



MOST TECHNOLOGY SERVICE CO., LTD.

Tel: (86) 755-86170306 Fax: (86) 755-86170310

Http:// www. szmost.com Email: szmost@szmost.com

Test Report

Product Name: Wall Light

FCC ID: V7Z-LINGSHENG3009

MODEL NO. : LS3009

Applicant:

Ningbo Lingsheng Electric Appliance Co., Ltd.

Huancheng North Rd, Simen Industry Zone, Simen Town, Yuyao, Zhejiang

Date Received: 4/23/2008

Date Tested: 4/22/2008



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EMC Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100492	Apr 05,2008	1 Year
LISN	ROHDE&SCHWARZ	ENV216	100093	Apr 05,2008	1Year
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101202	Apr 05,2008	1 Year
Spectrum Analyzer	ANRITSU	MS2651B	6200238316	Apr 05,2008	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Apr 05,2008	1 Year
Bilog Antenna	Sunol	JB3	A121206	Apr 05,2008	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Apr 05,2008	1 Year
Cable	Resenberger	N/A	NO.1	Apr 05,2008	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Apr 05,2008	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Apr 05,2008	1 Year
Single Phase Power Line Filter	Kikusui	LIN40MA-PC R-L	LM002352	Apr 05,2008	1Year
AC Power Source	Kikusui	AC40MA	LM003232	Apr 05,2008	1Year
Test analyzer	Kikusui	KHA1000	LM003720	Apr 05,2008	1Year
ESD Tester	Kikusui	KES4021	LM003537	Apr 05,2008	1 Year
Signal Generator	IFR	2032	203002/100	Apr 05,2008	1 Year
Amplifier	A&R	150W1000	301584	NCR	NCR
Dual Directional Coupler	A&R	DC6080	301508	Apr 05,2008	1 Year
Power Head	A&R	PH2000	301193	Apr 05,2008	1 Year
Power Meter	A&R	PM2002	302799	Apr 05,2008	1 Year
Field Monitor	A&R	FM5004	300329	Apr 05,2008	1 Year
Field Probe	A&R	FP5000	300221	Apr 05,2008	1 Year
EMC PRO System	EM Test	UCS-500-M4	V0648102026	Apr 05,2008	1 Year
EMC PRO System	EM Test	UCS-500-M4	V0648102026	Apr 05,2008	1 Year

Remark:

Test Firm Name: Most Technology Service Co., Ltd.

Test Firm Address:

No. 5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China

FCC Registered Test Site Number: 490827

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TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of MOST TECHNOLOGY SERVICE CO., LTD. The EUT was transmitting a test signal during the testing.

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a 50 UH LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25 with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. The ambient temperature of the EUT was 25 with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF = FS

33 20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.



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NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.231

REQUIREMENTS:

Fundamental Frequency MHz	Field Strength of Fundamental dBuV	Field Strength of Harmonics and Spurious Emissions (dBuV/m @ 3m)
40.66 to 40.70	67.04	47.04
70 to 130	61.94	41.94
130 to 174	61.94 to 71.48	41.94 to 51.48
174 to 260	71.48	51.48
260 to 470	71.48 to 81.94	51.48 to 61.94
470 and above	81.94	61.94

THE LIMIT FOR AVERAGE FIELD STRENGTH dBuV/m FOR THE FUNDAMENTAL FREQUENCY= 75.623 dBuV/m. NO FUNDAMENTAL IS ALLOWED IN THE RESTRICTED BANDS.

THE LIMIT FOR AVERAGE FIELD STRENGTH dBuV/m FOR THE HARMONICS AND SPURIOUS FREQUENCIES = 55.623 dBuV/m. SPURIOUS IN THE RESTRICTED BANDS MUST BE LESS THAN 54dBuV/m OR 15.209

Fundamental Radiation Interference Data:

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)	FCC 15 Subpart C Limit (dBuV/m)
315.00	Vertical	68.89	75.623
315.00	Horizontal	64.21	75.623
630.20	Vertical	43.56	55.623
630.20	Horizontal	41.15	55.623
1260.30	Vertical	42.05	55.623
1260.30	Horizontal	40.15	55.623
1575.50	Vertical	38.70	55.623
1575.50	Horizontal	31.90	55.623
3150.00	Vertical	34.92	55.623
3150.00	Horizontal	33.59	55.623

SAMPLE CALCULATION OF LIMIT @ 303 MHz:

$(470 - 260)\text{MHz} = 210 \text{ MHz}$
 $(12500 - 3750)\text{uV/m} = 8750 \text{ uV/m}$
 $8750\text{uV/m}/210\text{MHz} = 41.67 \text{ uV/m/MHz}$
 $(303-260)\text{MHz} = 43 \text{ MHz}$
 $43 \text{ MHz} * 41.67 \text{ uV/m/MHz} = 1791.81 \text{ uV/m}$
 $(1791.81 + 3750)\text{uV/m} = 5541.81 \text{ uV/m limit @ 303 MHz}$

TEST RESULTS: The unit DOES meet the FCC requirements.

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NAME OF TEST: RADIATION INTERFERENCE

RULES PART NUMBER: 15.209

REQUIREMENTS: OUT-OF-BAND EMISSIONS SHALL NOT EXCEED:

30 - 88 MHz	40.0 dBuV/M MEASURED AT 3 METERS
88 - 216 MHz	43.5 dBuV/M
216 - 960 MHz	46.0 dBuV/M
ABOVE 960 MHz	54.0 dBuV/M

Continued:

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)	FCC 15 Subpart C Limit (dBuV/m)
189.08	Horizontal	17.99	43.50
322.94	Horizontal	33.89	46.00
268.62	Vertical	35.47	46.00
518.88	Vertical	31.56	46.00

SAMPLE CALCULATION: $F_{SdBuV/m} = MR (dBuV) + ACFdB$.

TEST PROCEDURE: ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector and an appropriate antenna. The resolution bandwidth of spectrum analyzer was 100 kHz below 1 GHz and 1 MHz above 1 GHz. An appropriate sweep speed was used. When an emission was found, the table was rotated to produce the maximum signal strength. The antenna was placed in both the horizontal and vertical planes and the worse case emissions were reported. The spectrum was searched to at least the tenth (10) harmonic of the fundamental.



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NAME OF TEST: CALCULATION OF DUTY CYCLE

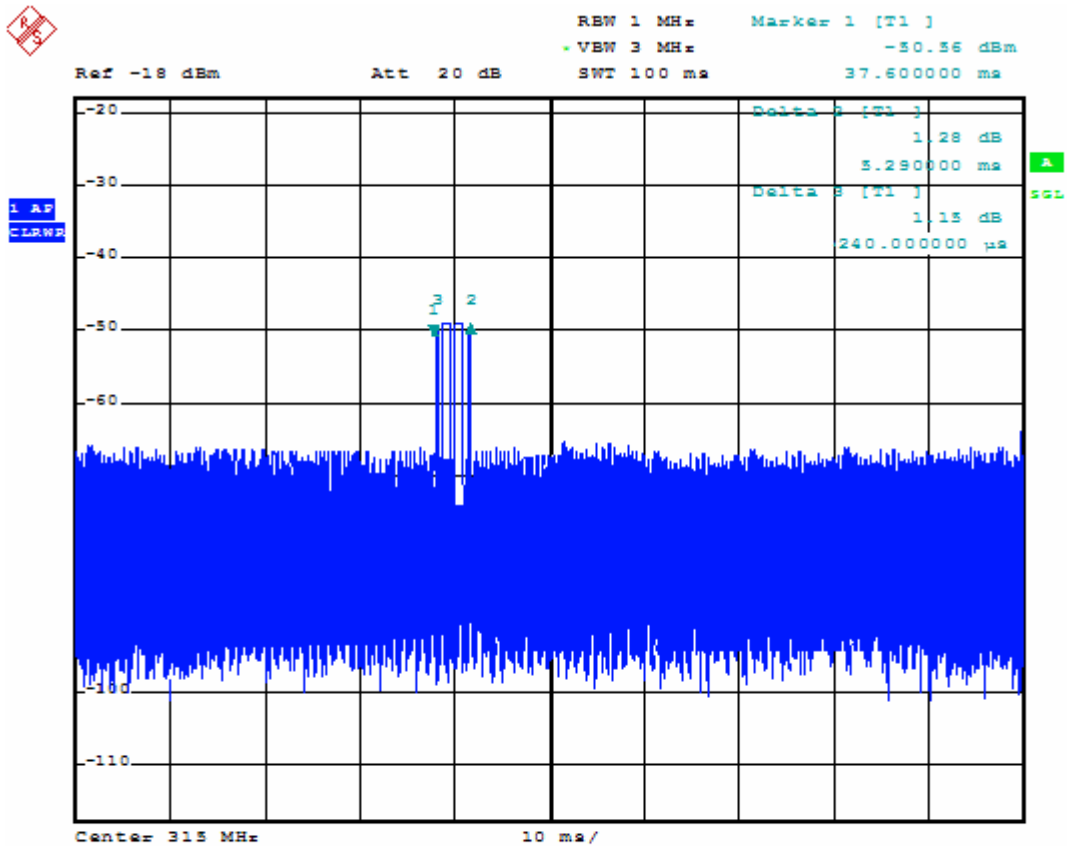
RULES PART NUMBER: 15.231

The period of the pulse train is determined by observing it on an oscilloscope or a spectrum analyzer with zero(0) frequency span. A plot is then made of the pulse train with a sweep time of 100milliseconds. This sweep determines the duration of the pulse train, which in this case is 162 milliseconds. This sweep allows the determination of the number of and type of pulses, i.e. long & short. Plots are then made showing the duration of each type of pulse and its duration.

Duty Cycle= Total On interval in a complete pulse train/ Length of a complete pulse train
= (1.24*2+0.24*2) /5.29
= 74.85%

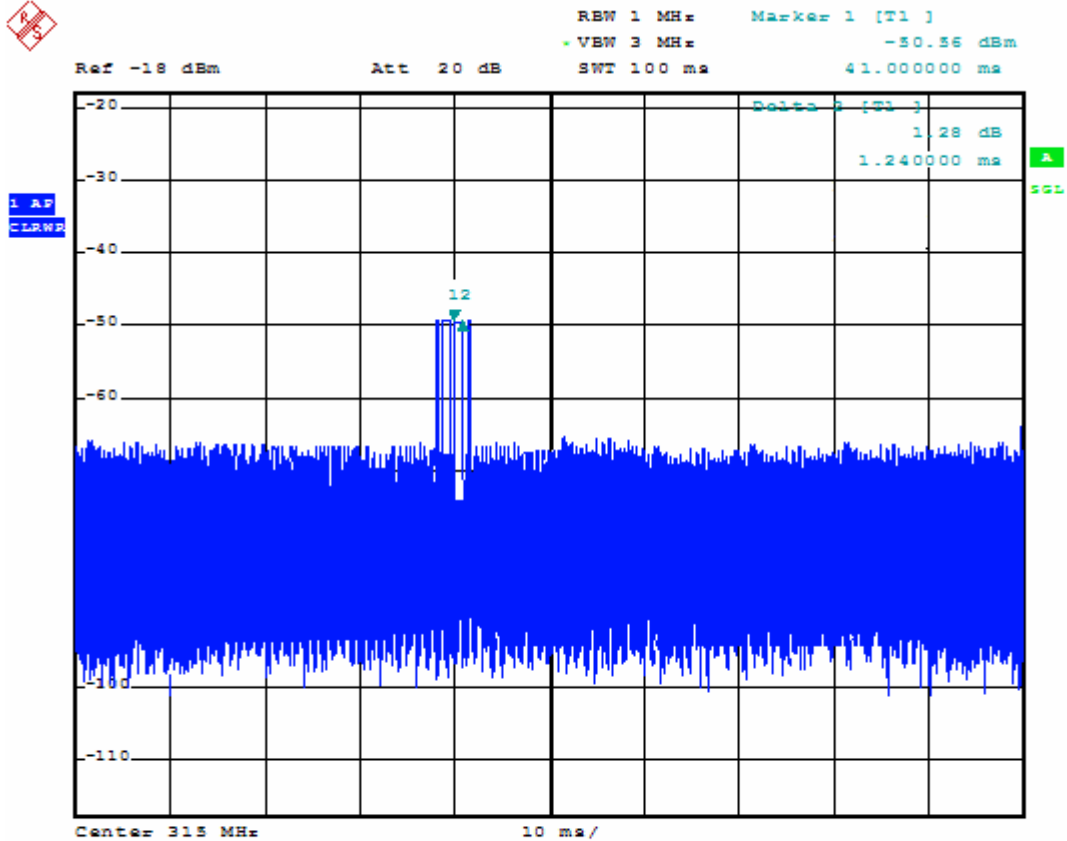


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NAME OF TEST: Occupied Bandwidth

RULES PART NUMBER: 15.231(C)

REQUIREMENTS: The bandwidth of the emission shall be no wider than .25% of the center frequency for devices operating between 70 and 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier.

$315.00 \text{ MHz} * 0.0025 = .7875 \text{ MHz}$
 $0.7875 \text{ MHz} / 2 = +/- 393.75 \text{ KHz}$

Band edge emissions plots are included on the following pages

METHOD OF MEASUREMENT: A small sample of the transmitter output was fed into the spectrum analyzer and the attached plot was printed. The vertical scale is set to -10 dB per division.

TEST RESULTS: The unit DOES meet the FCC requirements.



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