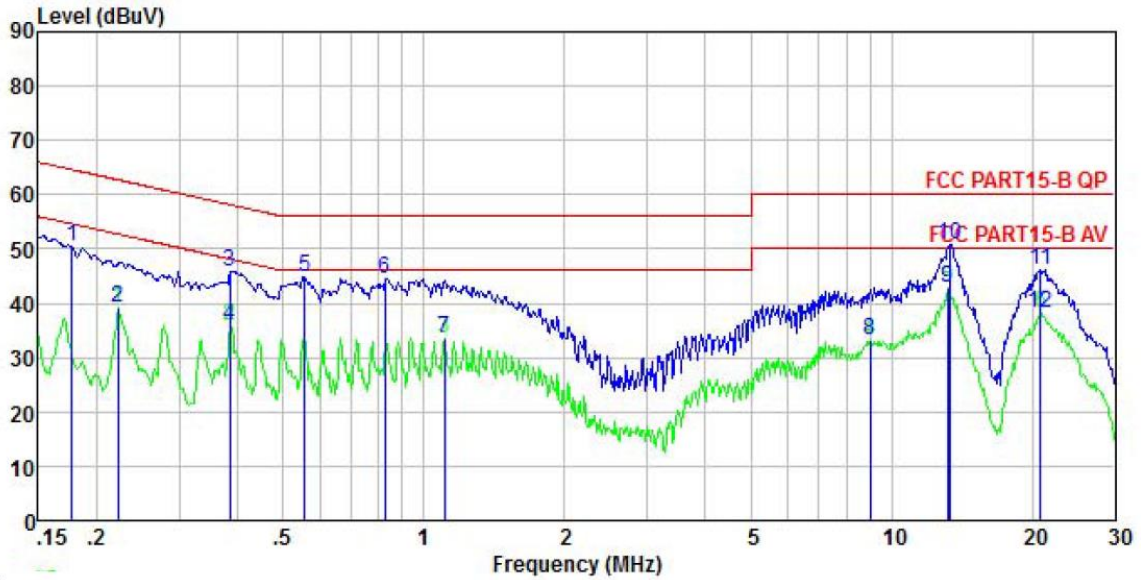


## 6.2 Conducted Emission

Test Requirement:	FCC Part 15 C Section 15.207		
Test Frequency Range:	150 kHz to 30 MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9kHz, VBW=30kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test procedure	<ol style="list-style-type: none"> <li>The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10(latest version) on conducted measurement.</li> </ol>		
Test setup:	<div style="text-align: center;"> <p><b>Reference Plane</b></p>  </div> <p><i>Remark</i>  E.U.T: Equipment Under Test  LISN: Line Impedance Stabilization Network  Test table height=0.8m</p>		
Test Instruments:	Refer to section 5.9 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		

Measurement Data:

Product name:	Microwave motion Sensor	Product model:	HB01DMS
Test by:	Janet	Test mode:	Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5°C Humi: 55%

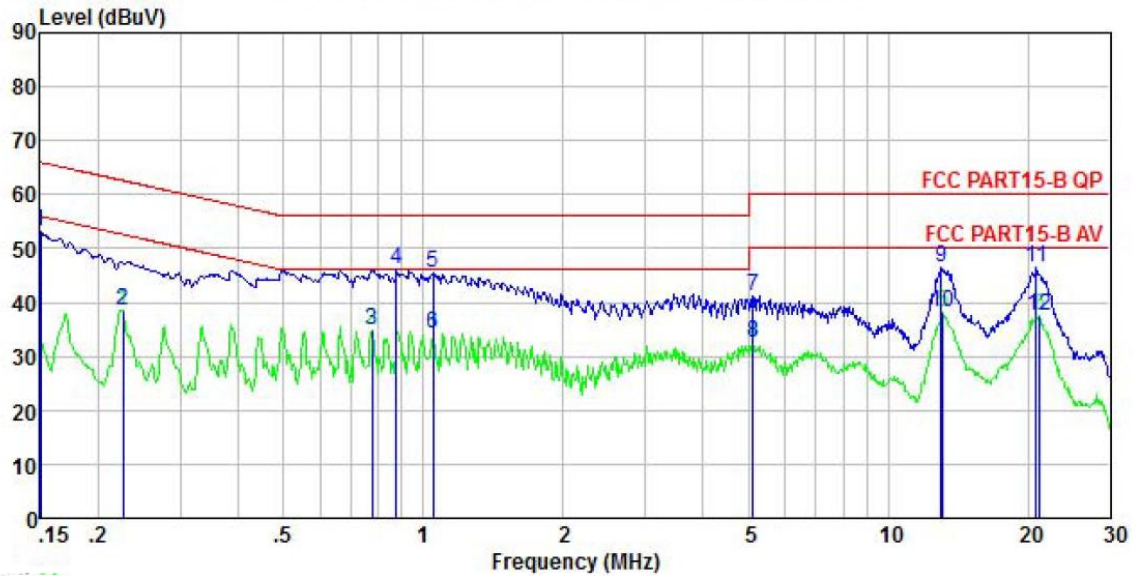


	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.177	40.22	10.23	-0.11	0.01	50.35	64.64	-14.29	QP
2	0.222	29.20	10.24	-0.19	0.03	39.28	52.74	-13.46	Average
3	0.385	35.31	10.27	0.33	0.03	45.94	58.17	-12.23	QP
4	0.385	25.23	10.27	0.33	0.03	35.86	48.17	-12.31	Average
5	0.555	34.76	10.29	-0.37	0.02	44.70	56.00	-11.30	QP
6	0.826	34.23	10.31	-0.01	0.03	44.56	56.00	-11.44	QP
7	1.106	22.84	10.32	0.35	0.07	33.58	46.00	-12.42	Average
8	9.011	20.62	10.57	1.77	0.11	33.07	50.00	-16.93	Average
9	13.197	28.88	10.72	3.08	0.11	42.79	50.00	-7.21	Average
10	13.337	36.96	10.72	3.11	0.11	50.90	60.00	-9.10	QP
11	20.814	34.27	10.92	0.91	0.18	46.28	60.00	-13.72	QP
12	20.814	26.27	10.92	0.91	0.18	38.28	50.00	-11.72	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss.

<b>Product name:</b>	Microwave motion Sensor	<b>Product model:</b>	HB01DMS
<b>Test by:</b>	Janet	<b>Test mode:</b>	Tx mode
<b>Test frequency:</b>	150 kHz ~ 30 MHz	<b>Phase:</b>	Neutral
<b>Test voltage:</b>	AC 120 V/60 Hz	<b>Environment:</b>	Temp: 22.5°C Huni: 55%



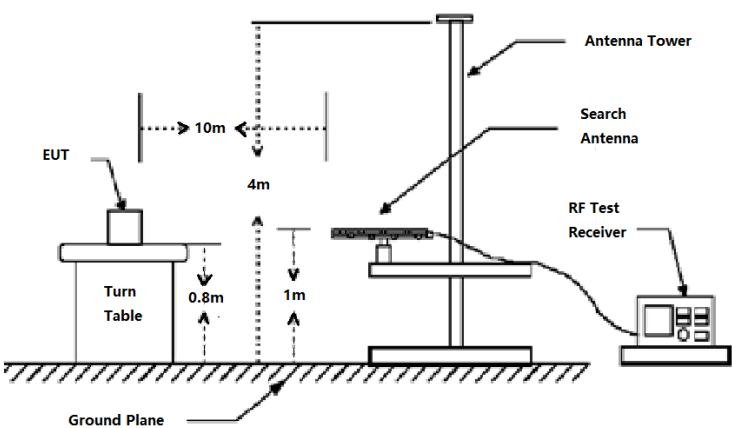
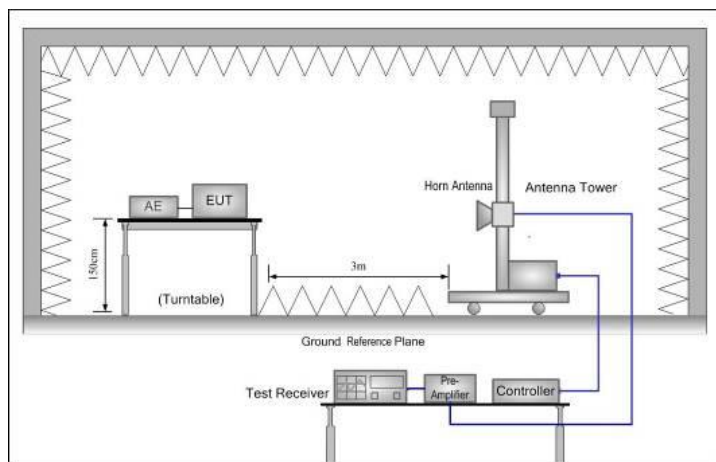
	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.150	42.79	10.19	0.01	0.01	53.00	66.00	-13.00	QP
2	0.226	28.21	10.23	0.00	0.02	38.46	52.61	-14.15	Average
3	0.775	24.46	10.30	0.05	0.03	34.84	46.00	-11.16	Average
4	0.876	35.62	10.31	0.06	0.04	46.03	56.00	-9.97	QP
5	1.049	35.04	10.31	0.09	0.06	45.50	56.00	-10.50	QP
6	1.049	23.89	10.31	0.09	0.06	34.35	56.00	-21.65	QP
7	5.112	30.08	10.41	0.68	0.09	41.26	60.00	-18.74	QP
8	5.112	21.42	10.41	0.68	0.09	32.60	50.00	-17.40	Average
9	12.988	33.16	10.68	2.50	0.11	46.45	60.00	-13.55	QP
10	13.127	24.73	10.68	2.54	0.11	38.06	50.00	-11.94	Average
11	20.814	35.09	10.88	0.32	0.18	46.47	60.00	-13.53	QP
12	21.147	25.96	10.88	0.36	0.17	37.37	50.00	-12.63	Average

**Notes:**

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss.

### 6.3 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.249(a) (d)and 15.209				
Test Frequency Range:	30MHz to 40GHz				
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark	
	5725-5825	94		Average Value	
		114		Peak Value	
Limit: (Spurious Emissions)	Frequency	Limit (dBuV/m @10m)		Remark	
	30MHz-88MHz	30.0		Quasi-peak Value	
	88MHz-216MHz	33.5		Quasi-peak Value	
	216MHz-960MHz	36.0		Quasi-peak Value	
	960MHz-1GHz	44.0		Quasi-peak Value	
	Above 1GHz	54.0		Average Value	
		74.0		Peak Value	
Or The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level whichever limit permits higher field strength.					
Test Procedure:	<p>a. The EUT was placed on the top of a rotating table 0.8m(below 1GHz) /1.5m(above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>c. 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.</p> <p>d. 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 and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>f. 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.</p>				

<p>Test setup:</p>	<p><b>Below 1GHz</b></p>  <p><b>Above 1GHz</b></p> 
<p>Test Instruments:</p>	<p>Refer to section 5.9 for details</p>
<p>Test mode:</p>	<p>Refer to section 5.3 for details</p>
<p>Test results:</p>	<p>Pass</p>

**6.3.1 Field Strength Of The Fundamental Signal**

Lowest Field Strength Of The Fundamental Signal						
Peak value:						
Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5731.1	78.77	17.24	96.01	114.00	-17.99	Vertical
5731.1	70.91	17.24	88.15	114.00	-25.85	Horizontal
Average value:						
Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5731.1	74.65	17.24	91.89	94	-2.11	Vertical
5731.1	68.28	17.24	85.52	94	-8.48	Horizontal
Middle Field Strength Of The Fundamental Signal						
Peak value:						
Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5805.0	48.63	17.51	66.14	114.00	-47.86	Vertical
5805.0	53.20	17.51	70.71	114.00	-43.29	Horizontal
Average value:						
Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5805.0	46.59	17.51	64.10	94	-29.9	Vertical
5805.0	52.20	17.51	69.71	94	-24.29	Horizontal
Highest Field Strength Of The Fundamental Signal						
Peak value:						
Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5859.1	57.34	17.51	74.85	114.00	-39.15	Vertical
5859.1	56.10	17.51	73.61	114.00	-40.39	Horizontal
Average value:						
Frequency (MHz)	Read Level (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5859.1	56.75	17.51	74.26	94	-19.74	Vertical
5859.1	55.52	17.51	73.03	94	-20.97	Horizontal
<i>Remark:</i>						
1. <i>Final Level = Receiver Read level + Factor</i>						

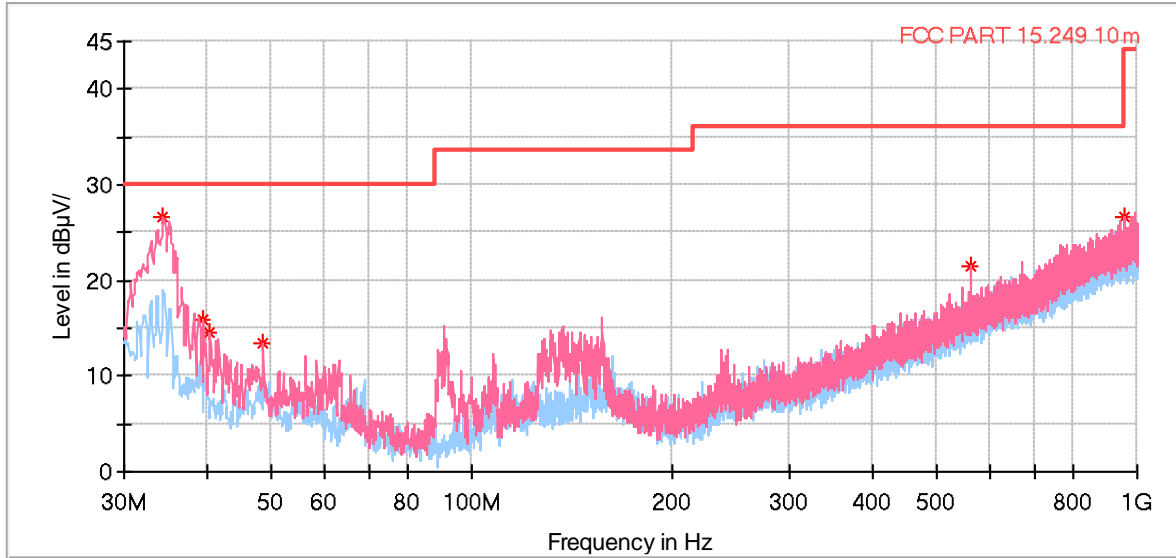
**6.3.2 Spurious Emissions**
**Above 1GHz**

Lowest						
Peak Value						
Frequency (MHz)	Read Level (dBuV)	Factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11462.20	52.59	7.06	59.65	74.00	-14.35	Vertical
11462.20	52.98	7.06	60.04	74.00	-13.96	Horizontal
Average Value						
Frequency (MHz)	Read Level (dBuV)	Factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11462.20	44.94	7.06	52.00	54.00	-2.00	Vertical
11462.20	44.83	7.06	51.89	54.00	-2.11	Horizontal
Middle						
Peak Value						
Frequency (MHz)	Read Level (dBuV)	Factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11610.00	51.40	6.72	58.12	74.00	-15.88	Vertical
11610.00	52.19	6.72	58.91	74.00	-15.09	Horizontal
Average Value						
Frequency (MHz)	Read Level (dBuV)	Factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11610.00	44.32	6.72	51.04	54.00	-2.96	Vertical
11610.00	43.81	6.72	50.53	54.00	-3.47	Horizontal
Highest						
Peak Value						
Frequency (MHz)	Read Level (dBuV)	Factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11718.20	52.31	7.44	59.75	74.00	-14.25	Vertical
11718.20	52.04	7.44	59.48	74.00	-14.52	Horizontal
Average Value						
Frequency (MHz)	Read Level (dBuV)	Factor	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
11718.20	43.65	7.44	51.09	54.00	-2.91	Vertical
11718.20	43.70	7.44	51.14	54.00	-2.86	Horizontal
<b>Remark:</b> 2. <i>Final Level = Receiver Read level + Factor</i> 3. <i>The spurious emissions is tested up to 40GHz, the emission levels of other frequencies are very lower than the limit and not show in test report, , only report the worst case.</i>						

Below 1GHz

<b>Product name:</b>	Microwave motion Sensor	<b>Product model:</b>	HB01DMS
<b>Test By:</b>	Janet	<b>Test mode:</b>	Tx mode
<b>Test Frequency:</b>	30 MHz ~ 1 GHz	<b>Polarization:</b>	Vertical& Horizontal
<b>Test Voltage:</b>	AC 120V/60Hz	<b>Environment:</b>	Temp: 24°C Humi: 57%

Full Spectrum



Critical Freqs

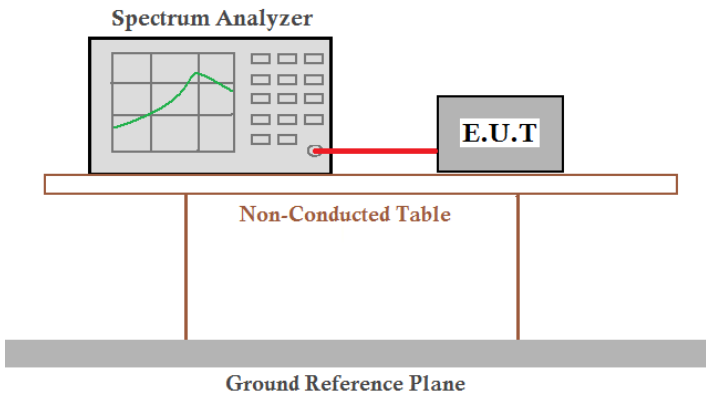
Frequency (MHz)	MaxPeak (dB µV/m)	Limit (dB µV/m)	Margin (dB)	Height (cm)	Pol.	Azimuth (deg)	Corr. (dB/m)
34.365000	26.58	30.00	3.42	100.0	V	165.0	-16.8
39.506000	15.79	30.00	14.21	100.0	V	165.0	-15.8
40.379000	14.57	30.00	15.43	100.0	V	165.0	-15.7
48.624000	13.49	30.00	16.52	100.0	V	165.0	-15.8
562.530000	21.50	36.00	14.50	100.0	V	279.0	-7.5
958.581000	26.55	36.00	9.45	100.0	V	0.0	0.0

Remark:

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.
- The Aux Factor is a notch filter switch box loss, this item is not used.



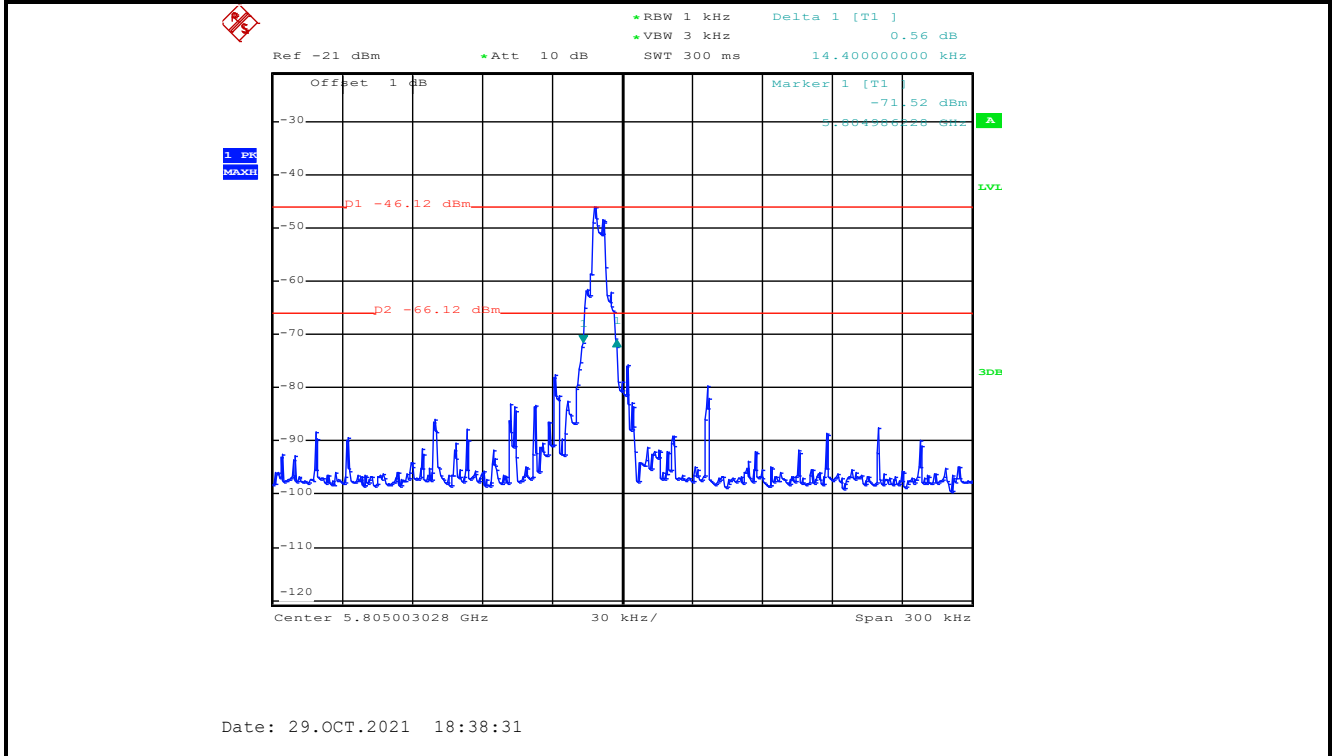
### 6.4 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.215(c)
Receiver setup:	RBW=1kHz, VBW=3kHz, detector: Peak
Limit:	N/A
Test Procedure:	<ol style="list-style-type: none"> <li>1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li> <li>2. Set the EUT to proper test channel.</li> <li>3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.</li> <li>4. Read 20dB bandwidth.</li> </ol>
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.9 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed

#### Measurement Data

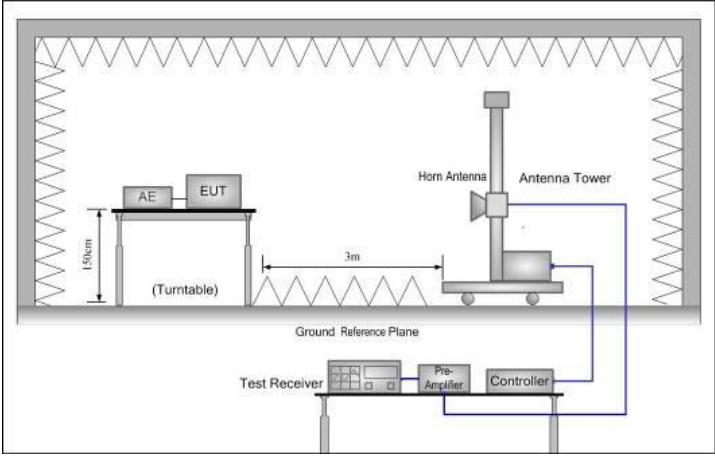
20dB bandwidth (MHz)	Results
0.0144	Passed

Test plot as follows:

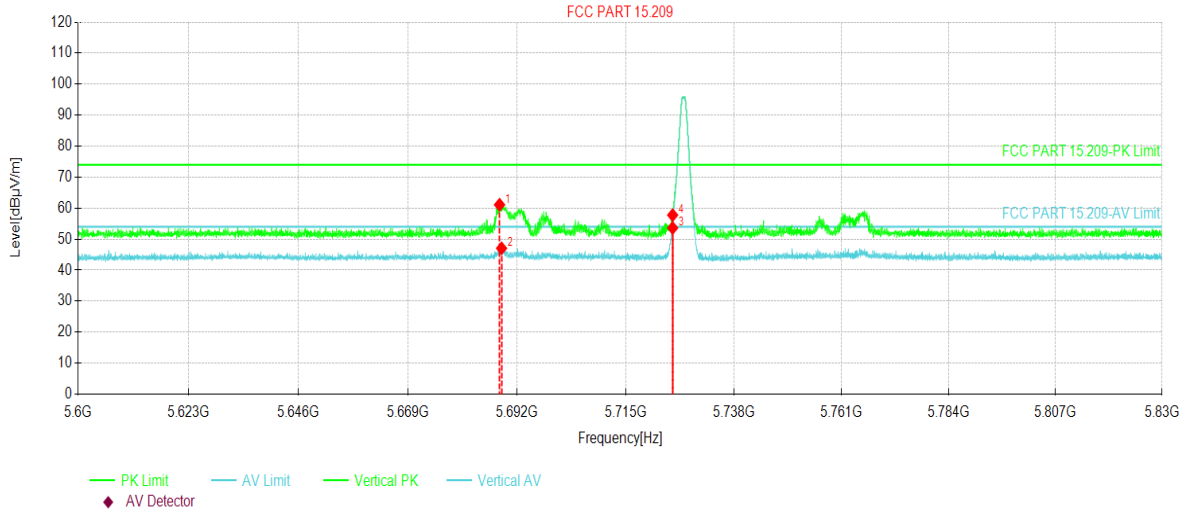


## 6.5 Band Edge

### 6.5.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.249				
Test Frequency Range:	5600MHz to 6000Hz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	Above 1GHz	Peak RMS	1MHz 1MHz	3MHz 3MHz	Peak Value Average Value
Limit:	Frequency	Limit (dBuV/m @3m)		Remark	
	Above 1GHz	54.00		Average Value	
		74.00		Peak Value	
Test Procedure:	<ol style="list-style-type: none"> <li>The EUT was placed on the top of a rotating table 1.5m(above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>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.</li> <li>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 and the rotating table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>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.</li> </ol>				
Test setup:	<p>Above 1GHz</p> 				
Test Instruments:	Refer to section 5.9 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Passed				

<b>Product name:</b>	Microwave motion Sensor	<b>Product model:</b>	HB01DMS
<b>Test By:</b>	Janet	<b>Test mode:</b>	Tx mode
<b>Test Channel:</b>	Lowest channel	<b>Polarization:</b>	Vertical
<b>Test Voltage:</b>	DC12V	<b>Environment:</b>	Temp: 24°C Huni: 57%

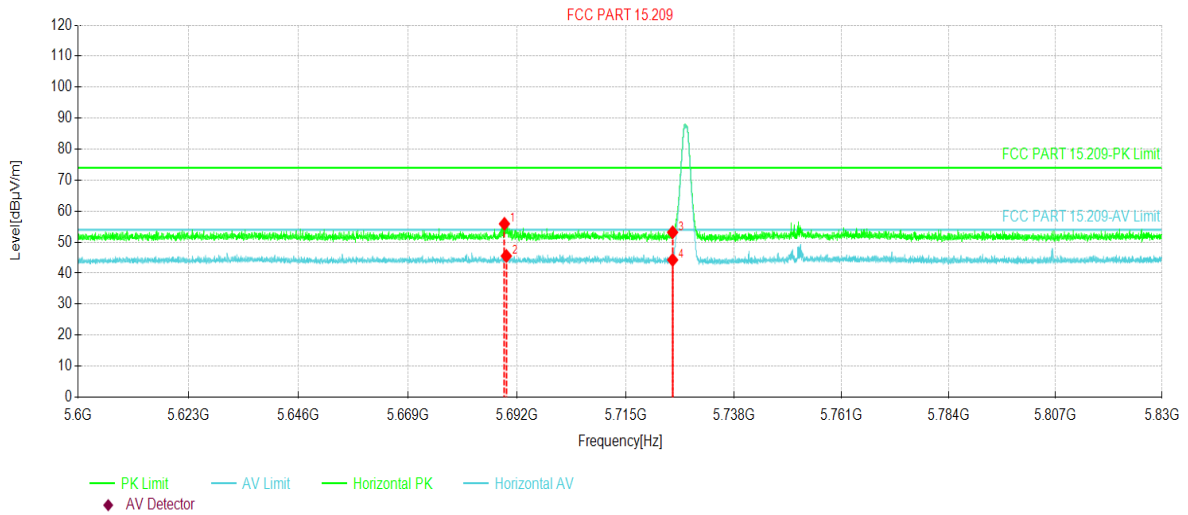


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBuV/m]	Level [dBuV/m]	Factor [dB]	Limit [dBuV/m]	Margin [dB]	Trace	Polarity
1	5688.32	43.99	61.09	17.10	74.00	12.91	PK	Vertical
2	5688.75	29.94	47.05	17.11	54.00	6.95	AV	Vertical
3	5725.00	36.38	53.61	17.23	54.00	0.39	AV	Vertical
4	5725.00	40.54	57.77	17.23	74.00	16.23	PK	Vertical

**Remark:**

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

<b>Product name:</b>	Microwave motion Sensor	<b>Product model:</b>	HB01DMS
<b>Test By:</b>	Janet	<b>Test mode:</b>	Tx mode
<b>Test Channel:</b>	Lowest channel	<b>Polarization:</b>	Horizontal
<b>Test Voltage:</b>	DC12V	<b>Environment:</b>	Temp: 24°C Humi: 57%

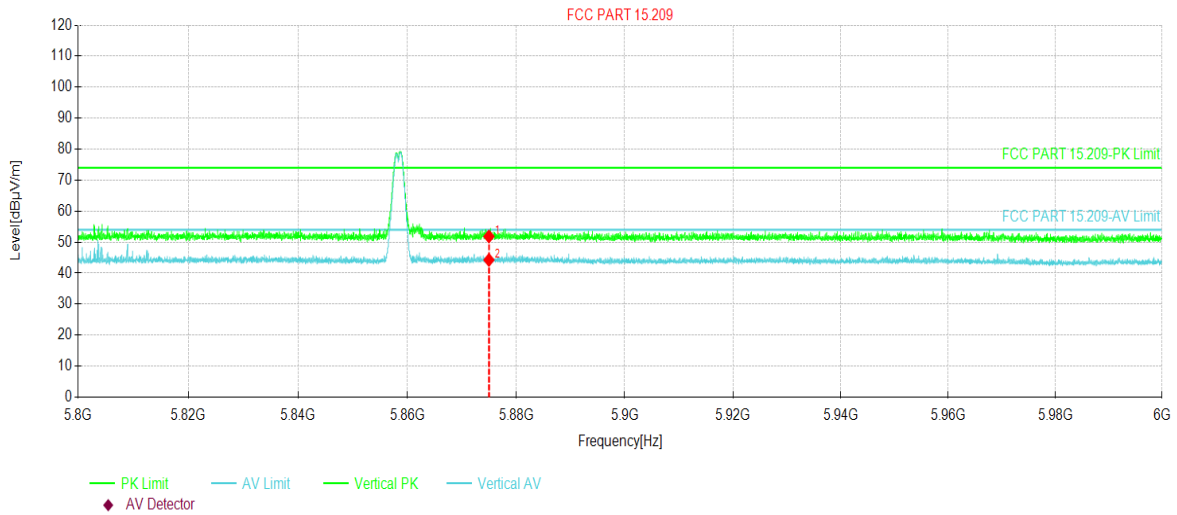


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBuV/m]	Level [dBuV/m]	Factor [dB]	Limit [dBuV/m]	Margin [dB]	Trace	Polarity
1	5689.35	38.80	55.91	17.11	74.00	18.09	PK	Horizontal
2	5689.75	28.43	45.54	17.11	54.00	8.46	AV	Horizontal
3	5725.00	35.94	53.17	17.23	74.00	20.83	PK	Horizontal
4	5725.00	27.03	44.26	17.23	54.00	9.74	AV	Horizontal

**Remark:**

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

<b>Product name:</b>	Microwave motion Sensor	<b>Product model:</b>	HB01DMS
<b>Test By:</b>	Janet	<b>Test mode:</b>	Tx mode
<b>Test Channel:</b>	Highest channel	<b>Polarization:</b>	Vertical
<b>Test Voltage:</b>	DC12V	<b>Environment:</b>	Temp: 24°C Humi: 57%

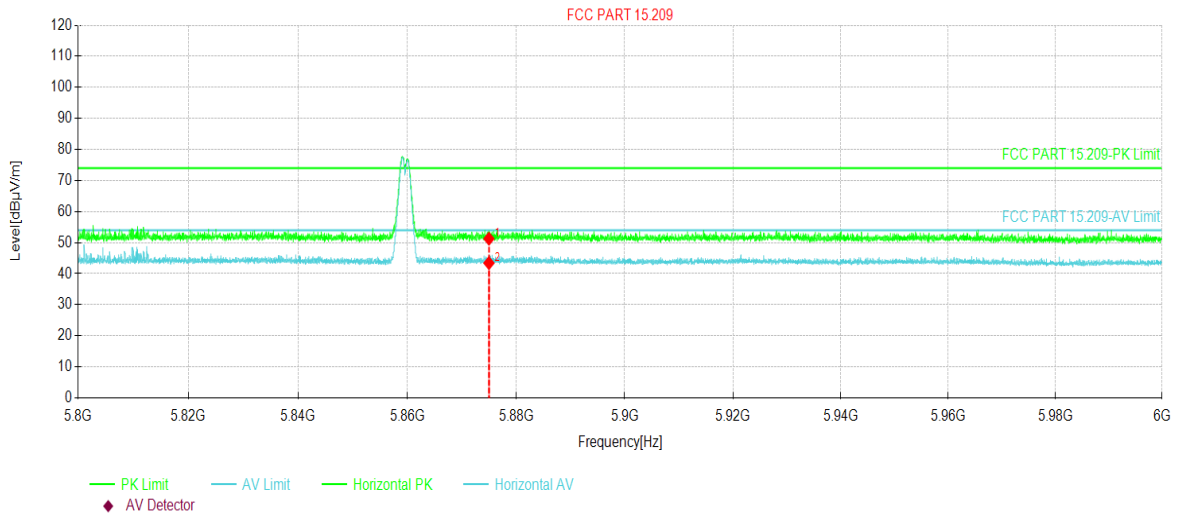


Suspected Data List								
NO.	Freq. [MHz]	Reading [dBuV/m]	Level [dBuV/m]	Factor [dB]	Limit [dBuV/m]	Margin [dB]	Trace	Polarity
1	5875.00	34.26	51.83	17.57	74.00	22.17	PK	Vertical
2	5875.00	26.69	44.26	17.57	54.00	9.74	AV	Vertical

**Remark:**

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor.
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

<b>Product name:</b>	Microwave motion Sensor	<b>Product model:</b>	HB01DMS
<b>Test By:</b>	Janet	<b>Test mode:</b>	Tx mode
<b>Test Channel:</b>	Highest channel	<b>Polarization:</b>	Horizontal
<b>Test Voltage:</b>	DC 12V	<b>Environment:</b>	Temp: 24°C Humi: 57%



Suspected Data List								
NO.	Freq. [MHz]	Reading [dBµV/m]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity
1	5875.00	33.69	51.26	17.57	74.00	22.74	PK	Horizontal
2	5875.00	25.85	43.42	17.57	54.00	10.58	AV	Horizontal

**Remark:**

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.