



Report No.: TW2009404E File Reference No.: 2020-10-14

Applicant: YUYAO YUTE LIGHTING APPLIANCE FACTORY

Product: LED LIGHT

Brand Name: N/A

Model No.: ZYJ099-COB, ZYJ066, ZYJ055, ZYJ007B, ZYJ011F,ZYJ005A,

ZYJ005B,ZYJ027B,ZYJ056,ZYJ099-8L,ZYJ099-50SMD,ZYJ036F,

ZYJ-JM-001,ZYJ015-COB, ZYJ033,ZYJ007A

Test Standards: EN 55015: 2019

EN 61547: 2009 EN 61000-3-2: 2019

EN 61000-3-3:2013+A1:2019

Test result:

The EMC testing has been performed on the submitted samples and

found in compliance with council EMC Directive 2014/30/EU.

Approved By

Terry Tang

Manager

Dated: October 14, 2020

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TESTING LABORATORIES.

Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China

Tel (+86 755)8344 8688 Fax (+86 755)8344 2996 Email: info@timeway-lab.com

Date: 2020-10-14



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

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The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

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

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 744189

The 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.: 744189.

Industry Canada (IC) —Registration No.:5205A

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

A2LA (Certification Number:5013.01)

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

Date: 2020-10-14



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The report refers only to the sample tested and does not apply to the bulk.

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1.0 General Details

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES

Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West,

Tong Le Village, Nanshan District, Shenzhen, China

Telephone: (086) 755-83448688 Fax: (086) 755-83442996

1.2 Applicant Details

Applicant: YUYAO YUTE LIGHTING APPLIANCE FACTORY

Address: NO.99 NORTH OF TONGHAI ROAD, HUANGJIABU TOWN, YUYAO,

NINGBO, ZHEJIANG, CHINA

Telephone: --Fax: ---

1.3 Description of EUT

Product: LED LIGHT

Manufacturer: YUYAO YUTE LIGHTING APPLIANCE FACTORY

Address: NO.99 NORTH OF TONGHAI ROAD, HUANGJIABU TOWN, YUYAO,

NINGBO, ZHEJIANG, CHINA

Brand Name: N/A

Model Number: ZYJ099-COB, ZYJ066, ZYJ055, ZYJ007B, ZYJ011F

Adding Model Number: ZYJ005A, ZYJ005B, ZYJ027B, ZYJ056, ZYJ099-8L, ZYJ099-50SMD, ZYJ036F,

ZYJ-JM-001, ZYJ015-COB, ZYJ033, ZYJ007A

Rating: Input: 7.4V,6600mAh,48.84Wh

1.4 Submitted Sample

1 sample

1.5 Test Duration

Date of Receipt of Test Item: September 29, 2020 Date of Test: September 29, 2020 ~ October 14, 2020

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions Uncertainty =4.7dB

1.7 Test or witness Engineer

The sample tested by

Les Laur

Print Name: Leo Lau

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2.0 List of Measurement Equipment

2.1 Conducted Emission Test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
EMI Test Receiver	ESH3	860905/006	RS	2020.06.23	1Year
Spectrum Analyzer	ESA-L1500A	US37451154	HP	2020.06.23	1Year
PULSE LIMITER	ESH3-Z2	100281	RS	2020.06.23	1Year
LISN	ESH3-Z5	100294	RS	2020.06.23	1Year
LISN	ESH3-Z5	100253	RS	2020.06.23	1Year
LISN	NNB42	00012	SCHAFFNER	2020.01.07	1Year

2.2 Radiated Disturbance Test

				Calibration	Calibration
Name	Model No	Serial No.	Manufacturer	Date	Cycle
EMI Test Receiver	ESPI 3	100379	RS	2020.06.23	1Year
Spectrum Analyzer	E4407B	MY50441392	HP/Agilent	2020.06.23	1Year
Amplifier	BBV9743	#218	HP/Agilent	2020.06.23	1Year
Bilog Antenna	VULB9163	9163/340	Schwarebeck	2018.07.04	3Year
Horn Antenna	BBHA 9120D	9120D-631	RS	2018.07.09	3Year
Amplifier	8449B	3008A00160	HP/Agilent	2020.06.23	1Year

2.3 Harmonic & Flicker Test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
Harmonics Flicker Test System	PACS-1	72305	CI	2019.09.28	1Year
5K VA AC Power Source	5001iX	56060	CI	2019.09.28	N/A

2.4 ESD Test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
ESD Simulator	DITO	0404-24	EM TEST	2020.06.23	1Year

2.5 RF field Strength Susceptibility

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle

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Signal Generator	SMT03	100059	RS	2020.06.23	1Year
Power Meter	NRVS		RS	2020.06.23	1Year
Voltage Probe	URV5-Z2	100012	RS	2020.06.23	1Year
Voltage Probe	URV5-Z2	100013	RS	2020.06.23	1Year
Power Amplifier	150W1000	300999	AR	2020.06.23	1Year
Power Amplifier	25S1G4AM1	305993	AR	2020.06.23	1Year
Field Probe	CBL6111C	2576	Holaday	2020.06.23	1Year
Bilog Antenna	MCDC		Chase	2020.06.23	1Year

2.6 Electrical Fast Transient/Burst (EFT/B) Immunity test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
EFT Generator	UCS 500 M4	0304-42	EM TEST	2020.06.23	1Year
Power Source	MV2616	0104-14	EM TEST	2020.06.23	1Year

2.7 Surge Test

				Calibration Date	Calibration
Name	Model No.	Serial No.	Manufacturer	Candration Date	Cycle
Ultra Compact	UCS 500			2020.06.23	
Simulator	M4	0304-42	EM TEST		1Year
Power Source	MV2616	0104-14	EM TEST	2020.06.23	1Year

2.8 Conducted Immunity Test

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
Continuous Wave				2020.06.23	
Simulator	CWS 500C	0407-05	EM TEST		1 Year

2.9 Power-frequency Magnetic Field

				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
Continuous Wave	UCS 500 M4	0304-42		2020.06.23	
Simulator	UCS 300 M4	0304-42	EM TEST		1 Year
Power Source	MV 2616	0104-14		2020.06.23	
Network	Network MV 2616		EM TEST		1 Year
Current Transformer	MC2630	-	EM TEST	2020.06.23	1 Year
Magnetic Coil	MS100	0304-42	EM TEST	2020.06.23	1 Year

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2.10 Voltage Dips/Interruption Immunity Test

	1	7			
				Calibration	Calibration
Name	Model No.	Serial No.	Manufacturer	Date	Cycle
Ultra Compact				2020.06.23	
Simulator	UCS 500 M4	0304-42	EM TEST		1Year
Power Source	MV2616	0104-14	EM TEST	2020.06.23	1Year

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3.0 Technical Details

3.1 Investigations Requested

Perform Electromagnetic Interference [EMI] & Electromagnetic Suspectability [EMS] tests for CE Marking

3.2 Test Standards

	Test Standar	ds		
EN 55015: 2019	Limits and methods of measurelectrical lighting and similar equ	rement of radio disturbance characteristics of aipment		
EN 61000-3-2: 2019	Electromagnetic compatibility(E emissions(equipment input curre	MC)- Part 3-2:Limits-Limits for harmonic current nt ≤16A per phase)		
EN 61000-3-3: 2013 +A1:2019	Electromagnetic compatibility (EMC)- Part 3-3:Limits-Limitation of voltage changes, Voltage fluctuations and flicker in public low-voltage supply systems. For equipment with rated current ≤16A per phase and not subject to conditional connection			
EN 61547: 2009	Equipment for general lighting p	urposes—EMC immunity requirements		
	EN 61000-4-2:2009	Electrostatic discharge		
	EN 61000-4-3:2006+A2:2010	RF field strength susceptibility		
	EN 61000-4-4:2012	Electrical Fast transients		
	EN 61000-4-5:2014+A1:2017	Surge		
	EN 61000-4-6:2014	Conducted susceptibility		
	EN 61000-4-8:2010	Magnetic Field		
	EN 61000-4-11:2004+A1:2017	Dips/Voltage Interruption Variation		

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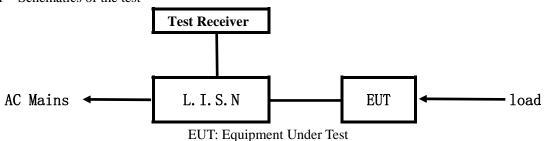
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4.0 Disturbance Voltage Test

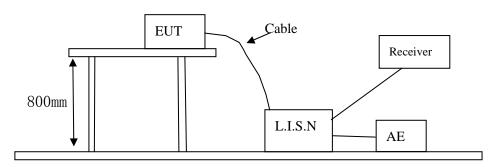
4.1 Schematics of the test



4.2 Test Method:

The test was performed in accordance with EN 55015: 2019

Block diagram of Test setup



4.3 Disturbance Voltage Limits

A Disturbance Voltage Limits at mains terminals

Emagyamay/(MHz)	Limits dB(µ V)				
Frequency(MHz)	Quasi-peak Level	Avera e Level			
9kHz to 50kHz	110				
50kHz to 150kHz	90 to 80				
150kHz to 0.5MHz	66 to 56	56 to 46			
0.5MHz to 2.51MHz	56	46			
2.51MHz to 3.0MHz	73	63			
3.0MHz to 5.0MHz	56	46			
5.0MHz to 30.0MHz	60	50			

Notes: 1.decreasing linearly with logarithm of the frequency in the range 50kHz to 150kHz and 150kHz to 0.5MHz.

2. The lower limit shall apply at the transition frequencies

B Disturbance Voltage Limits at load terminals

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Engage av (MIII)	Limits dB(μ V)				
Frequency(MHz)	Quasi-peak Level	Average Level			
0.15MHz to 0.50MHz	80	70			
0.50MHz to 30MHz	74	64			

^{*}At the transition frequency, the lower limit applies.

C Disturbance Voltage Limits at Control terminals

Engage av (MIIIa)	Limits dB(µ V)				
Frequency(MHz)	Quasi-peak Level	Average Level			
0.15MHz to 0.50MHz	84 to 74	74 to 64			
0.50MHz to 30MHz	74	64			

^{*} The limits decrease linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz

4.4 Test Results

Limits for Conducted Emission test, Please refer to limit line (Quasi-peak) in the following diagram labelled as (QP)

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A: Conducted Emission on Live Terminal (150kHz to 30MHz)

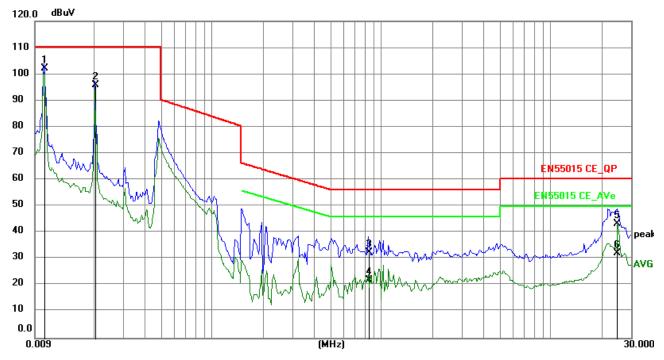
EUT Operating Environment

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: CHARGING+LIGHTING

Equipment Level: Class B

Results: Pass



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.0102	92.26	10.00	102.26	110.00	-7.74	QP	Р
2	0.0205	85.44	10.35	95.79	110.00	-14.21	QP	Р
3	0.8442	22.69	9.78	32.47	56.00	-23.53	QP	Р
4	0.8442	12.38	9.78	22.16	46.00	-23.84	AVG	Р
5	24.7425	32.44	10.97	43.41	60.00	-16.59	QP	Р
6	24.7425	21.13	10.97	32.10	50.00	-17.90	AVG	Р

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B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

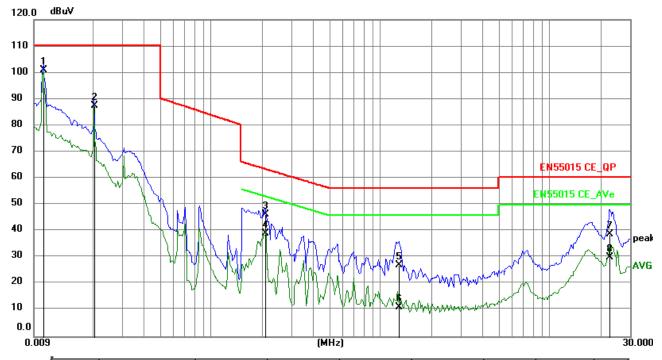
EUT Operating Environment

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: CHARGING+LIGHTING

Equipment Level: Class B

Results: Pass



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.0103	90.85	10.00	100.85	110.00	-9.15	QP	Р
2	0.0205	77.05	10.35	87.40	110.00	-22.60	QP	Р
3	0.2085	36.56	9.75	46.31	63.26	-16.95	QP	Р
4	0.2085	29.51	9.75	39.26	53.26	-14.00	AVG	Р
5	1.2966	17.47	9.79	27.26	56.00	-28.74	QP	Р
6	1.2966	1.58	9.79	11.37	46.00	-34.63	AVG	Р
7	22.7418	27.98	10.85	38.83	60.00	-21.17	QP	Р
8	22.7418	19.18	10.85	30.03	50.00	-19.97	AVG	Р

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C: Conducted Emission on Live Terminal (150kHz to 30MHz)

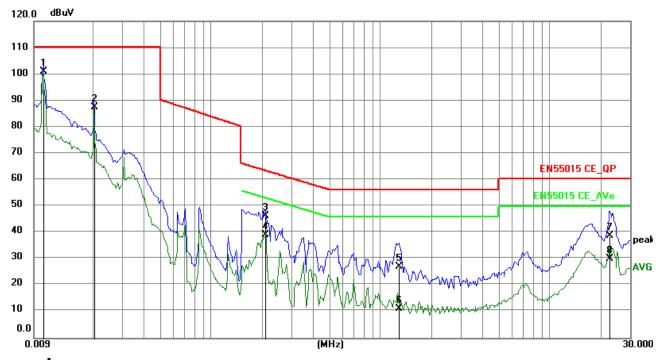
EUT Operating Environment

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: CHARGING+LIGHTING

Equipment Level: Class B

Results: Pass



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.0103	90.85	10.00	100.85	110.00	-9.15	QP	Р
2	0.0205	77.05	10.35	87.40	110.00	-22.60	QP	Р
3	0.2085	36.56	9.75	46.31	63.26	-16.95	QP	Р
4	0.2085	29.51	9.75	39.26	53.26	-14.00	AVG	Р
5	1.2966	17.47	9.79	27.26	56.00	-28.74	QP	Р
6	1.2966	1.58	9.79	11.37	46.00	-34.63	AVG	Р
7	22.7418	27.98	10.85	38.83	60.00	-21.17	QP	Р
8	22.7418	19.18	10.85	30.03	50.00	-19.97	AVG	Р

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D: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

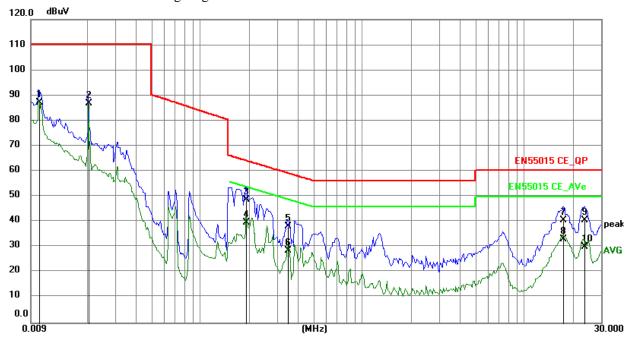
EUT Operating Environment

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

EUT set Condition: CHARGING+LIGHTING

Equipment Level: Class B

Results: Pass



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.0101	77.15	10.00	87.15	110.00	-22.85	QP	Р
2	0.0205	76.59	10.35	86.94	110.00	-23.06	QP	Р
3	0.1929	39.09	9.75	48.84	63.91	-15.07	QP	Р
4	0.1929	29.90	9.75	39.65	53.91	-14.26	AVG	Р
5	0.3489	28.63	9.76	38.39	58.99	-20.60	QP	Р
6	0.3489	18.99	9.76	28.75	48.99	-20.24	AVG	Р
7	17.5314	30.22	10.53	40.75	60.00	-19.25	QP	Р
8	17.5314	22.54	10.53	33.07	50.00	-16.93	AVG	Р
9	23.6856	29.89	10.91	40.80	60.00	-19.20	QP	Р
10	23.6856	19.19	10.91	30.10	50.00	-19.90	AVG	Р

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5.0 Magnetic Field Test

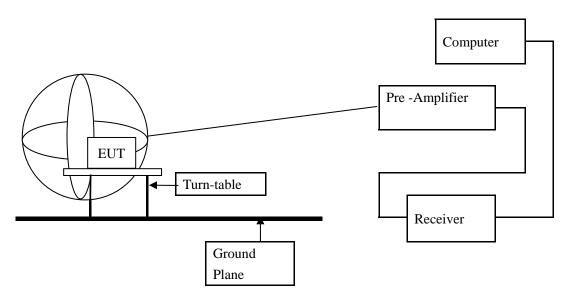
5.1 Schematics of the test



5.2 Test Method:

The test was performed in accordance with EN 55015: 2019

Block diagram of Test setup



5.3 Radiated electromagnetic disturbances Limits

5.5 Radiated electromagnet	7 Radiated electromagnetic distarbances Emilis						
Frequency Range	Limits for loop diameter (dB \mu A)						
(MHz)	2m	3m	4m				
9kHz to 70kHz	88	81	75				
70kHz to 150kHz	88 to 58	81 to 51	75 to 45				
150kHz to 2.2MHz	58 to 26	51 to 22	45 to 16				
2.2MHz to 3.0MHz	58	51	45				
3.0Hz to 30MHz	22	15 to 16	9 to 12				

Note: 1.The lower limit shall apply at the transition frequencies

- 2.Decreasing linearly with the logarithm of the frequency.
- 3.Increasing linearly with the logarithm of the frequency.

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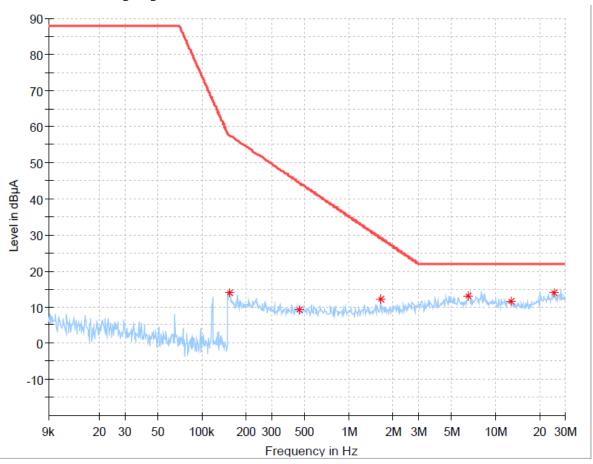


5.4 Magnetic Field Test in X (9kHz to 30MHz)

EUT set Condition: ON

Results: Pass

Please refer to following diagram for individual



Critical Freqs

· · · · · · · · · · · · · · · · · · ·				
Frequency	MaxPeak	Limit	Margin	Corr.
(MHz)	(dBµA)	(dBµA)	(dB)	(dB)
0.154545	13.94	57.64	43.70	6.0
0.457178	9.24	44.61	35.36	6.0
1.650223	12.10	29.18	17.09	6.0
6.579814	13.27	22.00	8.73	6.1
12.815797	11.63	22.00	10.37	6.2
25.211521	14.13	22.00	7.87	6.3

Final_Result

Frequency	QuasiPeak	Limit	Margin	Corr.
(MHz)	(dBµA)	(dBµA)	(dB)	(dB)

The test data shows much less than the limit, no necessary take the results.

The report refers only to the sample tested and does not apply to the bulk.

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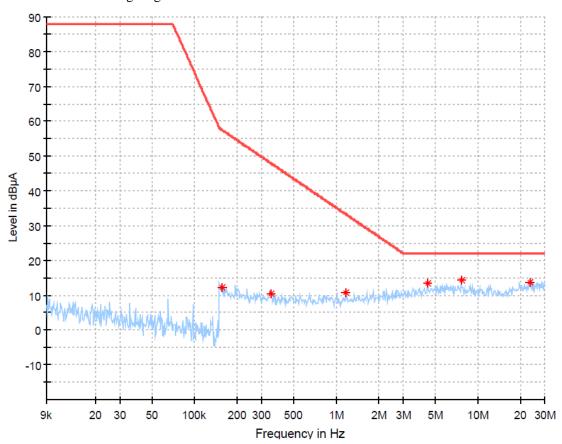
Date: 2020-10-14



Magnetic Field Test in Y (9kHz to 30MHz)

EUT set Condition: ON Results: Pass

Please refer to following diagram for individual



Critical Freqs

<u> </u>				
Frequency	MaxPeak	Limit	Margin	Corr.
(MHz)	(dBµA)	(dBµA)	(dB)	(dB)
0.156091	12.21	57.52	45.31	6.0
0.349469	10.34	47.84	37.49	6.0
1.164916	10.80	33.37	22.56	6.0
4.419352	13.33	22.00	8.67	6.1
7.715349	14.20	22.00	7.80	6.1
23.515241	13.78	22.00	8.22	6.2

Final Result

Frequency	QuasiPeak	Limit	Margin	Corr.
(MHz)	(dBµA)	(dBµA)	(dB)	(dB)

The test data shows much less than the limit, no necessary take the results.

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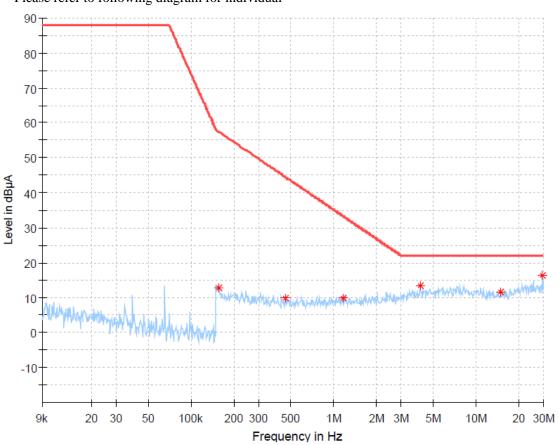
Date: 2020-10-14



Magnetic Field Test in Z (9kHz to 30MHz)

EUT set Condition: ON Results: Pass

Please refer to following diagram for individual



Critical Freqs

• · · · · · · · · · · · · · · · · · · ·				
Frequency	MaxPeak	Limit	Margin	Corr.
(MHz)	(dBµA)	(dBµA)	(dB)	(dB)
0.157652	12.97	57.40	44.43	6.0
0.457178	9.88	44.61	34.73	6.0
1.176565	9.93	33.25	23.32	6.0
4.081198	13.47	22.00	8.53	6.1
15.027530	11.64	22.00	10.36	6.2
29.562491	16.35	22.00	5.65	6.3

Final Result

Frequency	QuasiPeak	Limit	Margin	Corr.
(MHz)	(dBµA)	(dBµA)	(dB)	(dB)
		-		

The test data shows much less than the limit, no necessary take the results.

The report refers only to the sample tested and does not apply to the bulk.

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Date: 2020-10-14



6.0 Radiated Disturbance Test

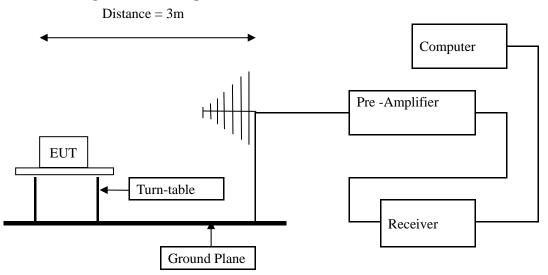
6.1 Schematics of the test



6.2 Test Method:

The test was performed in accordance with EN 55015: 2019

Block diagram of Test setup



6.3 Power line conducted Emission Limit

Frequency Range (MHz)	Quasi-Peak limits (dB μ V/m)
30-230	40.00
230-1000	47.00

Note: The lower limit shall apply at the transition frequencies

6.4 Test result

Please refer to following table

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Date: 2020-10-14



A: Radiated Disturbance (30MHz----1000MHz)

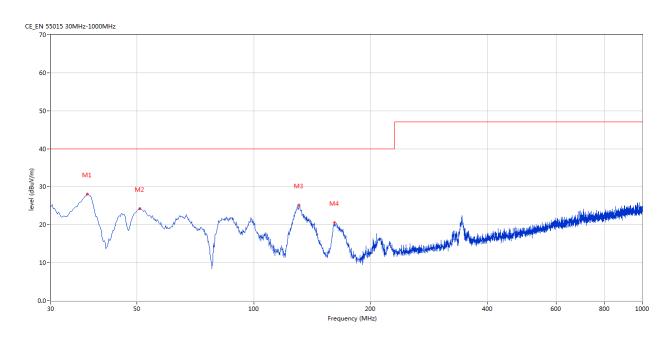
Project Number: CASE3 Test Time: 2020-10-13_17.04.33

EUT Name: LED LIGHT Test Engineer: KENT

Manufacturer: YUYAO YUTE LIGHTING Test Standard: EN 55015

APPLIANCE FACTORY

Model: ZYJ099-COB Work Addition: CHARGING+LIGHTING



No.	Frequen	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	cy (MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	37.273	28.13	-13.06	40.0	-11.87	Peak	360.00	200	Horizontal	Pass
2	50.850	24.25	-11.40	40.0	-15.75	Peak	359.00	100	Horizontal	Pass
3	130.855	25.23	-16.78	40.0	-14.77	Peak	7.00	200	Horizontal	Pass
4	161.160	20.54	-16.36	40.0	-19.46	Peak	360.00	200	Horizontal	Pass



Date: 2020-10-14



B: Radiated Disturbance (30MHz----1000MHz)

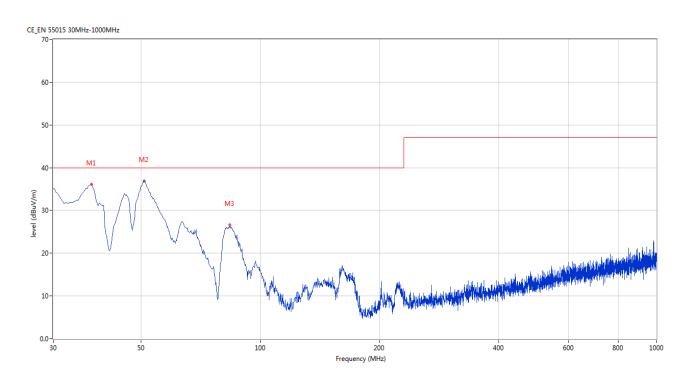
Project Number: CASE3 Test Time: 2020-10-13_17.00.47

EUT Name: LED LIGHT Test Engineer: KENT

Manufacturer: YUYAO YUTE LIGHTING Test Standard: EN 55015

APPLIANCE FACTORY

Model: ZYJ099-COB Work Addition: CHARGING+LIGHTING



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	37.516	35.92	-13.24	40.0	-4.08	Peak	360.00	100	Vertical	Pass
2	50.850	36.88	-11.83	40.0	-3.12	Peak	349.00	100	Vertical	Pass
3	83.822	26.62	-17.33	40.0	-13.38	Peak	360.00	100	Vertical	Pass

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C: Radiated Disturbance (30MHz----1000MHz)

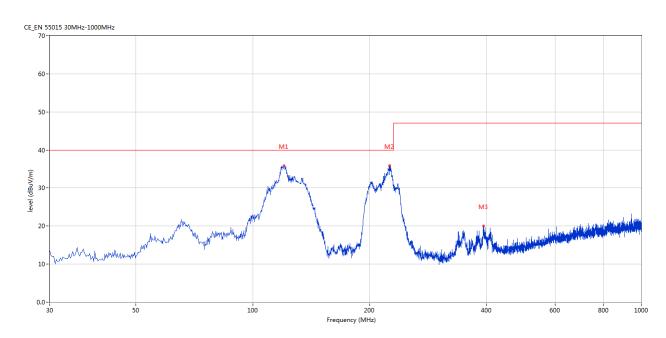
Project Number: CASE3 Test Time: 2020-10-13_17.07.55

EUT Name: LED LIGHT Test Engineer: KENT

Manufacturer: YUYAO YUTE LIGHTING Test Standard: EN 55015

APPLIANCE FACTORY

Model: ZYJ099-COB Work Addition: OUTPUT+LIGHTING



No.	Frequen	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	cy (MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	120.187	36.08	-16.07	40.0	-3.92	Peak	4.00	200	Horizontal	N/A
2	225.164	35.84	-13.82	40.0	-4.16	Peak	157.00	200	Horizontal	Pass
3	392.447	20.09	-10.16	47.0	-26.91	Peak	281.00	200	Horizontal	Pass

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D: Radiated Disturbance (30MHz----1000MHz)

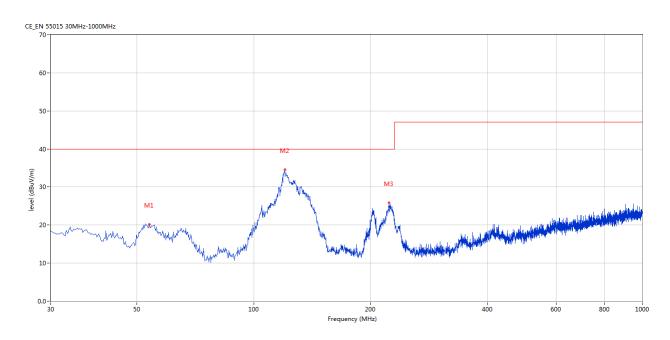
Project Number: CASE3 Test Time: 2020-10-13_17.09.53

EUT Name: LED LIGHT Test Engineer: KENT

Manufacturer: YUYAO YUTE LIGHTING Test Standard: EN 55015

APPLIANCE FACTORY

Model: ZYJ099-COB Work Addition: OUTPUT+LIGHTING



No.	Frequen	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	cy (MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	53.759	20.19	-11.53	40.0	-19.81	Peak	218.00	100	Vertical	Pass
2	120.187	34.54	-15.39	40.0	-5.46	Peak	274.00	100	Vertical	Pass
3	222.982	25.87	-13.18	40.0	-14.13	Peak	170.00	100	Vertical	Pass



Date: 2020-10-14



E: Radiated Disturbance (30MHz----1000MHz)

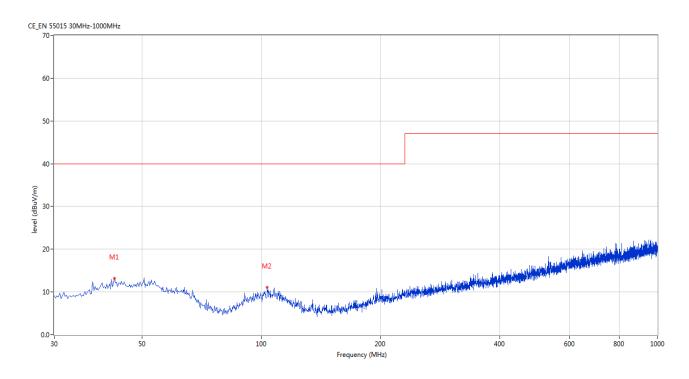
Project Number: CASE3 Test Time: 2020-10-13_10.59.42

EUT Name: LED LIGHT Test Engineer: KENT

Manufacturer: YUYAO YUTE LIGHTING Test Standard: EN 55015

APPLIANCE FACTORY

Model: ZYJ099-COB Work Addition: LIGHTING



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	42.607	13.14	-11.90	40.0	-26.86	Peak	223.00	100	Horizontal	Pass
2	103.459	11.03	-13.98	40.0	-28.97	Peak	116.00	100	Horizontal	Pass

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F: Radiated Disturbance (30MHz----1000MHz)

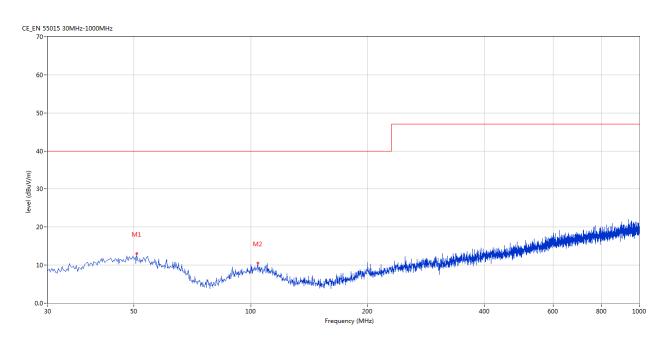
Project Number: CASE3 Test Time: 2020-10-13_11.01.31

EUT Name: LED LIGHT Test Engineer: KENT

Manufacturer: YUYAO YUTE LIGHTING Test Standard: EN 55015

APPLIANCE FACTORY

Model: ZYJ099-COB Work Addition: LIGHTING



No.	Frequen	Results	Factor	Limit	Over	Detector	Table (o)	Height	ANT	Verdict
	cy (MHz)	(dBuV/m	(dB)	(dBuV/m	Limit			(cm)		
))	(dB)					
1	50.850	13.07	-11.83	40.0	-26.93	Peak	281.00	100	Vertical	Pass
2	104.186	10.50	-13.93	40.0	-29.50	Peak	344.00	100	Vertical	Pass

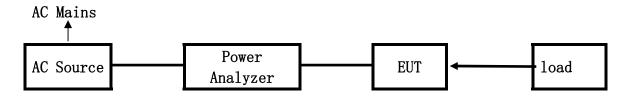
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7.0 Voltage Fluctuations & Flicker Test

7.1 Schematic of the test



EUT: Equipment Under Test

7.2 Test Method:

The test was performed in accordance with EN 61000-3-3: 2013+A1:2019

7.3 Test Results

Result: N/A

Please refer to the following pages

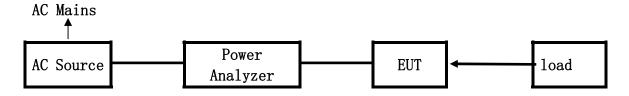
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8.0 Harmonic Current Emission Test

8.1 Schematic of the test



EUT: Equipment Under Test

8.2 Test Method

The test was performed in accordance with EN 61000-3-2: 2019

*: The Level of the product is: CLASS C (Power less than 5W is not applicable)

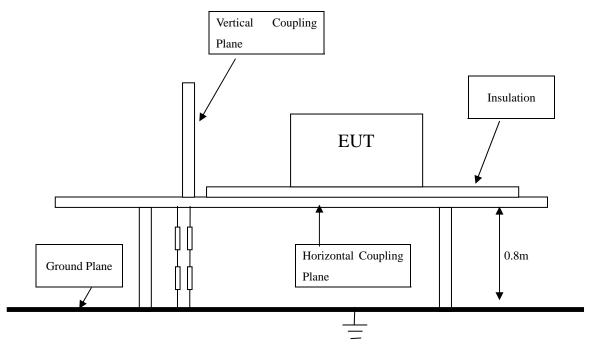
8.3 Test Results: N/A

Date: 2020-10-14



9.0 Electrostatic Discharge

9.1 Schematic of the test



9.2 Test method

The test was performed in accordance with EN 61000-4-2:2009

9.3 Test severity

- ±4kV for direct & in-direct Contact Discharge
- ±8kV for air Discharge

Performance Criterion Require: B (Please see following table)

9.4 Susceptibility performance Criteria and Severity level

A	Normal performance within the specification limits
В	Temporary degradation or loss of function or performance which is
	self recoverable
С	Temporary degradation or loss of function or performance which
	requires operator intervention or system reset
D	Degradation or loss of function which is not recoverable due to
	damage of equipment(components) or software, or loss of data

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Severity Level

Level	Test Voltage Direct & in-direct contact	Test Voltage Air
	Discharge (kV)	discharge(kV)
1	±2kV	$\pm 2kV$
2	$\pm 4 \mathrm{kV}$	$\pm 4 \mathrm{kV}$
3	±6kV	$\pm 8 \mathrm{kV}$
4	±8kV	±15kV

9.5 Test Result

Please refer to the following table for individual results.

Location	Discharge Method	Test Voltage	Results
HCP (Horizontal coupling plane)	In-Direct	$\pm 2kV$, $\pm 4kV$	Pass
VCP (Vertical Coupling plane)	In-Direct	$\pm 4kV \pm 4kV$	Pass
Shell	In-Direct	$\pm 2kV$, $\pm 4kV$	Pass
Shell	Air Discharge	$\pm 2kV$, $\pm 4kV$, $\pm 8kV$	Pass
Gap	Air Discharge	$\pm 2kV$, $\pm 4kV$, $\pm 8kV$	Pass
Cable	Air Discharge	$\pm 2kV$, $\pm 4kV$, $\pm 8kV$	Pass
Connector	Air Discharge	$\pm 2kV$, $\pm 4kV$, $\pm 8kV$	Pass

Remark: Calculated measurement uncertainty= 0.2kV

Date: 2020-10-14



10.0 RF field strength susceptibility (80MHz----- 1000MHz)

10.1 Schematics of the test



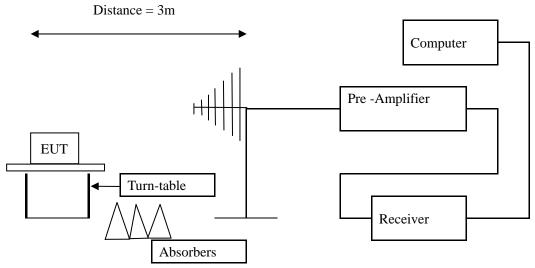
10.2 Test Method:

The test was performed in accordance with EN 61000-4-3:2006+A2:2010

Severity: Level 2 (3V/m) Modulation: 80% AM

Performance Criterion Require: A (Please see following table)

Block diagram of Test setup



10.3 Susceptibility performance Criteria and severity Level

Susceptibility performance Criteria

1 71	
A	Normal performance within the specification limits
В	Temporary degradation or loss of function or performance which is self recoverable
С	Temporary degradation or loss of function or performance which requires operator intervention or system reset
D	Degradation or loss of function which is not recoverable due to damage of equipment(components) or software, or loss of data

Severity Level

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Level	Field Strength (V/m)		
1	1		
2	3		
3	10		

10.4 Test Result:

Please refer to the following table for individual results.

Frequency (MHz)	Face	Polarity	Level (V/m)	Dwell Time(s)	Sweep Rate (%)	Results
80-1000	0°	Horizontal	3	1	1	Pass
80-1000	90°	Horizontal	3	1	1	Pass
80-1000	180°	Horizontal	3	1	1	Pass
80-1000	270°	Horizontal	3	1	1	Pass
80-1000	0°	Vertical	3	1	1	Pass
80-1000	90°	Vertical	3	1	1	Pass
80-1000	180°	Vertical	3	1	1	Pass
80-1000	270°	Vertical	3	1	1	Pass

Remark: Calculated measurement uncertainty= 80MHz to 1000MHz (+3.7/-1.3) V/m

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11.0 Electrical Fast Transient/Burst (EFT/B) immunity test

11.1 Schematics of the test



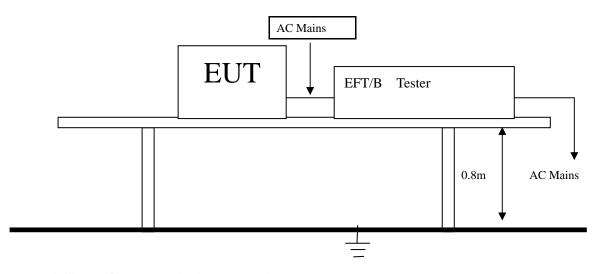
11.2 Test Method

The test was performed in accordance with EN 61000-4-4: 2012

Severity: Level 2 (1kV)

Performance Criterion Require: B (Please see following table)

Block diagram of Test setup



11.3 Susceptibility performance Criteria and Severity Level Susceptibility performance Criteria

A	Normal performance within the specification limits
В	Temporary degradation or loss of function or performance which is
	self recoverable
С	Temporary degradation or loss of function or performance which
	requires operator intervention or system reset
D	Degradation or loss of function which is not recoverable due to
	damage of equipment(components) or software, or loss of data

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Severity Level

	Open Circuit output Test Voltag	ge ±10%
Level	On power Supply Lines	On I/O (Input/output)
		Signal data and control lines
1	0.5kV	0.5kV
2	1kV	1kV
3	2kV	2kV
4	4kV	4kV
X	Special	Special

11.4 Test Results

Please refer to following page.

Inject location:

Inject Line	Voltage kV	Inject Times (s)	Method	Results
L	±1	120	Direct	Pass
N	±1	120	Direct	Pass
L-N	±1	120	Direct	Pass

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12.0 Surge test

12.1 Schematics of the test



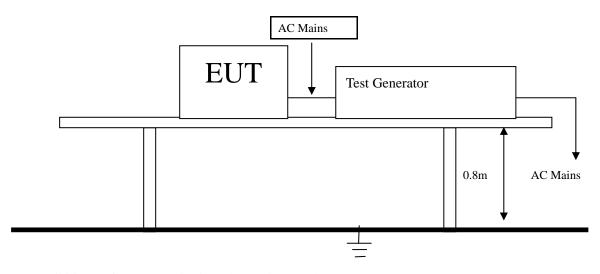
12.2 Test Method:

The test was performed in accordance with EN 61000-4-5: 2014+A1:2017

Severity: Level 2 (Below 25W Line to Neutral at 0.5kV)

Performance Criterion Require: C (Please see following table)

Block diagram of Test setup



12.3 Susceptibility performance Criteria and Severity Level Susceptibility performance Criteria

A	Normal performance within the specification limits
В	Temporary degradation or loss of function or performance which is self recoverable
С	Temporary degradation or loss of function or performance which requires operator intervention or system reset
D	Degradation or loss of function which is not recoverable due to damage of equipment(components) or software, or loss of data

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Severity Level

Severity Level	Open-Circuit Test Voltage		
	kV		
1	0.5		
2	1.0		
3	2.0		
4	4.0		
*	Special		

12.4 Test Results

Please refer to following page.

Test location:

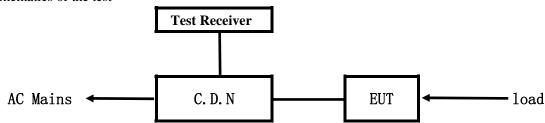
Location	Polarity	Phase	No of	Pulse	Results
		Angle	Pulse	Voltage(kV)	
LNI	+	90	10	0.5	Pass
L-N	_	270	10	0.5	Pass

Date: 2020-10-14



13.0 Conducted Immunity test

13.1 Schematics of the test



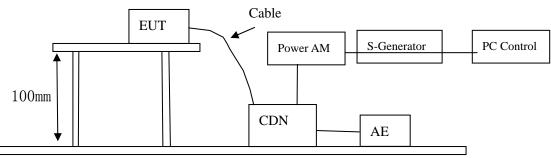
13.2 Test Method

The test was performed in accordance with EN 61000-4-6: 2014

Severity: Level 2 (3 V rms),0.15MHz—80MHz

Performance Criterion Require: A (Please see following table)

Block diagram of Test setup



13.3 Susceptibility performance Criteria and Severity Level

Susceptibility performance Criteria

A	Normal performance within the specification limits			
В	Temporary degradation or loss of function or performance which is			
	self recoverable			
C	Temporary degradation or loss of function or performance which			
	requires operator intervention or system reset			
D	Degradation or loss of function which is not recoverable due to			
	damage of equipment(components) or software, or loss of data			

Severity Level

Severity Level	Field Strength V/m
1	1
2	3
3	10
*	Special

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13.4 Test Results

Please refer to the following page

Thomse result to the ross will bright					
Frequency	Injected Position	Strength	Criterion	Result	
Range (MHz)	lange (MHz)				
0.15 - 20	AC Line	3V (rms)	٨	Pass	
0.13 - 20		Unmodulated	A		
20. 80	20 90 ACL:		٨	Pass	
20 - 80	AC Line	Unmodulated	A		

Date: 2020-10-14



14.0 Power Frequency magnetic field test

14.1 Schematics of the test



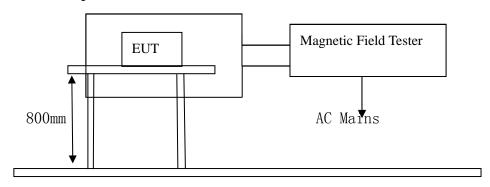
14.2 Test Method

The test was performed in accordance with EN 61000-4-8: 2010

Severity: Level 2 (3A/m),

Performance Criterion Require: A (Please see following table)

Block diagram of Test setup



14.3 Susceptibility performance Criteria and Severity Level

Susceptibility performance Criteria

	-		
A	Normal performance within the specification limits		
В	Temporary degradation or loss of function or performance which is		
	self recoverable		
С	Temporary degradation or loss of function or performance which		
	requires operator intervention or system reset		
D	Degradation or loss of function which is not recoverable due to		
	damage of equipment(components) or software, or loss of data		

Severity Level

Severity Level	Magnetic Field Strength A/m		
1	1		
2	3		
3	10		

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4	30
5	100
*	Special

14.4 Test Results:

Please refer to the following page

	010			
Test Level	Testing Duration	Coil Orientation	Criterion	Result
3A/m	5 Mins	Horizontal	A	N/A
3A/m	5 Mins	Vertical	A	N/A

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15.0 Voltage Dips/Interruptions immunity test

15.1 Schematics of the test

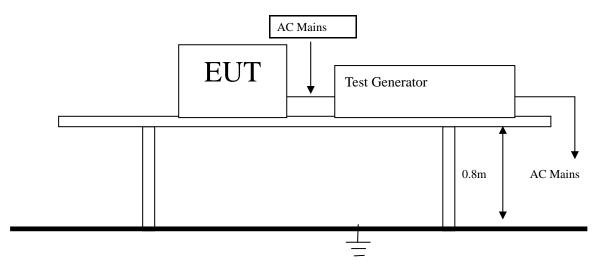


15.2 Test Method:

The test was performed in accordance with EN 61000-4-11: 2004+A1:2017

Performance Criterion Require: C&B (Please see following table)

Block diagram of Test setup



15.3 Susceptibility performance Criteria and Severity Level Susceptibility performance Criteria

A	Normal performance within the specification limits				
В	Temporary degradation or loss of function or performance which is self recoverable				
С	Temporary degradation or loss of function or performance which requires operator intervention or system reset				
D	Degradation or loss of function which is not recoverable due to damage of equipment(components) or software, or loss of data				

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Severity Level

Test Level %Ut	Voltage dip and short interruptions %Ut	Duration(in period)	
0	100	0.5	
0	100	1	
40		5	
	60	10	
		25	
70	30	50	
		*	

15.4 Test Result:

Please refer to the following page

rease refer to the following page					
Test Level	Voltage	Duration(in	Phase Angle	Criterion	Result
% Ut	dips &short	period)			
	interruptions %				
	Ut				
0	100	0.5P	0° - 360°	В	Pass
70	30	10P	0° - 360°	С	Pass

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16.0 Product Labelling

16.1 CE Mark label specification

Text of the mark is black or white in color and is left justified. Labels are printed in indelible ink on permanent adhesive backing and shall be affixed at a conspicuous location on the EUT or silk-screened onto the EUT.



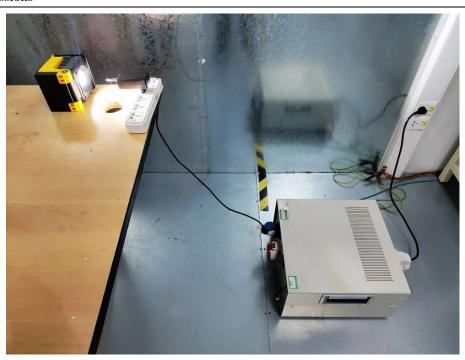
16.2 Mark Location: Rear enclosure

Date: 2020-10-14



Appendix:

Conducted Emissions



Model: ZYJ099-COB



Model: ZYJ066

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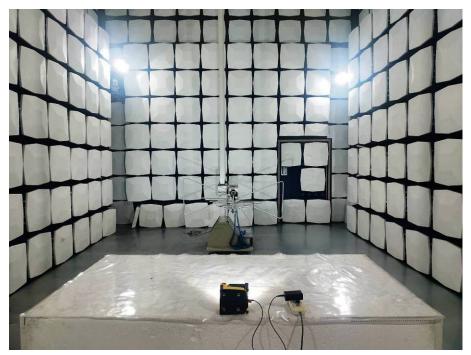
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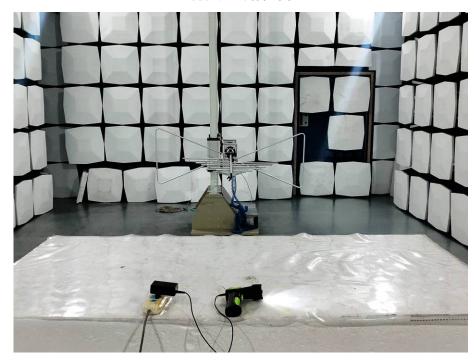
Date: 2020-10-14



Photograph - Radiated Emissions



Model: ZYJ099-COB



Model: ZYJ066

Date: 2020-10-14



Photos of the Product- Model: ZYJ099-COB, ZYJ066, ZYJ055, ZYJ007B, ZYJ011F



Model: ZYJ099-COB



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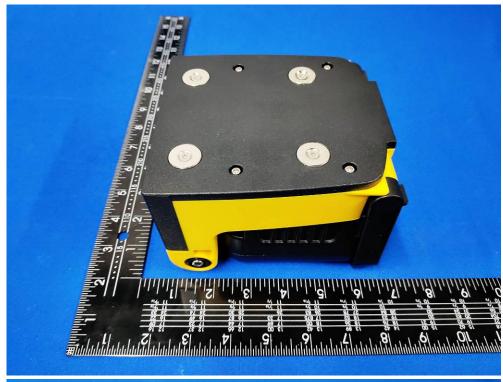
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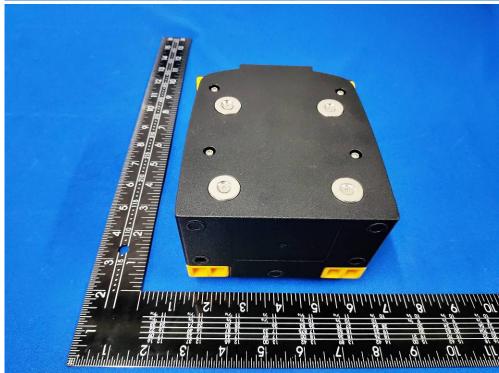
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Photos of the Product - Model: ZYJ099-COB





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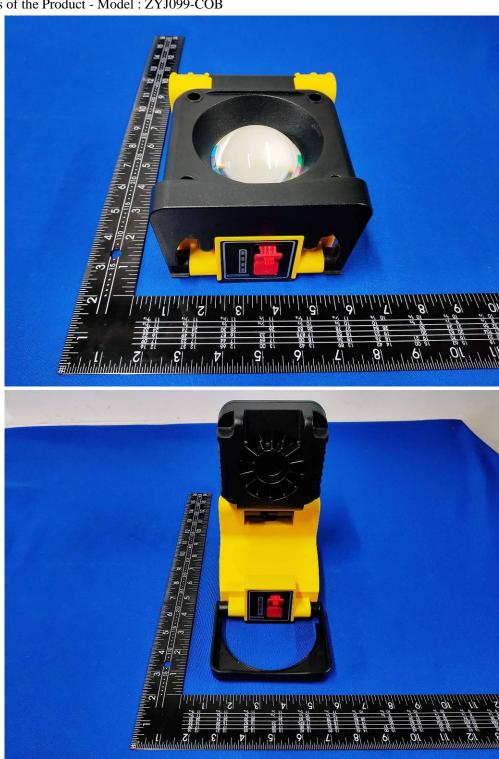
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Photos of the Product - Model: ZYJ099-COB



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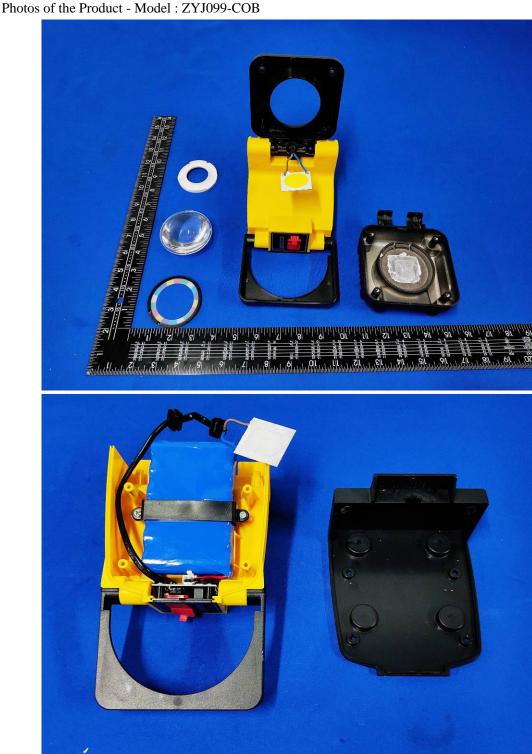
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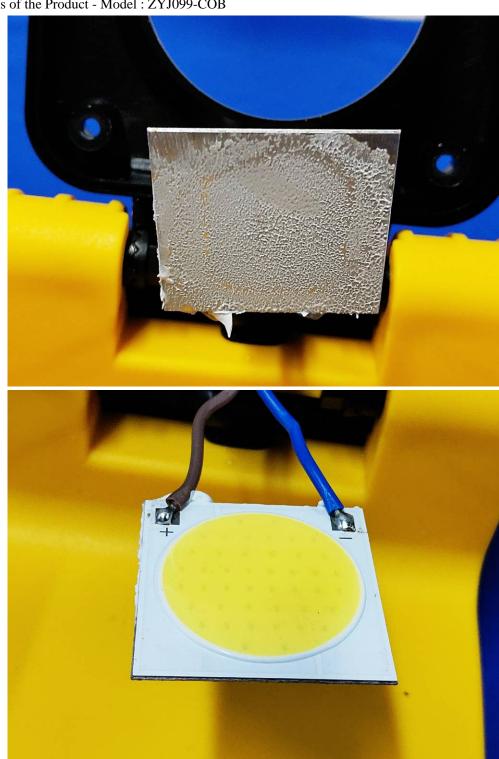
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Photos of the Product - Model: ZYJ099-COB



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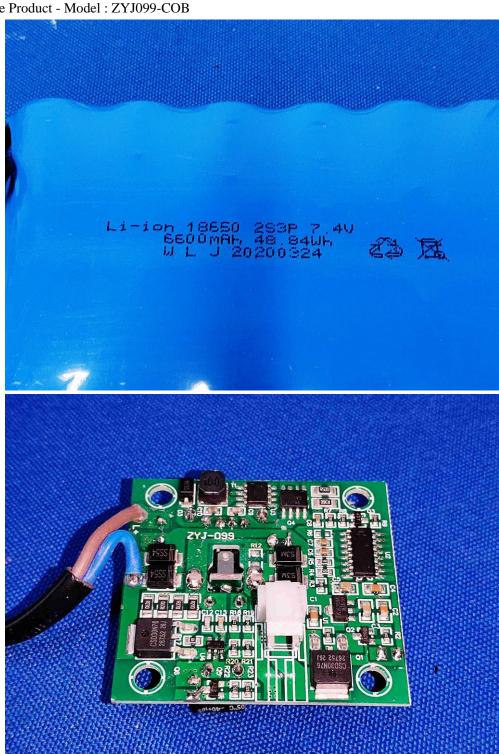
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Photos of the Product - Model: ZYJ099-COB



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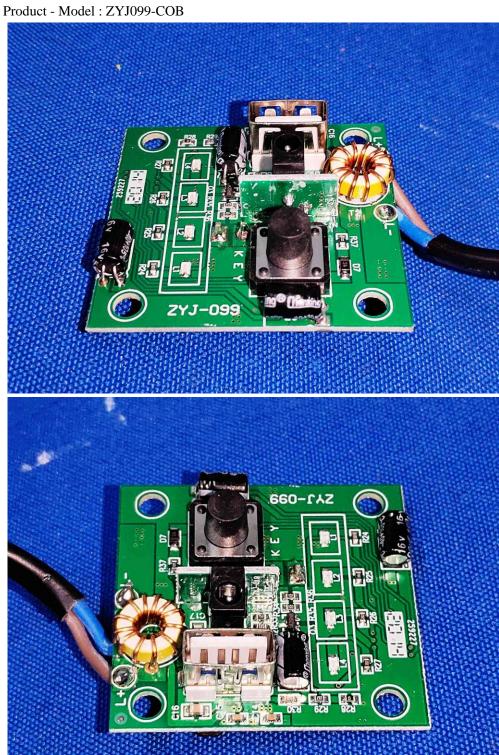
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Photos of the Product - Model: ZYJ099-COB



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Photos of the Product - Model: ZYJ066



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Photos of the Product - Model: ZYJ066



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Photos of the Product - Model: ZYJ066



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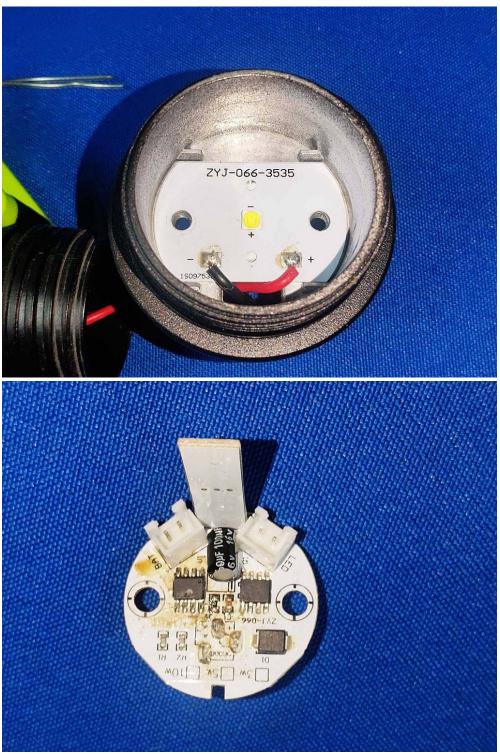
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Photos of the Product - Model: ZYJ066



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Photos of the Product - Model: ZYJ066





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Photos of the Product - Model: ZYJ066



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Photos of the Product- Model: ZYJ007B



Photos of the Product- Model: ZYJ011F



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Photos of the Product- Model: ZYJ055



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Model: ZYJ011F



Model: ZYJ033

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Model: ZYJ007A



Model: ZYJ005A

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Model: ZYJ005B



Model: ZYJ015-COB

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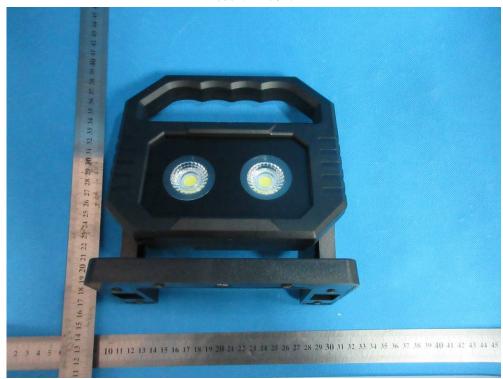
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Model: ZYJ027B



Model: ZYJ036F

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Model: ZYJ056



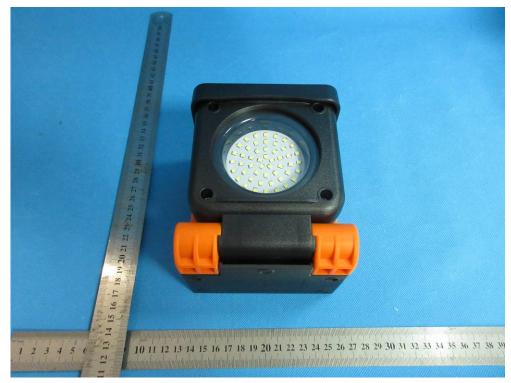
Model: ZYJ099-8L

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Model: ZYJ099-50SMD



Model: ZYJ-JM-001

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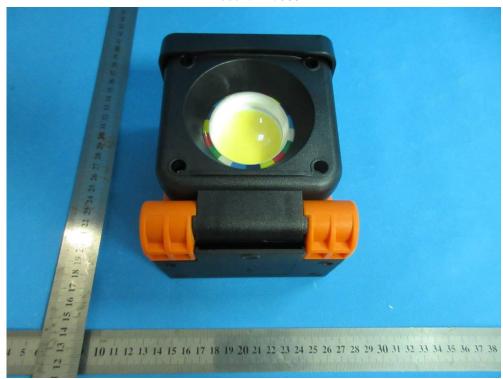
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Model: ZYJ066



Model : ZYJ099-COB -End of the report-

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