

PSE TEST REPORT

For

Shenzhen Betop Electronics Co., Ltd.

Corn Bulb

Model No.: BT-PL40WE39-B

Additional Model No.: BT-PL18WE26-B, BT-PL40WE26-B

Prepared for : Shenzhen Betop Electronics Co., Ltd.
Address : Building C-D, Yisong Ecological Science and
Technology Park, Jiejiabao Road No.9, Shiyan Town,
Bao'an District, Shenzhen, China

Prepared by : Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample : July 27, 2015
Number of tested samples : 1
Serial number : Prototype
Date of Test : July 27, 2015 - July 31, 2015
Date of Report : July 31, 2015



PSE TEST REPORT
J55015 (H20)

Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment

Report Reference No. : LCS1507271625E

Date Of Issue: July 31, 2015

Testing Laboratory Name: Shenzhen LCS Compliance Testing Laboratory Ltd.

Address: 1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China

Testing Location/ Procedure.....: Full application of Harmonised standards ☒
Partial application of Harmonised standards ☐
Other standard testing method ☐

Applicant's Name.....: Shenzhen Betop Electronics Co., Ltd.

Address: Building C-D, Yisong Ecological Science and Technology Park, Jiejiabao Road No.9, Shiyan Town, Bao'an District, Shenzhen, China

Test Specification:

Standard: J55015 (H20)

Test Report Form No.....: LCSEMC-1.0

TRF Originator: Shenzhen LCS Compliance Testing Laboratory Ltd.

Master TRF.....: Dated 2011-03

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Test Item Description. : Corn Bulb

Trade Mark: Bitco

Model/ Type Reference: BT-PL40WE39-B

Ratings: AC100-240V~, 50/60Hz, Max.40W, E39

Result: Positive

Compiled by:

Mango Tang

Supervised by:

Glin Lu

Approved by:

Gavin Liang

Mango Tang/ File administrators

Glin Lu/ Technique principal

Gavin Liang/ Manager

PSE -- TEST REPORT**Test Report No. : LCS1507271625E**July 31, 2015

Date of issue

Type / Model..... : BT-PL40WE39-B

EUT..... : Corn Bulb

Applicant..... : Shenzhen Betop Electronics Co., Ltd.Address..... : Building C-D, Yisong Ecological Science and Technology
Park, Jiejiabao Road No.9, Shiyan Town, Bao'an District,
Shenzhen, China

Telephone..... : /

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Manufacturer..... : Shenzhen Betop Electronics Co., Ltd.Address..... : Building C-D, Yisong Ecological Science and Technology
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Factory..... : Shenzhen Betop Electronics Co., Ltd.Address..... : Building C-D, Yisong Ecological Science and Technology
Park, Jiejiabao Road No.9, Shiyan Town, Bao'an District,
Shenzhen, China

Telephone..... : /

Fax..... : /

Test Result according to the standards on page 6:**Positive**

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. SUMMARY OF STANDARDS AND RESULTS

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted disturbance at mains terminals	J55015 (H20)	-----	PASS
Disturbance Power	J55015 (H20)	-----	PASS
Magnetic field emission	J55015 (H20)	-----	PASS
N/A is an ab breviation for Not Applicable.			

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : Corn Bulb

Model Number : BT-PL40WE39-B

Power Supply : AC100-240V~, 50/60Hz, Max.40W, E39

2.2. Description of Test Facility

Site Description
EMC Lab. : CNAS Registration Number. is L4595.
FCC Registration Number. is 899208.
Industry Canada Registration Number. is 9642A-1.
VCCI Registration Number. is C-4260 and R-3804.
ESMD Registration Number. is ARCB0108.
UL Registration Number. is 100571-492.
TUV SUD Registration Number. is SCN1081.
TUV RH Registration Number. is UA 50296516-001.

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

2.4.Measurement Uncertainty

Test Item	Frequency Range	Expanded uncertainty (Ulab)	Expanded uncertainty (Ucisp)
Conducted Emission	(9kHz to 150kHz)	2.63 dB	4.0 dB
	(150kHz to 30MHz)	2.35 dB	3.6 dB
Power disturbance	(30MHz to 300MHz)	2.90dB	4.5 dB
Electromagnetic Radiated Emission (3-loop)	(9kHz to 30MHz)	3.60 dB	N/A
Radiated Emission	(9kHz to 30MHz)	3.68 dB	N/A
Radiated Emission	(30MHz to 1000MHz)	3.48 dB	5.2 dB
Radiated Emission	(above 1000MHz)	3.90 dB	N/A
Mains Harmonic	Voltage	0.510%	N/A
Voltage Fluctuations & Flicker	Voltage	0.510%	N/A

- (1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.
- (2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of $k=2$, which for a normal distribution corresponds to a coverage probability of approximately 95%.

3. MEASURING DEVICES AND TEST EQUIPMENT

3.1. Conducted Disturbance

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2015/06/18
2	10dB Attenuator	SCHWARZBECK	OSPAM236	9729	2015/06/18
3	Artificial Mains	ROHDE & SCHWARZ	ENV216	101288	2015/06/18
4	EMI Test Software	AUDIX	E3	N/A	2015/06/18

3.2. Disturbance Power

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2015/06/18
2	Absorbing clamp	ROHDE & SCHWARZ	MDS 21	4033	2014/10/28
3	EMI Test Software	AUDIX	E3	N/A	2015/06/18

3.3. Radiated Electromagnetic Disturbance

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	1011423	2015/06/18
2	Triple-loop Antenna	EVERFINE	LLA-2	11050003	2015/06/18
3	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	101840	2015/06/18
4	EMI Test Software	AUDIX	E3	N/A	2015/06/18

3.4. Radiated Disturbance (Electric Field)

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2015/02/04
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	101840	2015/06/18
3	Log per Antenna	SCHWARZBECK	VULB9163	9163-470	2015/06/18
4	EMI Test Software	AUDIX	E3	N/A	2015/06/18
5	Positioning Controller	MF	MF-7082	/	2015/06/18

3.5. Harmonic Current

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2015/06/18

3.6. Voltage fluctuation and Flicker

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2015/06/18

3.7. Electrostatic Discharge

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	KIKUSUI	KC001311	KES4021	2014/09/02

3.8.RF Field Strength Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	SIGNAL GENERATOR	HP	8648A	625U00573	2015/06/18
2	Amplifier	AR	500A100	17034	2015/06/18
3	Amplifier	AR	100W/1000M1	17028	2015/06/18
4	Isotropic Field Monitor	AR	FM2000	16829	2015/06/18
5	Isotropic Field Probe	AR	FP2000	16755	2015/06/18
6	Bi-conic Antenna	EMCO	3108	9507-2534	2015/06/18
7	By-log-periodic Antenna	AR	AT1080	16812	2015/06/18
8	EMS Test Software	ROHDE & SCHWARZ	ESK1	N/A	2015/06/18

3.9.Electrical Fast Transient/Burst

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Electrical fast transient(EFT)generator	3CTEST	EFT-4021	EC0461044	2015/01/20
2	Coupling Clamp	3CTEST	EFTC	EC0441098	2015/06/18

3.10.Surge

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Surge test system	3CTEST	SG5006G	EC5581070	2015/06/18
2	Coupling/decoupling network	3CTEST	SGN-5010G	CS5591033	2015/06/18

3.11.Conducted Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Simulator	EMTEST	CIT-10	A126A1195	2015/06/18
2	CDN	EMTEST	CDN-M2	A2210177	2015/06/18
3	CDN	EMTEST	CDN-M3	A2210177	2015/06/18
4	Attenuator	EMTEST	ATT6	50FP-006-H3 B	2015/06/18

3.12.Power Frequency Magnetic Field Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power frequency mag-field generator System	EVERFINE	EMS61000-8K	906003	2015/06/18

3.13.Voltage Dips

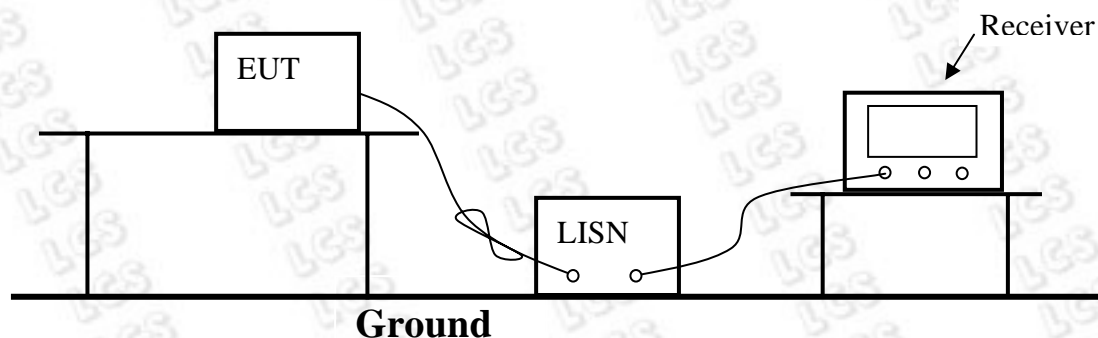
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2015/06/18

3.14.Voltage Short Interruptions

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2015/06/18

4. POWER LINE CONDUCTED MEASUREMENT

4.1. Block Diagram of Test Setup



4.2. Conducted Power Line Emission Measurement Standard and Limits

4.2.1. Standard:

J55015 (H20)

4.2.2. Limits

Frequency	At mains terminals (dB μ V)	
	Quasi-peak Level	Average Level
150kHz ~ 0.5MHz	66 ~ 56*	56 ~ 46*
0.5MHz ~ 2.51MHz	56	46
2.51MHz ~ 3.0MHz	73	63
3.0MHz ~ 5.0MHz	56	46
5.0MHz ~ 30MHz	60	50

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

4.3. EUT Configuration on Test

The configuration of the EUT is same as Section 3.1.

4.4. Operating Condition of EUT

- 4.4.1. Setup the EUT as shown in Section 4.1.
- 4.4.2. Turn on the power of all equipments.
- 4.4.3. Let the EUT work in test mode (On) and measure it.

4.5. Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground and connected to the AC mains through a Line Impedance Stabilization Network (L.I.S.N.). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission according to the J55015 regulations during conducted emission measurement. And the voltage probe had been used for the load terminals measurement according to the J55015 standard.

The bandwidth of the test receiver is set at 9kHz in 150k~30MHz range.

The frequency range from 150kHz to 30MHz is checked.

All the test results are listed in Section 4.6.

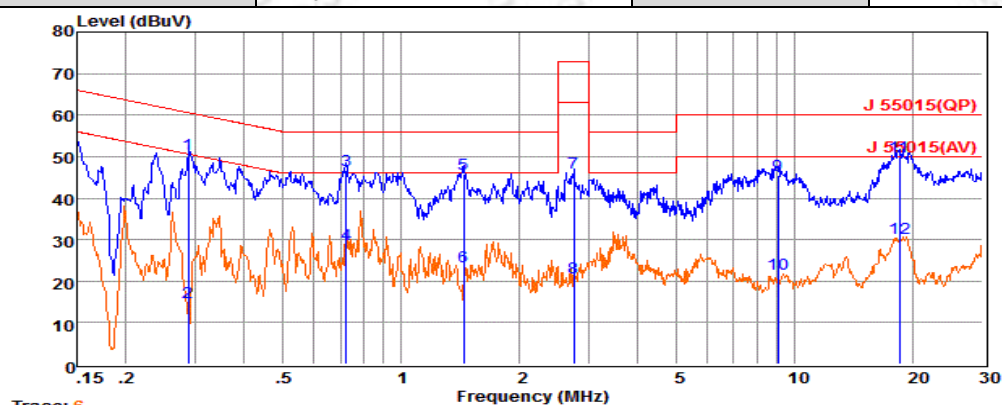
The frequency range from 150kHz to 30MHz is investigated.

4.6. Test Results

PASS.

The test result please refer to the next page.

Model No.	BT-PL40WE39-B	Test Mode	ON
Environmental Conditions	24°C, 56% RH	Test Engineer	Cherry Chen
Pol	Line		

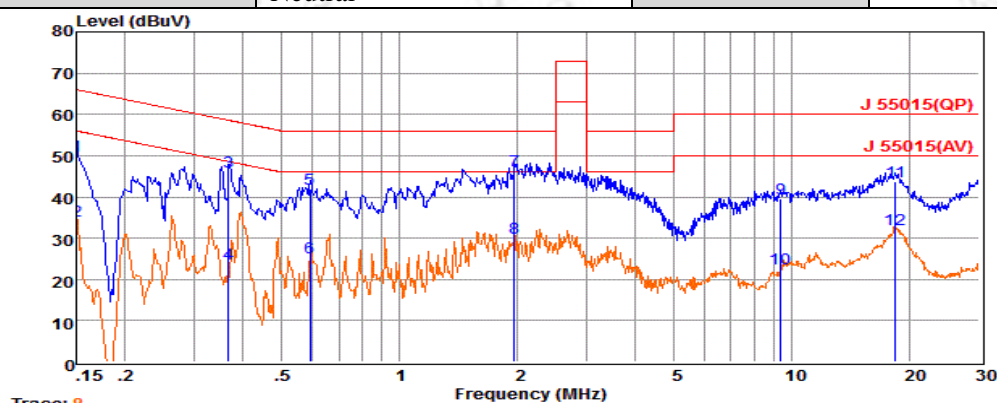


Trace: 6

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.28782	30.84	9.63	0.03	10.00	50.50	60.59	-10.09	QP
2	0.28792	-4.83	9.63	0.03	10.00	14.83	50.58	-35.75	Average
3	0.72360	26.93	9.64	0.04	10.00	46.61	56.00	-9.39	QP
4	0.72370	9.07	9.64	0.04	10.00	28.75	46.00	-17.25	Average
5	1.44089	26.18	9.64	0.05	10.00	45.87	56.00	-10.13	QP
6	1.44189	3.86	9.64	0.05	10.00	23.55	46.00	-22.45	Average
7	2.75015	26.30	9.64	0.05	10.00	45.99	73.00	-27.01	QP
8	2.75115	1.13	9.64	0.05	10.00	20.82	63.00	-42.18	Average
9	9.05917	25.81	9.69	0.08	10.00	45.58	60.00	-14.42	QP
10	9.06017	1.93	9.69	0.08	10.00	21.70	50.00	-28.30	Average
11	18.42581	30.01	9.74	0.11	10.00	49.86	60.00	-10.14	QP
12	18.42681	10.44	9.74	0.11	10.00	30.29	50.00	-19.71	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten_Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Model No.	BT-PL40WE39-B	Test Mode	ON
Environmental Conditions	24°C, 56% RH	Test Engineer	Cherry Chen
Pol	Neutral		



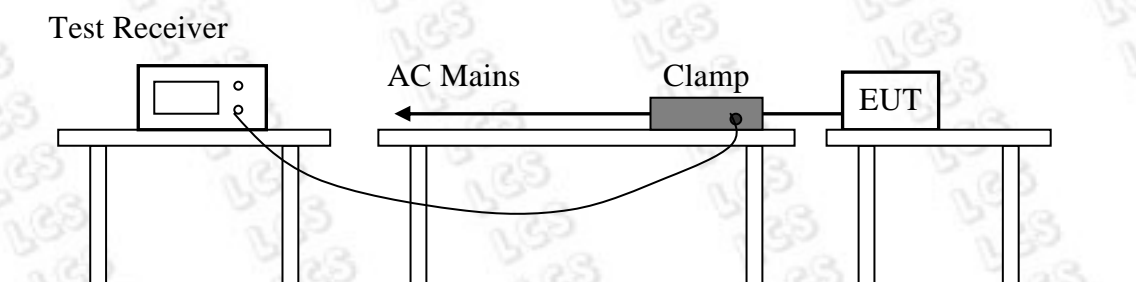
Trace: 8

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15000	30.21	9.70	0.02	10.00	49.93	66.00	-16.07	QP
2	0.15010	14.44	9.70	0.02	10.00	34.16	55.99	-21.83	Average
3	0.36725	26.37	9.61	0.03	10.00	46.01	58.56	-12.55	QP
4	0.36735	4.16	9.61	0.03	10.00	23.80	48.56	-24.76	Average
5	0.59164	22.39	9.63	0.04	10.00	42.06	56.00	-13.94	QP
6	0.59174	5.51	9.63	0.04	10.00	25.18	46.00	-20.82	Average
7	1.95925	26.66	9.63	0.05	10.00	46.34	56.00	-9.66	QP
8	1.96025	10.22	9.63	0.05	10.00	29.90	46.00	-16.10	Average
9	9.35179	19.63	9.71	0.08	10.00	39.42	60.00	-20.58	QP
10	9.35279	2.70	9.71	0.08	10.00	22.49	50.00	-27.51	Average
11	18.32844	23.80	9.82	0.11	10.00	43.73	60.00	-16.27	QP
12	18.32944	12.08	9.82	0.11	10.00	32.01	50.00	-17.99	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten_Fac.
2. The emission levels that are 20dB below the official limit are not reported.

5. DISTURBANCE POWER MEASUREMENT

5.1. Block Diagram of Test Setup



5.2. Test Standard

J55015 (H20)

5.3. Disturbance Power Limits

All emanations from devices or system including any network of conductors and apparatus connected there to, shall not exceed the level of field strengths specified below:

Frequency MHz	Limits dB(pW)	
	Quasi-peak Value	Average Value
30 ~ 300	45 Increasing Linearly with Frequency to 55	35 Increasing Linearly with Frequency to 45

5.4. EUT Configuration on Test

The J55015 Regulations test method must be used to find the maximum emission during radiated emission measurement. The configuration of the EUT is the same as used in conducted emission measurement.

5.5. Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 4.4, except the test set up replaced as Section 5.1.

5.6. Test Procedure

The EUT is placed on the plane 0.8m high above the ground by insulating support and away from other metallic surface at least 0.4m. It is connected to the power mains through an extension cord of 6m min. The absorber clamp clamps the cord and moves from the far end to the EUT to measure the disturbing energy emitted from the cord.

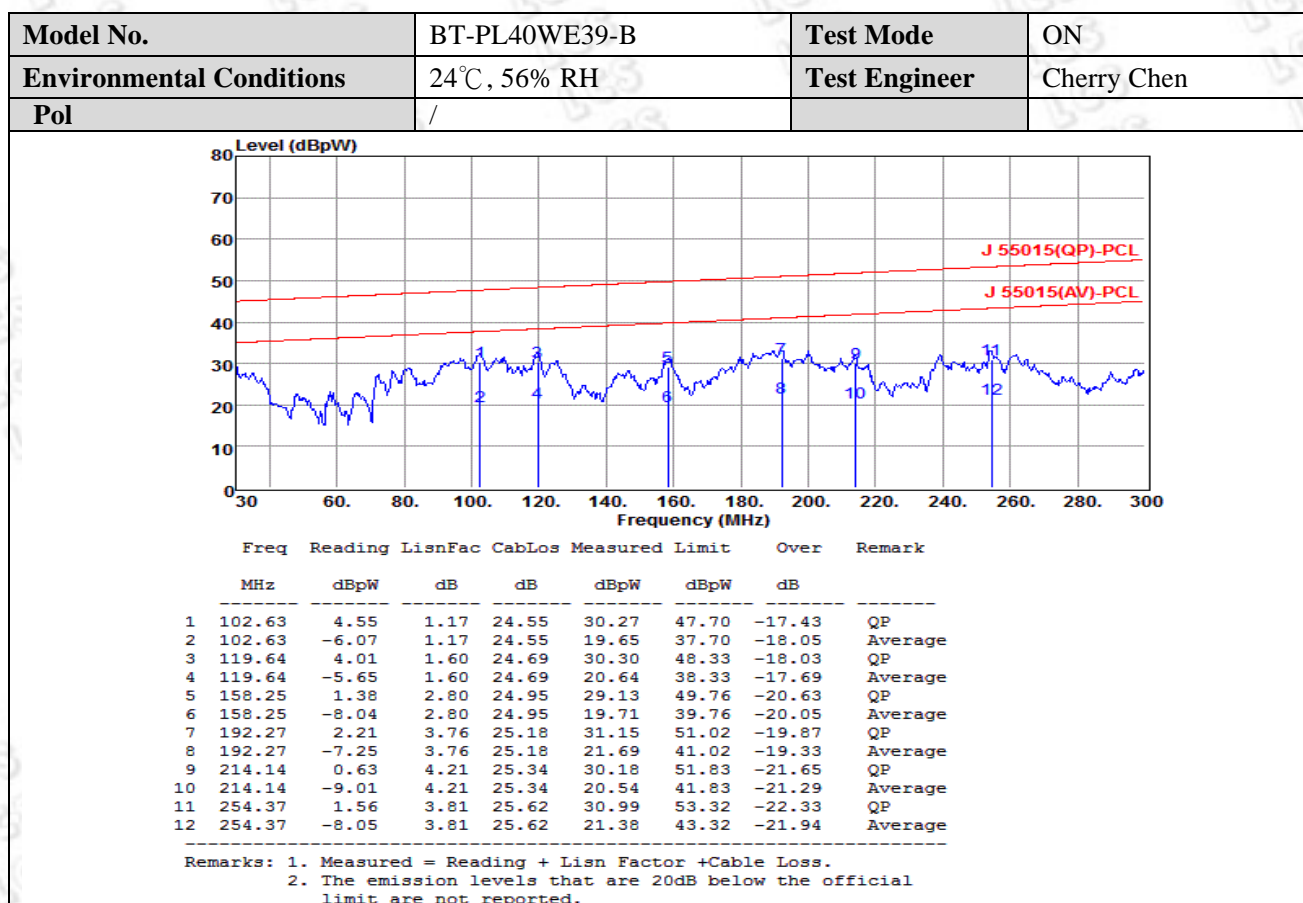
The bandwidth of the field strength meter is set at 120kHz.

All the test results are listed in Section 5.7.

5.7. Test Results

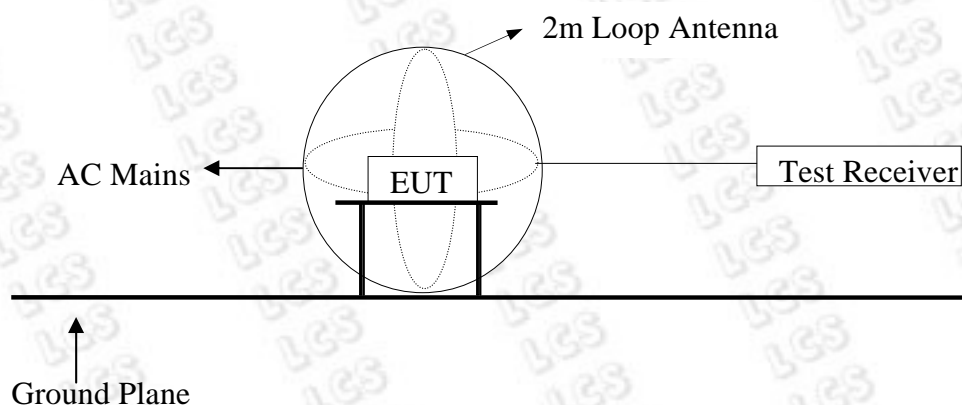
PASS.

The frequency spectrum from 30 MHz to 300 MHz is investigated.



6. MAGNETIC FIELD EMISSION MEASUREMENT

6.1. Block Diagram of Test Setup



6.2. Magnetic Field Emission Measurement Standard and Limits

6.2.1. Test Standard

J55015 (H20)

6.2.2. Test Limits

Frequency	Limits for loop diameter (dB μ A)
	2m
150 KHz~2.2 MHz	58-26
2.2 MHz~3.0 MHz	58
3.0MHz~30MHz	22

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

6.3. EUT Configuration on Test

The configuration of the EUT is same as Section 3.3.

6.4. Operating Condition of EUT

Same as conducted measurement which is listed in Section 4.4, except the test set up replaced by Section 6.1.

6.5. Test Procedure

The EUT is placed on a wood table in the center of a loop antenna. The induced current in the loop antenna is measured by means of a current probe and the test receiver. Three field components are checked by means of a coaxial switch.

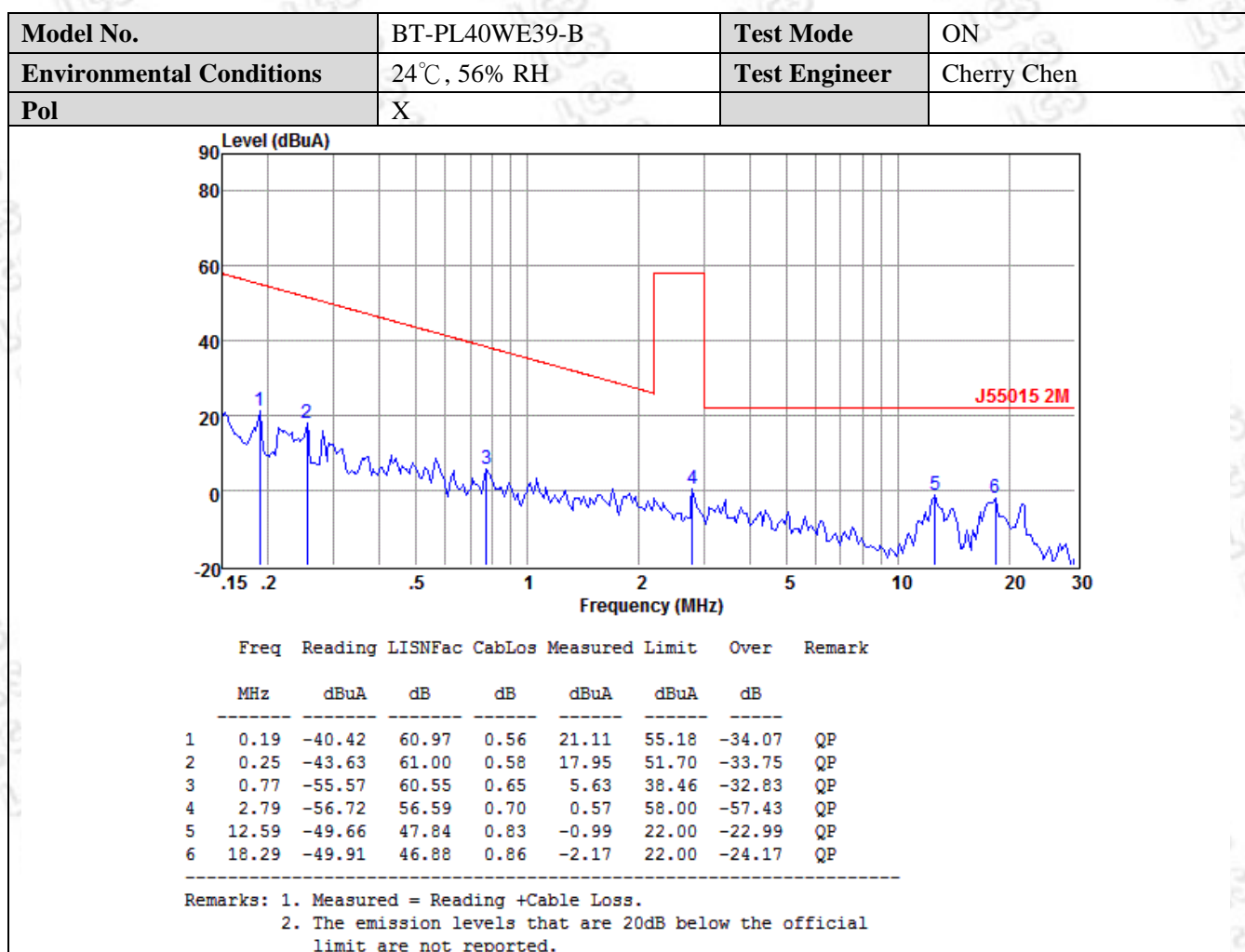
The frequency range from 150kHz to 30MHz is investigated. The receiver is measured with the quasi-peak detector. For frequency band 150kHz to 30MHz, the bandwidth is set at 9kHz.

All the test results are listed in Section 6.6.

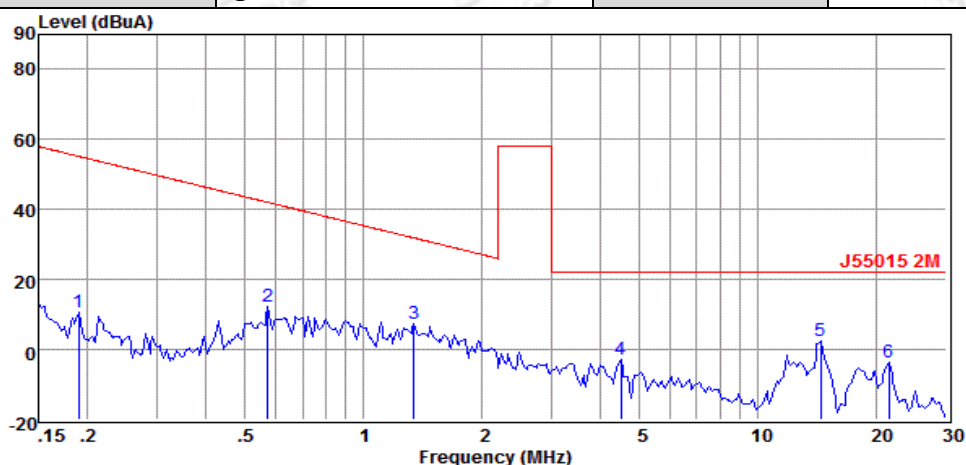
6.6. Test Results

PASS.

The frequency range from 150kHz to 30MHz is investigated.



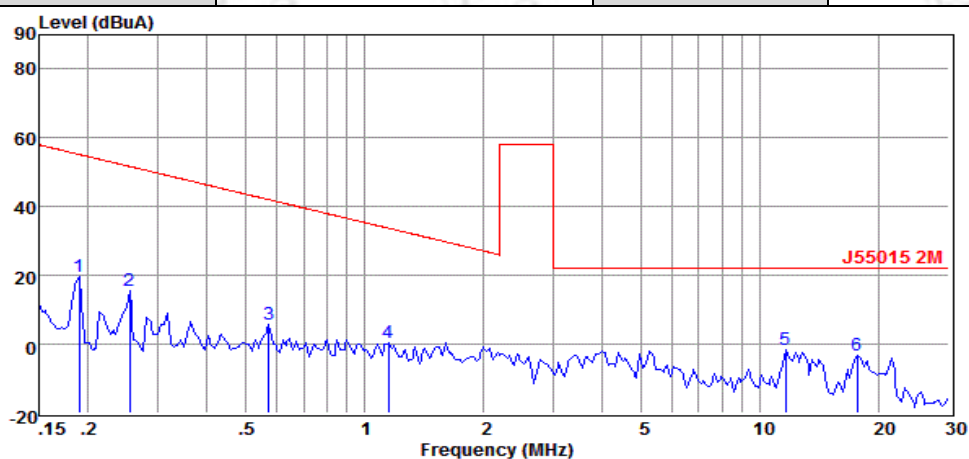
Model No.	BT-PL40WE39-B	Test Mode	ON
Environmental Conditions	24°C, 56% RH	Test Engineer	Cherry Chen
Pol	Y		



	Freq	Reading	LISNFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBuA	dB	dB	dBuA	dBuA	dB	
1	0.19	-51.06	60.97	0.56	10.47	55.18	-44.71	QP
2	0.57	-47.52	59.22	0.64	12.34	41.90	-29.56	QP
3	1.34	-54.07	60.70	0.67	7.30	31.66	-24.36	QP
4	4.50	-57.69	53.95	0.72	-3.02	22.00	-25.02	QP
5	14.46	-46.43	48.09	0.84	2.50	22.00	-19.50	QP
6	21.51	-51.33	47.00	0.87	-3.46	22.00	-25.46	QP

Remarks: 1. Measured = Reading + Cable Loss.
2. The emission levels that are 20dB below the official limit are not reported.

Model No.	BT-PL40WE39-B	Test Mode	ON
Environmental Conditions	24°C, 56% RH	Test Engineer	Cherry Chen
Pol	Z		



	Freq	Reading	LISNFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBuA	dB	dB	dBuA	dBuA	dB	
1	0.19	-41.82	60.97	0.56	19.71	55.18	-35.47	QP
2	0.25	-43.85	58.76	0.58	15.49	51.65	-36.16	QP
3	0.57	-53.40	58.68	0.64	5.92	41.90	-35.98	QP
4	1.15	-60.04	59.64	0.66	0.26	33.52	-33.26	QP
5	11.61	-52.50	49.90	0.82	-1.78	22.00	-23.78	QP
6	17.56	-52.12	48.09	0.86	-3.17	22.00	-25.17	QP

Remarks: 1. Measured = Reading + Cable Loss.
2. The emission levels that are 20dB below the official limit are not reported.

7. PHOTOGRAPH

7.1.Photo of Power Line Conducted Measurement



7.2.Photo of Radiated Electromagnetic Disturbance Measurement



7.3.Photo of Disturbance Power Measurement



8. EXTERNAL AND INTERNAL PHOTOS OF THE EUT



Fig. 1

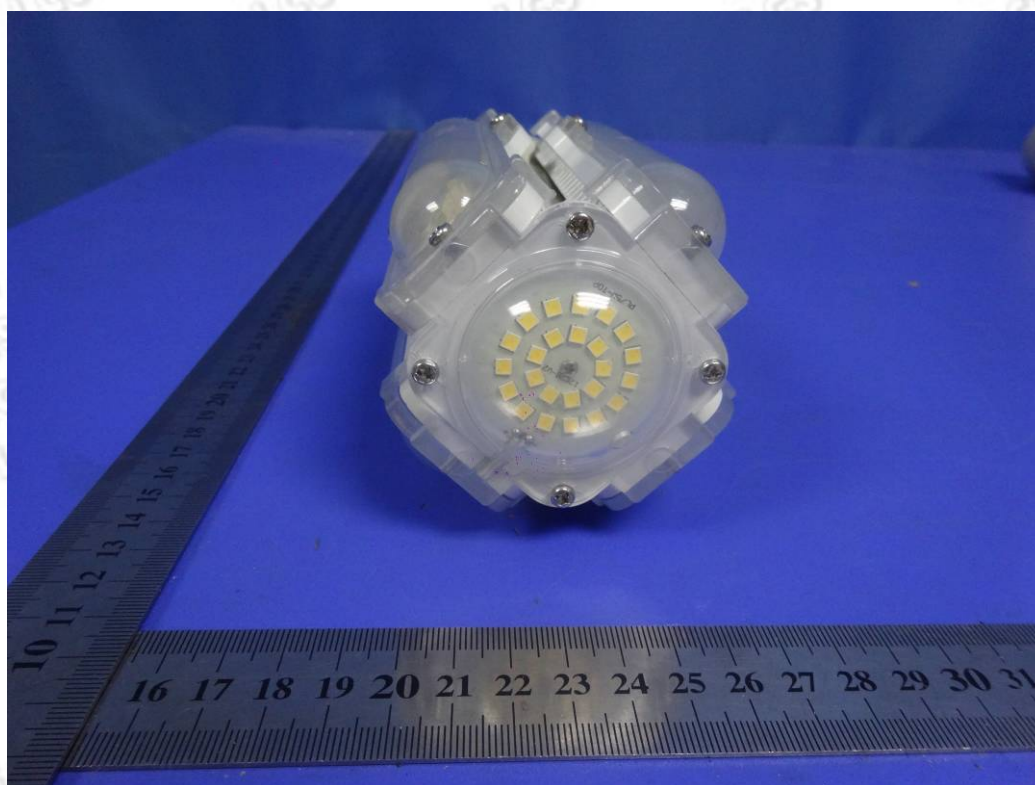


Fig. 2

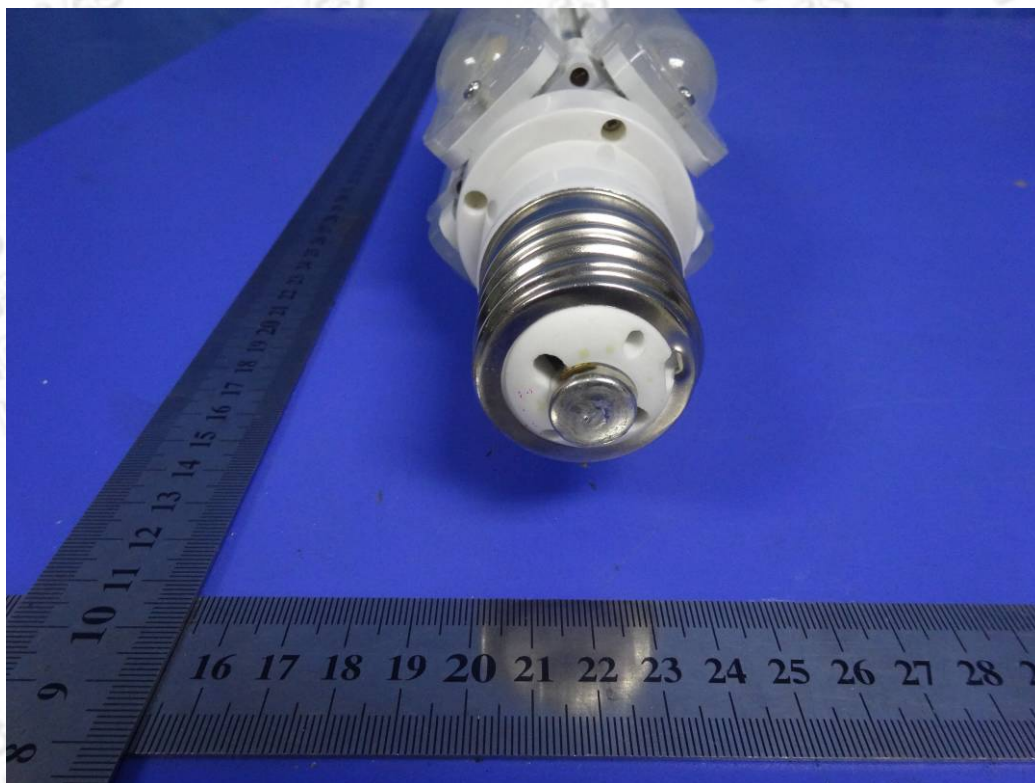


Fig. 3

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