

FCC REPORT

Applicant: Grandex International Corporation

Address of Applicant: 4F, No.525, Zhongzheng Rd., Xindian Dist., New Taipei City
23148, Taiwan (R.O.C.)

Equipment Under Test (EUT)

Product Name: Dimmer Switch

Model No.: PS155, PS150P, PS150

Trade Mark: Grandex

FCC ID: 2AHDSPS155-01

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249:2015

Date of sample receipt: September 05, 2016

Date of Test: September 06-12, 2016

Date of report issued: September 13, 2016

Test Result : PASS *

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

Authorized Signature:

A circular logo for GTS (Global United Technology Services Co., Ltd.) is overlaid with a handwritten signature in black ink. The logo contains the text 'GTS' in the center, 'GLOBAL UNITED TECHNOLOGY SERVICES CO., LTD.' around the perimeter, and 'ELECTRONIC TESTING' at the bottom.

Robinson Lo

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 GTS 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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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Pass: The EUT complies with the essential requirements in the standard.

Remark: Test according to ANSI C63.10 2013 and ANSI C63.4 2014.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	9kHz ~ 30MHz	± 4.34dB	(1)
Radiated Emission	30MHz ~ 1000MHz	± 4.24dB	(1)
Radiated Emission	1GHz ~ 26.5GHz	± 4.68dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	± 3.45dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 Client Information

Applicant:	Grandex International Corporation
Address of Applicant:	4F, No.525, Zhongzheng Rd., Xindian Dist., New Taipei City 23148, Taiwan (R.O.C.)
Manufacturer:	Grandex International Corporation
Address of Manufacturer:	4F, No.525, Zhongzheng Rd., Xindian Dist., New Taipei City 23148, Taiwan (R.O.C.)

5.2 General Description of EUT

Product Name:	Dimmer Switch
Model No.:	PS155, PS150P, PS150
Operation Frequency:	2476MHz~2480.5MHz
Channel numbers:	3
Modulation type:	GFSK
Antenna Type:	Integral antenna
Antenna gain:	0dBi (declare by Applicant)
Power supply:	AC 120V, 60Hz

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2476.0MHz	2	2477.5MHz	3	2480.5MHz	N/A	

Note:

In section 15.31(m), regards to the operating frequency range from 1 to 10 MHz, the Lowest frequency and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2476.0MHz
The Highest channel	2480.5MHz

5.3 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	

Per-test mode.

We have verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:

Axis	X	Y	Z
Field Strength(dBuV/m)	98.85	99.28	98.73

5.4 Description of Support Units

None.

5.5 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● FCC —Registration No.: 600491 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 22, 2016. ● Industry Canada (IC) —Registration No.: 9079A-2 The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, August 15, 2016.

5.6 Test Location

All tests were performed at:
<p>Global United Technology Services Co., Ltd. Address: No. 301-309, 3/F., Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960</p>

5.7 Description of Support Units

None.

5.8 Other Information Requested by the Customer

None.

6 Test Instruments list

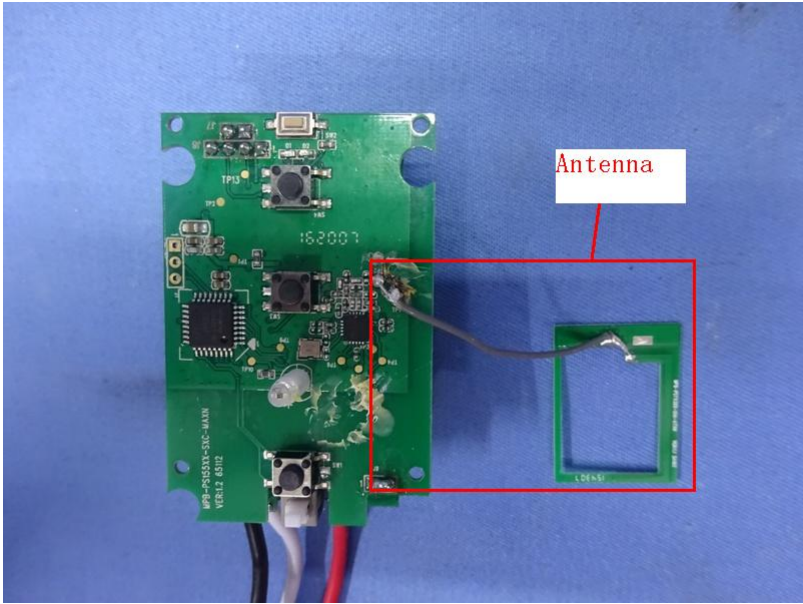
Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	July. 03 2015	July. 02 2020
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	June. 29 2016	June. 28 2017
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	June. 29 2016	June. 28 2017
5	Double-ridged horn antenna	SCHWARZBECK	9120D	GTS208	June. 29 2016	June. 28 2017
6	Horn Antenna	ETS-LINDGREN	3160-09	GTS218	June. 29 2016	June. 28 2017
7	RF Amplifier	HP	8347A	GTS204	June. 29 2016	June. 28 2017
8	RF Amplifier	HP	8349B	GTS206	June. 29 2016	June. 28 2017
9	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	June. 29 2016	June. 28 2017
10	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	June. 29 2016	June. 28 2017
11	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
12	Coaxial Cable	GTS	N/A	GTS210	June. 29 2016	June. 28 2017
13	Coaxial Cable	GTS	N/A	GTS211	June. 29 2016	June. 28 2017
14	Coaxial Cable	GTS	N/A	GTS213	June. 29 2016	June. 28 2017
15	Coaxial Cable	GTS	N/A	GTS212	June. 29 2016	June. 28 2017
16	Thermo meter	N/A	N/A	GTS256	June. 29 2016	June. 28 2017
17	D.C. Power Supply	Instek	PS-3030	GTS232	June. 29 2016	June. 28 2017
18	Power Meter	Anritsu	ML2495A	GTS540	June 29 2016	June 28 2017
19	Power Sensor	Anritsu	MA2411B	GTS541	June 29 2016	June 28 2017

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May.16 2014	May.15 2019
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 29 2016	June. 28 2017
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 29 2016	June. 28 2017
4	Artificial Mains Network	SCHWARZBECK MESS	NSLK8127	GTS226	June. 29 2016	June. 28 2017
5	Coaxial Cable	GTS	N/A	GTS227	June. 29 2016	June. 28 2017
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	KTJ	TA328	GTS233	June. 29 2016	June. 28 2017
8	10dB Pulse Limiter	Rohde & Schwarz	N/A	GTS224	June. 29 2016	June. 28 2017

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	ChangChun	DYM3	GTS257	June 29 2016	June 28 2017

7 Test results and Measurement Data

7.1 Antenna requirement

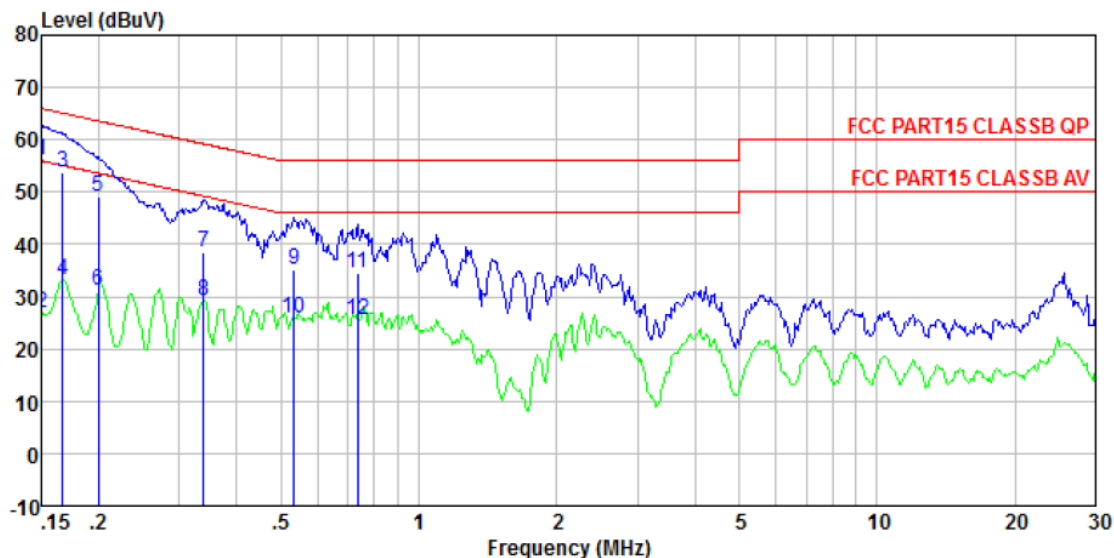
Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: <p>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique 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>	
EUT Antenna: <p><i>The antenna is Integral antenna, the best case gain of the antenna is 0dBi</i></p>	
	

7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207														
Test Method:	ANSI C63.10:2013														
Test Frequency Range:	150KHz to 30MHz														
Class / Severity:	Class B														
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto														
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Frequency range (MHz)</th> <th colspan="2">Limit (dBuV)</th> </tr> <tr> <th>Quasi-peak</th> <th>Average</th> </tr> </thead> <tbody> <tr> <td>0.15-0.5</td> <td>66 to 56*</td> <td>56 to 46*</td> </tr> <tr> <td>0.5-5</td> <td>56</td> <td>46</td> </tr> <tr> <td>5-30</td> <td>60</td> <td>50</td> </tr> </tbody> </table> <p>* Decreases with the logarithm of the frequency.</p>	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
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													
Test setup:	<p>Remark E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>														
Test procedure:	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. 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). 3. 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 C63.10:2013 on conducted measurement. 														
Test Instruments:	Refer to section 6.0 for details														
Test mode:	Refer to section 5.3 for details														
Test results:	Pass														

Measurement data:

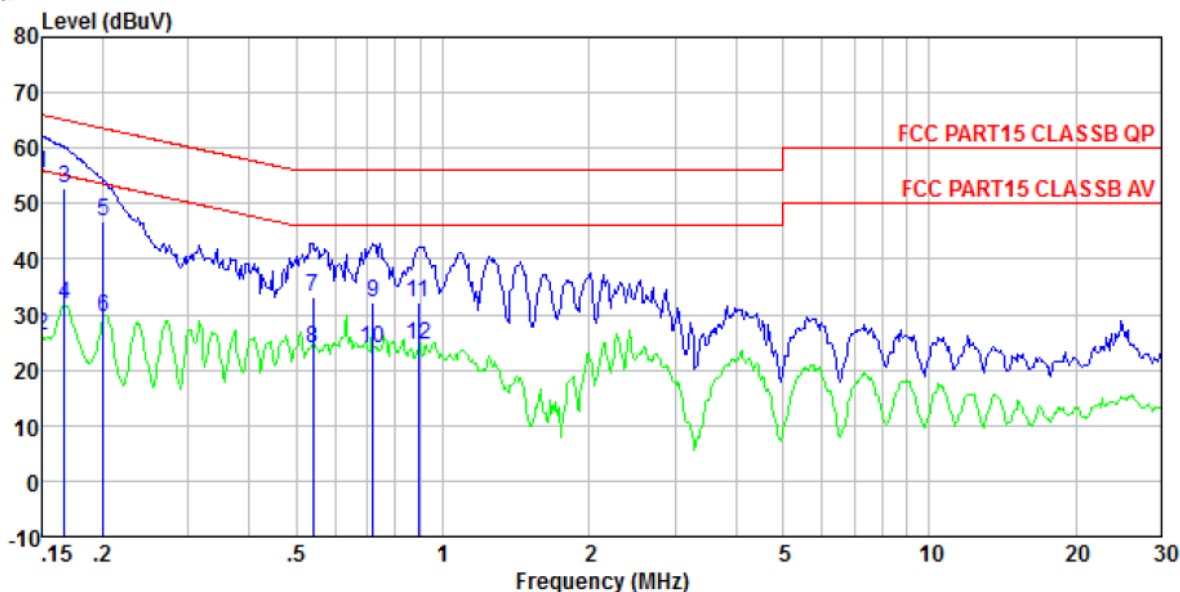
Line:



Site : Shielded room
 Condition : FCC PART15 CLASSB QP LISN-2013 LINE
 Job No. : 0285
 Test Mode : Transmitting mode
 Test Engineer: Boy

	Read Freq	LISN Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.150	55.76	0.15	0.12	56.03	66.00	-9.97	QP
2	0.150	26.74	0.15	0.12	27.01	56.00	-28.99	Average
3	0.167	53.45	0.15	0.12	53.72	65.12	-11.40	QP
4	0.167	33.00	0.15	0.12	33.27	55.12	-21.85	Average
5	0.200	48.75	0.14	0.13	49.02	63.62	-14.60	QP
6	0.200	31.01	0.14	0.13	31.28	53.62	-22.34	Average
7	0.339	38.34	0.11	0.10	38.55	59.22	-20.67	QP
8	0.339	28.93	0.11	0.10	29.14	49.22	-20.08	Average
9	0.535	34.81	0.13	0.11	35.05	56.00	-20.95	QP
10	0.535	25.58	0.13	0.11	25.82	46.00	-20.18	Average
11	0.735	34.09	0.14	0.13	34.36	56.00	-21.64	QP
12	0.735	25.37	0.14	0.13	25.64	46.00	-20.36	Average

Neutral:



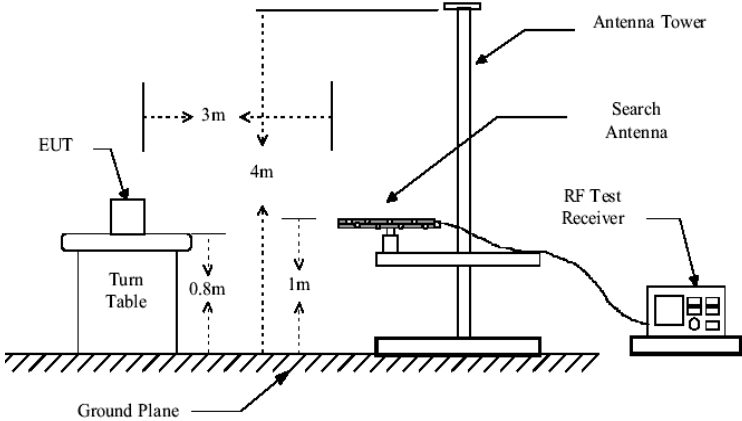
Site : Shielded room
 Condition : FCC PART15 CLASSB QP LISN-2013 NEUTRAL
 Job No. : 0285
 Test Mode : Transmitting mode
 Test Engineer: Boy

	Read	LISN	Cable	Limit	Over	
Freq	Level	Factor	Loss	Line	Limit	Remark
MHz	dBuV	dB	dB	dBuV	dB	
1	55.19	0.07	0.12	66.00	-10.62	QP
2	25.86	0.07	0.12	56.00	-29.95	Average
3	52.61	0.07	0.12	65.12	-12.32	QP
4	31.68	0.07	0.12	55.12	-23.25	Average
5	46.59	0.07	0.13	63.58	-16.79	QP
6	29.42	0.07	0.13	53.58	-23.96	Average
7	33.05	0.07	0.11	56.00	-22.77	QP
8	23.71	0.07	0.11	46.00	-22.11	Average
9	32.07	0.07	0.13	56.00	-23.73	QP
10	23.66	0.07	0.13	46.00	-22.14	Average
11	32.10	0.07	0.13	56.00	-23.70	QP
12	24.20	0.07	0.13	46.00	-21.60	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
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	30MHz to 25GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		Peak	1MHz	10Hz	Average Value
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark	
	2400MHz-2483.5MHz	94.00		Average Value	
Limit: (Spurious Emissions)	Frequency	Limit (dBuV/m @3m)		Remark	
	30MHz-88MHz	40.00		Quasi-peak Value	
	88MHz-216MHz	43.50		Quasi-peak Value	
	216MHz-960MHz	46.00		Quasi-peak Value	
	960MHz-1GHz	54.00		Quasi-peak Value	
	Above 1GHz	54.00		Average Value	
74.00		Peak Value			
Limit: (band edge)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p>				

	<p>The diagram illustrates the test setup. An EUT (Electromagnetic Under Test) is placed on a turn table. The turn table is positioned 3 meters away from an antenna tower. The antenna tower has a horn antenna mounted on it. The antenna height is varied from 1 meter to 4 meters above the ground. The turn table is 1.5 meters high for frequencies below 1 GHz and 1 meter high for frequencies above 1 GHz. The antenna is connected to a spectrum analyzer via an amplifier.</p>
<p>Test Procedure:</p>	<ol style="list-style-type: none"> 1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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>Test Instruments:</p>	<p>Refer to section 6.0 for details</p>
<p>Test mode:</p>	<p>Refer to section 5.3 for details</p>
<p>Test results:</p>	<p>Pass</p>

Measurement data:

7.3.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2476.00	95.18	27.52	5.47	29.93	98.24	114.00	-15.76	Vertical
2476.00	95.29	27.52	5.47	29.93	98.35	114.00	-15.65	Horizontal
2480.50	94.96	27.52	5.47	29.93	98.02	114.00	-15.98	Vertical
2480.50	96.22	27.52	5.47	29.93	99.28	114.00	-14.72	Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2476.00	87.77	27.52	5.47	29.93	90.83	94.00	-3.17	Vertical
2476.00	88.32	27.52	5.47	29.93	91.38	94.00	-2.62	Horizontal
2480.50	87.74	27.52	5.47	29.93	90.80	94.00	-3.20	Vertical
2480.50	89.31	27.52	5.47	29.93	92.37	94.00	-1.63	Horizontal

Remark: RBW 3MHz VBW 3MHz Peak detector is for PK value RMS detector is for AV value

7.3.2 Spurious emissions

■ Below 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
33.45	38.02	14.31	0.59	30.08	22.84	40.00	-17.16	Vertical
62.00	37.07	13.90	0.88	29.91	21.94	40.00	-18.06	Vertical
112.13	41.77	13.83	1.30	29.62	27.28	43.50	-16.22	Vertical
134.09	47.41	10.61	1.47	29.49	30.00	43.50	-13.50	Vertical
154.28	45.13	10.45	1.59	29.39	27.78	43.50	-15.72	Vertical
452.72	40.10	17.58	3.10	29.39	31.39	46.00	-14.61	Vertical
62.00	33.41	13.90	0.88	29.91	18.28	40.00	-21.72	Horizontal
112.13	40.19	13.83	1.30	29.62	25.70	43.50	-17.80	Horizontal
134.09	47.82	10.61	1.47	29.49	30.41	43.50	-13.09	Horizontal
152.66	50.53	10.39	1.59	29.39	33.12	43.50	-10.38	Horizontal
176.27	41.84	11.42	1.72	29.29	25.69	43.50	-17.81	Horizontal
219.85	39.10	13.17	1.96	29.39	24.84	46.00	-21.16	Horizontal

■ Above 1GHz

Test channel:	Lowest(2476MHz)
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4952.00	36.82	31.91	8.71	32.16	45.28	74.00	-28.72	Vertical
7428.00	32.84	36.56	11.79	31.80	49.39	74.00	-24.61	Vertical
9904.00	32.31	38.81	14.35	31.85	53.62	74.00	-20.38	Vertical
12380.00	*							Vertical
14856.00	*							Vertical
4952.00	42.03	31.91	8.71	32.16	50.49	74.00	-23.51	Horizontal
7428.00	32.51	36.56	11.79	31.80	49.06	74.00	-24.94	Horizontal
9904.00	30.17	38.81	14.35	31.85	51.48	74.00	-22.52	Horizontal
12380.00	*							Horizontal
14856.00	*							Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4952.00	27.26	31.91	8.71	32.16	35.72	54.00	-18.28	Vertical
7428.00	23.04	36.56	11.79	31.80	39.59	54.00	-14.41	Vertical
9904.00	22.13	38.81	14.35	31.85	43.44	54.00	-10.56	Vertical
12380.00	*							Vertical
14856.00	*							Vertical
4952.00	31.27	31.91	8.71	32.16	39.73	54.00	-14.27	Horizontal
7428.00	22.69	36.56	11.79	31.80	39.24	54.00	-14.76	Horizontal
9904.00	20.25	38.81	14.35	31.85	41.56	54.00	-12.44	Horizontal
12380.00	*							Horizontal
14856.00	*							Horizontal

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2. “*”, means this data is the too weak instrument of signal is unable to test.

Test channel:	Highest(2480.5MHz)
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4961.00	39.96	31.93	8.73	32.16	48.46	74.00	-25.54	Vertical
7441.50	32.22	36.59	11.79	31.78	48.82	74.00	-25.18	Vertical
9922.00	31.05	38.81	14.38	31.88	52.36	74.00	-21.64	Vertical
12402.50	*							Vertical
14883.00	*							Vertical
4961.00	39.07	31.93	8.73	32.16	47.57	74.00	-26.43	Horizontal
7441.50	32.36	36.59	11.79	31.78	48.96	74.00	-25.04	Horizontal
9922.00	31.47	38.81	14.38	31.88	52.78	74.00	-21.22	Horizontal
12402.50	*							Horizontal
14883.00	*							Horizontal

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4961.00	29.51	31.93	8.73	32.16	38.01	54.00	-15.99	Vertical
7441.50	22.84	36.59	11.79	31.78	39.44	54.00	-14.56	Vertical
9922.00	21.63	38.81	14.38	31.88	42.94	54.00	-11.06	Vertical
12402.50	*							Vertical
14883.00	*							Vertical
4961.00	29.33	31.93	8.73	32.16	37.83	54.00	-16.17	Horizontal
7441.50	22.56	36.59	11.79	31.78	39.16	54.00	-14.84	Horizontal
9922.00	21.61	38.81	14.38	31.88	42.92	54.00	-11.08	Horizontal
12402.50	*							Horizontal
14883.00	*							Horizontal

Remark:

1. $Final\ Level = Receiver\ Read\ level + Antenna\ Factor + Cable\ Loss - Preamplifier\ Factor$
2. “*”, means this data is the too weak instrument of signal is unable to test.
3. The emission levels of other frequencies are very lower than the limit and not show in test report.

7.3.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest(2476.0MHz)
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	44.79	27.59	5.38	30.18	47.58	74.00	-26.42	Horizontal
2400.00	44.71	27.58	5.39	30.18	47.50	74.00	-26.50	Horizontal
2390.00	44.75	27.59	5.38	30.18	47.54	74.00	-26.46	Vertical
2400.00	44.64	27.58	5.39	30.18	47.43	74.00	-26.57	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2390.00	33.06	27.59	5.38	30.18	35.85	54.00	-18.15	Horizontal
2400.00	33.20	27.58	5.39	30.18	35.99	54.00	-18.01	Horizontal
2390.00	33.10	27.59	5.38	30.18	35.89	54.00	-18.11	Vertical
2400.00	33.24	27.58	5.39	30.18	36.03	54.00	-17.97	Vertical

Test channel:	Highest(2480.5MHz)
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Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	63.81	27.53	5.47	29.93	66.88	74.00	-7.12	Horizontal
2500.00	43.32	27.55	5.49	29.93	46.43	74.00	-27.57	Horizontal
2483.50	63.30	27.53	5.47	29.93	66.37	74.00	-7.63	Vertical
2500.00	43.89	27.55	5.49	29.93	47.00	74.00	-27.00	Vertical

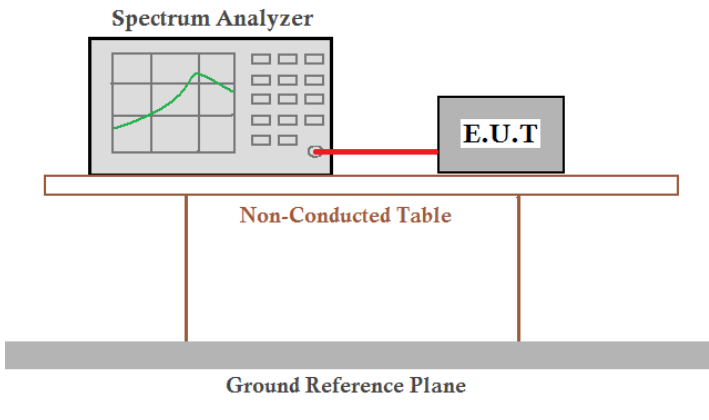
Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2483.50	47.54	27.53	5.47	29.93	50.61	54.00	-3.39	Horizontal
2500.00	32.31	27.55	5.49	29.93	35.42	54.00	-18.58	Horizontal
2483.50	46.24	27.53	5.47	29.93	49.31	54.00	-4.69	Vertical
2500.00	32.28	27.55	5.49	29.93	35.39	54.00	-18.61	Vertical

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor

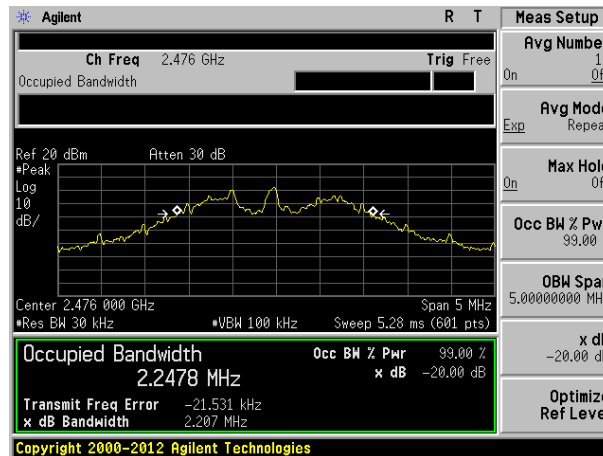
7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2013
Limit:	Operation Frequency range 2400MHz~2483.5MHz
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

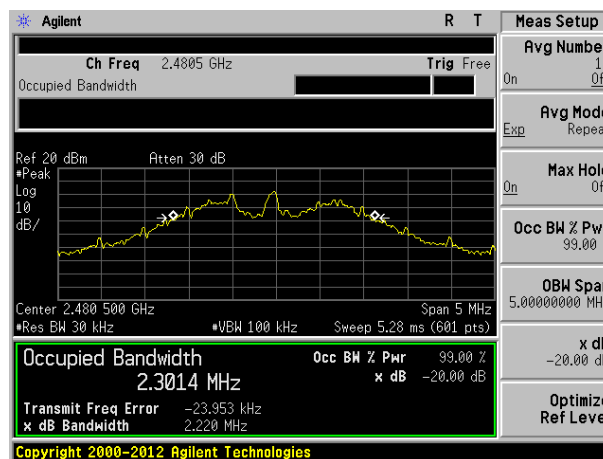
Measurement Data

Test channel	20dB bandwidth(MHz)	Result
Lowest	2.207	Pass
Highest	2.220	Pass

Test plot as follows:



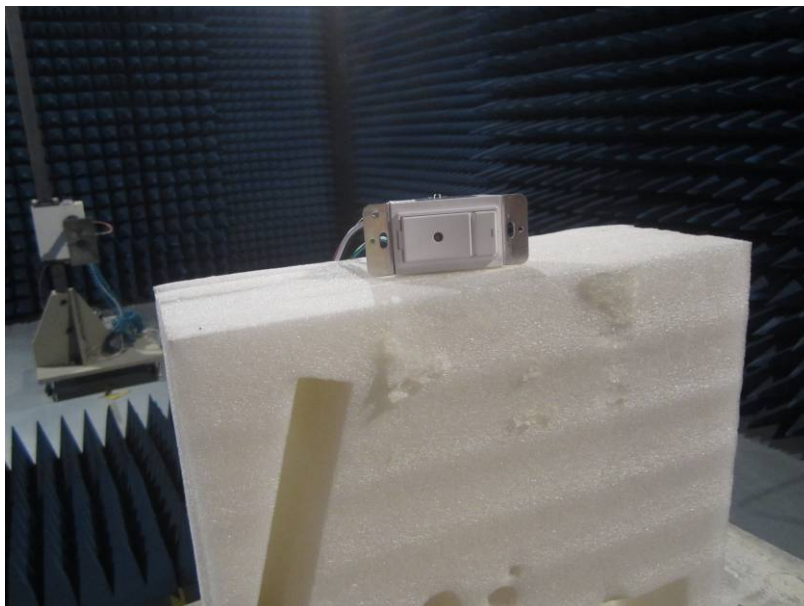
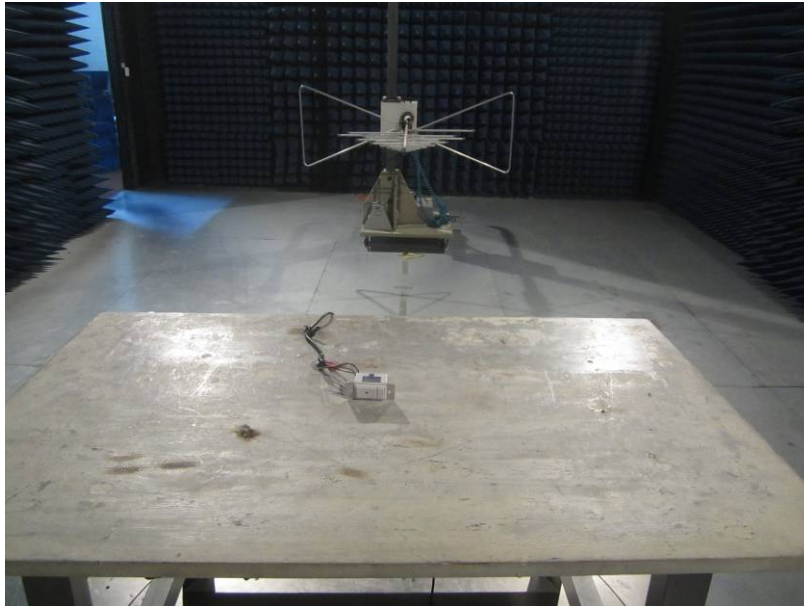
Lowest channel



Highest channel

8 Test Setup Photo

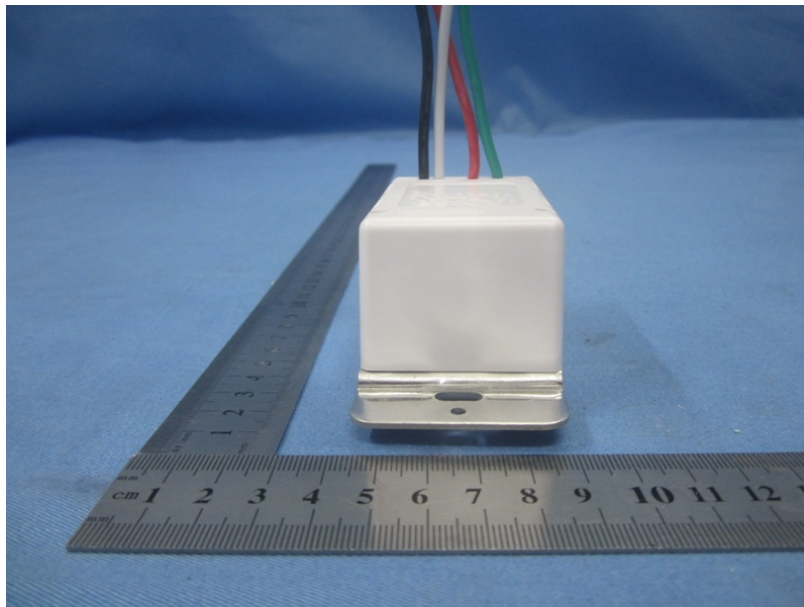
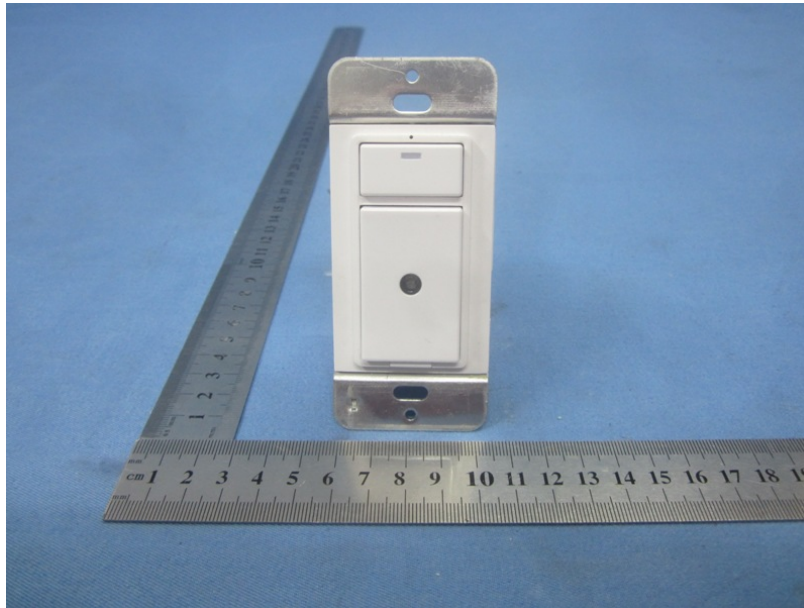
Radiated Emission

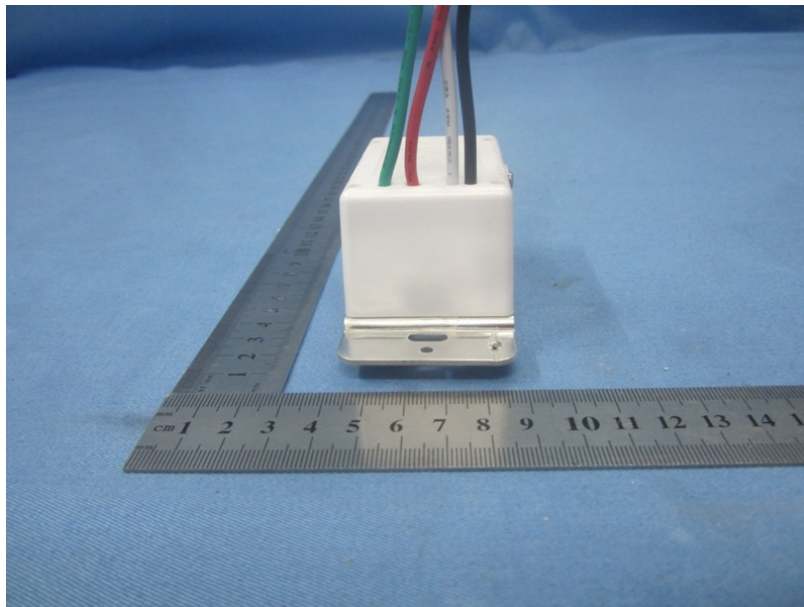
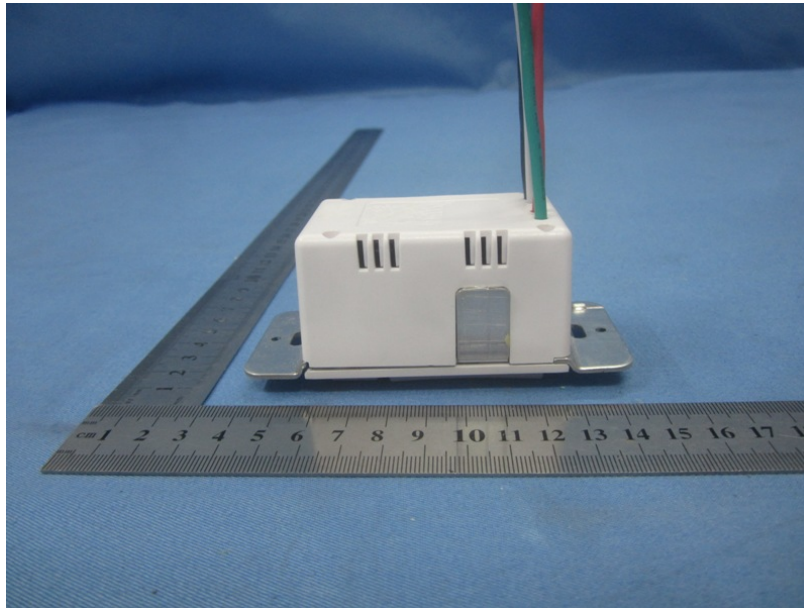


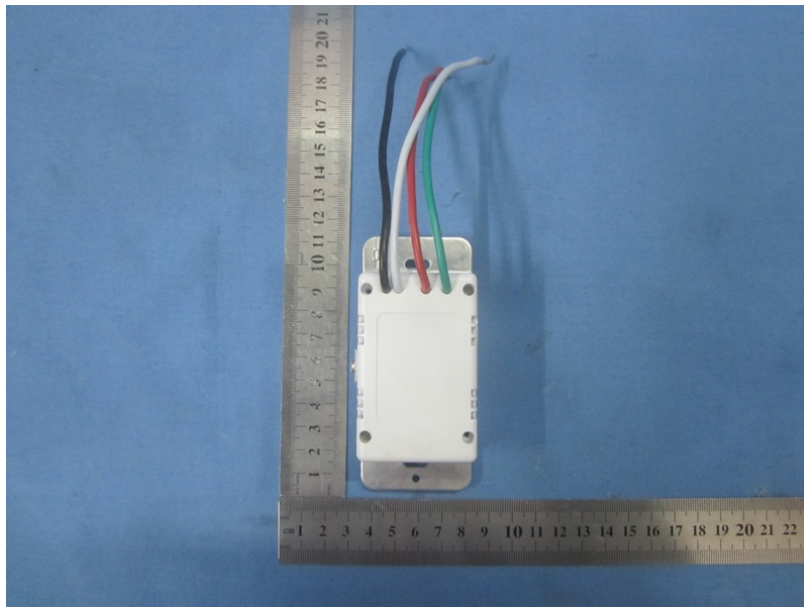
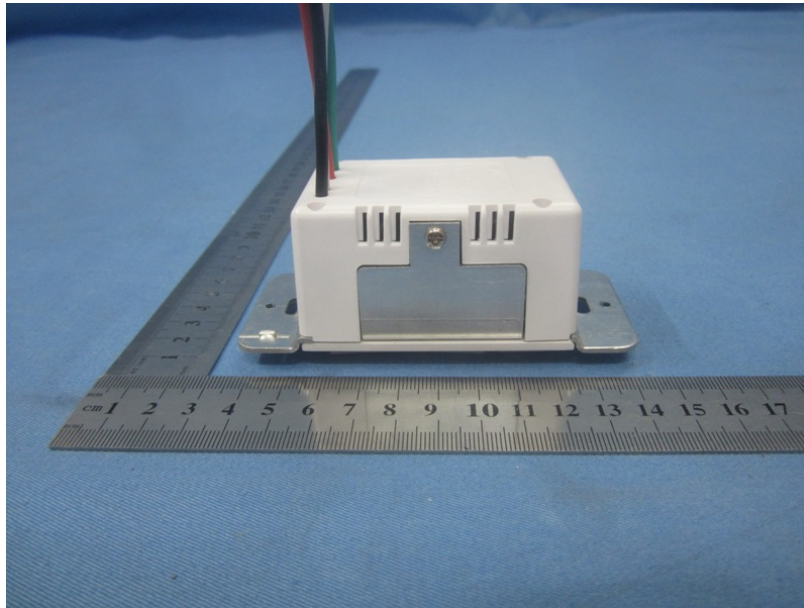
Conducted Emission

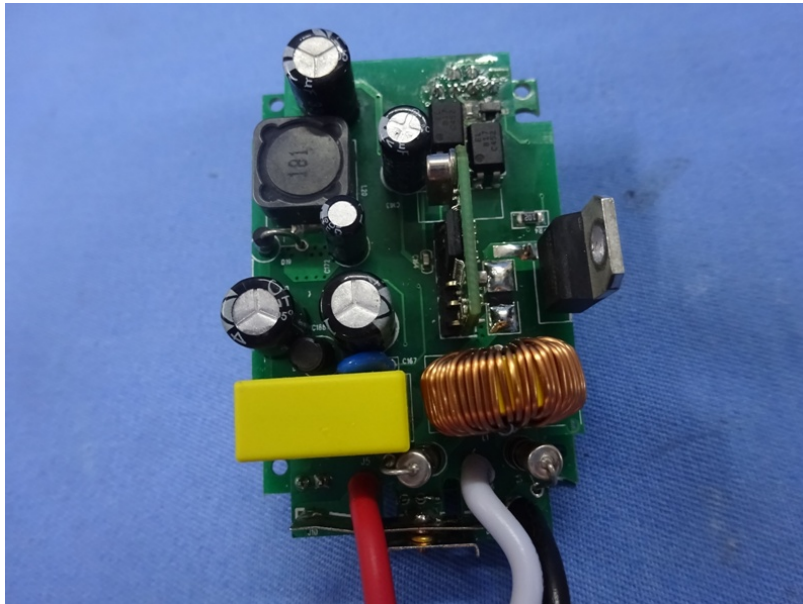
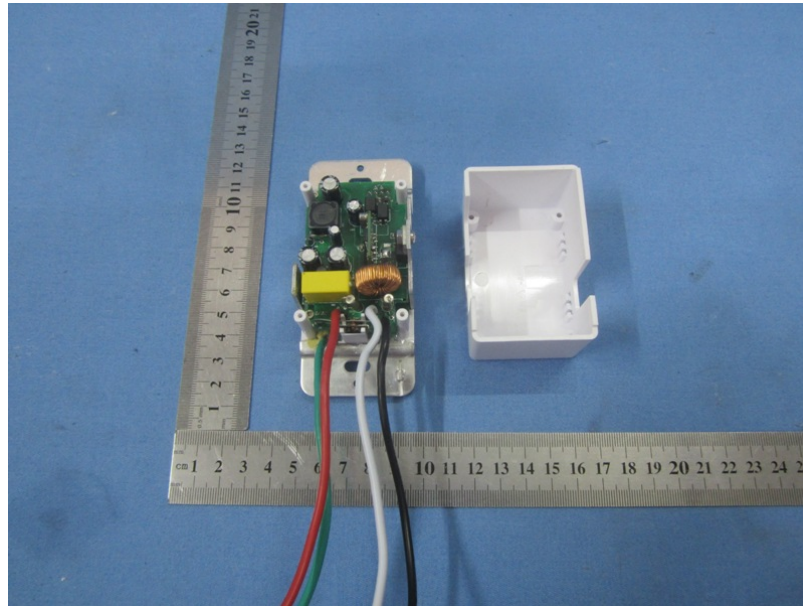


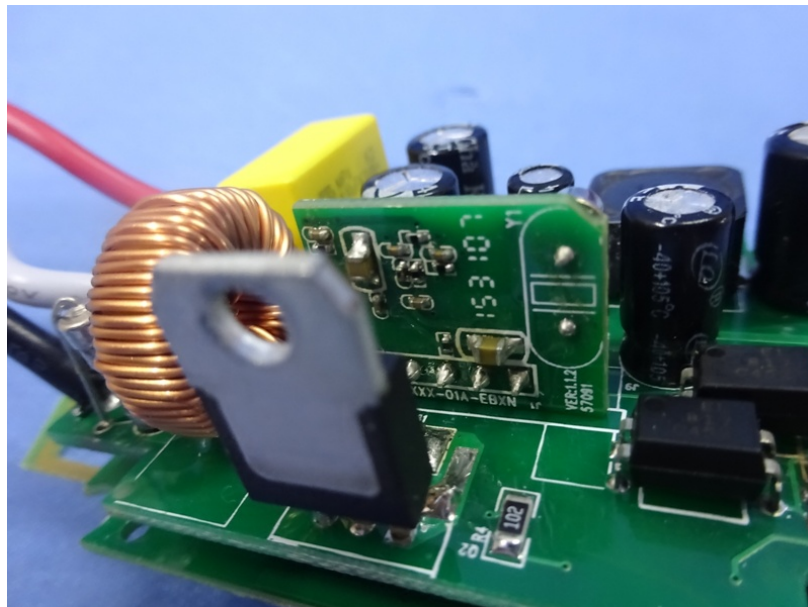
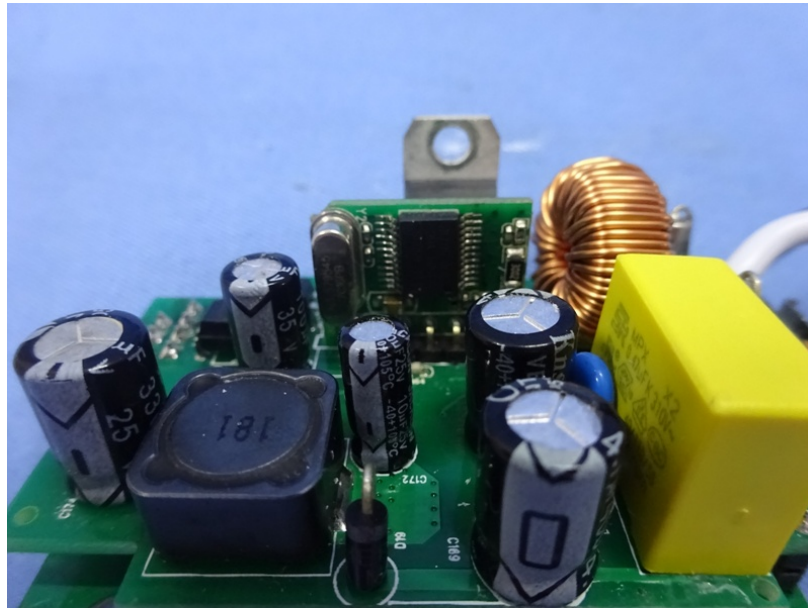
9 EUT Constructional Details

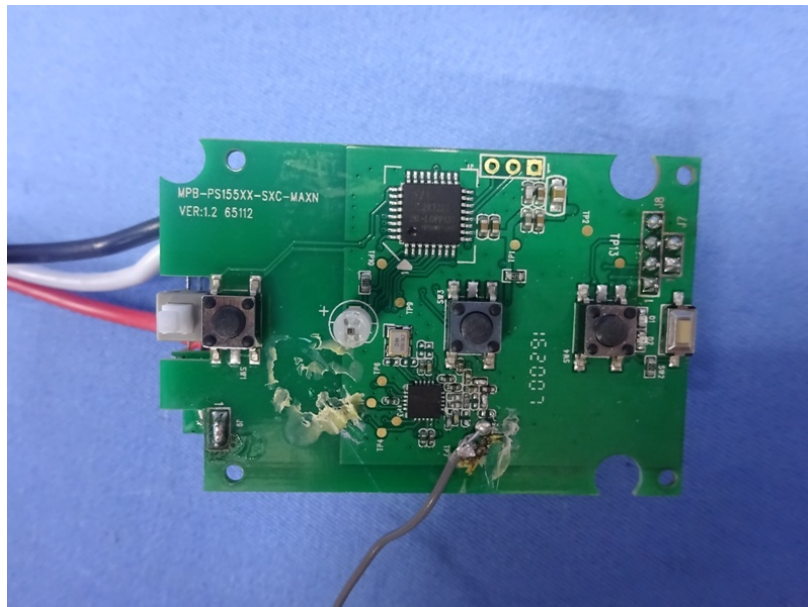
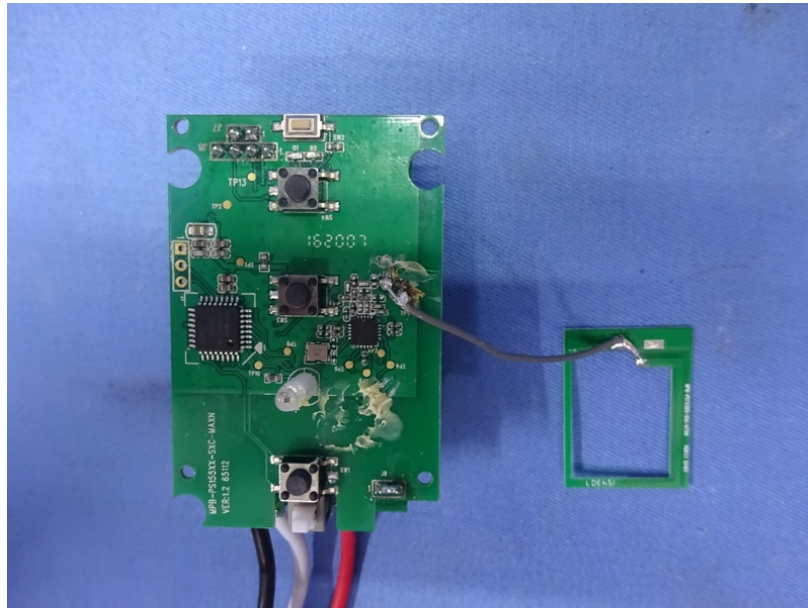












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