

Application for FCC Certificate
On Behalf of
Shanghai ChuanShi Illumination Electrical Equipment Co., Ltd.

Energy Saving Lamp

Model No.: YPZ120-3U 23W YPZ120-3U 20W YPZ120-3U 15W
YPZ120-S 23W YPZ120-S 20W YPZ120-S 15W

FCC ID : PF9SCS

Prepared For : Shanghai ChuanShi Illumination Electrical Equipment
Co., Ltd.

The East of Zhi Xin stop, San Lu Rd. Pudong
Minhang District Shanghai, China

Prepared By : AUDIX Technology (Shanghai) Co., Ltd.

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Report No. : ACI-F01006
Date of Test : Jan 10, 2001
Date of Report : Feb 06, 2001

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TEST REPORT FOR FCC CERTIFICATE

Applicant : Shanghai ChuanShi Illumination Electrical Equipment Co., Ltd.
 Manufacturer : Shanghai ChuanShi Illumination Electrical Equipment Co., Ltd.
 EUT Description : Energy Saving Lamp
 (A) Model No.: YPZ120-3U 23W, YPZ120-3U 20W, YPZ120-3U 15W
 YPZ120-S 23W, YPZ120-S 20W, YPZ120-S 15W
 (B) Serial No.: 3U/23W, 3U/20W, 3U/15W
 S/23W, S/20W, S/15W
 (C) Power Supply: 120V/60Hz

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 18 CONSUMER DEVICES (1998)
 AND MP-5/1986*

The device described above is tested by AUDIX Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 18 RF Lighting Device limits both radiated and conducted emissions.

The test results are contained in this test report and AUDIX Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the FCC official limits.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of AUDIX Technology (Shanghai) Co., Ltd.

This report must not be used by the applicant to claim product endorsement by NVLAP or any agency of the U.S. Government.

Date of Test : Jan 10, 2001

Prepared by : Yulisa Wang Test Engineer : Paul Yu
 (YULISA WANG) (PAUL YU)
 For and on behalf of
 AUDIX TECHNOLOGY (SHANGHAI) CO., LTD.
 Reviewer : Hall Wang Approved Signatory: Jeremy Geng
 (HALL WANG) (JEREMY GENG)

.....
 Authorized Signatory (2)

1 GENERAL INFORMATION

1.1 Description of Equipment Under Test

Description : Energy Saving Lamp

Type of EUT : Production Pre-product Pro-type

Model Number : YPZ120-3U 23W, YPZ120-3U 20W, YPZ120-3U 15W
YPZ120-S 23W, YPZ120-S 20W, YPZ120-S 15W

Applicant : Shanghai ChuanShi Illumination Electrical Equipment Co., Ltd.

The East of Zhi Xin stop, San Lu Rd., Pudong
Minhang District Shanghai, China

Manufacturer : Shanghai ChuanShi Illumination Electrical Equipment Co., Ltd.

The East of Zhi Xin stop, San Lu Rd., Pudong
Minhang District Shanghai, China

M/N	INPUT POWER (VA)	OUTPUT POWER (W)
YPZ120-3U 23W	34.2	20.8
YPZ120-3U 20W	29.9	17.7
YPZ120-3U 15W	24.2	13.7
YPZ120-S 23W	37.8	23.7
YPZ120-S 20W	30.7	18.7
YPZ120-S 15W	25.1	14.5

1.2 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	AUDIX Technology (Shanghai) Co., Ltd.
Site Location	:	3 F., 34 Bldg., 680 Guiping Rd., Caohejing Hi-Tech Park, Shanghai, China
NVLAP Lab Code	:	200371-0

1.3 Measurement Uncertainty

Conducted Emission Uncertainty	:	U = 2.66dB
Radiated Emission Uncertainty	:	U = 3.90dB

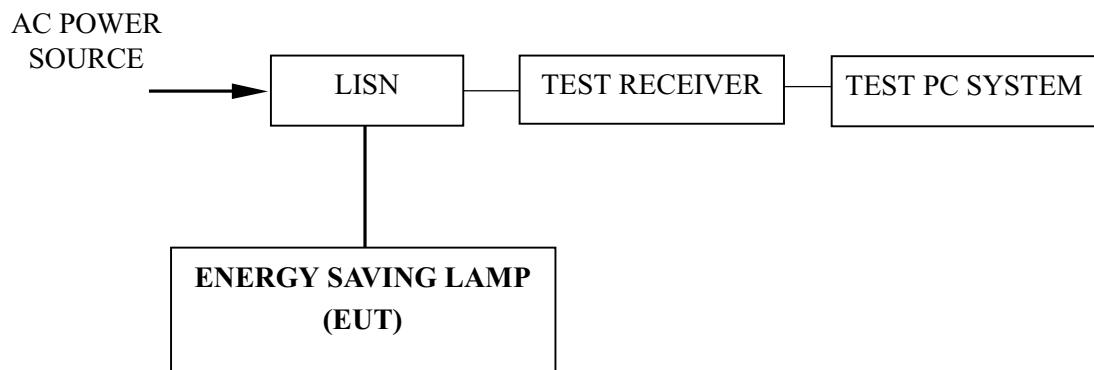
2 AC POWERLINE CONDUCTED EMISSION TEST

2.1 Test Equipment

The following test equipment are used during the powerline conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESHS10	844077/020	May 20, 2000	1 Year
2.	Line Impedance Stabilization Network (LISN)	Kyoritsu	KNW-407	8-1280-5	Apr 15,2000	1 Year

2.2 Block Diagram of Test Setup



2.3 Conducted Emission Limits

Frequency (MHz)	Maximum RF Line Voltage	
	(μ V)	dB(μ V)
0.45 ~ 2.51	250	48
2.51 ~ 3	3000	70
3 ~ 30	250	48

NOTE 1 – RF Line Voltage dB(μ V) = 20 log RF Line Voltage (μ V)

2.4 Test Configuration

The EUT (listed in Sec. 1.1) was installed as shown on Sec. 2.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

2.5 Operating Condition of EUT

The EUT was connected to the power mains through a Line Impedance Stabilization Network (LISN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to MP-5/1986 during conducted emission test.

The bandwidth of Test Receiver ESHS10 was set at 10 kHz.

The frequency range from 450 kHz to 30 MHz was checked. The test mode (ON) was done on conducted test and the test results of the highest emissions are listed in Sec. 2.7.

2.6 Test Procedures

- 2.6.1 Setup the EUT as shown in Sec. 2.2.
- 2.6.2 Turn on the power of all equipment.
- 2.6.3 The EUT will be operated normally.

2.7 Test Results

< PASS >

The frequency and amplitude of the highest AC powerline conducted emissions relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

EUT : Energy Saving Lamp Temperature : 22°C

Model No. : YPZ120-3U 23W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μ V)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)
VA	0.450	0.33	42.57	42.90	48.00	5.10
	0.515	0.31	39.07	39.38	48.00	8.62
	0.553	0.30	38.39	38.69	48.00	9.31
	0.665	0.29	38.65	38.94	48.00	9.06
	0.748	0.29	38.14	38.43	48.00	9.57
	0.790	0.28	36.39	36.67	48.00	11.33
VB	0.450	0.33	40.66	40.99	48.00	7.01
	0.553	0.30	39.19	39.49	48.00	8.51
	0.662	0.29	38.87	39.16	48.00	8.84
	0.714	0.29	39.24	39.53	48.00	8.47
	0.824	0.28	36.95	37.23	48.00	10.77
	0.889	0.28	34.94	35.22	48.00	12.78

NOTE 1 – Emission Level = Meter Reading + Factor

NOTE 2 – Factor = Insertion Loss + Cable Loss

NOTE 3 – All reading are Quasi-Peak Values.

NOTE 4 – The worst emission is detected at 0.450 MHz with corrected signal level of 42.90 dB(μ V) (limit is 48.00 dB(μ V)), when the VA of the EUT is connected to LISN.

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 22°C

Model No. : YPZ120-3U 20W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μ V)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)
VA	0.456	0.33	43.88	44.21	48.00	3.79
	0.489	0.31	40.62	40.93	48.00	7.07
	0.528	0.31	41.00	41.31	48.00	6.69
	0.604	0.30	40.39	40.69	48.00	7.31
	0.673	0.29	39.29	39.58	48.00	8.42
	0.754	0.29	38.86	39.15	48.00	8.85
VB	0.452	0.33	41.33	41.66	48.00	6.34
	0.526	0.31	39.14	39.45	48.00	8.55
	0.562	0.30	41.13	41.43	48.00	6.57
	0.594	0.30	40.71	41.01	48.00	6.99
	0.673	0.29	41.28	41.57	48.00	6.43
	0.745	0.29	37.06	37.35	48.00	10.65
<p>NOTE 1 – Emission Level = Meter Reading + Factor NOTE 2 – Factor = Insertion Loss + Cable Loss NOTE 3 – All reading are Quasi-Peak Values. NOTE 4 – The worst emission is detected at 0.456Hz with corrected signal level of 44.21 dB(μV) (limit is 48.00 dB(μV)), when the VA of the EUT is connected to LISN.</p>						

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 22°C

Model No. : YPZ120-3U 15W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μ V)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)
VA	0.463	0.33	36.86	37.19	48.00	10.81
	0.535	0.31	36.85	37.16	48.00	10.84
	0.591	0.30	35.76	36.06	48.00	11.94
	0.627	0.30	35.76	36.06	48.00	11.94
	0.691	0.29	35.16	35.45	48.00	12.55
	0.751	0.29	33.11	33.40	48.00	14.60
VB	0.450	0.33	38.36	38.69	48.00	9.31
	0.467	0.32	37.20	37.52	48.00	10.48
	0.535	0.31	38.49	38.80	48.00	9.20
	0.567	0.30	38.76	39.06	48.00	8.94
	0.627	0.30	37.98	38.28	48.00	9.72
	0.691	0.29	36.49	36.78	48.00	11.22
<p>NOTE 1 – Emission Level = Meter Reading + Factor NOTE 2 – Factor = Insertion Loss + Cable Loss NOTE 3 – All reading are Quasi-Peak Values. NOTE 4 – The worst emission is detected at 0.567Hz with corrected signal level of 39.06 dB(μV) (limit is 48.00 dB(μV)), when the VB of the EUT is connected to LISN.</p>						

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 22°C
 Model No. : YPZ120-S 23W Humidity : 53%
 Test Mode : ON Date of Test : Jan 10, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μ V)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)
VA	0.450	0.33	43.31	43.64	48.00	4.36
	0.475	0.32	38.36	38.68	48.00	9.32
	0.594	0.30	35.34	35.64	48.00	12.36
	0.662	0.29	34.51	34.80	48.00	13.20
	0.739	0.29	34.05	34.34	48.00	13.66
	0.790	0.28	33.79	34.07	48.00	13.93
VB	0.450	0.33	35.76	36.09	48.00	11.91
	0.489	0.31	36.53	36.84	48.00	11.16
	0.526	0.31	36.11	36.42	48.00	11.58
	0.599	0.30	35.14	35.44	48.00	12.56
	0.659	0.29	35.23	35.52	48.00	12.48
	0.764	0.29	33.43	33.72	48.00	14.28
NOTE 1 – Emission Level = Meter Reading + Factor NOTE 2 – Factor = Insertion Loss + Cable Loss NOTE 3 – All reading are Quasi-Peak Values. NOTE 4 – The worst emission is detected at 0.450Hz with corrected signal level of 43.64 dB(μ V) (limit is 48.00 dB(μ V)), when the VA of the EUT is connected to LISN.						

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 22°C
 Model No. : YPZ120-S 20W Humidity : 53%
 Test Mode : ON Date of Test : Jan 10, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μ V)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)
VA	0.450	0.33	43.39	43.72	48.00	4.28
	0.475	0.32	44.14	44.46	48.00	3.54
	0.530	0.31	36.63	36.94	48.00	11.06
	0.604	0.30	35.82	36.12	48.00	11.88
	0.729	0.29	34.54	34.83	48.00	13.17
	0.870	0.28	31.86	32.14	48.00	15.86
VB	0.450	0.33	43.35	43.68	48.00	4.32
	0.506	0.31	36.73	37.04	48.00	10.96
	0.569	0.30	36.38	36.68	48.00	11.32
	0.599	0.30	34.36	34.66	48.00	13.34
	0.673	0.29	37.89	38.18	48.00	9.82
	0.770	0.28	34.72	35.00	48.00	13.00
NOTE 1 – Emission Level = Meter Reading + Factor NOTE 2 – Factor = Insertion Loss + Cable Loss NOTE 3 – All reading are Quasi-Peak Values. NOTE 4 – The worst emission is detected at 0.475 MHz with corrected signal level of 44.46 dB(μ V) (limit is 48.00 dB(μ V)), when the VA of the EUT is connected to LISN.						

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 22°C
 Model No. : YPZ120-S 15W Humidity : 53%
 Test Mode : ON Date of Test : Jan 10, 2001

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μ V)	Emission Level dB(μ V)	Limits dB(μ V)	Margin (dB)
VA	0.450	0.33	36.98	37.31	48.00	10.69
	0.506	0.31	35.09	35.40	48.00	12.60
	0.551	0.30	36.10	36.40	48.00	11.60
	0.651	0.29	34.48	34.77	48.00	13.23
	0.708	0.29	33.72	34.01	48.00	13.99
	0.770	0.28	31.62	31.90	48.00	16.10
VB	0.454	0.33	41.04	41.37	48.00	6.63
	0.523	0.31	36.29	36.60	48.00	11.40
	0.579	0.30	38.02	38.32	48.00	9.68
	0.676	0.29	35.84	36.13	48.00	11.87
	0.714	0.29	35.16	35.45	48.00	12.55
	0.777	0.28	30.96	31.24	48.00	16.76
<p>NOTE 1 – Emission Level = Meter Reading + Factor NOTE 2 – Factor = Insertion Loss + Cable Loss NOTE 3 – All reading are Quasi-Peak Values. NOTE 4 – The worst emission is detected at 0.454 MHz with corrected signal level of 41.37 dB(μV) (limit is 48.00 dB(μV)), when the VB of the EUT is connected to LISN.</p>						

TEST ENGINEER: Paul Yu
(PAUL YU)

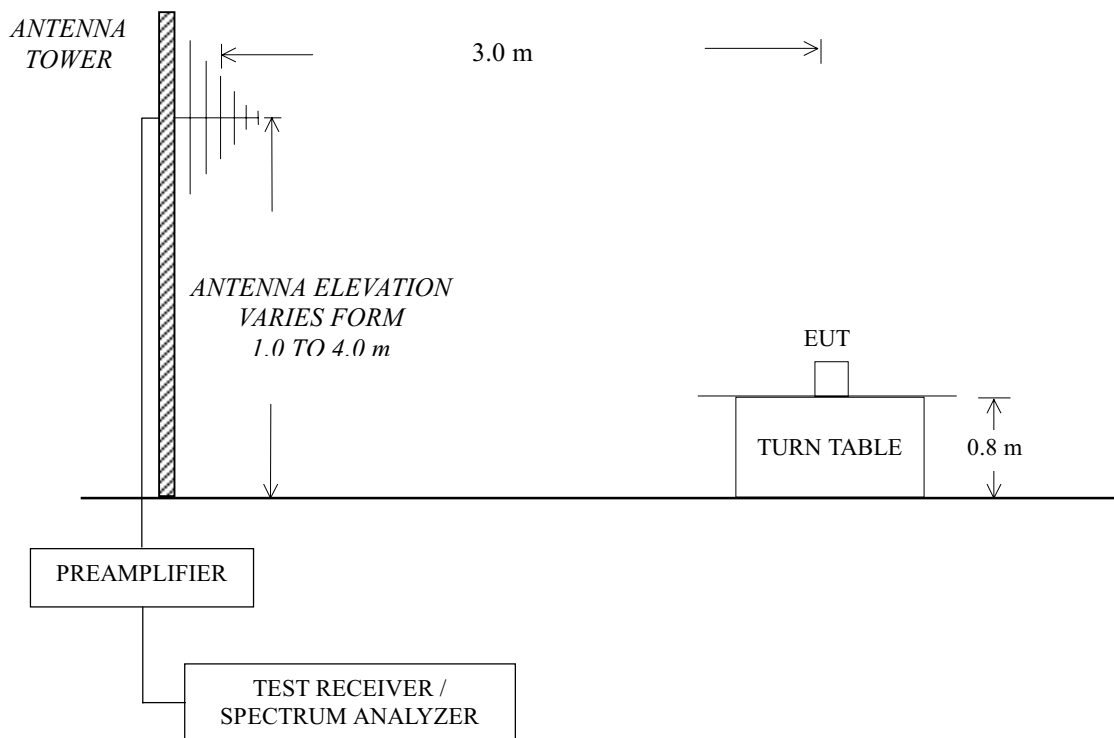
3 RADIATED EMISSION TEST

3.1 Test Equipment

The following test equipment are used during the radiated emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Spectrum Analyzer	HP	8593EM	3628A00908	Dec 10,2000	1/2 Year
2.	Preamplifier	HP	8447D	2944A06664	Dec 10, 2000	1/2 Year
3.	Bilog Antenna	Chase	CBL6111	1145	Dec 10, 2000	1/2 Year
4.	Test Receiver	Rohde & Schwarz	ESVS10	844594/001	May 20, 2000	1 Year

3.2 Block Diagram of Test Setup



3.3 Radiated Emission Limits

Frequency (MHz)	Distance (m)	Field strength limits ($\mu\text{V/m}$)	Converted Field Strengths Limits By 3 meters Measuring Distance	
			$\mu\text{V/m}$	$\text{dB}(\mu\text{V/m})$
30 ~ 88	30	10	100	40.0
88 ~ 216	30	15	150	43.5
216 ~ 1000	30	20	200	46.0

NOTE 1 - Emission Level $\text{dB}(\mu\text{V/m}) = 20 \log$ Emission Level ($\mu\text{V/m}$)
NOTE 2 - The tighter limit applies at the band edges.
NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
NOTE 4 - The measurements are made at 3 meters distance, then the permissible field strength limits be adjusted using $1/d$ as an attenuation factor.

3.4 Test Configuration

The configuration of the EUT is same as those used in conducted emission test.

Please refer to Sec. 2.4.

3.5 Operating Condition of EUT

The EUT was placed on a turn table which is 0.8 meter above ground. The turn table rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or dipole antenna were used as receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to MP-5/1986 requirements during radiated test.

The bandwidth setting on Test Receiver ESVS10 was 120 kHz.

The frequency range from 30 MHz to 1000 MHz was checked. The test mode (ON) was done on radiated emission test and the test results of the highest emissions are listed in Sec. 3.7.

3.6 Test Procedures

Same as conducted emission test which is listed in Sec. 2.6, except the test set up replaced by Sec. 3.2.

3.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emissions relative the limit is reported. All the emissions not reported below are too low against the FCC Part 18 limit.

EUT : Energy Saving Lamp Temperature : 20.8°C

Model No. : YPZ120-3U 23W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Polarization	Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV/m)	Limits dB(μV/m)	Margin (dB)
Horizontal	32.910	17.25	0.71	25.54	24.87	17.29	40.00	22.71
	283.170	13.82	2.42	25.10	29.18	20.32	46.00	25.68
	327.790	15.05	2.66	25.39	28.16	20.48	46.00	25.52
	383.080	16.30	2.97	25.88	28.68	22.07	46.00	23.93
	415.090	17.17	3.13	26.12	28.97	23.15	46.00	22.85
	595.510	20.59	3.83	26.70	28.05	25.77	46.00	20.23
Vertical	30.970	18.11	0.68	25.57	24.48	17.70	40.00	22.30
	280.260	13.73	2.41	25.10	29.46	20.50	46.00	25.50
	382.110	16.29	2.97	25.87	26.99	20.38	46.00	25.62
	440.310	17.97	3.24	26.31	28.26	23.16	46.00	22.84
	597.450	20.61	3.84	26.70	28.80	26.55	46.00	19.45
	652.740	21.01	4.01	26.70	30.44	28.76	46.00	17.24

NOTE 1 – Emission Level = Meter Reading + Antenna Factor + Cable Loss – Preamp Factor

NOTE 2 – All reading are Quasi-Peak values.

NOTE 3 – The worst emission at horizontal polarization was detected at 595.510 MHz with corrected signal level of 25.77 dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00m height and the turn table was at 60°.

NOTE 4 – The worst emission at vertical polarization was detected at 652.740 MHz with corrected signal level of 28.76 dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00 m height and the turn table was at 60°.

NOTE 5 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 20.8°C

Model No. : YPZ120-3U 20W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Polarization	Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV/m)	Limits dB(μV/m)	Margin (dB)
Horizontal	30.970	18.11	0.68	25.57	24.90	18.12	40.00	21.88
	282.200	13.79	2.42	25.10	26.62	17.73	46.00	28.27
	386.960	16.38	2.99	25.91	28.31	21.77	46.00	24.23
	442.250	18.05	3.25	26.32	29.14	24.12	46.00	21.88
	471.350	18.96	3.38	26.52	28.08	23.90	46.00	22.10
	595.510	20.59	3.83	26.70	27.94	25.66	46.00	20.34
Vertical	32.910	17.25	0.71	25.54	24.67	17.09	40.00	22.91
	160.950	10.79	1.75	25.10	27.80	15.24	43.50	28.26
	280.260	13.73	2.41	25.10	30.12	21.16	46.00	24.84
	384.050	16.31	2.98	25.89	27.59	20.99	46.00	25.01
	442.250	18.05	3.25	26.32	27.99	22.97	46.00	23.03
	599.390	20.63	3.85	26.70	26.59	24.37	46.00	21.63

NOTE 1 – Emission Level = Meter Reading + Antenna Factor + Cable Loss – Preamp Factor

NOTE 2 – All reading are Quasi-Peak values.

NOTE 3 – The worst emission at horizontal polarization was detected at 595.510MHz with corrected signal level of 20.34V/m (limit is 46.00 dB(μV/m)), when the antenna was 1.00m height and the turn table was at 60°.

NOTE 4 – The worst emission at vertical polarization was detected at 599.390 MHz with corrected signal level of 24.37 dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00 m height and the turn table was at 60°.

NOTE 5 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 20.8°C

Model No. : YPZ120-3U 15W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Polarization	Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV/m)	Limits dB(μV/m)	Margin (dB)
Horizontal	31.940	17.68	0.70	25.55	25.10	17.93	40.00	22.07
	121.180	12.98	1.41	25.10	24.97	14.26	43.50	29.24
	280.260	13.73	2.41	25.10	27.30	18.34	46.00	27.66
	383.080	16.30	2.97	25.88	29.92	23.31	46.00	22.69
	441.280	18.02	3.25	26.31	29.78	24.74	46.00	21.26
	596.480	20.60	3.84	26.70	26.63	24.37	46.00	21.63
Vertical	30.000	18.15	0.67	25.57	24.36	17.61	40.00	22.39
	107.600	11.51	1.27	25.10	26.35	14.03	43.50	29.47
	280.260	13.73	2.41	25.10	28.17	19.21	46.00	26.79
	440.310	17.97	3.24	26.31	28.21	23.11	46.00	22.89
	595.510	20.59	3.83	26.70	27.25	24.97	46.00	21.03
	653.710	21.01	4.02	26.70	27.21	25.54	46.00	20.46

NOTE 1 – Emission Level = Meter Reading + Antenna Factor + Cable Loss – Preamp Factor

NOTE 2 – All reading are Quasi-Peak values.

NOTE 3 – The worst emission at horizontal polarization was detected at 441.280 MHz with corrected signal level of 24.74dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00m height and the turn table was at 60°.

NOTE 4 – The worst emission at vertical polarization was detected at 653.710 MHz with corrected signal level of 25.54 dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00 m height and the turn table was at 60°.

NOTE 5 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 20.8°C

Model No. : YPZ120-S 23W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Polarization	Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV/m)	Limits dB(μV/m)	Margin (dB)
Horizontal	32.910	17.25	0.71	25.54	24.92	17.34	40.00	22.66
	92.080	8.18	1.14	25.13	30.50	14.69	43.50	28.81
	161.920	10.70	1.76	25.10	26.33	13.69	43.50	29.81
	280.260	13.73	2.41	25.10	29.29	20.33	46.00	25.67
	597.450	20.61	3.84	26.70	29.21	26.96	46.00	19.04
	652.740	21.01	4.01	26.70	29.77	28.09	46.00	17.91
Vertical	32.910	17.25	0.71	25.54	25.91	18.33	40.00	21.67
	91.110	7.90	1.14	25.14	30.15	14.05	43.50	29.45
	280.260	13.73	2.41	25.10	31.22	22.26	46.00	23.74
	382.110	16.29	2.97	25.87	27.53	20.92	46.00	25.08
	440.310	17.97	3.24	26.31	27.88	22.78	46.00	23.22
	595.510	20.59	3.83	26.70	27.88	25.60	46.00	20.40

NOTE 1 – Emission Level = Meter Reading + Antenna Factor + Cable Loss – Preamp Factor

NOTE 2 – All reading are Quasi-Peak values.

NOTE 3 – The worst emission at horizontal polarization was detected at 652.740 MHz with corrected signal level of 28.09dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00m height and the turn table was at 60°.

NOTE 4 – The worst emission at vertical polarization was detected at 595.510 MHz with corrected signal level of 25.60 dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00 m height and the turn table was at 60°.

NOTE 5 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 20.8°C

Model No. : YPZ120-S 20W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Polarization	Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV/m)	Limits dB(μV/m)	Margin (dB)
Horizontal	33.880	16.88	0.72	25.53	23.76	15.83	40.00	24.17
	111.480	12.07	1.31	25.10	28.40	16.68	43.50	26.82
	283.170	13.82	2.42	25.10	28.47	19.61	46.00	26.39
	386.960	16.38	2.99	25.91	27.73	21.19	46.00	24.81
	443.220	18.07	3.26	26.33	26.66	21.66	46.00	24.34
	598.420	20.62	3.84	26.70	26.97	24.73	46.00	21.27
Vertical	32.910	17.25	0.71	25.54	24.98	17.40	40.00	22.60
	199.750	9.39	2.01	25.10	29.65	15.95	43.50	27.55
	280.260	13.73	2.41	25.10	29.46	20.50	46.00	25.50
	442.250	18.05	3.25	26.32	28.77	23.75	46.00	22.25
	513.060	19.88	3.54	26.70	28.19	24.71	46.00	21.09
	597.450	20.61	3.84	26.70	28.54	26.29	46.00	19.71

NOTE 1 – Emission Level = Meter Reading + Antenna Factor + Cable Loss – Preamp Factor

NOTE 2 – All reading are Quasi-Peak values.

NOTE 3 – The worst emission at horizontal polarization was detected at 598.420 MHz with corrected signal level of 24.73dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00m height and the turn table was at 60°.

NOTE 4 – The worst emission at vertical polarization was detected at 597.450 MHz with corrected signal level of 26.29 dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00 m height and the turn table was at 60°.

NOTE 5 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Paul Yu
(PAUL YU)

EUT : Energy Saving Lamp Temperature : 20.8°C

Model No. : YPZ120-S 15W Humidity : 53%

Test Mode : ON Date of Test : Jan 10, 2001

Polarization	Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV/m)	Limits dB(μV/m)	Margin (dB)
Horizontal	31.940	17.68	0.70	25.55	25.33	18.16	40.00	21.84
	112.450	12.23	1.32	25.10	28.55	17.00	43.50	26.50
	283.170	13.82	2.42	25.10	28.20	19.34	46.00	26.66
	327.790	15.05	2.66	25.39	28.12	20.44	46.00	25.56
	384.050	16.31	2.98	25.89	29.41	22.81	46.00	23.19
	595.510	20.59	3.83	26.70	28.35	26.07	46.00	19.93
Vertical	36.790	15.62	0.76	25.50	26.42	17.30	40.00	22.70
	119.240	13.18	1.39	25.10	25.28	14.75	43.50	28.75
	271.530	13.45	2.37	25.10	28.89	19.61	46.00	26.39
	385.990	16.37	2.99	25.90	30.20	23.66	46.00	22.34
	442.250	18.05	3.25	26.32	28.15	23.13	46.00	22.87
	595.510	20.59	3.83	26.70	28.16	25.88	46.00	20.12

NOTE 1 – Emission Level = Meter Reading + Antenna Factor + Cable Loss – Preamp Factor

NOTE 2 – All reading are Quasi-Peak values.

NOTE 3 – The worst emission at horizontal polarization was detected at 595.510 MHz with corrected signal level of 26.07dB(μV/m) (limit is 46.00 dB(μV/m)), when the antenna was 1.00m height and the turn table was at 60°.

NOTE 4 – The worst emission at vertical polarization was detected at 595.510 MHz with corrected signal level of 25.88 dB(μV/m) (limit is 40.00 dB(μV/m)), when the antenna was 1.00 m height and the turn table was at 60°.

NOTE 5 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST ENGINEER: Paul Yu
(PAUL YU)