

FCC TEST REPORT

FCC ID : OZISPP5107XXXX

Applicant : San Shih Electrical Enterprise Co., Ltd.

Address : No 209, Sec ,3 County Boulevard, Pan Chiao City, Taipei Hsien, Taiwan.

Equipment Under Test (EUT) :

Product description : Surge protected power strip with two group remote controlled outlets

Model No. : SPP5107F, SPP5107H,SPP5107XXXX, RC-07

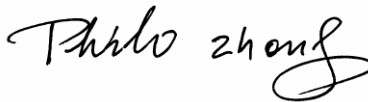
Standards : FCC Subpart B Part15.109

Date of Test : Nov.12,2010

Test Engineer : (Olic huang) /Engineer



Reviewed By : (Philo zhong)/Manager



Test Result :	PASS *
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* The sample detailed above has been tested to the requirements of Council Directives ANSI C63.4:2003. The test results have been reviewed against the Directives above and found to meet their essential requirements.

Prepared By:

Waltek Services (Shenzhen) Co., Ltd.

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San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

1 Test Summary

Test items	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 5GHz)	FCC PART 15, SUBPART B: 2008	ANSI C63.4: 2003	Class B	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15, SUBPART B: 2008	ANSI C63.4: 2003	Class B	PASS

2 Contents

1	COVER PAGE	1
1	TEST SUMMARY.....	2
2	CONTENTS.....	3
3	GENERAL INFORMATION	4
3.1	CLIENT INFORMATION	4
3.2	GENERAL DESCRIPTION OF E.U.T.	4
3.3	DETAILS OF E.U.T.....	4
3.4	TEST INSTRUCTION.....	4
3.5	DESCRIPTION OF SUPPORT UNITS	4
3.6	STANDARDS APPLICABLE FOR TESTING	4
3.7	TEST FACILITY	5
3.8	TEST LOCATION	5
4	EQUIPMENT USED DURING TEST	6
5	EMISSIONS TEST RESULTS	9
5.1	CONDUCTED EMISSION LIMIT	9
5.2	CONDUCTED EMISSION DATA RECORD.....	9
5.3	CONDUCTED EMISSION TEST SETUP VIEW	11
5.4	RADIATION EMISSION DATA	12
5.4.1	<i>Measurement Uncertainty.....</i>	<i>12</i>
5.4.2	<i>EUT Setup.....</i>	<i>12</i>
5.4.3	<i>Spectrum Analyzer Setup</i>	<i>13</i>
5.4.4	<i>Test Procedure.....</i>	<i>13</i>
5.4.5	<i>Corrected Amplitude & Margin Calculation.....</i>	<i>14</i>
5.4.6	<i>Summary of Test Results.....</i>	<i>14</i>
5.4.7	<i>Photograph – Radiation Emission Test Setup for Standby Mode.....</i>	<i>18</i>
6	PHOTOGRAPHS - CONSTRUCTIONAL DETAILS.....	19
6.1	EUT-FRONT VIEW	19
6.2	EUT-BACK VIEW.....	19
6.3	EUT-OPEN VIEW	20
6.4	PCB1-FRONT VIEW	20
6.5	PCB1-BACK VIEW	21
6.6	PCB2-FRONT VIEW	21
6.7	PCB2-BACK VIEW	22
7	FCC LABEL.....	23

San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

3 General Information

3.1 Client Information

Applicant: San Shih Electrical Enterprise Co., Ltd.
Address: No 209, Sec ,3 County Boulevard, Pan Chiao City,
Taipei Hsien, Taiwan.

Manufacturer: ZongPro Electrical(ShenZhen) Ltd.
Address: No.7, Tongpro street, Pan Ten 2nd industrial Zone,
Bu Ji Town, Lung Gun Zone, ShenZhen

3.2 General Description of E.U.T.

Product description: Surge protected power strip with two group remote controlled outlets

Model No.: SPP5107F, SPP5107H,SPP5107XXXX, RC-07
XXXX: customer code,stands for alphanumeric,symbols and blank,it will be add more if need.

Working Frequency: 433.92MHz(Receiver only)

3.3 Details of E.U.T.

Power Supply: Input AC 120V, 60Hz

3.4 Test Instruction

The all tests were performed in the condition of 120V input of receiver.

3.5 Description of Support Units

The EUT has been tested as a receiver unit.

3.6 Standards Applicable for Testing

The customer requested FCC tests for a Surge protected power strip with two group remote controlled outlets. The standards used was FCC PART 15 SUBPART B.

3.7 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **IC – Registration No.:7760A**

Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration No.:7760A, Aug.03,2010.

- **FCC – Registration No.: 880581**

Waltek Services(Shenzhen) Co., Ltd. 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 our files. Registration No.:880581, July 9, 2008

3.8 Test Location

All Emission tests were performed at:-

Waltek Services(Shenzhen) Co., Ltd. at 1/F, Fukangtai Building, West Baima Rd., Songgang Street, Baoan District, Shenzhen, China

San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

4 Equipment Used during Test

Equipment Name	Manufacturer Model	Equipment No	Internal No	Specification	Cal. Date	Due Date	Cert. No	Uncertainty
EMC Analyzer	Agilent/ E7405A	MY451149 43	W2008001	9k-26.5GHz	Aug- 03-10	Aug- 02-11	Wws200 81596	±1dB
Trilog Broadband Antenne 30-3000 MHz	SCHWARZB ECK MESS- ELEKTROM / VULB9163	336	W2008002	30-3000 MHz	Aug- 03-10	Aug- 02-11		±1dB
Broad-band Horn Antenna	SCHWARZB ECK MESS- ELEKTROM / BBHA 9120D(1201)	667	W2008003	1-18GHz	Aug- 03-10	Aug- 02-11		f<10 GHz: 10GHz<f< 18 GHz:
Broadband Preamplifier	SCHWARZB ECK MESS- ELEKTROM / BBV 9718	9718-148	W2008004	0.5-18GHz	Aug- 03-10	Aug- 02-11		±1.2dB
10m Coaxial Cable with N-male Connectors usable up to 25GHz,	SCHWARZB ECK MESS- ELEKTROM / AK 9515 H	-	-	-	Aug- 03-10	Aug- 02-11		-
10m 50 Ohm Coaxial Cable with N-plug, individual length, usable up to 3(5)GHz, Connector	SCHWARZB ECK MESS- ELEKTROM / AK 9513				Aug- 03-10	Aug- 02-11		
Positioning Controller	C&C LAB/ CC-C-IF				N/A	N/A		
Color Monitor	SUNSP0/ SP-14C				N/A	N/A		
Test Receiver	ROHDE&SC HWAHZ/ ESPI	101155	W2005001	9k-3GHz	Aug- 03-10	Aug- 02-11	Wws200 80942	±1dB
EMI Receiver	Beijingkehua n	KH3931		9k-1GHz	Aug- 03-10	Aug- 02-11		
Two-Line V-Network	ROHDE&SC HWAHZ/ ENV216	100115	W2005002	50Ω/50μH	Aug- 03-10	Aug- 02-11	Wws200 80941	±10%

WALTEK SERVICES

Reference No.: WT10104269-S-E-F

San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

Equipment Name	Manufacturer Model	Equipment No	Internal No	Specification	Cal. Date	Due Date	Cert. No	Uncertainty
Absorbing Clamp	ROHDE&SC HWAHZ/ MDS-21	100205	W2005003	impedance 50 Ω loss : 17 dB	Aug-03-10	Aug-02-11	Wws20080943	± 1 dB
10m 50 Ohm Coaxial Cable with N-plug, individual length, usable up to 3(5)GHz, Connectors	SCHWARZBECK MESS-ELEKTROM / AK 9514				Aug-03-10	Aug-02-11		
Digital Power Analyzer	Em Test AG/Switzerland/ DPA 500	V0745103095	W2008012	Power: 2000VA Vol-range: 0-300V Freq_range: 10-80Hz	Aug-03-10	Aug-02-11	Wwd20081185	Voltage distinguish: 0.025% Power_freq distinguish: 0.02Hz
Power Source	Em Test AG/Switzerland/ ACS 500	V0745103096	W2008013	Vol-range: 0-300V Power_freq: 10-80Hz				
Electrostatic Discharge Simulator	Em Test AG/Switzerland/DITO	V0745103094	W2008005	Contact discharge: 500V-10KV Air discharge: 500V-16.5KV	Aug-03-10	Aug-02-11	Wwc20082400	7.5A current will be changed in $V_m=1.5V$
RF Generator	TESEQ GmbH/ NSG4070	25781	W2008008	Freq-range: 9K-1GHz RF voltage: -60 dBm-+10dBm	Aug-03-10	Aug-02-11	Wws20081890	Power_freq distinguish: 0.1Hz RF electricity distinguish 0.1 B
CDN M-Type	TESEQ GmbH/ CDN M016	25112	W2008009	Voltage correct factor 9.5 dB	Aug-03-10	Aug-02-11	Wwc20082396	150K-80MHz: ± 1 dB 80-230MHz: -2-+3dB
EM-Clamp	TESEQ GmbH/ KEMZ 801	25453	W2008010	Freq_range: 0.15-1000 MHz	Aug-03-10	Aug-02-11	Wwc20082397	0.3-400 MHz: ± 4 dB Other freq: ± 5 dB
Attenuator 6dB	TESEQ GmbH/ ATN6050	25365			Aug-03-10	Aug-02-11	Wws20081597	

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Equipment Name	Manufacturer Model	Equipment No	Internal No	Specification	Cal. Date	Due Date	Cert. No	Uncertainty
All Modules Generator	SCHAFFNER/6150	34579	W2008006	voltage:200V-4.4KV Pulse current: 100A-2.2KA	Aug-03-10	Aug-02-11	Wwc20082401	voltage: $\pm 10\%$ Pulse current: $\pm 10\%$
Capacitive Coupling Clamp	SCHAFFNER/CDN 8014	25311			Aug-03-10	Aug-02-11	Wwc20082398	-
Signal and Data Line Coupling Network	SCHAFFNER/CDN 117	25627	W2008011	1.2/50 μ S	Aug-03-10	Aug-02-11	Wwc20082399	-
AC Power Supply	TONGYUN/DTDGC-4				Aug-03-10	Aug-02-11	Wws20080944	-
Exposure Level Tester ELT-400	Narda Safety TEST Solutions/2304/03	M-0155	w2008022	Test freq range: 1—400kHz	Aug-03-10	Aug-02-11	Wwd20081191	Test uncertainty : 1—120kHz: $\pm 1.83\%$, 120 kHz-400 kHz: $\pm 4.06\%$
Magnetic Field Probe 100cm ²	Narda Safety TEST Solutions/2300/90.10	M-1070	w2008021	Test freq range: 1—400kHz				Test uncertainty : 1Hz-10Hz: $\pm 16.2\%$, 10Hz - 120kHz: $\pm 2.2\%$, 120 kHz-400 kHz: $\pm 4.7\%$
Active Loop Antenna Charger 10kHz-30MHz	Beijing Dazhi / ZN30900A	-	-	10kHz-30MHz	Aug-03-10	Aug-02-11		$\pm 1\text{dB}$

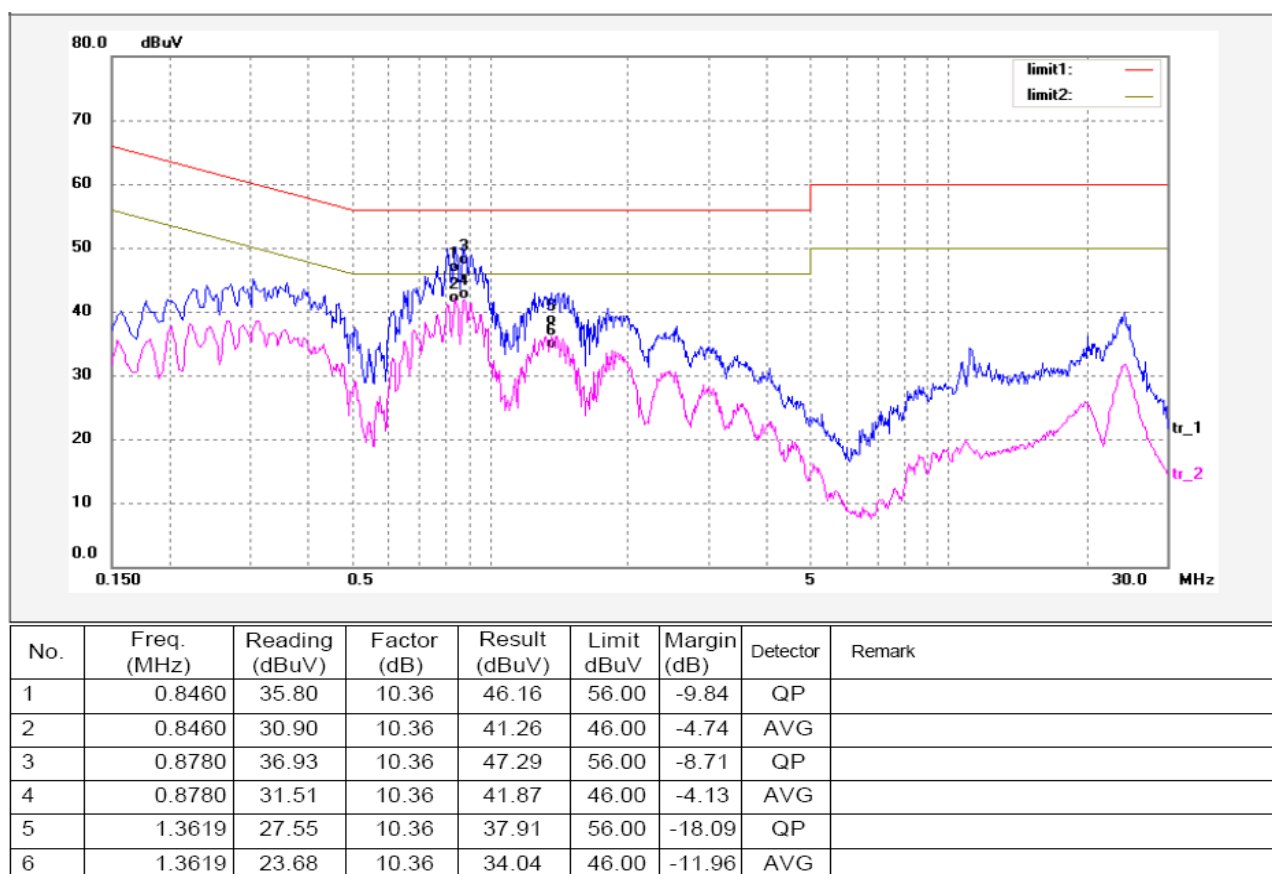
5 Emissions Test Results

5.1 Conducted Emission Limit

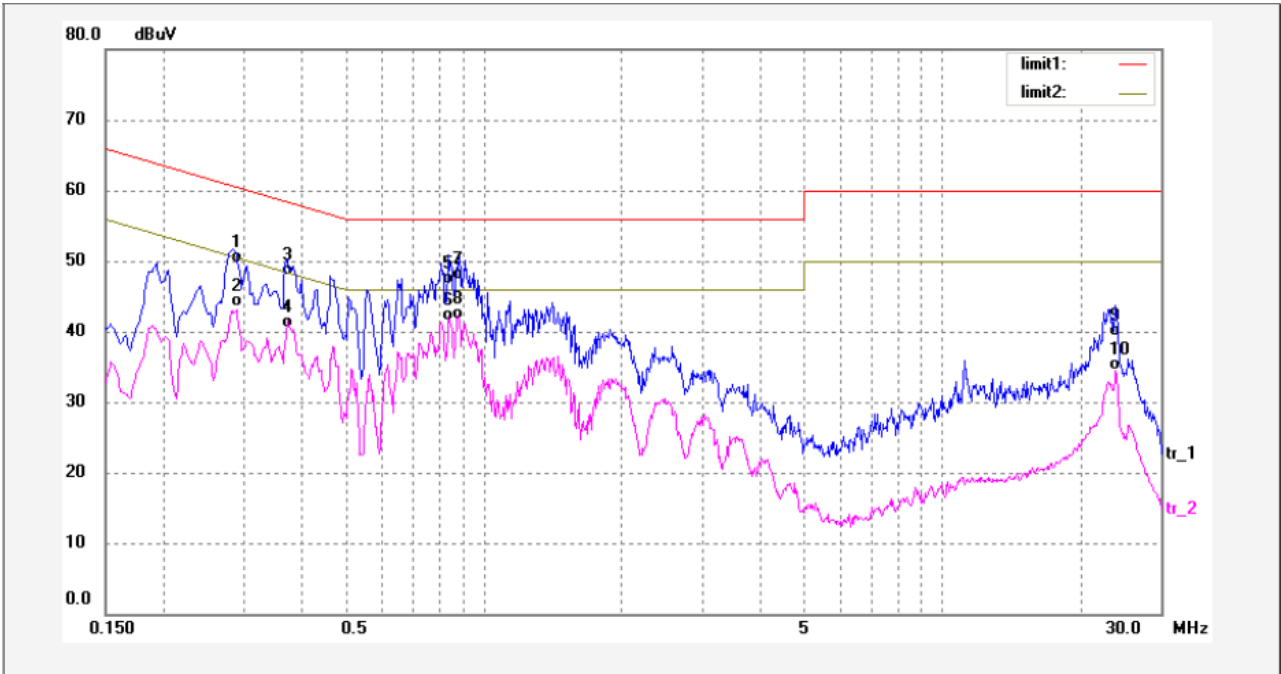
Test Requirement:	FCC Part15.107
Test Method:	ANSI C63.4:2003
Test Result:	Pass
Frequency Range:	150kHz to 30MHz
Class:	Class B
Limit:	66-56 dB μ V between 0.15MHz & 0.5MHz 56 dB μ V between 0.5MHz & 5MHz 60 dB μ V between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

5.2 Conducted Emission Data record

Live Line



Neutral Line

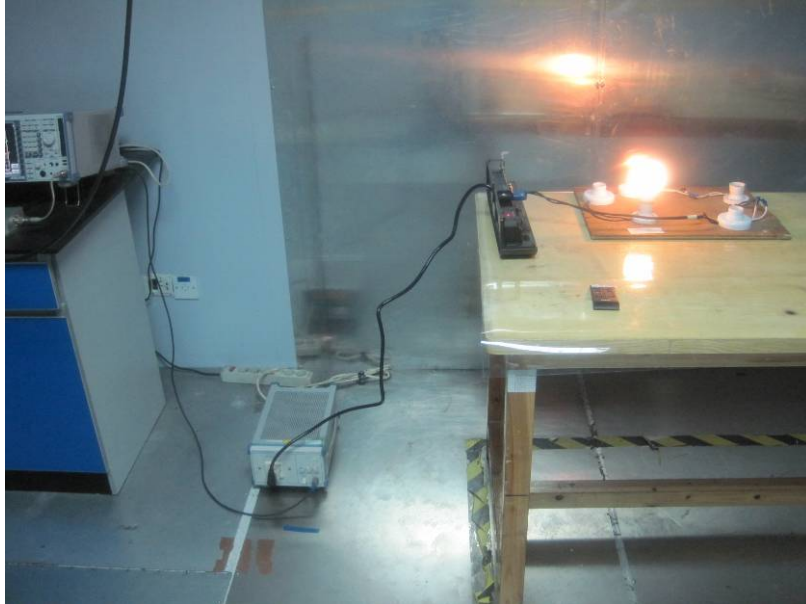


No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.2860	39.38	10.35	49.73	60.64	-10.91	QP	
2	0.2860	33.09	10.35	43.44	50.64	-7.20	AVG	
3	0.3740	37.49	10.35	47.84	58.41	-10.57	QP	
4	0.3740	30.08	10.35	40.43	48.41	-7.98	AVG	
5	0.8420	36.31	10.36	46.67	56.00	-9.33	QP	
6	0.8420	31.21	10.36	41.57	46.00	-4.43	AVG	
7	0.8860	36.92	10.36	47.28	56.00	-8.72	QP	
8	0.8860	31.26	10.36	41.62	46.00	-4.38	AVG	
9	23.8740	28.80	10.44	39.24	60.00	-20.76	QP	
10	23.8740	24.03	10.44	34.47	50.00	-15.53	AVG	

San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

5.3 Conducted Emission Test Setup View



5.4 Radiation Emission Data

Test Requirement:	FCC Part15.109
Test Method:	ANSI C63.4:2003
Test Result:	PASS
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dB μ V/m between 30MHz & 88MHz 43.5 dB μ V/m between 88MHz & 216MHz 46.0 dB μ V/m between 216MHz & 960MHz 54.0 dB μ V/m zbove 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximised peak within 6dB of limit

5.4.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Waltek EMC Lab is ± 5.03 dB.

5.4.2 EUT Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4:2003, The specification used in this report was the FCC Part15 B limits.

The EUT was placed on the test table in working mode.

5.4.3 Spectrum Analyzer Setup

According to FCC Part15 B Rules, the system was tested 30 to 2000MHz.

Below 1GHz

Start Frequency	30 MHz
Stop Frequency	1000MHz
Sweep Speed	Auto
IF Bandwidth.....	120 KHz
Video Bandwidth.....	100KHz
Quasi-Peak Adapter Bandwidth	120 KHz
Quasi-Peak Adapter Mode	Normal
Resolution Bandwidth	100KHz

Above 1GHz

Start Frequency	1000 MHz
Stop Frequency	2000MHz
Sweep Speed	Auto
IF Bandwidth.....	120 KHz
Video Bandwidth.....	1MHz
Quasi-Peak Adapter Bandwidth	120 KHz
Quasi-Peak Adapter Mode	Normal
Resolution Bandwidth.....	1MHz

5.4.4 Test Procedure

The radiated emissions test. ANSI STANDARD C63.4-2003 12.1.1.2 OTHER TYPES OF RECEIVERS: A typical signal or an unmodulated CW signal at the operating frequency of the EUT shall be supplied to the EUT for all measurements. Such a signal may be supplied by either a signal generator and an antenna in close proximity to the EUT or directly conducted into the antenna terminals of the EUT. The signal level shall be sufficient to the local oscillator of the EUT.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT is compliant with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dBμV of specification limits), and are distinguished with a "Qp" in the data table.

The EUT was under normal mode during the final qualification test and the configuration was used to represent the worst case results.

5.4.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dBμV means the emission is 7dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

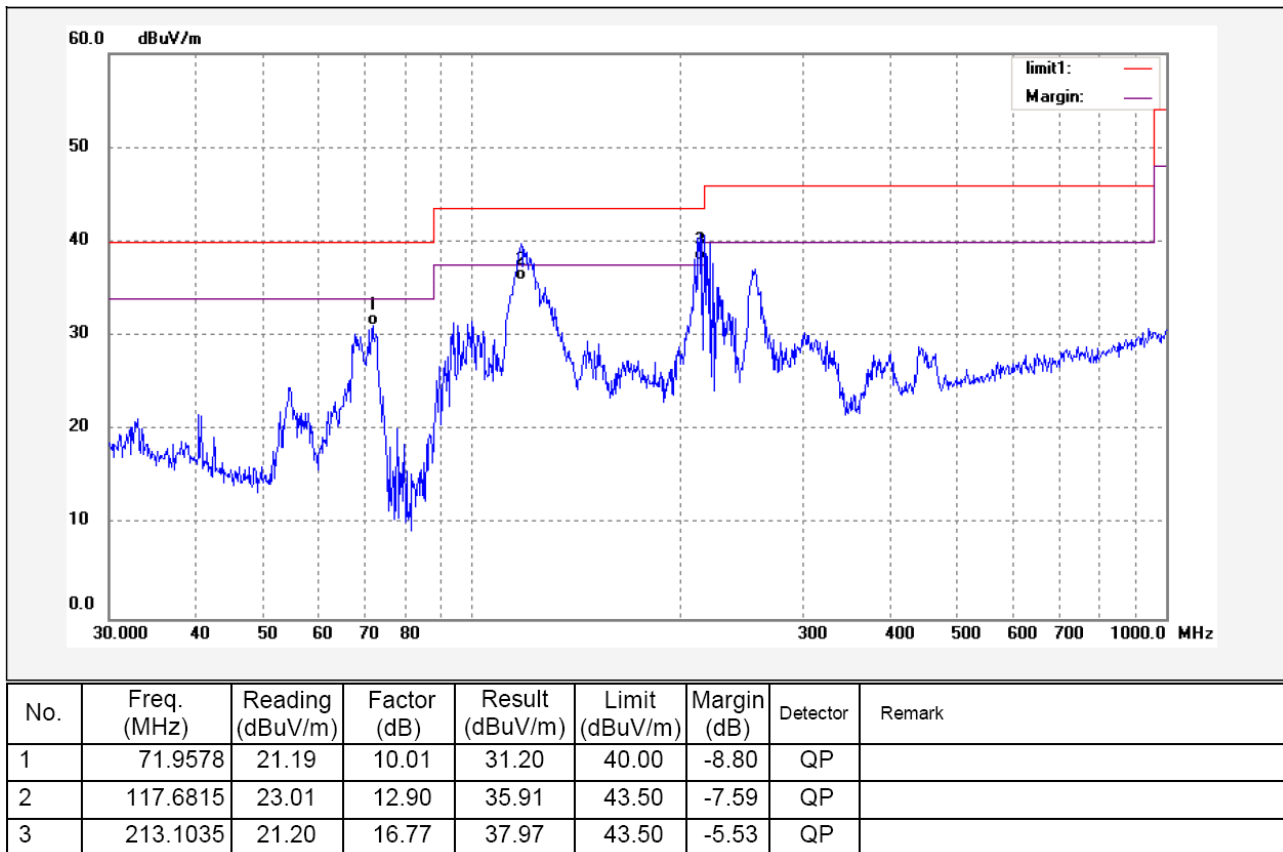
$$\text{Margin} = \text{Corr. Ampl.} - \text{Class B Limit}$$

5.4.6 Summary of Test Results

According to the data in this section, the EUT complied with the FCC Part15 B standards.

Below 1GHz

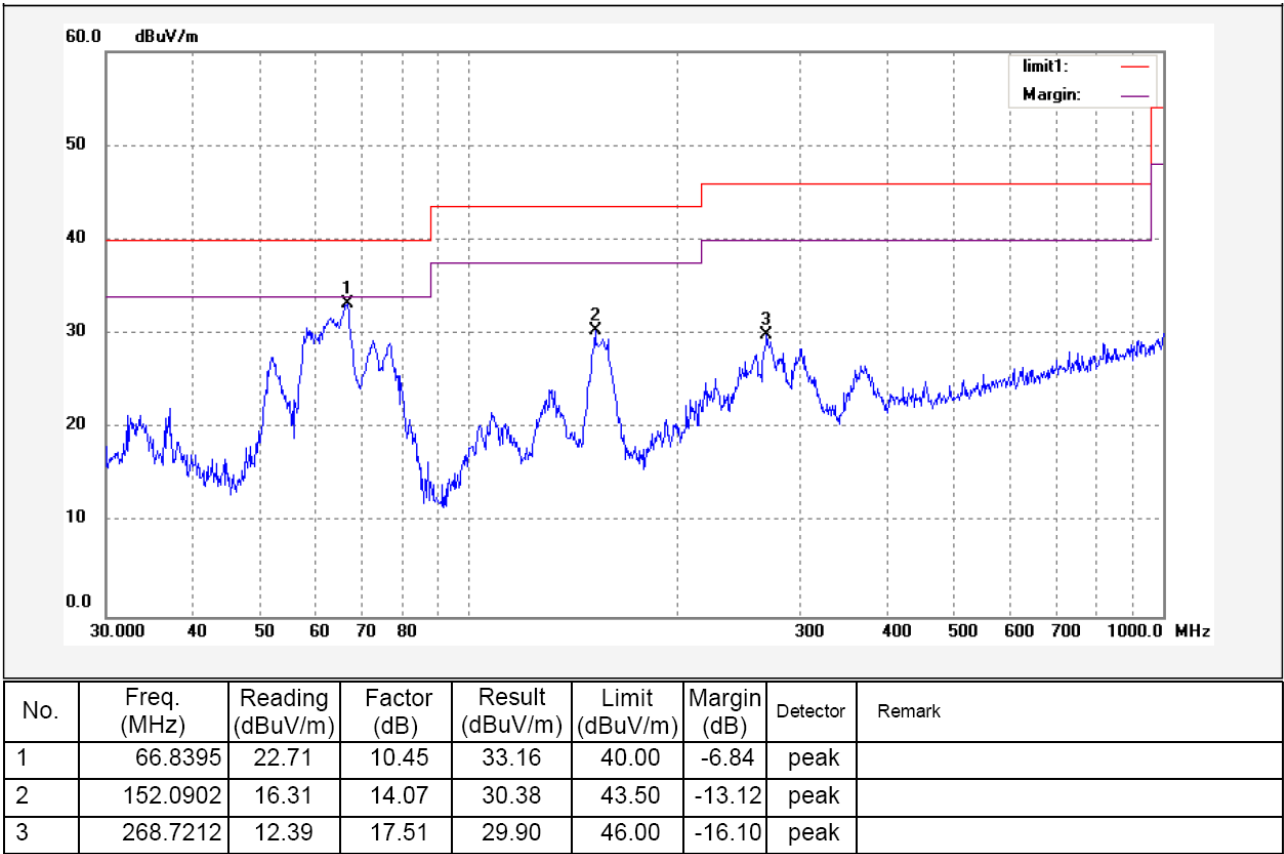
Antenna polarization:Horizontal



San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

Antenna polarization:Vertical

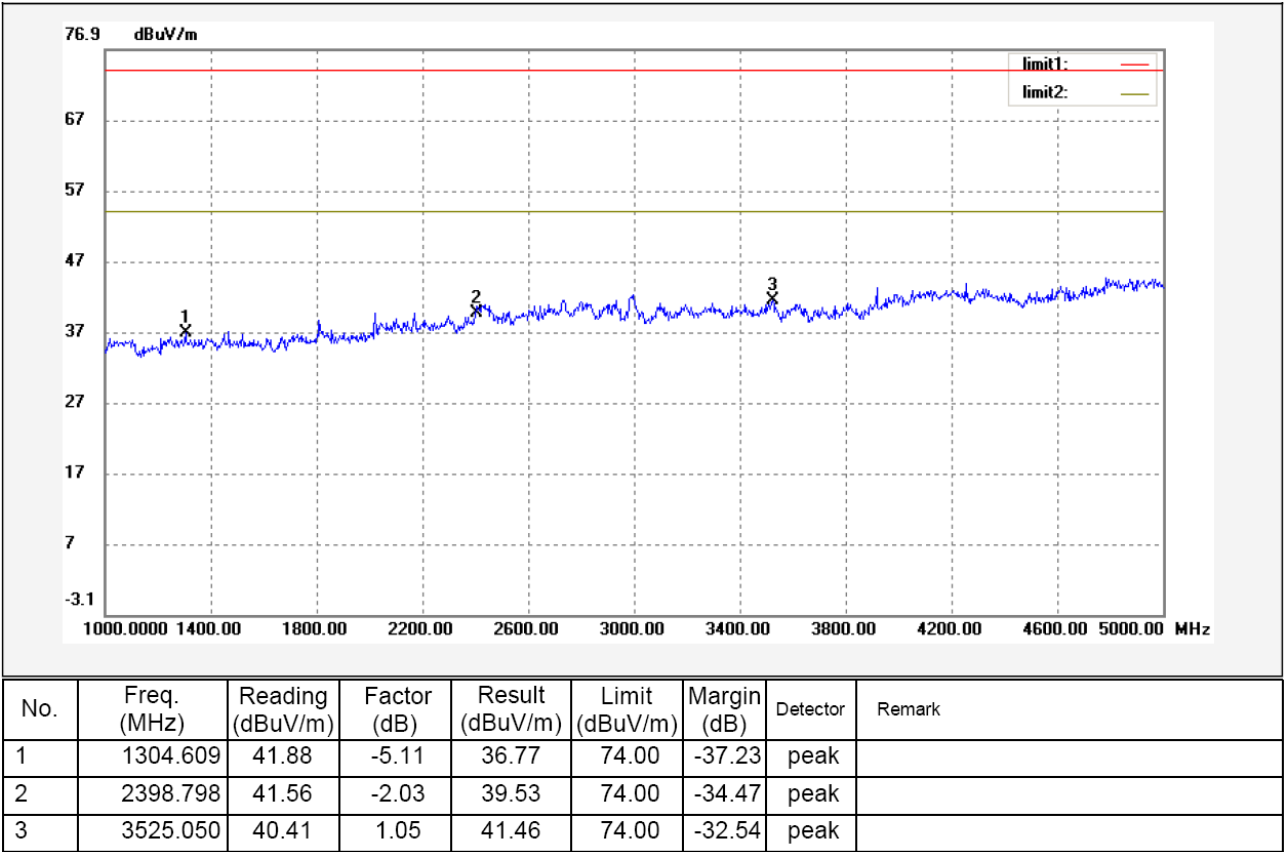


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FCC ID:OZISPP5107XXXX

Above 1GHz

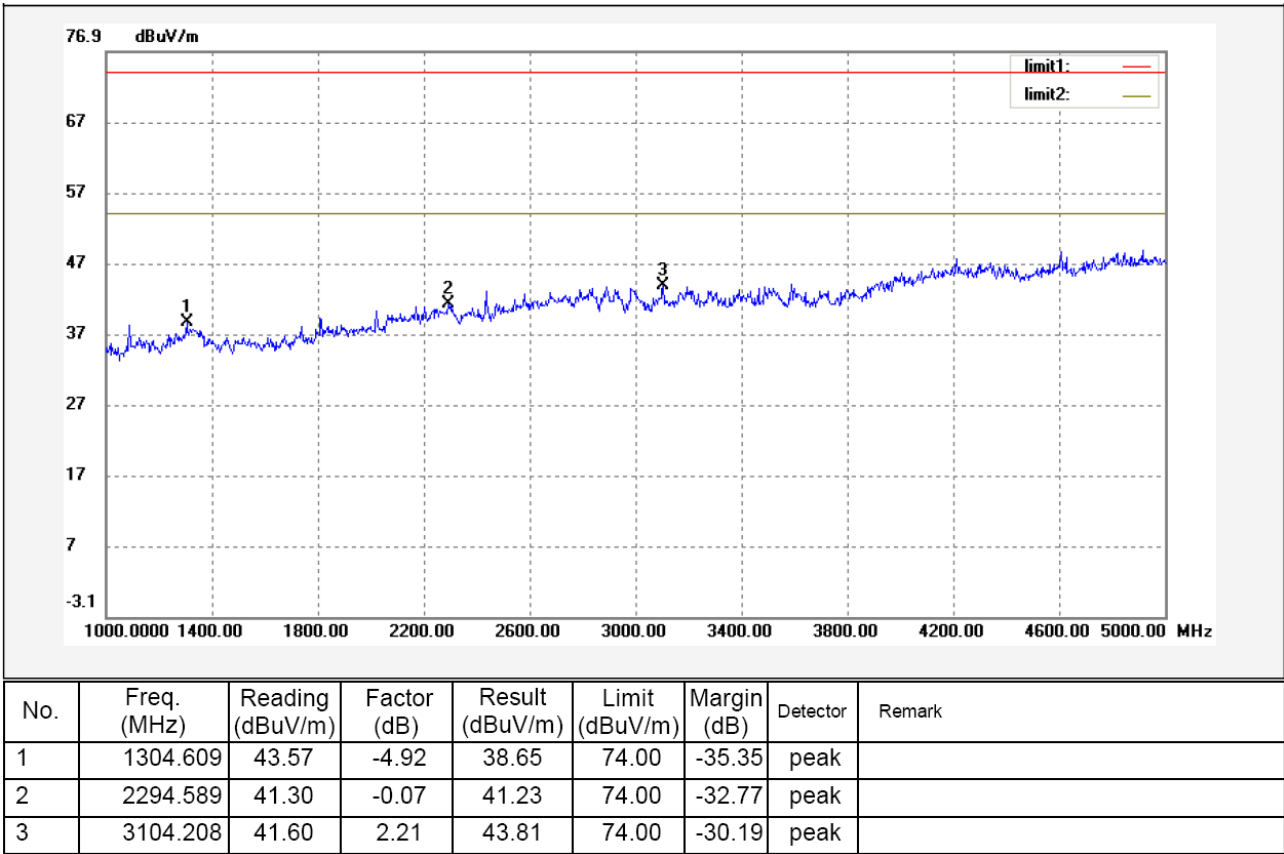
Antenna polarization: Horizontal



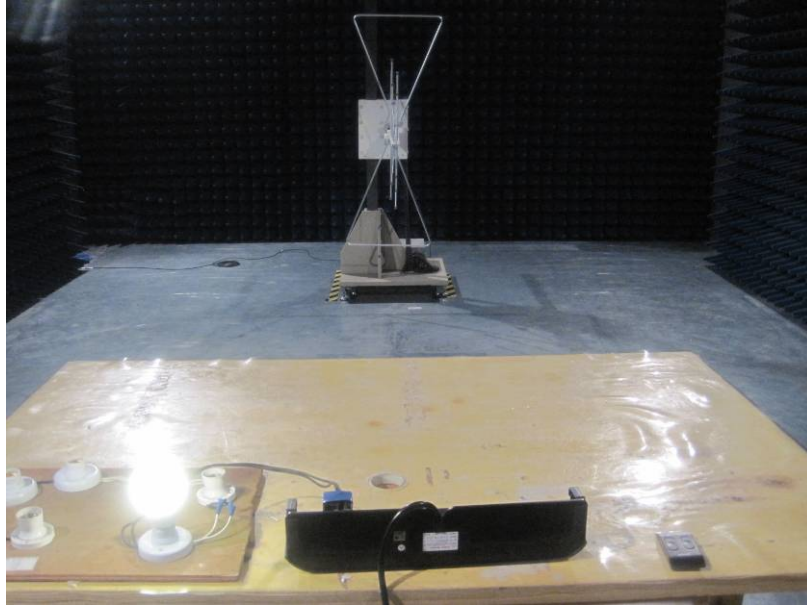
San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

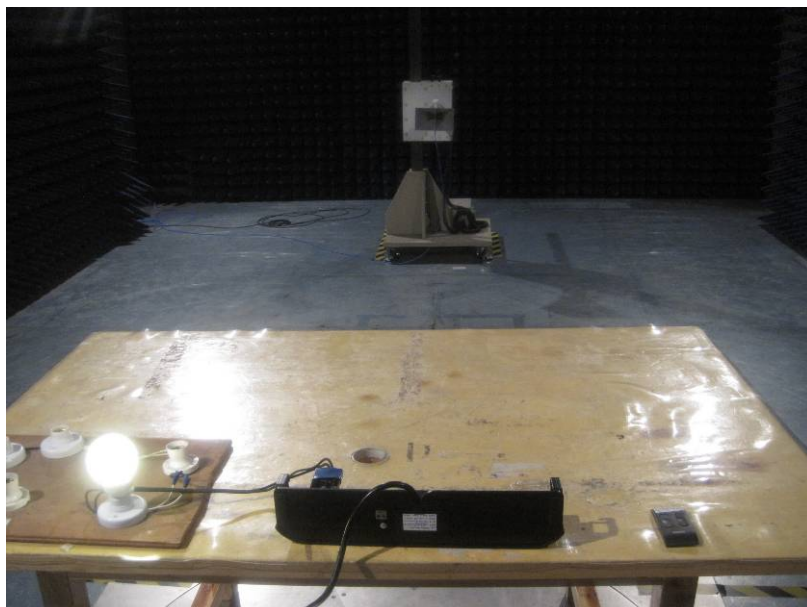
Antenna polarization:Vertical



**5.4.7 Photograph – Radiation Emission Test Setup for Standby Mode
Below 1GHz**



Above 1GHz

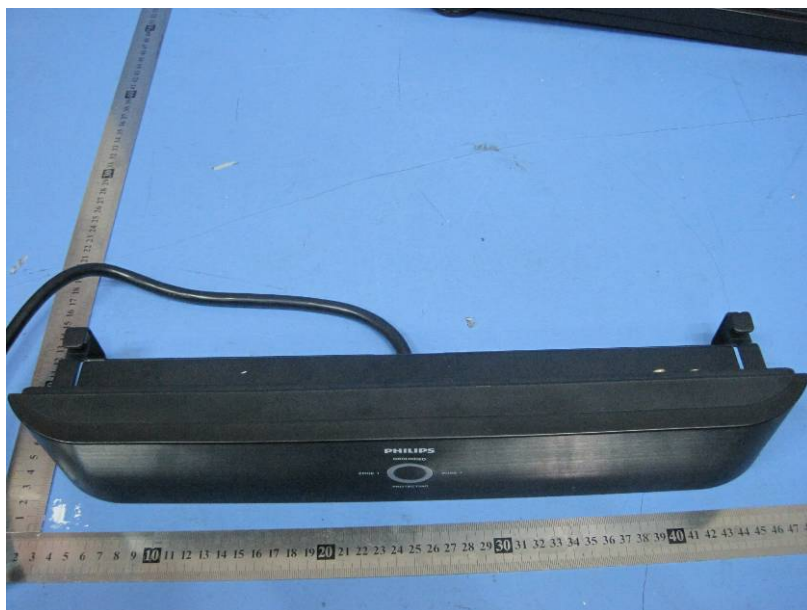


San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

6 Photographs - Constructional Details

6.1 EUT-Front View



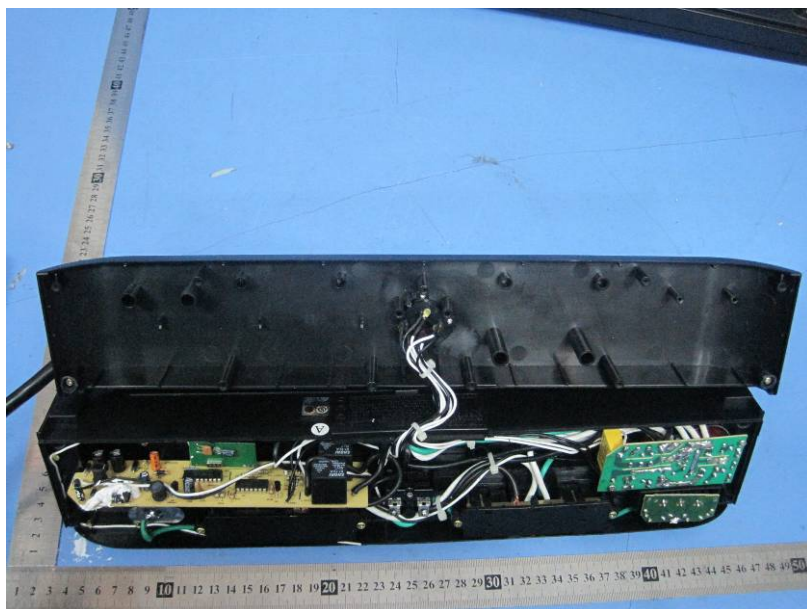
6.2 EUT-Back View



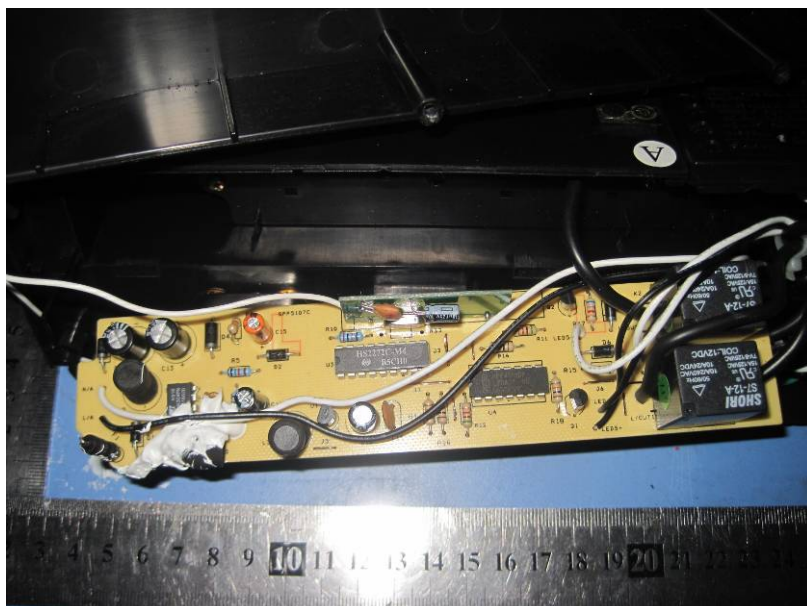
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FCC ID:OZISPP5107XXXX

6.3 EUT-Open View



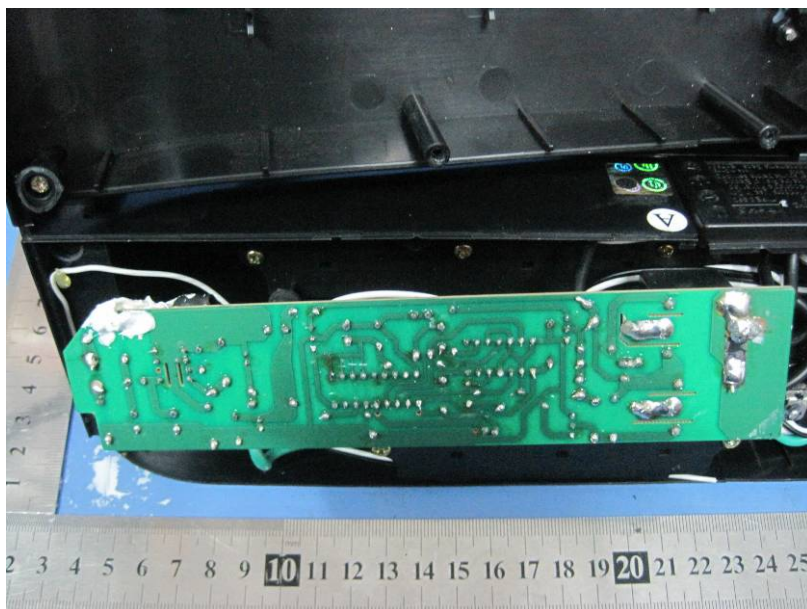
6.4 PCB1-Front View



San Shih Electrical Enterprise Co., Ltd.

FCC ID:OZISPP5107XXXX

6.5 PCB1-Back View



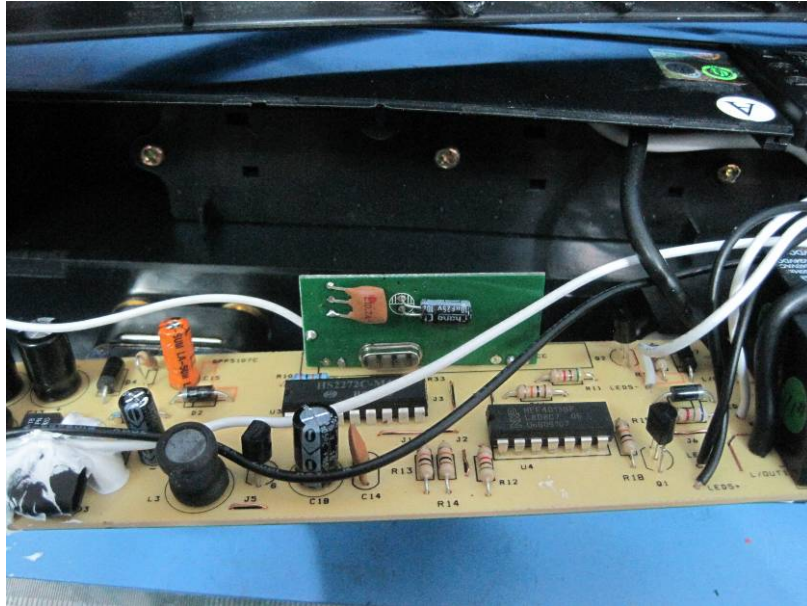
6.6 PCB2-Front View



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FCC ID:OZISPP5107XXXX

6.7 PCB2-Back View



WALTEK SERVICES

Reference No.: WT10104269-S-E-F

7 FCC ID Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1)this device may not cause harmful interference,and (2) this device must accept any interference received, including interference that may cause undesired operation

The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT
EUT Bottom View/proposed FCC Mark Location

