EMC TEST REPORT

Applicant:	
Address of Applicant:	2nd-3rd Fl, A8 Building, Langxin Industry Area, Qingnian Rd, Shiyan Town, Bao'an District, Shenzhen, Guangdong, China
Manufacturer:	
Address of Manufacturer:	
Product name:	ADAPTOR
Model:	JYH7Z-xxxyyyy-Az, JYH7Z-xxxyyyy-Bz, JYH7Z-xxxyyyy-Cz (xxx, yyyy, and z are variable, see "General product information and other remarks" for details)
Rating(s):	Input: 100-240VAC, 50/60Hz, 0.5A Output: See general product information for details
Trademark:	JU YUAN HAI (JU YUAN HAI)
Standards:	EN IEC 55014-1:2021 EN IEC 55014-2:2021 EN IEC 61000-3-2:2019 EN 61000-3-3:2013/A1:2019
Date of Receipt:	2021-06-08
Date of Test:	2021-06-08~2021-06-24
Date of Issue:	2021-06-24
Test Result	**Pass***

* In the configuration tested, the test item complied with the standards specified above.

Authorized for issue by:

Test by: ***Reviewed by:***

Jun.24.2021	Chivas Tsang Project Engineer		Jun.24.2021	Victor Meng Project Manager	
Date	*Name/Position*	*Signature*	*Date*	*Name/Position*	*Signature*

Testing Laboratory information:

Testing Laboratory Name ..... :	Dongguan Hongnuo Product Testing Service Co., Ltd.
Address ..... :	No.8, Jinqianling Street 5, Huangjiang, Dongguan, Guangdong, China.
Testing location ..... :	Same as above
Tel..... :	0086-769-39001678
Fax ..... :	0086-20-62824387
E-mail ..... :	itl@i-testlab.com

Possible test case verdicts:

- test case does not apply to the test object.. :	N/A
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement . :	F (Fail)

General remarks:

The test results presented in this report relate only to the object tested.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

This report would be invalid test report without all the signatures of testing technician and approver.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

General product information:

Model list:

Model No.	Input Rating	Output Rating			Transformer (T1)
		Voltage(VDC)	Current(A)	Max. Power(W)	
JYH7Z-xxxyyyy-Az, JYH7Z-xxxyyyy-Bz, JYH7Z-xxxyyyy-Cz	100-240V~, 50/60Hz, 0.5A	5.0	0.01-2.5	12.5	JYH1Z0508
		5.1-8.9	0.01-2.0	12.0	
		9.0-14.9	0.01-1.25	15.0	JYH1Z0914
		15.0-23.9	0.01-1.0	15.0	JYH1Z1524
		24.0-27.0	0.01-0.65	15.66	

Note:
xxx = 050-270 stands for output voltage: 5.0-27.0VDC in step of 0.1V, e.g.: 050=5.0VDC, 270=27.0VDC.
yyyy = 0001-0250 stands for output current 0.01-2.5A in step of 0.01A, e.g.: 0001=0.01A, 0250=2.5A.
z = A, B, C, E, G, I, K, M, O, T stands for different AC type, A=United States of America plug or Japan plug or Taiwan plug, B=Brazil plug, C=China plug, E=Europe plug, G=United Kingdom plug or Hong Kong plug or Singapore plug, I=Australia plug, K=Korea plug, M=Argentina plug, O=India plug, T=Thailand plug.

The models JYH7Z-xxxyyyy-Az are direct plug-in equipment with vertical enclosure type with square shape; The models JYH7Z-xxxyyyy-Bz are direct plug-in equipment with horizontal enclosure type; The models JYH7Z-xxxyyyy-Cz are direct plug-in equipment with vertical enclosure with arc shape.

All tests were performed on the models JYH7Z-0500250-AE, JYH7Z-0500250-CE and JYH7Z-2700058-BE as representatives.

Test Summary:

The following standards have been applied to ensure the product conforms with the protection requirements of the council directive 2014/30/EU.

Electromagnetic Interference (EMI)				
Test Item	**Test Standard**	**Test Method**	**Class / Severity**	**Result**
Conducted Emission (0.15MHz to 30MHz)	EN IEC 55014-1:2021	EN IEC 55014-1:2021	Table 1 Columns 2&3	PASS
Disturbance Power, (30MHz to 300MHz)	EN IEC 55014-1:2021	EN IEC 55014-1:2021	Table 2a, Table 2b Columns 2&3	PASS
Discontinuous Interference on AC (150kHz to 30MHz)	EN IEC 55014-1:2021	EN IEC 55014-1:2021	Clause 4.2 of EN 55014-1	N/A
Harmonic Emission on AC, (100 Hz to 2 kHz)	EN IEC 61000-3-2:2019	Clause 7 of EN 61000-3-2	Class A	N/A
Voltage fluctuation and flicker	EN 61000-3-3:2013/A1:2019	EN 61000-3-3:2013/A1:2019	Clause 5 of EN 61000-3-3	PASS
Electromagnetic Immunity (EMS)				
Test Item	**Test Standard**	**Test Method**	**Test Level**	**Result**
Electrostatic Discharge Immunity (ESD)	EN IEC 55014-2:2021	EN 61000-4-2:2009	Contact ±4 kV Air ±8 kV	PASS
Electrical Fast Transient (EFT) on AC	EN IEC 55014-2:2021	EN 61000-4-4:2012	AC ±1.0 kV	PASS
Surge immunity on AC	EN IEC 55014-2:2021	EN 61000-4-5:2014 +A1:2017	±1.0 kV D.M. ±2.0 kV C.M.	PASS
Injected Currents on AC, (150kHz to 230MHz)	EN IEC 55014-2:2021	EN 61000-4-6: 2014	3 Vrms (emf), 80%,1kHz, Amp. Mod.	PASS
Voltage dips and interruptions on AC	EN IEC 55014-2:2021	EN 61000-4-11: 2017	0%U_T * for 0.5per 40%U_T * for 10/12per 70%U_T * for25/30per	PASS

Test Location

Conducted Emission, Radiated Emissom, Harmonics/Flicker ESD, EFT, Surge, Votage dips and Interruption tests were performed in Dongguan Hongnuo Product Testing Service Co., Ltd. Which is located at No.8, Jinqianling Street 5, Huangjiang, Dongguan, Guangdong, China.

Tel: 0086-769-39001678, Fax: 0086-20-62824387

Injected Currents on AC test were performed in GuangZhou ITL Co., Ltd. Which is located at 1-2 floor, South Block, Building A2, No 3 Keyan Lu, Science City, Guangzhou, Guangdong Province, P.R. China

Tel: 0086-20-32209330, Fax: 0086-20-62824387

TABLE OF CONTENTS

Section 1 General Information and Equipment Used

1.1 Client Information

Applicant:

Address of Applicant:

1.2 EUT General and Technical Descriptions

EUT Name:	ADAPTOR
EUT Model:	JYH7Z-0500250-AE JYH7Z-0500250-CE JYH7Z-2700058-BE
EUT Trademark:	JU YUAN HAI (JU YUAN HAI)
Input Voltage:	100-240V~
Frequency:	50/60Hz
Input Power/Current:	0.5A
Output rated:	5Vdc 2.5A (JYH7Z-0500250-AE) 5Vdc 2.5A (JYH7Z-0500250-CE) 27Vdc 0.58A (JYH7Z-2700058-BE)
Power Cable Description:	/
Other Cables Description:	/
I/O Ports:	/
Function(s) Description:	/
Accessories information:	/

1.3 Support Equipment(s) and Test Configuration

1.3.1 Details of Support Equipment(s)

Description	Manufacturer	Model No.	Connection	Working state
Resistor Load	/	/	/	Normal
/	/	/	/	/
/	/	/	/	/
/	/	/	/	/

1.3.2 Working State of EUT

Power Supply of EUT: 230V~ 50Hz and 120V~ 60Hz

EUT Status: Full load working and Half load working

1.3.3 Block Diagram of Test Configuration

/

1.4 Equipment Used during Test

Conducted Emission						
No.	**Test Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Last Cal.**	**Cal. Due**
DGITL-303a	EMI Test receiver	R&S	ESCI	100910	2021.05.11	2022.05.11
DGITL-304	L.I.S.N.#1	R&S	ESH3-Z5	100272	2021.05.11	2022.05.11
DGITL-302	Shielded Room	ETS•Lindgren	8*4*3	CT09010	2020.08.03	2022.08.03
DGITL-316	Pulse Limiter	R＆S	ESH3-Z2	100327	2021.05.11	2022.05.11

Disturbance Power						
No.	**Test Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Last Cal.**	**Cal. Due**
DGITL- 303a	EMI Test receiver	R&S	ESCI	100910	2021.05.11	2022.05.11
DGITL- 305	Power Absorber Clamp	R&S	MDS-21	100109	2021.05.11	2022.05.11
DGITL- 302	Shielded Room	ETS•Lindgren	8*4*3	CT09010	2020.08.03	2022.08.03

Harmonics / Flicker test						
No.	**Test Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Last Cal.**	**Cal. Due**
DGITL-341	Harmonics analyzer with flicker meter	LAPLACE INSTRUMENTS	AC2000A	310222	2021.05.11	2022.05.11
DGITL-342	Power source	C.I.	5001iX-400	57491	2021.05.11	2022.05.11

Electrostatic Discharge						
No.	**Test Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Last Cal.**	**Cal. Due**
DGITL-310	Electrostatic Discharge Generator	3ctest	ESD-30G	EC0281414	2021.05.11	2022.05.11

EFT						
No.	**Test Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Last Cal.**	**Cal. Due**
DGITL-312	EFT Generator	3ctest	EFT-4003G	EC0471429	2021.05.11	2022.05.11

Surge						
No.	**Test Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Last Cal.**	**Cal. Due**
DGITL-311	Surge Generator	3ctest	SG5010	EC5531503	2021.05.11	2022.05.11

Conducted Immunity						
No.	**Test Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Last Cal.**	**Cal. Due**
ITL-135	Signal generator	R/S	SML01	100252	2021/01/20	2022/01/19
ITL-136	150k-230MHz 30W amplifier	Schaffner	CBA9425	1019	2021/01/20	2022/01/19
ITL-137	CDN	Schaffner	CDN M016	20054	2021/01/20	2022/01/19
ITL-139	6dB/50W attenuation	Schaffner	ATN6050	16033	2021/01/20	2022/01/19

Voltage dips and Interruption						
No.	**Test Equipment**	**Manufacturer**	**Model**	**Serial No.**	**Last Cal.**	**Cal. Due**
DGITL-342	Power source	C.I.	5001iX-400	57491	2021.05.11	2022.05.11

Software list			
Testing software	**Manufacturer**	**Model**	**Version number**
e3	AUDIX	e3.Ink	Version:6.2009-11-3c(itl)

Section 2 Emission Test Results

2.1 Conducted Emission at Mains Terminals, 150 kHz to 30MHz

Test Requirement:	EN 55014-1
Test Method:	EN 55014-1
Test Voltage:	230V AC, 50Hz and 120V AC, 60Hz
Test Date:	2021-06-08~2021-06-24
Frequency Range:	150 kHz to 30MHz
Detector:	Peak for pre-scan Quasi-Peak and Average at frequency with maximum peak (9 kHz resolution bandwidth)
Uncertainty:	2Uc（V）= 2.3dB
Class / Limit:	Class B

Frequency range MHz	**Limits dB (μV)**	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	59 to 46
0.50 to 5	56	46
5 to 30	60	50
NOTE 1 :The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz. NOTE 2: The lower limit is applicable at the transition frequency.		

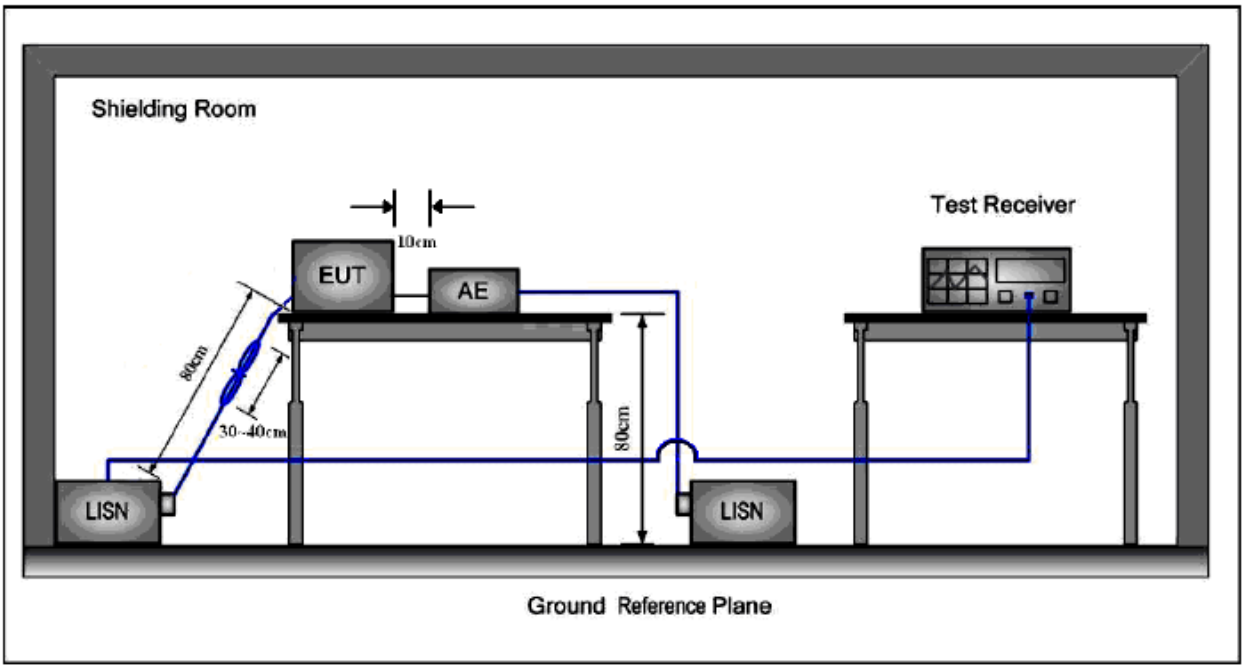
2.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 44 % RH Atmospheric Pressure: 101 kPa

EUT Operation: Pre-test the EUT in On Mode with full load and half load to find the worse case, Compliance tests the EUT in On Mode with full load as the worse case was found.

2.1.2 Test Setup and Procedure

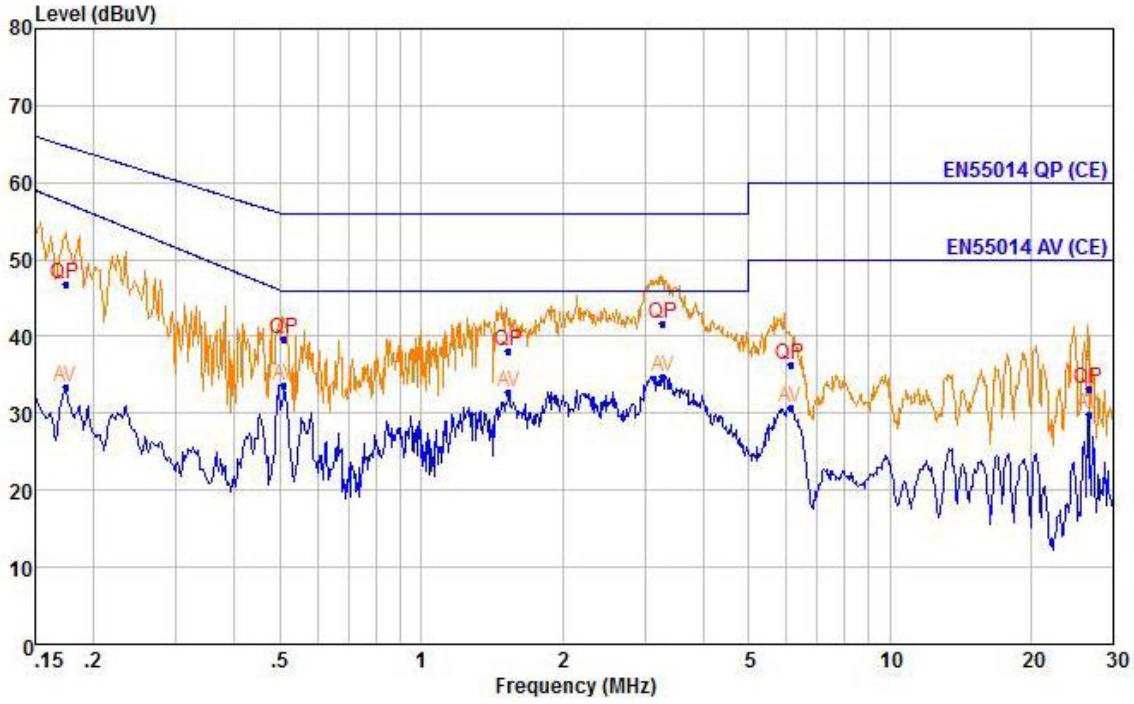


1. The mains terminal disturbance voltage test was conducted in a shielded room.
2. The EUT was connected to nominal power supply through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH+5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.

2.1.3 Measurement Data

Pre-scan was performed with peak detected on both live and neutral cable. Quasi-peak & average measurements were performed at the frequencies which maximum peak emission level was detected. Please see the attached Quasi-peak and Average test results.

Model: JYH7Z-0500250-AE (AC 230V 50Hz)
Live Line:
Peak Scan:
Level (dBμV)



Quasi-peak and Average measurement

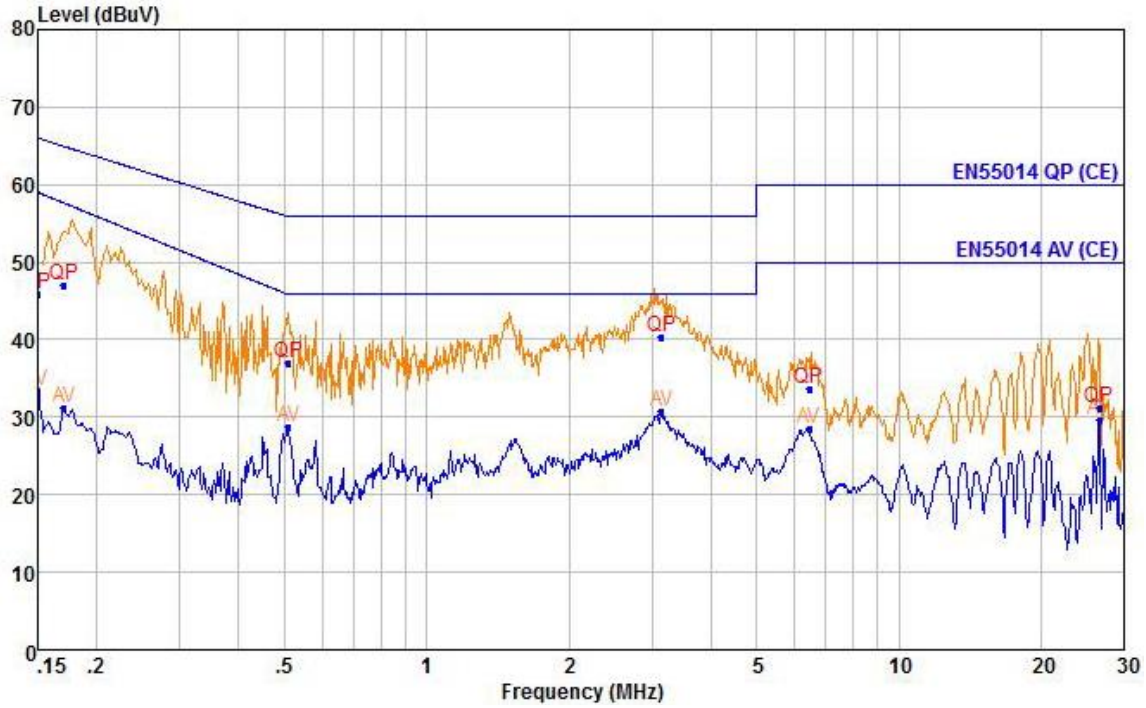
NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.174	33.34	Average	10.31	0.02	57.40	-24.06
2	0.174	46.83	QP	10.31	0.02	64.77	-17.94
3	0.510	33.67	Average	10.37	0.03	46.00	-12.33
4	0.510	39.60	QP	10.37	0.03	56.00	-16.40
5	1.535	32.74	Average	10.38	0.06	46.00	-13.26
6	1.535	38.03	QP	10.38	0.06	56.00	-17.97
7	3.276	34.86	Average	10.40	0.09	46.00	-11.14
8	3.276	41.67	QP	10.40	0.09	56.00	-14.33
9	6.153	30.85	Average	10.48	0.11	50.00	-19.15
10	6.153	36.42	QP	10.48	0.11	60.00	-23.58
11	26.558	29.75	Average	10.84	0.22	50.00	-20.25
12	26.558	33.20	QP	10.84	0.22	60.00	-26.80

Level=Read Level + Lisn Factor + Cable Loss

Neutral Line:

Peak Scan:

Level (dB μ V)

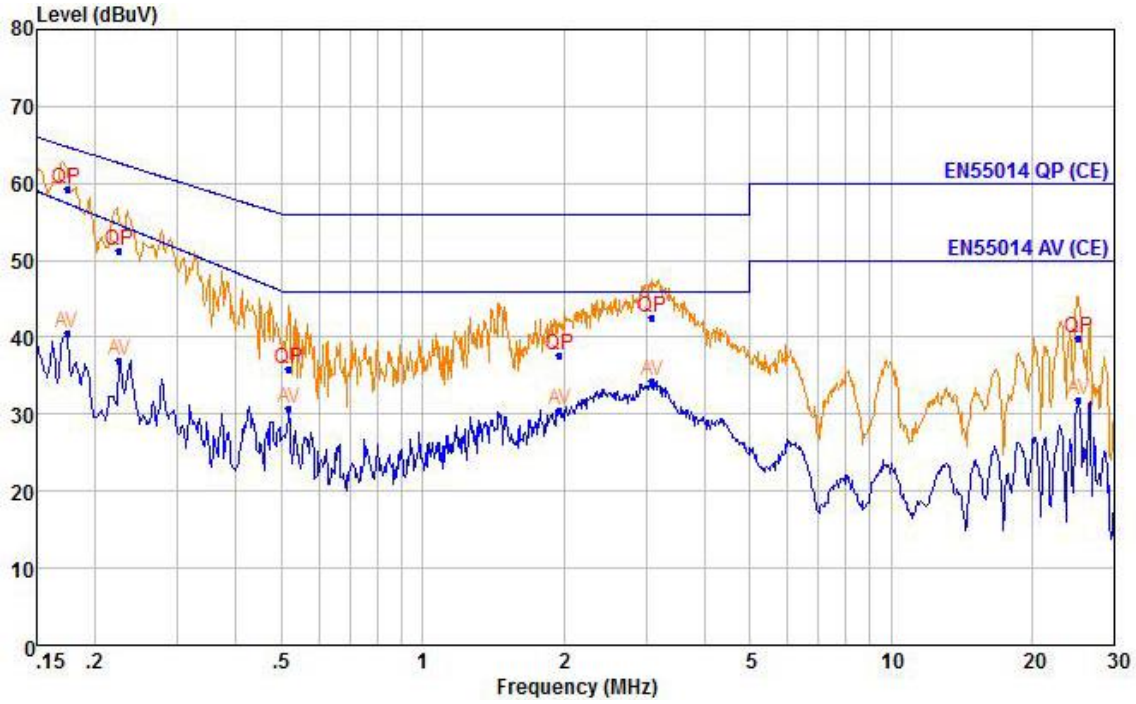


Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	33.40	Average	10.49	0.02	59.00	-25.60
2	0.150	45.87	QP	10.49	0.02	66.00	-20.13
3	0.170	31.27	Average	10.48	0.02	57.63	-26.36
4	0.170	46.93	QP	10.48	0.02	64.94	-18.01
5	0.510	28.69	Average	10.52	0.03	46.00	-17.31
6	0.510	36.95	QP	10.52	0.03	56.00	-19.05
7	3.140	30.76	Average	10.60	0.08	46.00	-15.24
8	3.140	40.40	QP	10.60	0.08	56.00	-15.60
9	6.454	28.48	Average	10.67	0.12	50.00	-21.52
10	6.454	33.71	QP	10.67	0.12	60.00	-26.29
11	26.558	29.72	Average	10.97	0.22	50.00	-20.28
12	26.558	31.23	QP	10.97	0.22	60.00	-28.77

Level=Read Level + Lisn Factor + Cable Loss

Model: JYH7Z-0500250-AE (AC 120V 60Hz)
Live Line:
Peak Scan:
Level (dBμV)



Quasi-peak and Average measurement

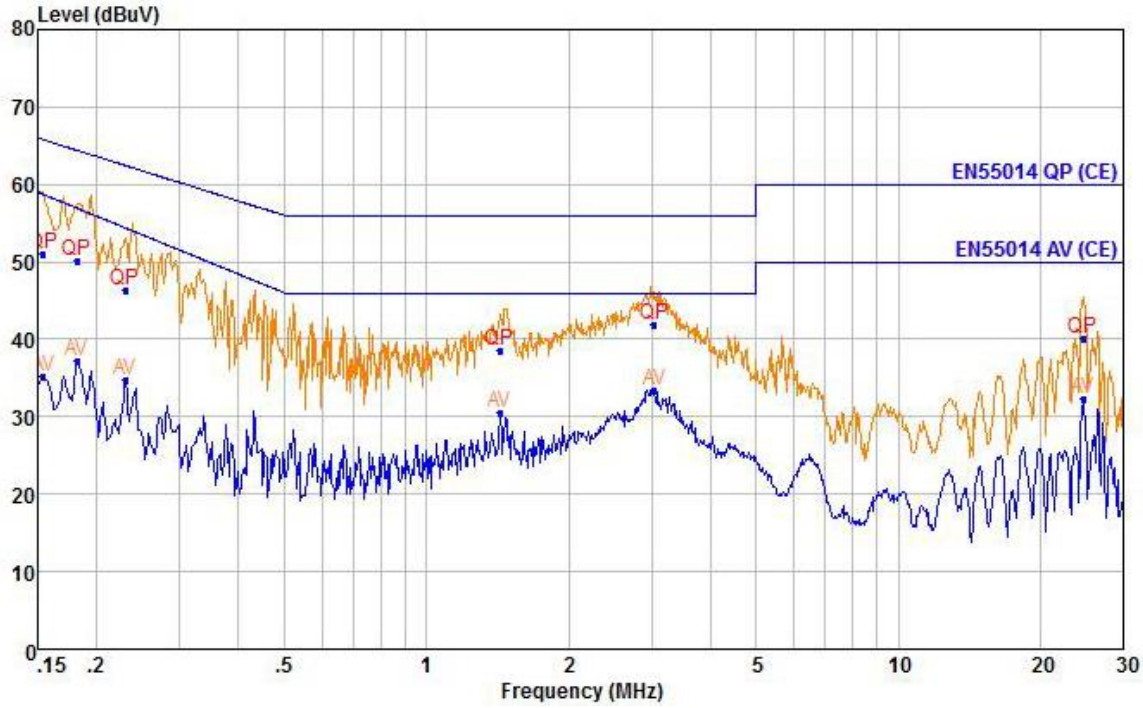
NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.174	40.56	Average	10.31	0.02	57.40	-16.84
2	0.174	59.25	QP	10.31	0.02	64.77	-5.52
3	0.226	37.01	Average	10.31	0.02	54.59	-17.58
4	0.226	51.15	QP	10.31	0.02	62.61	-11.46
5	0.518	30.65	Average	10.37	0.03	46.00	-15.35
6	0.518	35.97	QP	10.37	0.03	56.00	-20.03
7	1.959	30.60	Average	10.43	0.07	46.00	-15.40
8	1.959	37.56	QP	10.43	0.07	56.00	-18.44
9	3.090	34.23	Average	10.41	0.08	46.00	-11.77
10	3.090	42.61	QP	10.41	0.08	56.00	-13.39
11	25.188	31.91	Average	10.81	0.21	50.00	-18.09
12	25.188	39.98	QP	10.81	0.21	60.00	-20.02

Level=Read Level + Lisn Factor + Cable Loss

Neutral Line:

Peak Scan:

Level (dB μ V)

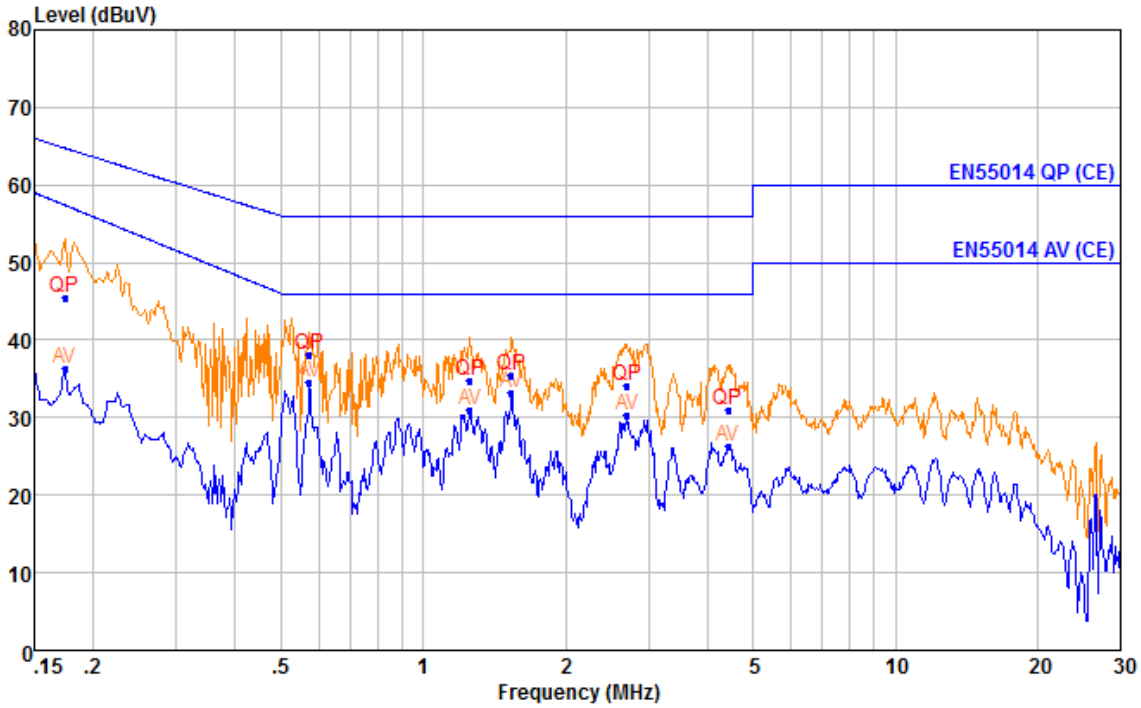


Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.154	35.24	Average	10.49	0.02	58.71	-23.47
2	0.154	51.14	QP	10.49	0.02	65.78	-14.64
3	0.182	37.28	Average	10.48	0.02	56.94	-19.66
4	0.182	50.16	QP	10.48	0.02	64.42	-14.26
5	0.230	34.78	Average	10.49	0.02	54.37	-19.59
6	0.230	46.37	QP	10.49	0.02	62.44	-16.07
7	1.433	30.63	Average	10.64	0.06	46.00	-15.37
8	1.433	38.59	QP	10.64	0.06	56.00	-17.41
9	3.041	33.51	Average	10.60	0.08	46.00	-12.49
10	3.041	41.86	QP	10.60	0.08	56.00	-14.14
11	24.659	32.29	Average	10.95	0.21	50.00	-17.71
12	24.659	40.14	QP	10.95	0.21	60.00	-19.86

Level=Read Level + Lisn Factor + Cable Loss

Model: JYH7Z-0500250-CE (AC 230V 50Hz)
Live Line:
Peak Scan:
Level (dBμV)



Quasi-peak and Average measurement

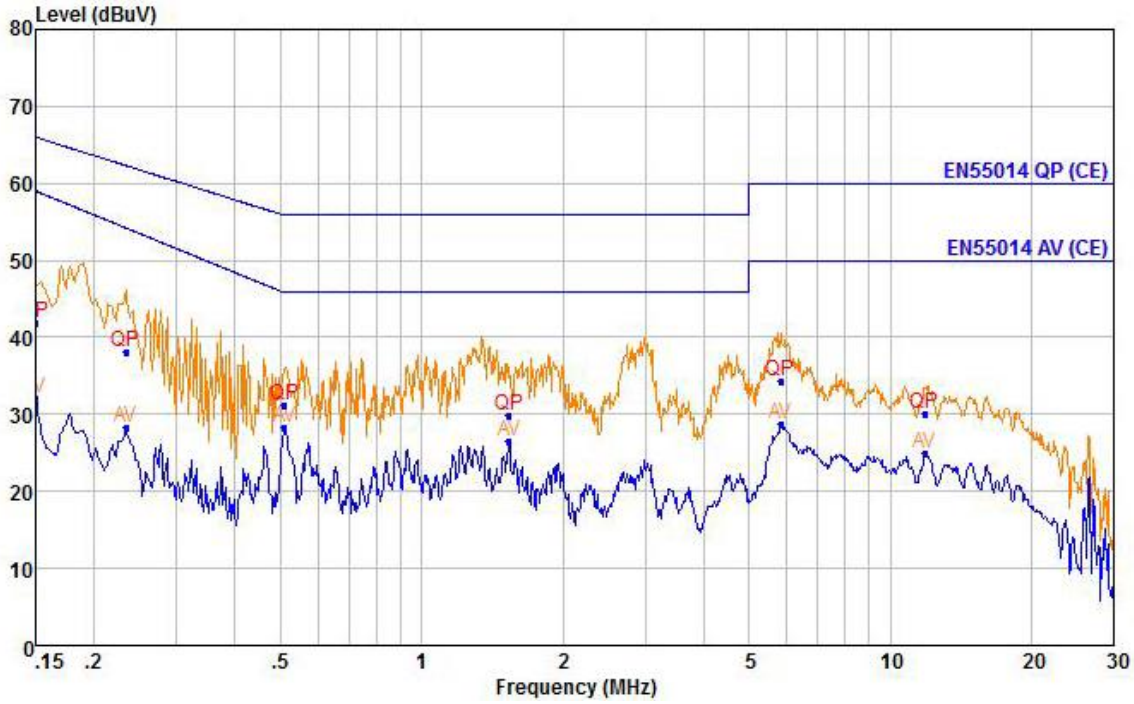
NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.174	36.38	Average	10.31	0.02	57.40	-21.02
2	0.174	45.53	QP	10.31	0.02	64.77	-19.24
3	0.573	34.52	Average	10.36	0.03	46.00	-11.48
4	0.573	38.04	QP	10.36	0.03	56.00	-17.96
5	1.255	30.89	Average	10.34	0.06	46.00	-15.11
6	1.255	34.74	QP	10.34	0.06	56.00	-21.26
7	1.535	33.09	Average	10.38	0.06	46.00	-12.91
8	1.535	35.46	QP	10.38	0.06	56.00	-20.54
9	2.707	30.36	Average	10.41	0.08	46.00	-15.64
10	2.707	34.15	QP	10.41	0.08	56.00	-21.85
11	4.430	26.30	Average	10.39	0.10	46.00	-19.70
12	4.430	31.08	QP	10.39	0.10	56.00	-24.92

Level=Read Level + Lisn Factor + Cable Loss

Neutral Line:

Peak Scan:

Level (dB μ V)

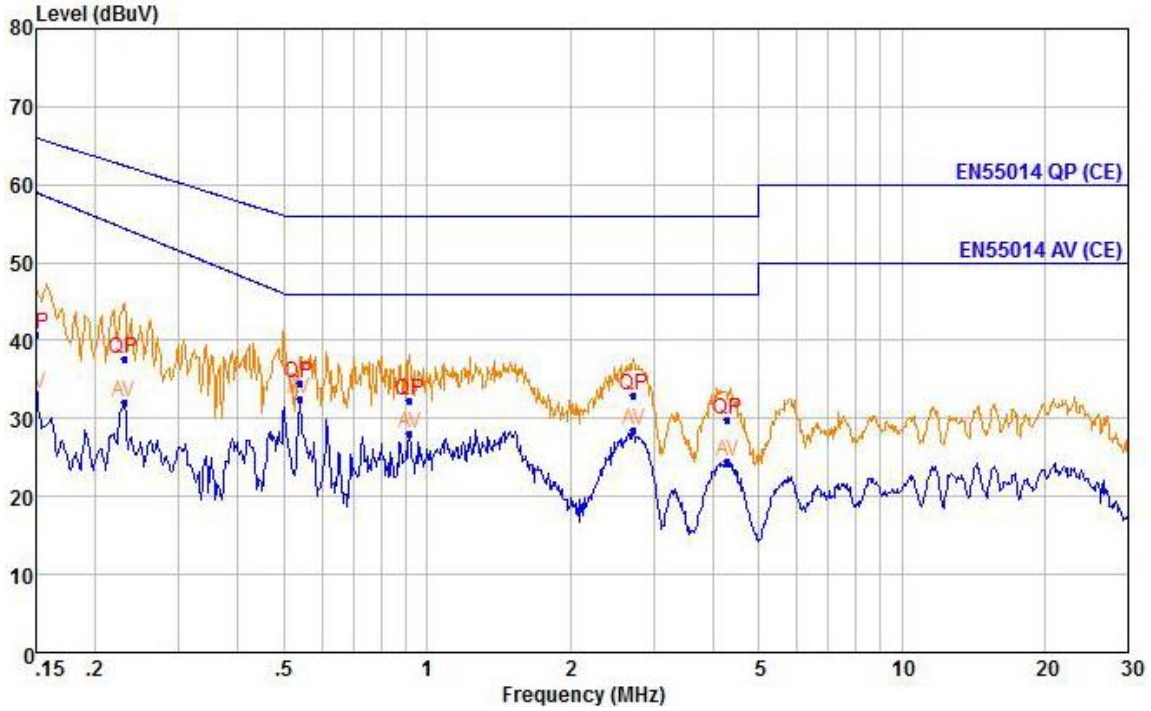


Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	32.08	Average	10.49	0.02	59.00	-26.92
2	0.150	41.84	QP	10.49	0.02	66.00	-24.16
3	0.234	28.27	Average	10.49	0.02	54.19	-25.92
4	0.234	38.10	QP	10.49	0.02	62.30	-24.20
5	0.510	28.37	Average	10.52	0.03	46.00	-17.63
6	0.510	31.10	QP	10.52	0.03	56.00	-24.90
7	1.535	26.62	Average	10.64	0.06	46.00	-19.38
8	1.535	29.84	QP	10.64	0.06	56.00	-26.16
9	5.836	28.66	Average	10.63	0.11	50.00	-21.34
10	5.836	34.43	QP	10.63	0.11	60.00	-25.57
11	11.870	24.99	Average	10.84	0.15	50.00	-25.01
12	11.870	30.11	QP	10.84	0.15	60.00	-29.89

Level=Read Level + Lisn Factor + Cable Loss

Model: JYH7Z-0500250-CE (AC 120V 60Hz)
Live Line:
Peak Scan:
Level (dBμV)



Quasi-peak and Average measurement

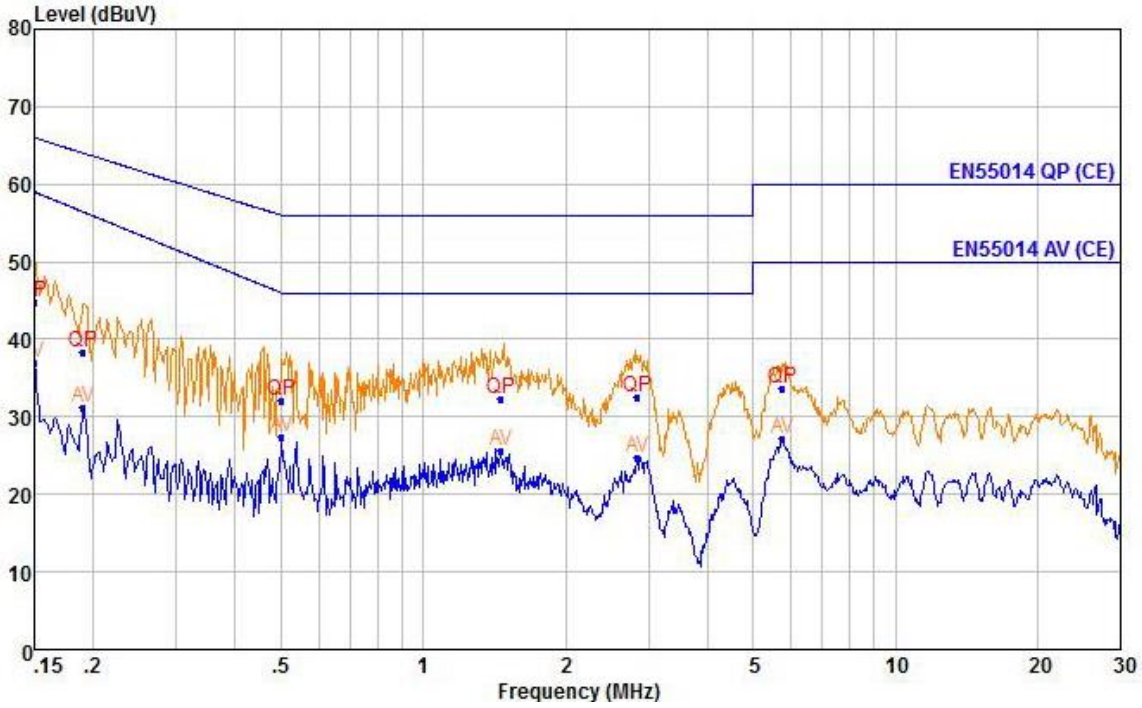
NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	33.28	Average	10.33	0.02	59.00	-25.72
2	0.150	40.86	QP	10.33	0.02	66.00	-25.14
3	0.230	32.07	Average	10.31	0.02	54.37	-22.30
4	0.230	37.76	QP	10.31	0.02	62.44	-24.68
5	0.538	32.47	Average	10.36	0.03	46.00	-13.53
6	0.538	34.52	QP	10.36	0.03	56.00	-21.48
7	0.918	28.16	Average	10.31	0.05	46.00	-17.84
8	0.918	32.30	QP	10.31	0.05	56.00	-23.70
9	2.721	28.47	Average	10.41	0.08	46.00	-17.53
10	2.721	32.99	QP	10.41	0.08	56.00	-23.01
11	4.292	24.53	Average	10.39	0.09	46.00	-21.47
12	4.292	29.92	QP	10.39	0.09	56.00	-26.08

Level=Read Level + Lisn Factor + Cable Loss

Neutral Line:

Peak Scan:

Level (dB μ V)

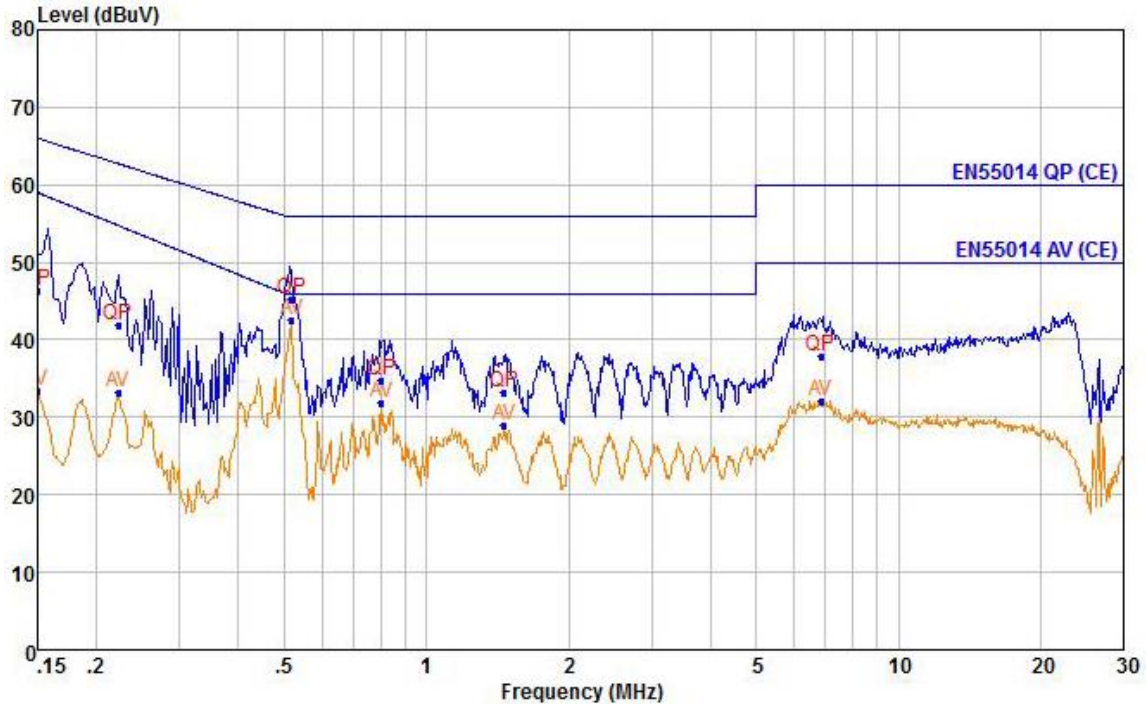


Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	36.97	Average	10.49	0.02	59.00	-22.03
2	0.150	44.71	QP	10.49	0.02	66.00	-21.29
3	0.190	31.19	Average	10.48	0.02	56.43	-25.24
4	0.190	38.39	QP	10.48	0.02	64.02	-25.63
5	0.502	27.30	Average	10.52	0.03	46.00	-18.70
6	0.502	32.09	QP	10.52	0.03	56.00	-23.91
7	1.464	25.58	Average	10.64	0.06	46.00	-20.42
8	1.464	32.31	QP	10.64	0.06	56.00	-23.69
9	2.839	24.77	Average	10.60	0.08	46.00	-21.23
10	2.839	32.45	QP	10.60	0.08	56.00	-23.55
11	5.774	27.08	Average	10.63	0.11	50.00	-22.92
12	5.774	33.61	QP	10.63	0.11	60.00	-26.39

Level=Read Level + Lisn Factor + Cable Loss

Model: JYH7Z-2700058-BE (AC 230V 50Hz)
Live Line:
Peak Scan:
Level (dBμV)



Quasi-peak and Average measurement

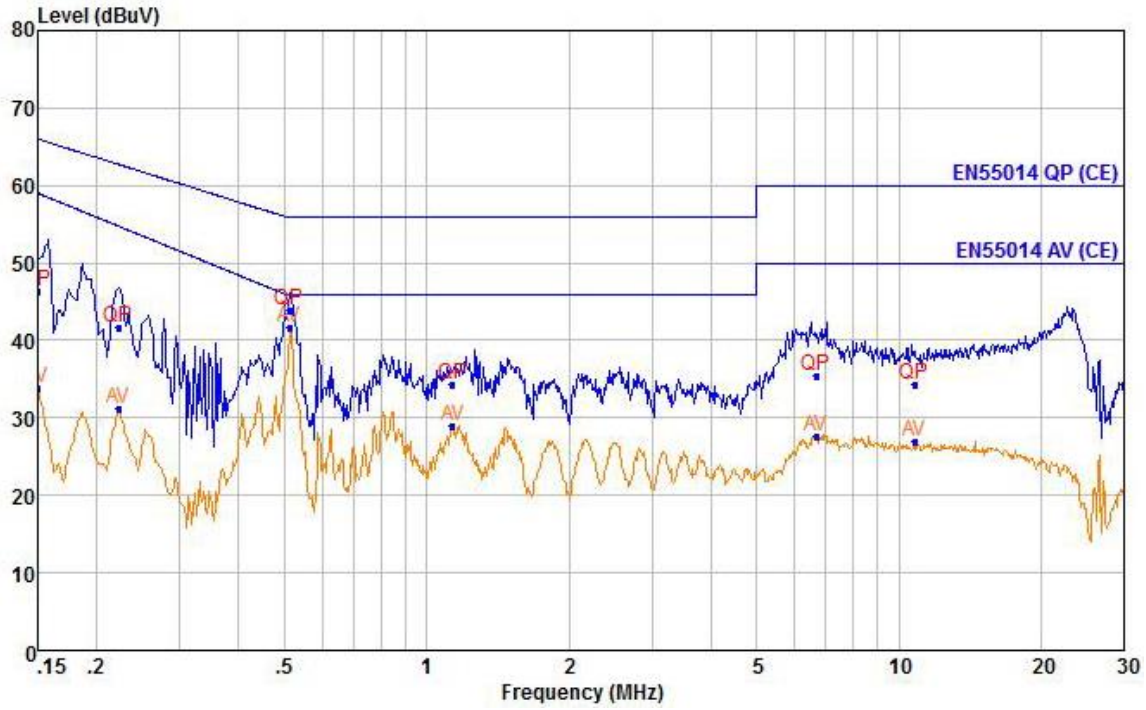
NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	33.51	Average	10.33	0.02	59.00	-25.49
2	0.150	46.32	QP	10.33	0.02	66.00	-19.68
3	0.222	33.11	Average	10.31	0.02	54.77	-21.66
4	0.222	42.00	QP	10.31	0.02	62.74	-20.74
5	0.518	42.49	Average	10.37	0.03	46.00	-3.51
6	0.518	45.34	QP	10.37	0.03	56.00	-10.66
7	0.804	31.79	Average	10.32	0.04	46.00	-14.21
8	0.804	34.74	QP	10.32	0.04	56.00	-21.26
9	1.464	29.01	Average	10.37	0.06	46.00	-16.99
10	1.464	33.13	QP	10.37	0.06	56.00	-22.87
11	6.841	32.20	Average	10.52	0.12	50.00	-17.80
12	6.841	37.82	QP	10.52	0.12	60.00	-22.18

Level=Read Level + Lisn Factor + Cable Loss

Neutral Line:

Peak Scan:

Level (dB μ V)



Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	33.86	Average	10.49	0.02	59.00	-25.14
2	0.150	46.44	QP	10.49	0.02	66.00	-19.56
3	0.222	31.13	Average	10.48	0.02	54.77	-23.64
4	0.222	41.65	QP	10.48	0.02	62.74	-21.09
5	0.513	41.58	Average	10.53	0.03	46.00	-4.42
6	0.513	43.80	QP	10.53	0.03	56.00	-12.20
7	1.135	29.00	Average	10.66	0.05	46.00	-17.00
8	1.135	34.38	QP	10.66	0.05	56.00	-21.62
9	6.698	27.70	Average	10.68	0.12	50.00	-22.30
10	6.698	35.35	QP	10.68	0.12	60.00	-24.65
11	10.790	26.91	Average	10.83	0.15	50.00	-23.09
12	10.790	34.36	QP	10.83	0.15	60.00	-25.64

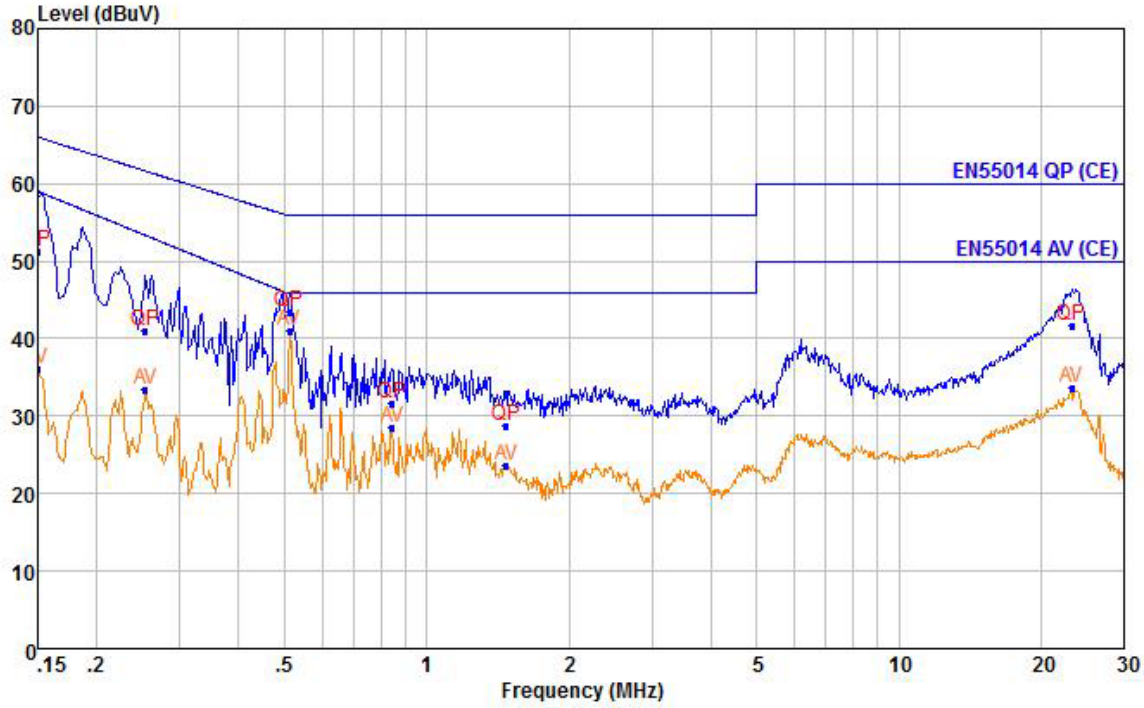
Level=Read Level + Lisn Factor + Cable Loss

Model: JYH7Z-2700058-BE (AC 120V 60Hz)

Live Line:

Peak Scan:

Level (dBμV)



Quasi-peak and Average measurement

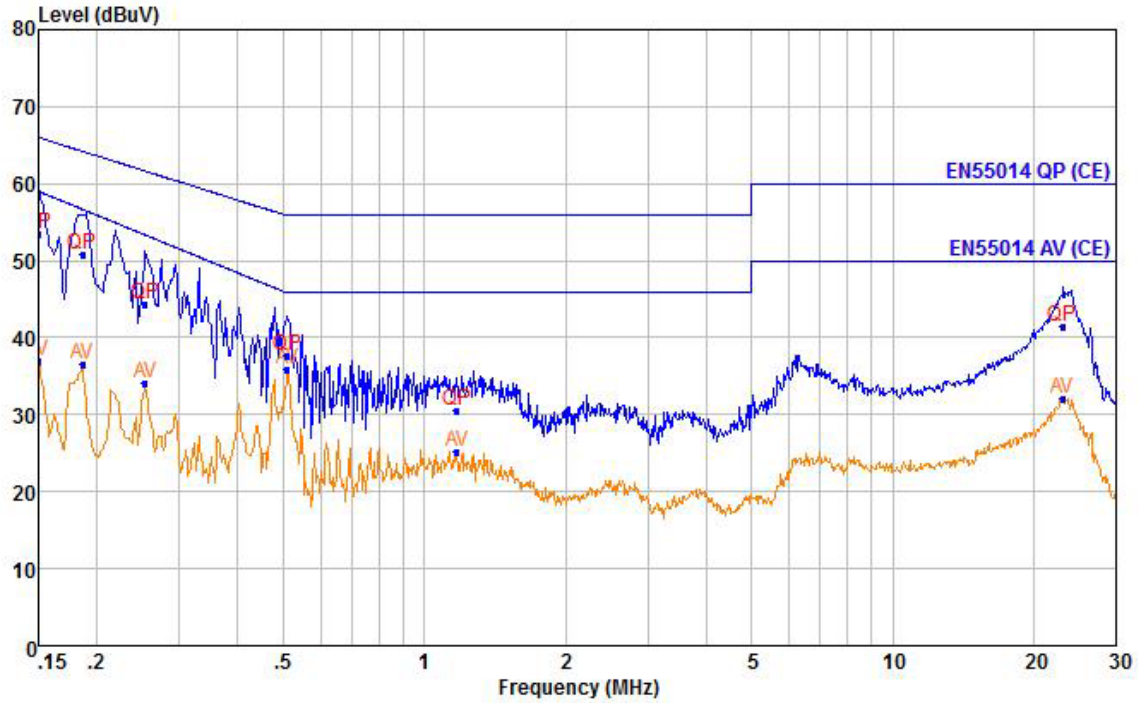
NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	36.06	Average	10.33	0.02	59.00	-22.94
2	0.150	51.32	QP	10.33	0.02	66.00	-14.68
3	0.253	33.34	Average	10.32	0.02	53.34	-20.00
4	0.253	40.95	QP	10.32	0.02	61.64	-20.69
5	0.513	40.90	Average	10.37	0.03	46.00	-5.10
6	0.513	43.36	QP	10.37	0.03	56.00	-12.64
7	0.844	28.44	Average	10.32	0.05	46.00	-17.56
8	0.844	31.74	QP	10.32	0.05	56.00	-24.26
9	1.472	23.61	Average	10.37	0.06	46.00	-22.39
10	1.472	28.85	QP	10.37	0.06	56.00	-27.15
11	23.263	33.55	Average	10.84	0.20	50.00	-16.45
12	23.263	41.63	QP	10.84	0.20	60.00	-18.37

Level=Read Level + Lisn Factor + Cable Loss

Neutral Line:

Peak Scan:

Level (dB μ V)



Quasi-peak and Average measurement

NO.	Freq MHz	Level dBuV	Remark	LISN Factor dB	Cable Loss dB	Limit Line dBuV	Margin dB
1	0.150	36.98	Average	10.49	0.02	59.00	-22.02
2	0.150	53.38	QP	10.49	0.02	66.00	-12.62
3	0.186	36.54	Average	10.48	0.02	56.65	-20.11
4	0.186	50.79	QP	10.48	0.02	64.20	-13.41
5	0.253	34.14	Average	10.49	0.02	53.34	-19.20
6	0.253	44.29	QP	10.49	0.02	61.64	-17.35
7	0.510	35.83	Average	10.52	0.03	46.00	-10.17
8	0.510	37.74	QP	10.52	0.03	56.00	-18.26
9	1.172	25.19	Average	10.66	0.05	46.00	-20.81
10	1.172	30.53	QP	10.66	0.05	56.00	-25.47
11	23.018	32.20	Average	10.95	0.20	50.00	-17.80
12	23.018	41.47	QP	10.95	0.20	60.00	-18.53

Level=Read Level + Lisn Factor + Cable Loss

2.2 Disturbance Power Test, 30MHz to 300MHz

Test Requirement:	EN 55014-1
Test Method:	EN 55014-1
Test Voltage:	230V AC, 50Hz and 120V AC, 60Hz
Test Date:	2021-06-08~2021-06-24
Frequency Range:	30MHz to 300MHz
Detector:	Peak for pre-scan
	Quasi-Peak and Average at frequency with maximum peak (120 kHz resolution bandwidth)
Uncertainty:	2Uc（V）= 3.2dB

Disturbance power limits for the frequency range 30 MHz to 300 MHz

Frequency range MHz	**At mains terminals** (dB (pW))	
	Quasi-peak	Average
30 to 300	45 to 55	35 to 45
Note1: The limit increases linearly with the frequency in the range 30 MHz to 300 MHz.		

Table 2b, Columns 2&3 for household and similar appliances

Margin when performing disturbance power measurement in the frequency range 30 MHz to 300MHz

Frequency range MHz	**Margin** (dB)	
	Quasi-peak	Average
200 to 300	0 to 10 dB	-
NOTE 1: Appliances are deemed to comply in the frequency range from 300 MHz to 1 000 MHz if both of the following conditions (1) and 2)) are fulfilled: 1) all emission readings from the equipment under test are lower than the applicable limits (Table 2a) reduced by the margin (Table 2b); 2) the maximum clock frequency is less than 30 MHz. NOTE 2: The measured result at a particular frequency shall be less than the relevant limit minus the corresponding margin (at that frequency).		

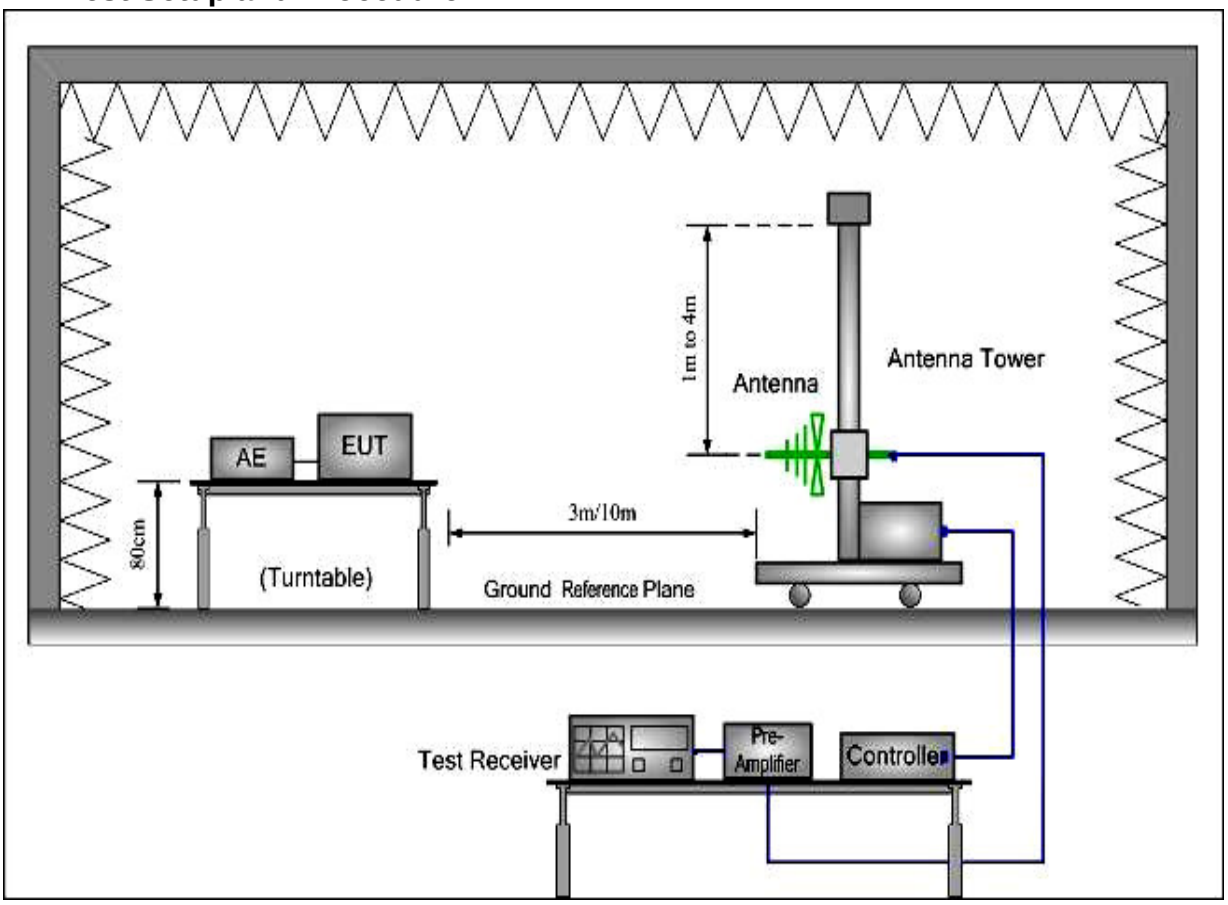
2.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 46 % RH Atmospheric Pressure: 101 kPa

EUT Operation: Pre-test the EUT in On Mode with full load and half load to find the worse case, Compliance tests the EUT in On Mode with full load as the worse case was found.

2.2.2 Test Setup and Procedure



1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. Biconical and log periodic antenna was used for the frequency range from 30MHz to 1GHz
3. The EUT was connected to nominal power supply through a mains power outlet which was bonded to the ground reference plane; The mains cables were draped to the ground reference plane. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emissions spectrum plots of the EUT.
5. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

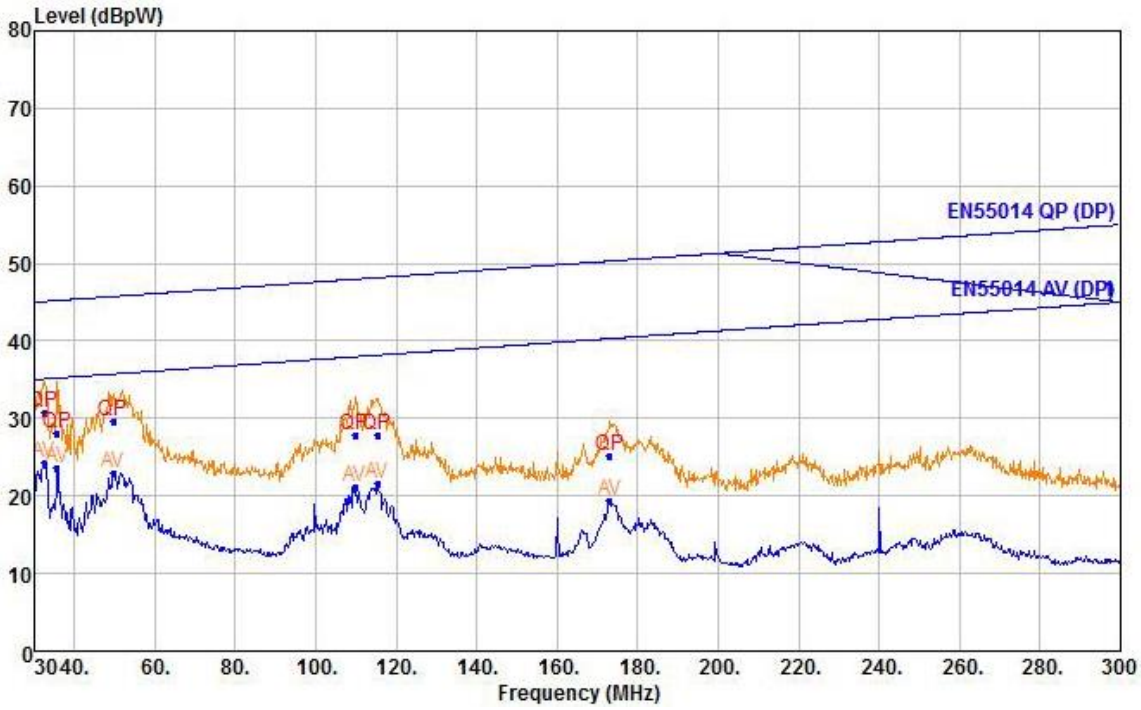
2.2.3 Measurement Data

Model: JYH7Z-0500250-AE (AC 230V 50Hz)

AC Line:

Peak Scan:

Level (dBpW)



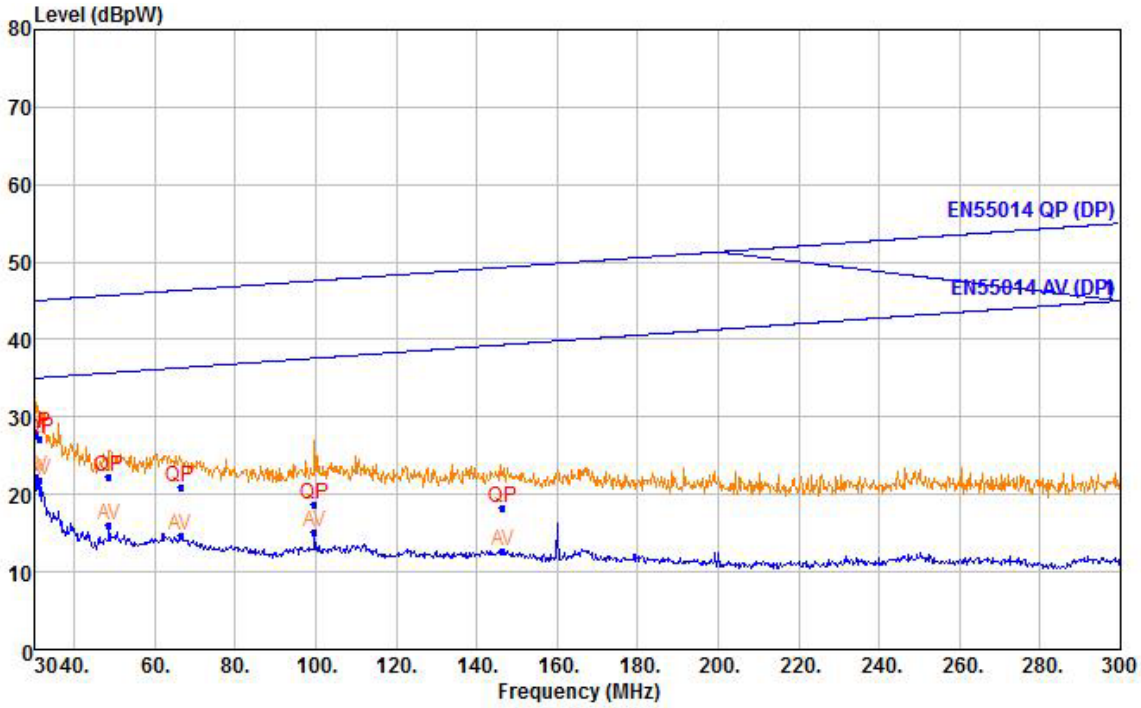
Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	32.430	24.37	Average	6.60	35.10	-10.73
2	32.430	30.72	QP	6.60	45.10	-14.38
3	35.670	23.55	Average	6.17	35.22	-11.67
4	35.670	28.00	QP	6.17	45.22	-17.22
5	49.710	22.94	Average	5.03	35.74	-12.80
6	49.710	29.53	QP	5.03	45.74	-16.21
7	109.650	21.06	Average	4.41	37.96	-16.90
8	109.650	27.78	QP	4.41	47.96	-20.18
9	115.320	21.55	Average	3.89	38.17	-16.62
10	115.320	27.96	QP	3.89	48.17	-20.21
11	173.100	19.47	Average	3.44	40.31	-20.84
12	173.100	25.11	QP	3.44	50.31	-25.20

DC Line:

Peak Scan:

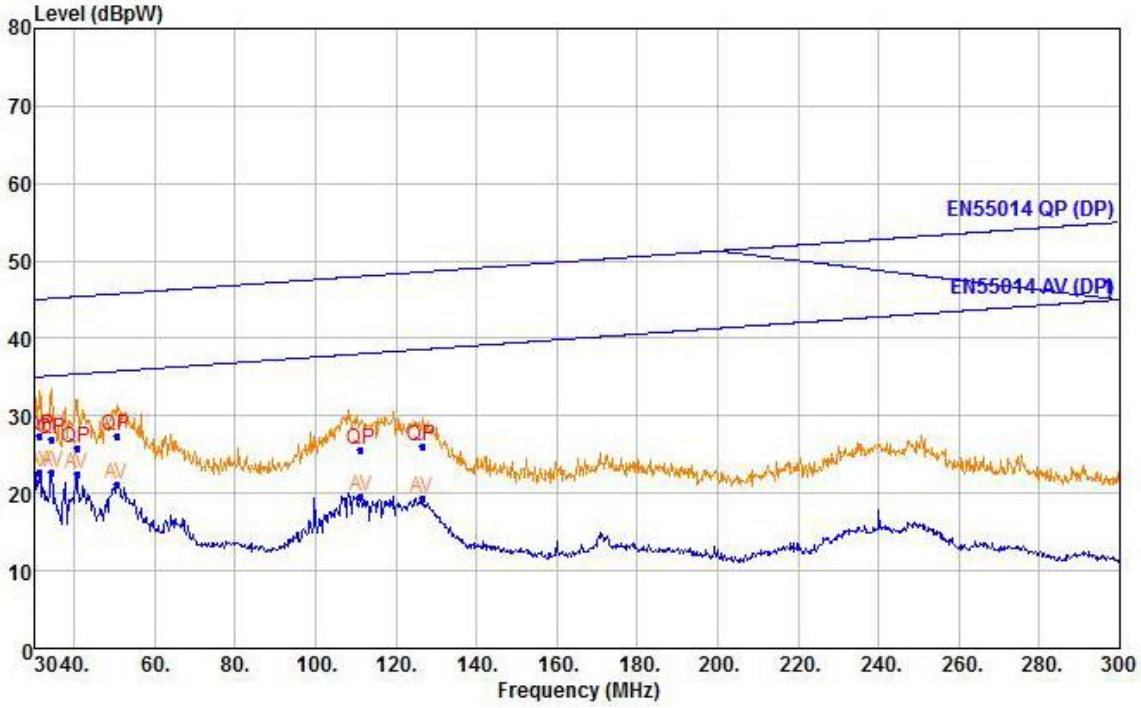
Level (dBpW)



Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	30.540	22.27	Average	6.83	35.03	-12.76
2	30.540	27.75	QP	6.83	45.03	-17.28
3	31.350	21.82	Average	6.73	35.06	-13.24
4	31.350	27.29	QP	6.73	45.06	-17.77
5	48.630	16.13	Average	4.78	35.70	-19.57
6	48.630	22.38	QP	4.78	45.70	-23.32
7	66.450	14.65	Average	5.34	36.36	-21.71
8	66.450	20.87	QP	5.34	46.36	-25.49
9	99.660	15.13	Average	4.39	37.59	-22.46
10	99.660	18.66	QP	4.39	47.59	-28.93
11	146.370	12.80	Average	3.84	39.32	-26.52
12	146.370	18.36	QP	3.84	49.32	-30.96

Model: JYH7Z-0500250-AE (AC 120V 60Hz)
AC Line:
Peak Scan:
Level (dBpW)



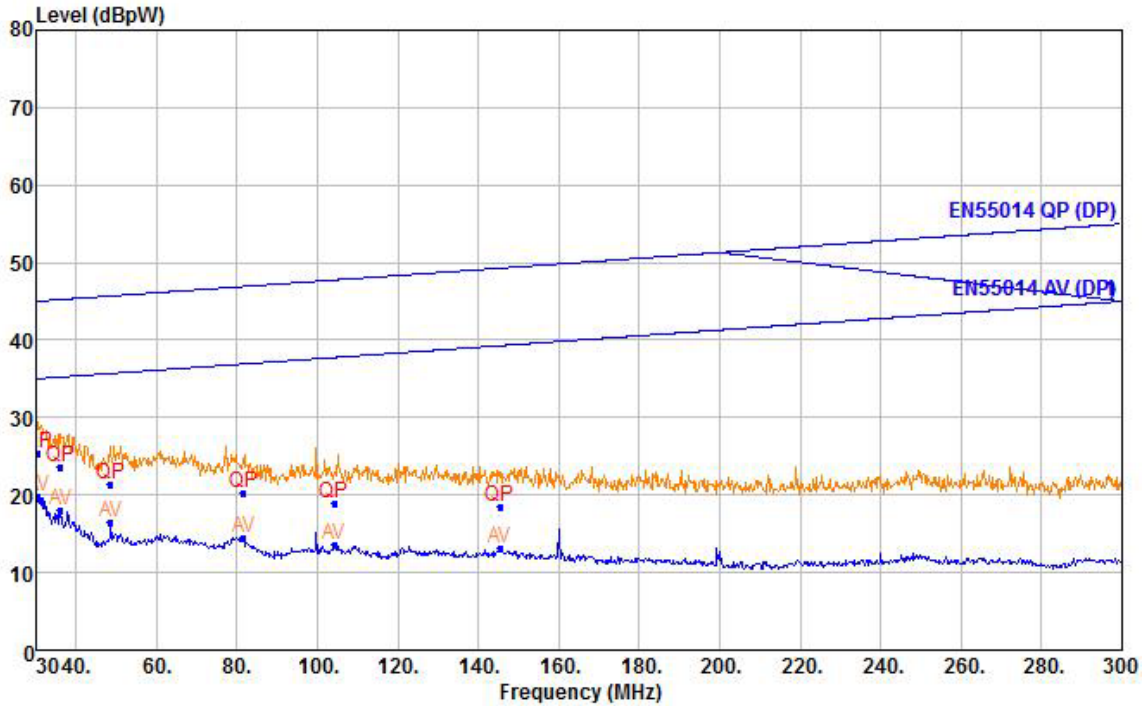
Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	31.350	22.69	Average	6.73	35.06	-12.37
2	31.350	27.52	QP	6.73	45.06	-17.54
3	34.320	22.75	Average	6.38	35.17	-12.42
4	34.320	27.00	QP	6.38	45.17	-18.17
5	40.530	22.58	Average	5.23	35.40	-12.82
6	40.530	25.92	QP	5.23	45.40	-19.48
7	50.520	21.16	Average	5.05	35.77	-14.61
8	50.520	27.40	QP	5.05	45.77	-18.37
9	111.270	19.51	Average	4.27	38.02	-18.51
10	111.270	25.72	QP	4.27	48.02	-22.30
11	126.390	19.36	Average	3.73	38.58	-19.22
12	126.390	26.04	QP	3.73	48.58	-22.54

DC Line:

Peak Scan:

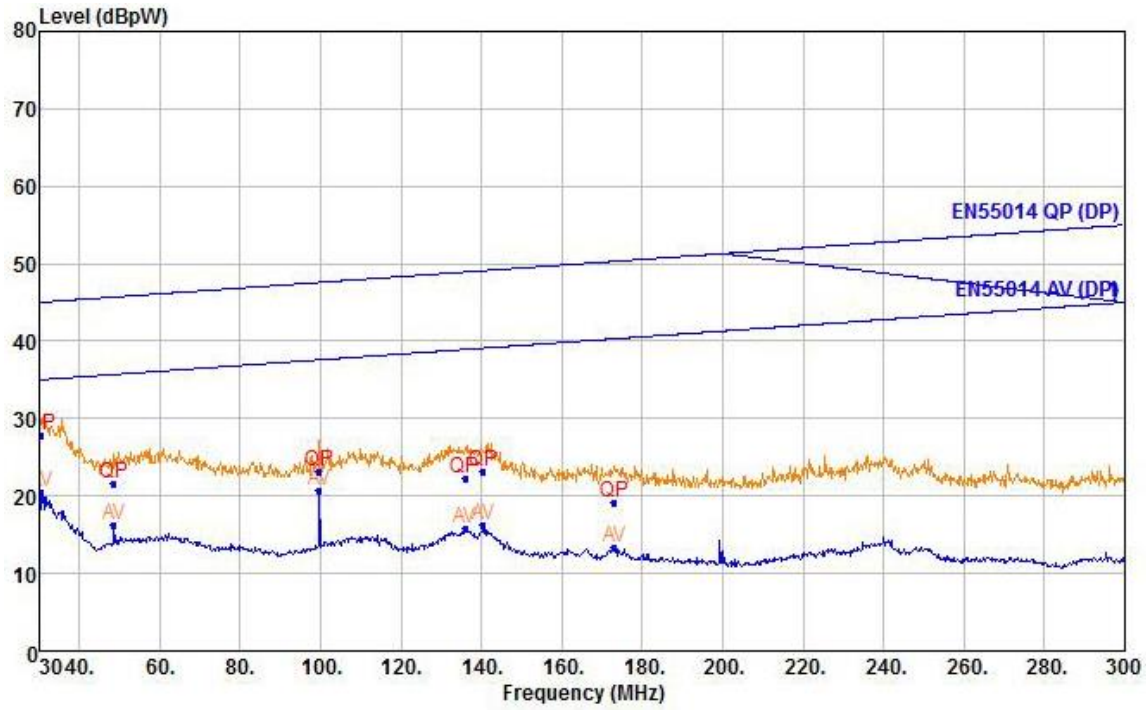
Level (dBpW)



Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	30.540	19.80	Average	6.83	35.03	-15.23
2	30.540	25.34	QP	6.83	45.03	-19.69
3	36.210	18.03	Average	6.07	35.24	-17.21
4	36.210	23.70	QP	6.07	45.24	-21.54
5	48.630	16.43	Average	4.78	35.70	-19.27
6	48.630	21.35	QP	4.78	45.70	-24.35
7	81.570	14.58	Average	4.60	36.92	-22.34
8	81.570	20.30	QP	4.60	46.92	-26.62
9	104.250	13.62	Average	4.49	37.76	-24.14
10	104.250	18.97	QP	4.49	47.76	-28.79
11	145.290	13.19	Average	3.89	39.28	-26.09
12	145.290	18.46	QP	3.89	49.28	-30.82

Model: JYH7Z-0500250-CE (AC 230V 50Hz)
AC Line:
Peak Scan:
Level (dBpW)



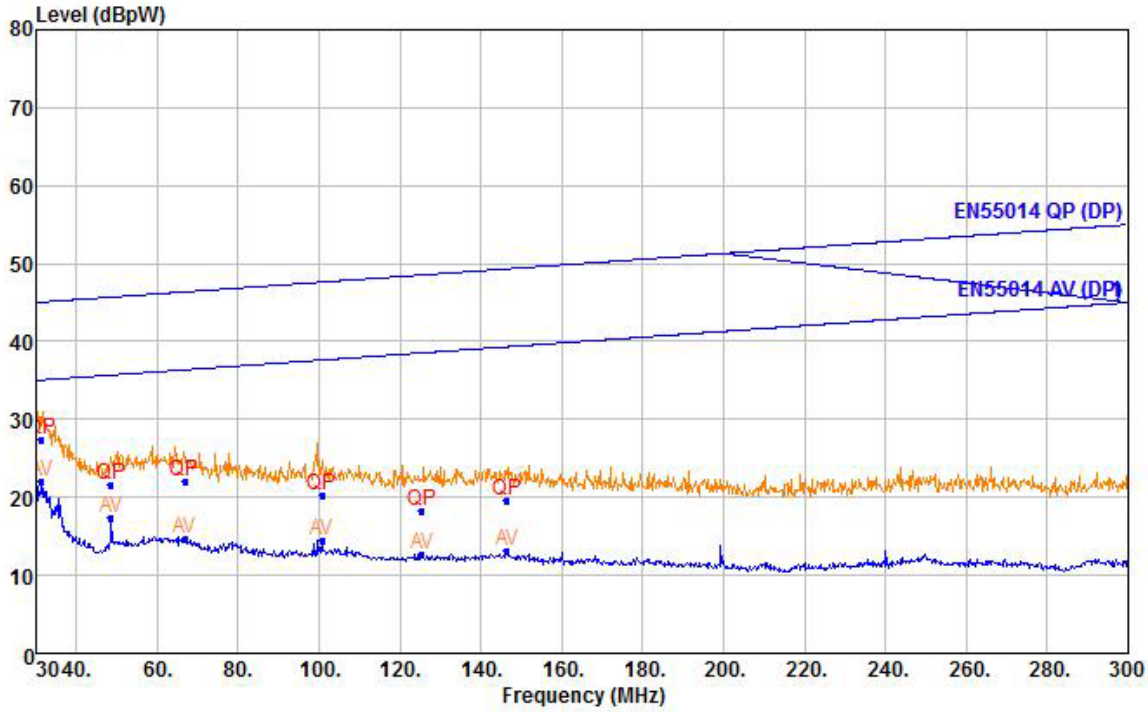
Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	30.540	20.47	Average	6.83	35.03	-14.56
2	30.540	27.82	QP	6.83	45.03	-17.21
3	48.630	16.22	Average	4.78	35.70	-19.48
4	48.630	21.61	QP	4.78	45.70	-24.09
5	99.660	20.66	Average	4.39	37.59	-16.93
6	99.660	23.21	QP	4.39	47.59	-24.38
7	135.840	15.89	Average	3.62	38.93	-23.04
8	135.840	22.22	QP	3.62	48.93	-26.71
9	140.430	16.20	Average	3.72	39.10	-22.90
10	140.430	23.12	QP	3.72	49.10	-25.98
11	173.100	13.30	Average	3.44	40.31	-27.01
12	173.100	19.25	QP	3.44	50.31	-31.06

DC Line:

Peak Scan:

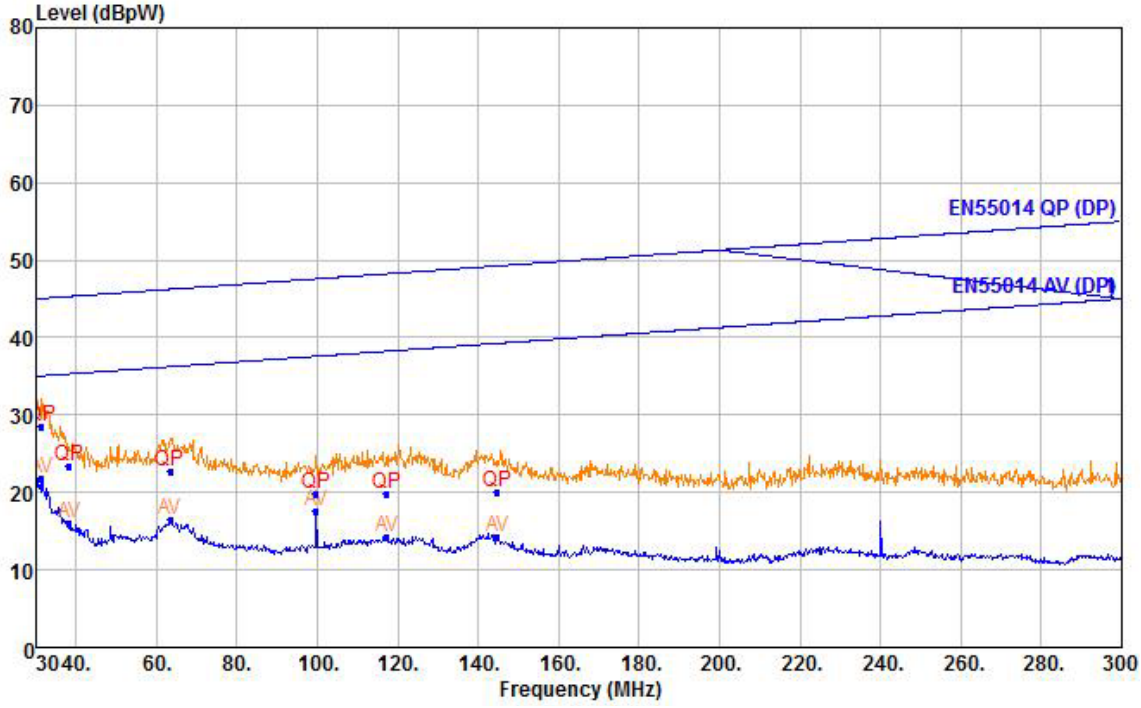
Level (dBpW)



Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	31.350	22.00	Average	6.73	35.06	-13.06
2	31.350	27.48	QP	6.73	45.06	-17.58
3	48.630	17.39	Average	4.78	35.70	-18.31
4	48.630	21.54	QP	4.78	45.70	-24.16
5	66.720	14.68	Average	5.33	36.37	-21.69
6	66.720	22.08	QP	5.33	46.37	-24.29
7	100.740	14.58	Average	4.42	37.63	-23.05
8	100.740	20.36	QP	4.42	47.63	-27.27
9	125.310	12.71	Average	3.71	38.54	-25.83
10	125.310	18.19	QP	3.71	48.54	-30.35
11	146.370	13.17	Average	3.84	39.32	-26.15
12	146.370	19.64	QP	3.84	49.32	-29.68

Model: JYH7Z-0500250-CE (AC 120V 60Hz)
AC Line:
Peak Scan:
Level (dBpW)



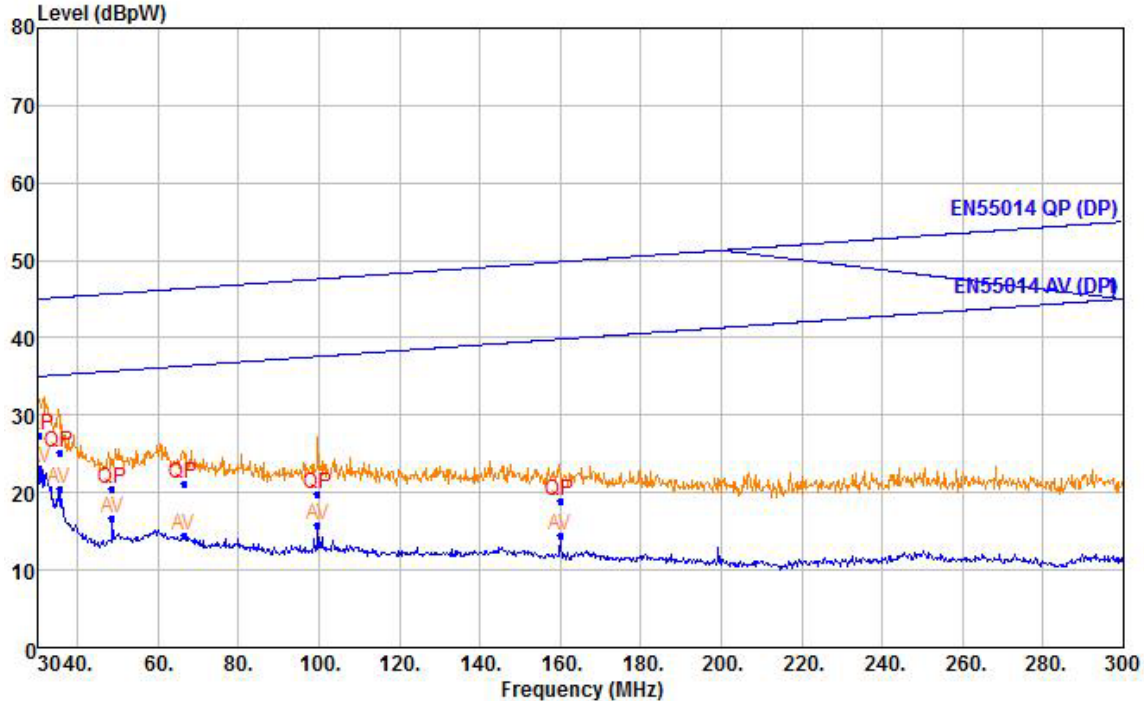
Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	31.350	21.88	Average	6.73	35.06	-13.18
2	31.350	28.56	QP	6.73	45.06	-16.50
3	38.370	15.97	Average	5.68	35.32	-19.35
4	38.370	23.37	QP	5.68	45.32	-21.95
5	63.480	16.52	Average	5.40	36.25	-19.73
6	63.480	22.64	QP	5.40	46.25	-23.61
7	99.660	17.51	Average	4.39	37.59	-20.08
8	99.660	19.79	QP	4.39	47.59	-27.80
9	117.210	14.35	Average	3.81	38.24	-23.89
10	117.210	19.73	QP	3.81	48.24	-28.51
11	144.750	14.20	Average	3.89	39.26	-25.06
12	144.750	20.16	QP	3.89	49.26	-29.10

DC Line:

Peak Scan:

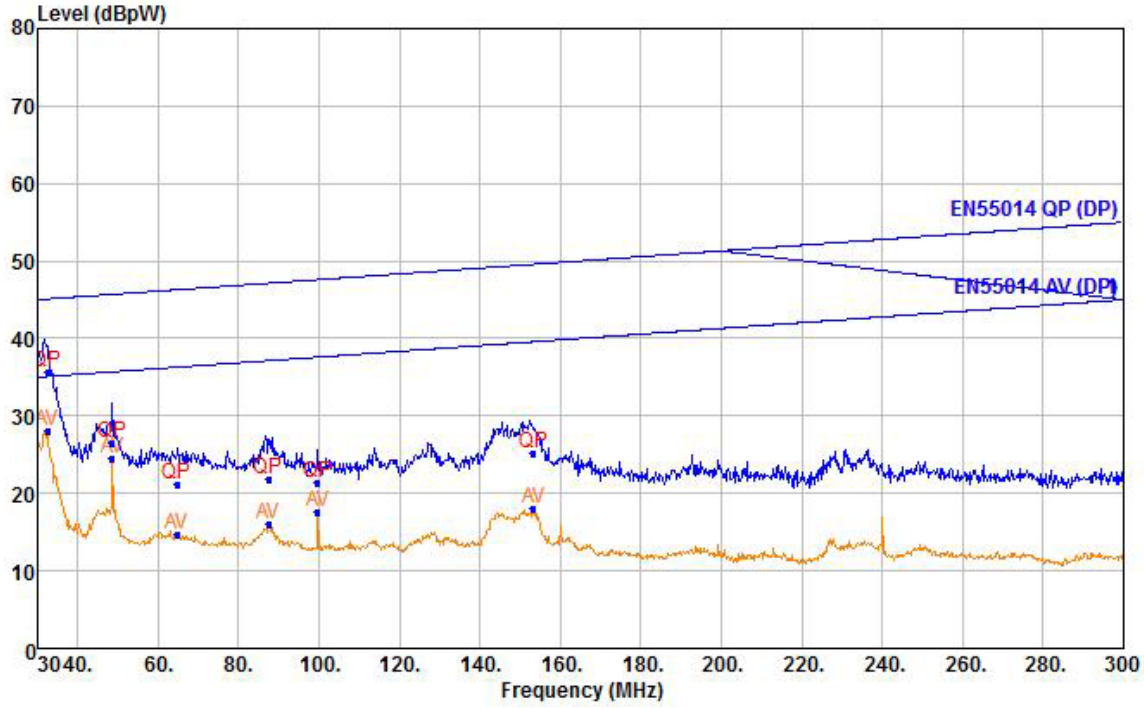
Level (dBpW)



Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	30.540	23.11	Average	6.83	35.03	-11.92
2	30.540	27.49	QP	6.83	45.03	-17.54
3	35.400	20.60	Average	6.22	35.21	-14.61
4	35.400	25.28	QP	6.22	45.21	-19.93
5	48.630	16.73	Average	4.78	35.70	-18.97
6	48.630	20.42	QP	4.78	45.70	-25.28
7	66.450	14.52	Average	5.34	36.36	-21.84
8	66.450	21.15	QP	5.34	46.36	-25.21
9	99.660	15.89	Average	4.39	37.59	-21.70
10	99.660	19.84	QP	4.39	47.59	-27.75
11	159.870	14.57	Average	3.40	39.82	-25.25
12	159.870	18.87	QP	3.40	49.82	-30.95

Model: JYH7Z-2700058-BE (AC 230V 50Hz)
AC Line:
Peak Scan:
Level (dBpW)



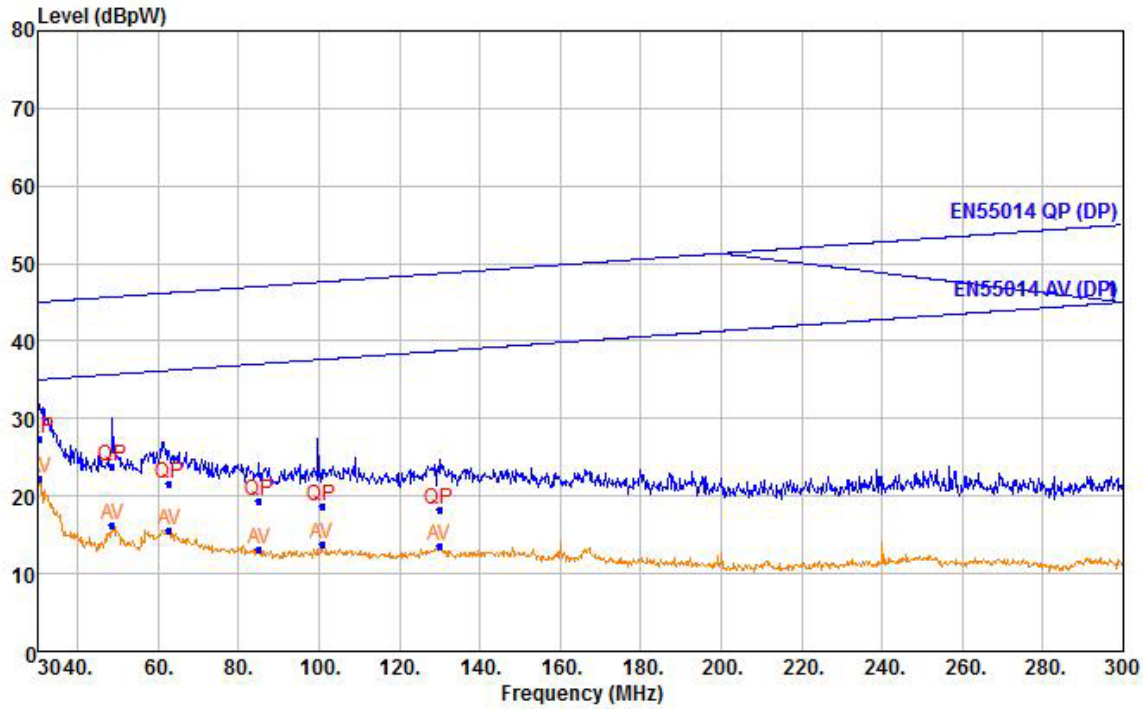
Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	32.430	28.02	Average	6.60	35.10	-7.08
2	32.430	35.72	QP	6.60	45.10	-9.38
3	48.630	24.52	Average	4.78	35.70	-11.18
4	48.630	26.58	QP	4.78	45.70	-19.12
5	64.560	14.79	Average	5.40	36.29	-21.50
6	64.560	21.13	QP	5.40	46.29	-25.16
7	87.510	16.08	Average	4.15	37.14	-21.06
8	87.510	21.79	QP	4.15	47.14	-25.35
9	99.660	17.71	Average	4.39	37.59	-19.88
10	99.660	21.45	QP	4.39	47.59	-26.14
11	153.390	17.98	Average	3.60	39.58	-21.60
12	153.390	25.18	QP	3.60	49.58	-24.40

DC Line:

Peak Scan:

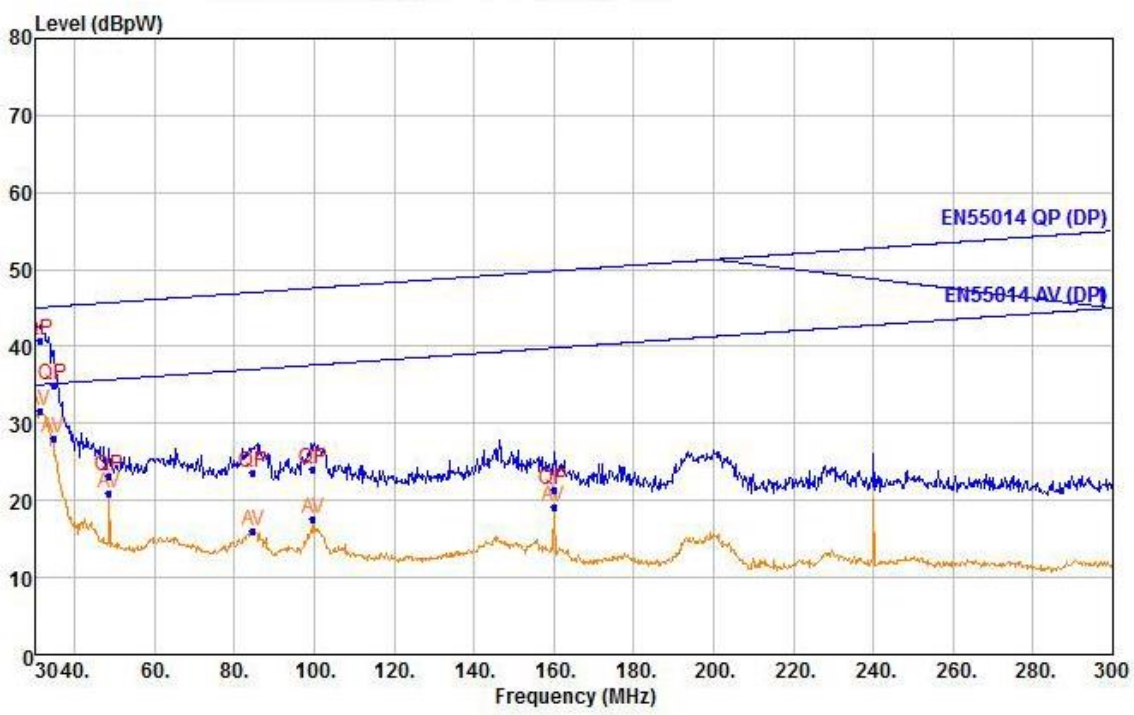
Level (dBpW)



Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	30.540	22.18	Average	6.83	35.03	-12.85
2	30.540	27.43	QP	6.83	45.03	-17.60
3	48.630	16.32	Average	4.78	35.70	-19.38
4	48.630	23.74	QP	4.78	45.70	-21.96
5	62.670	15.63	Average	5.40	36.22	-20.59
6	62.670	21.55	QP	5.40	46.22	-24.67
7	85.080	13.13	Average	4.39	37.05	-23.92
8	85.080	19.34	QP	4.39	47.05	-27.71
9	100.740	13.71	Average	4.42	37.63	-23.92
10	100.740	18.73	QP	4.42	47.63	-28.90
11	129.900	13.60	Average	3.80	38.71	-25.11
12	129.900	18.24	QP	3.80	48.71	-30.47

Model: JYH7Z-2700058-BE (AC 120V 60Hz)
AC Line:
Peak Scan:
Level (dBpW)



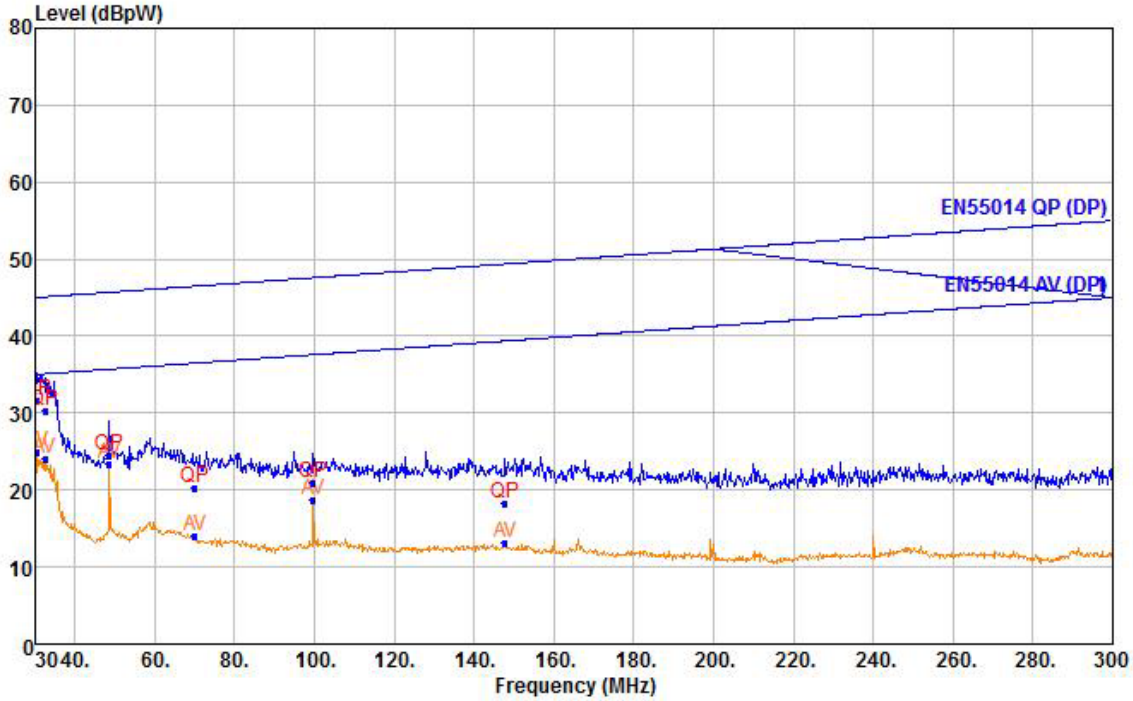
Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	31.080	31.67	Average	6.76	35.05	-3.38
2	31.080	40.81	QP	6.76	45.05	-4.24
3	34.590	28.03	Average	6.35	35.18	-7.15
4	34.590	34.97	QP	6.35	45.18	-10.21
5	48.630	21.06	Average	4.78	35.70	-14.64
6	48.630	23.27	QP	4.78	45.70	-22.43
7	84.540	16.09	Average	4.43	37.03	-20.94
8	84.540	23.72	QP	4.43	47.03	-23.31
9	99.660	17.53	Average	4.39	37.59	-20.06
10	99.660	24.05	QP	4.39	47.59	-23.54
11	159.870	19.14	Average	3.40	39.82	-20.68
12	159.870	21.33	QP	3.40	49.82	-28.49

DC Line:

Peak Scan:

Level (dBpW)



Quasi-peak measurement

NO.	Freq MHz	Level dBpW	Remark	Clamp Factor dB	Limit Line dBpW	Margin dB
1	30.540	25.01	Average	6.83	35.03	-10.02
2	30.540	31.72	QP	6.83	45.03	-13.31
3	32.430	24.00	Average	6.60	35.10	-11.10
4	32.430	30.37	QP	6.60	45.10	-14.73
5	48.630	23.40	Average	4.78	35.70	-12.30
6	48.630	24.60	QP	4.78	45.70	-21.10
7	69.960	14.06	Average	5.20	36.49	-22.43
8	69.960	20.23	QP	5.20	46.49	-26.26
9	99.660	18.61	Average	4.39	37.59	-18.98
10	99.660	20.99	QP	4.39	47.59	-26.60
11	147.720	13.14	Average	3.79	39.37	-26.23
12	147.720	18.37	QP	3.79	49.37	-31.00

2.3 Harmonics Test Results

Test Requirement:	EN IEC 61000-3-2:2019
Frequency Range:	100Hz to 2kHz
Measurement Time:	3 min
Class / Limit:	Class A
Test Date:	**N/A: See Remark Below**

Remark:

There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2

For further details, please refer to Clause 6, Note1 of EN 61000-3-2 which states:

"For the following categories of equipment limits are not specified in this edition of the standard.

Note 1: Equipment with a rated power of 75W or less, other than lighting equipment."

2.4 Flicker Test Results

Test Requirement:	EN 61000-3-3
Test Method:	EN 61000-3-3
Test Voltage:	AC 230V, 50Hz
Test Date:	2021-06-24
Measurement Time	10 mins
Class / Limit:	Clause 5 of EN 61000-3-3

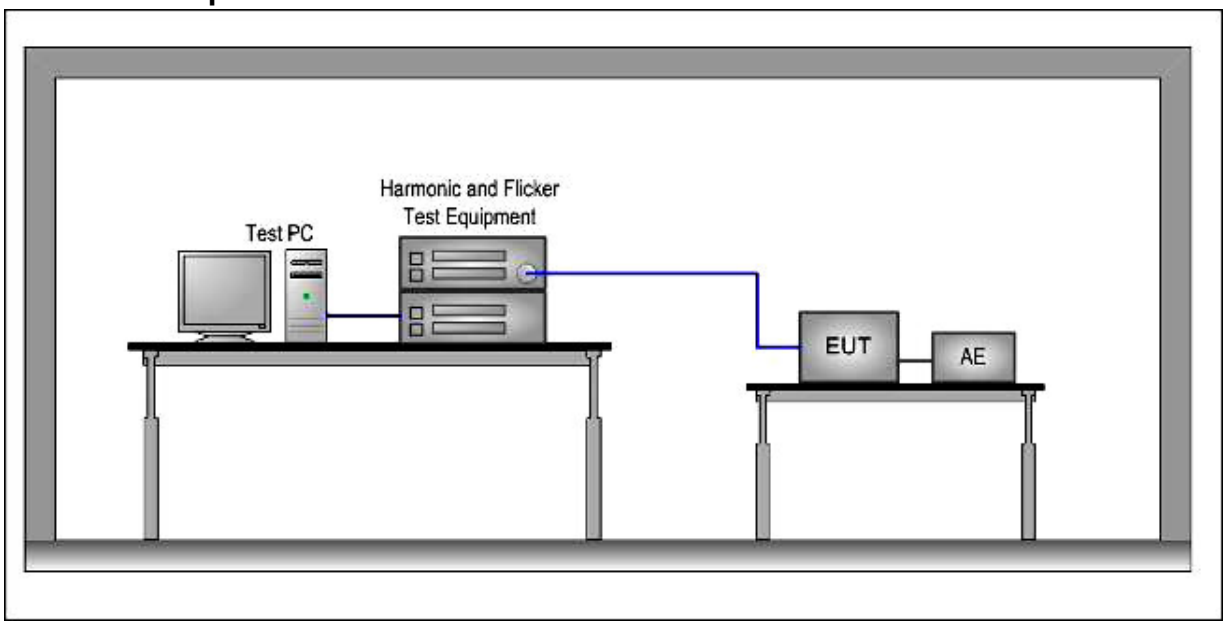
2.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 44 % RH Atmospheric Pressure: 101 kPa

EUT Operation: Pre-test the EUT in On Mode with full load and half load to find the worse case, Compliance test the EUT in On Mode with full load as the worse case was found.

2.4.2 Test Setup and Procedure



1. The test supply voltage (open-circuit voltage) was the rated voltage of the EUT. The test voltage was maintained within ±2 % of the nominal value. The frequency was 50 Hz ±0.5 %.
2. The voltage fluctuations and flicker were measured at the supply terminals of the EUT.
3. The observation period, Tp, for the assessment of flicker values by flicker measurement, flicker simulation, or analytical method was:

¡ ª —for Pst, Tp = 10 min;

¡ ª —for Plt, Tp = 2 h.

The observation period included that part of the whole operation cycle in which the EUT produces the most unfavorable sequence of voltage changes.

2.4.3 Measurement Data

For JYH7Z-0500250-AE

Maximum Flicker results			
	EUT values	**Limit**	**Result**
Pst	0.01	1.00	PASS
dc [%]	0.00	3.30	PASS
dmax [%]	0.00	4.00	PASS
dt [s]	0.00	0.50	PASS

For JYH7Z-0500250-CE

Maximum Flicker results			
	EUT values	**Limit**	**Result**
Pst	0.01	1.00	PASS
dc [%]	0.00	3.30	PASS
dmax [%]	0.00	4.00	PASS
dt [s]	0.00	0.50	PASS

For JYH7Z-2700058-BE

Maximum Flicker results			
	EUT values	**Limit**	**Result**
Pst	0.01	1.00	PASS
dc [%]	-0.02	3.30	PASS
dmax [%]	-0.45	4.00	PASS
dt [s]	0.00	0.50	PASS

Section 3 Immunity Test Results

3.1 Performance Criteria Description in Clause 6 of EN 55014-2

Criterion A:	The apparatus shall continue to operate as intended during the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.
Criterion B:	The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation and from what the user may reasonably expect from the apparatus if used as intended.
Criterion C:	Temporary loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

3.2 ESD

Test Requirement:	EN 55014-2	
Test Method:	EN 61000-4-2	
Test Voltage:	AC 230V, 50Hz	
Test Date:	2021-06-24	
Criterion Required:	B	
Discharge Impedance:	330Ω / 150 pF	
Discharge Voltage:	Air Discharge:	8 kV
	VCP, HCP:	4 kV
	Contact Discharge:	4 kV
Polarity:	Positive & Negative	
Number of Discharge:	Minimum 10 times at each test point	
Discharge Mode:	Single Discharge	
Discharge Period:	1 second minimum	

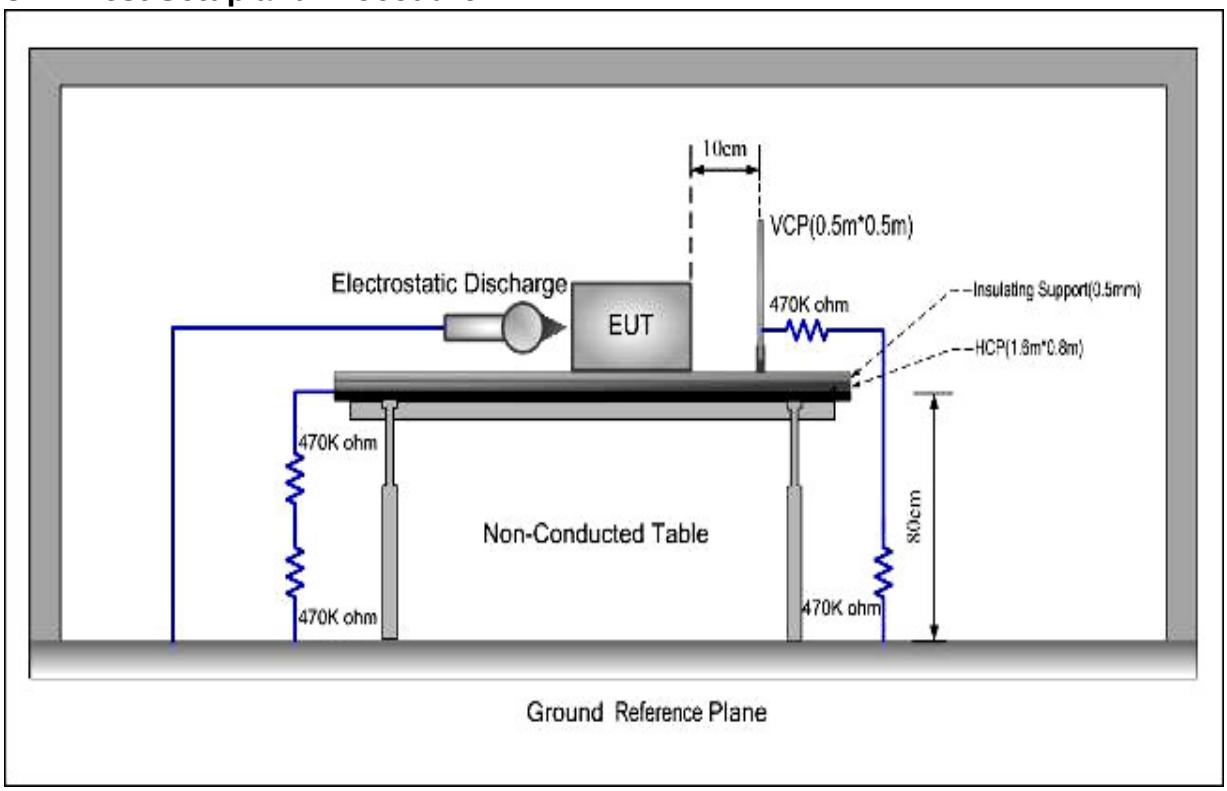
3.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 43% RH Atmospheric Pressure: 101 kPa

EUT Operation: Pre-test the EUT in On Mode with full load and half load to find the worse case, Compliance test the EUT in On Mode with full load as the worse case was found.

3.2.2 Test Setup and Procedure



1. Contact discharges to the conductive surfaces and to coupling planes:

   The EUT was exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points (a minimum of 50 discharges at each point). One of the test points was subjected to at least 50 indirect discharges (contact) to the centre of the front edge of the horizontal coupling plane. The remaining three test points shall each receive at least 50 direct contact discharges. If no direct contact test points were available, then at least 200 indirect discharges were applied in the indirect mode. Tests were performed at a maximum repetition rate of one discharge per second.

   Air discharge at slots and apertures, and insulating surfaces:

   On those parts of the EUT where it was not possible to perform contact discharge testing, the equipment was investigated to identify user accessible points where breakdown may occur. This investigation was restricted to those areas normally handled by the user. A minimum of 10 single air discharges were applied to the selected test point for each such area.

   The application of electrostatic discharges to the contacts of open connectors was not required by this standard.

2. The EUT was put on a 0.8m high wooden table for table-top equipment or 0.1m high for floor standing equipment standing on the ground reference plane (GRP).
3. A horizontal coupling plane (HCP) 1.6m by 0.8m in size was placed on the table, and the EUT with its cables were isolated from the HCP by an insulating support thick than 0.5mm. The VCP 0.5m by 0.5m in size while HCP were constructed from the same material type and thickness as that of the GRP, and connected to the GRP via a 470k Ω resistor at each end. The distance between EUT and

any of the other metallic surface excepted the GRP, HCP and VCP was greater than 1m.

4. During the contact discharges, the tip of the discharge electrode was touched the EUT before the discharge switch is operated. During the air discharges, the round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT.
5. After each discharge, the ESD generator was removed from the EUT, the generator was then retriggered for a new single discharge. For ungrounded product, a discharge cable with two resistances was used after each discharge to remove remnant electrostatic voltage. 10 times of each polarity single discharge were applied to HCP and VCP.

3.2.3 Test Results

For JYH7Z-0500250-AE, JYH7Z-0500250-CE, JYH7Z-2700058-BE

- **Direct Application Test Results**

Observations: Test Point: 1. All insulated enclosure & seams.
2. All accessible metal parts of the enclosure with discharge resistor used.

Direct Application			Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Contact Discharge**	**Air Discharge**
8	+/-	1	N/A	A
4	+/-	2	A	N/A

- **Indirect Application Test Results**

Observations: Test Point: 1. All sides.

Indirect Application			Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Horizontal Coupling**	**Vertical Coupling**
4	+/-	1	A	A

Remarks:

A: No degradation in the performance of the EUT was observed.

N/A: Not Applicable (not required by Standard).

The EUT does meet the Electric-Static Discharge requirements of Standard.

3.3 Electrical Fast Transients (EFT)

Test Requirement:	EN 55014-2
Test Method:	EN 61000-4-4
Test Voltage:	AC 230V, 50Hz
Test Date:	2021-06-24
Criterion Required:	B
Test Level:	1.0kV on AC
Polarity:	Positive & Negative
Repetition Frequency:	5kHz
Burst Duration:	300ms
Test Duration:	2 minute per level & polarity

3.3.1 E.U.T. Operation

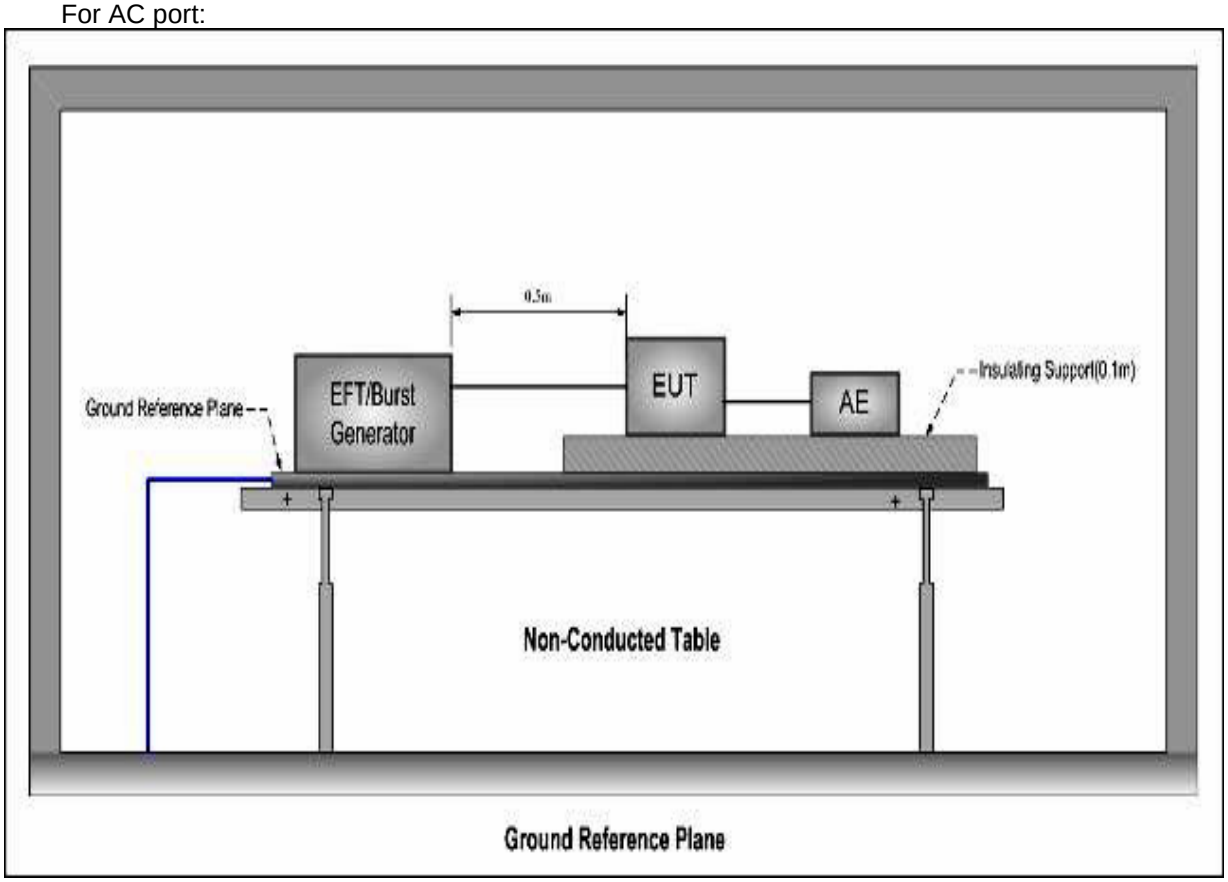
Operating Environment:

Temperature: 23°C Humidity: 45 % RH Atmospheric Pressure: 101 kPa

EUT Operation: Pre-test the EUT in On Mode with full load and half load to find the worse case, Compliance test the EUT in On Mode with full load as the worse case was found.

3.3.2 Test Setup and Procedure

For AC port:



1. The EUT was placed on a ground reference plane (GRP) insulated by an insulating support 0.1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The GRP shall project beyond the EUT and the clamp by at least 0.1m on all sides. The distance between the EUT and any other of the metallic surface except the GRP was greater than 0.5m. All cables to the EUT were placed on the insulation support 0.1m above GRP. Cables not subject to EFT were routed as far as possible from cable under test to minimize the coupling between the cables.
3. The length of signal and power cable between the EUT and EFT generator was 0.5m. If the cable is a non-detachable supply cable more than 0.5m, the excess length of this cable shall be folded to avoid a flat coil and situated at a distance of 0.1m above the GRP.
4. The EUT was conducted the below specified level voltage test for line to neutral or line to neutral to earth(for clamp coupling is for the signal line), 120 seconds duration.
5. If the equipment contains identical ports, only one was tested; multiconductor cables, such as a 50-pair telecommunication cable, were tested as a single cable. Cables did not be split or divided into groups of conductors for this test; interface ports, which were intended by the manufacturer to be connected to data cables not longer than 3 m, did not be tested.

3.3.3 Test Results

For JYH7Z-0500250-AE, JYH7Z-0500250-CE, JYH7Z-2700058-BE

Lead under Test	Level (±kV)	Coupling Direct/Clamp	EUT operating mode	Observations (Performance Criterion)
Live	±1.0	Direct	All mode	(A)
Neutral	±1.0	Direct	All mode	(A)
Live+ Neutral	±1.0	Direct	All mode	(A)

Remark:

A: No degradation in the performance of the E.U.T. was observed.

The EUT does meet the Electrical Fast Transients requirements of Standard.

3.4 Surge

Test Requirement:	EN 55014-2
Test Method:	EN 61000-4-5
Test Voltage:	230V AC 50Hz
Test Date:	2021-06-24
Criterion Required:	B
Test Level:	±1.0 kV Live to Neutral
Polarity:	Positive & Negative
Generator source impedance:	2 Ω
Trigger Mode:	Internal
No. of surges:	5 positive at 90°, 5 negative at 270°

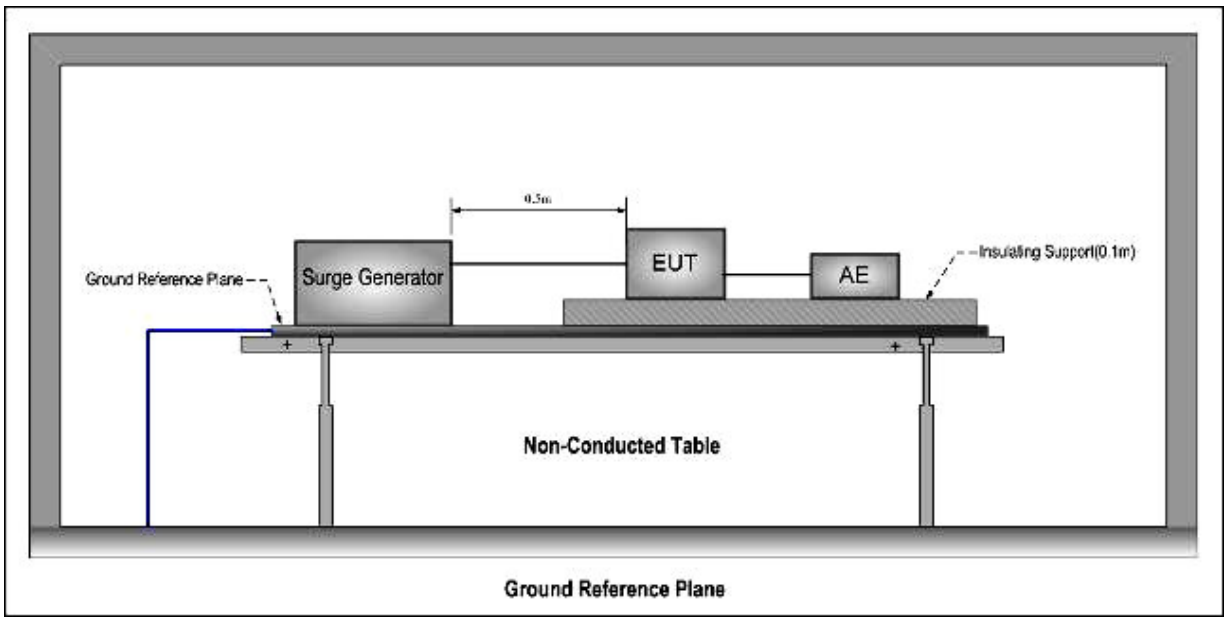
3.4.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 50 % RH Atmospheric Pressure: 101 kPa

EUT Operation: Full load and half load working mode.

3.4.2 Test Setup and Procedure



1. The EUT was placed on a ground reference plane (GRP) insulated by an insulating support 0.1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The 1,2/50 μ s surge was to be applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks were required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines and to provide sufficient decoupling impedance to the surge wave so that the specified wave may be applied on the lines under test.
3. The power cord between the EUT and the coupling/decoupling network was not exceeding 2 m in length. The interconnection line between the EUT and the coupling/ decoupling network shall not exceed 2 m in length.
4. The EUT was conducted 1kV test voltage for line to Line and line to neutral and conducted 2kV test voltage for line to earth and neutral to earth, five positive pulses and five negative pulses each at 0°, 90°, 180° and 270°for a.c. power ports and five positive pulses and five negative surge pulses for d.c. power ports. The test levels were applied on the EUT with a 2Ω source impedance for power supply terminals and 40Ω output impedance for interconnection lines. The tests were done at repetition rate one per minute.

3.4.3 Test Results

For JYH7Z-0500250-AE, JYH7Z-0500250-CE, JYH7Z-2700058-BE

Pulse No	Coupling	Level (kV)	Surge Interval	Phase (deg)	Observation (Performance Criterion)
1-5	L-N	+1	60s	90°	(A)
6-10	L-N	-1	60s	270°	(A)

Remarks:

A: No degradation in the performance of the E.U.T. was observed.

The EUT does meet the Surge immunity on AC requirements of Standard.

3.5 Conducted Immunity 0.15 MHz to 80 MHz

Test Requirement:	EN 55014-2
Test Method:	EN 61000-4-6
Test Voltage:	230V AC 50Hz
Test Date:	2021-06-24
Criterion Required:	A
Frequency Range:	0.15MHz to 230MHz
Test level:	3V rms on AC Ports (unmodulated emf into 150Ω)
Modulation:	80%, 1kHz Amplitude Modulation

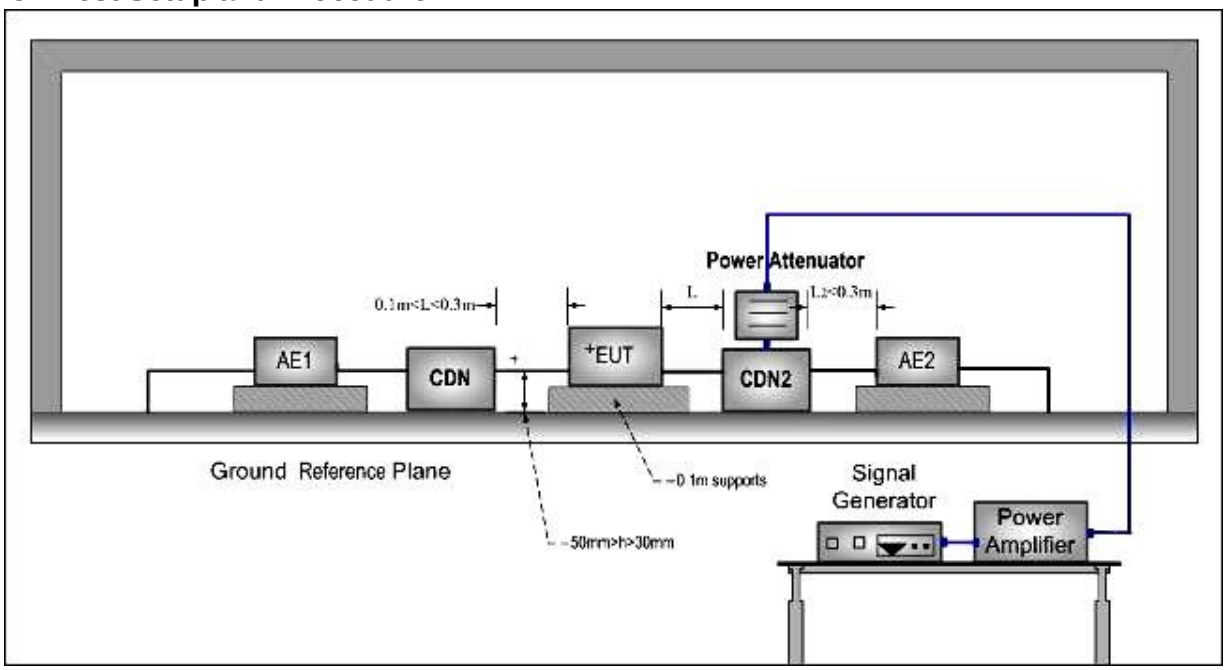
3.5.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 50 % RH Atmospheric Pressure: 101 kPa

EUT Operation: Full load and half load working mode.

3.5.2 Test Setup and Procedure



1. The EUT was placed on an insulating support of 0.1m height above a ground reference Plane, arranged and connected to satisfy its functional requirement. All cables exiting the EUT was supported at a height of at least 30 mm above the ground reference plane.
2. The coupling and decoupling devices were required, they were located between 0.1 m and 0.3 m from the EUT. This distance was to be measured horizontally from the projection of the EUT on to the ground reference plane to the coupling and decoupling device.
3. Each AE, used with clamp injection, shall be placed on an insulating support 0.1 m above the ground reference plane. A decoupling network shall be installed on each cable between the EUT and AE except the cable under test. All cables connected to each AE, other than those being connected to the EUT, shall be provided with decoupling networks. The decoupling networks connected to each AE (except those on cables between the EUT and AE) shall be applied no further than 0.3 m from the AE. The cable(s) between the AE and the decoupling network (s) or in between the AE and the injection clamp shall not be bundled nor wrapped and shall be kept between 30 mm and 50 mm above the ground reference plane.
4. The frequency range was swept from 150 kHz to 230 MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or to change coupling devices as necessary. Where the frequency was swept incrementally, the step size did not exceed 1 % of the preceding frequency value. The dwell time of the amplitude modulated carrier at each frequency was not less than the time necessary for the EUT to be exercised and to respond, and was not less than 0.5 s.

3.5.3 Test Results

For JYH7Z-0500250-AE, JYH7Z-0500250-CE, JYH7Z-2700058-BE

Frequency	Line	Test Level	Modulation	Step Size	Observation (Performance Criterion)
150 kHz to 230 MHz	2 Wires AC Supply Cable	3 Vrms	80 %, 1 kHz Amp. Mod.	1%	(A)

Remarks:

Electrical reference level L0=-7.33dBm

Max demodulated audio level L1=-45.32dBm

Electrical interference ratio = L1 – L0=-38.01dBm

A: No degradation in the performance of the E.U.T. was observed.

The EUT does meet the Conducted Immunity requirements of Standard.

3.6 Voltage Dips and Interruptions

Test Requirement:	EN 55014-2
Test Method:	EN 61000-4-11
Test Voltage:	100V/240V AC 50/60Hz
Test Date:	2021-06-24
Criterion Required:	C
Test level:	0% of U_T (Supply Voltage) for 0.5 Periods
	40% of U_T (Supply Voltage) for 10/12 Periods
	70% of U_T (Supply Voltage) for 25/30 Periods
No. of Dips / Interruptions:	3 per Level

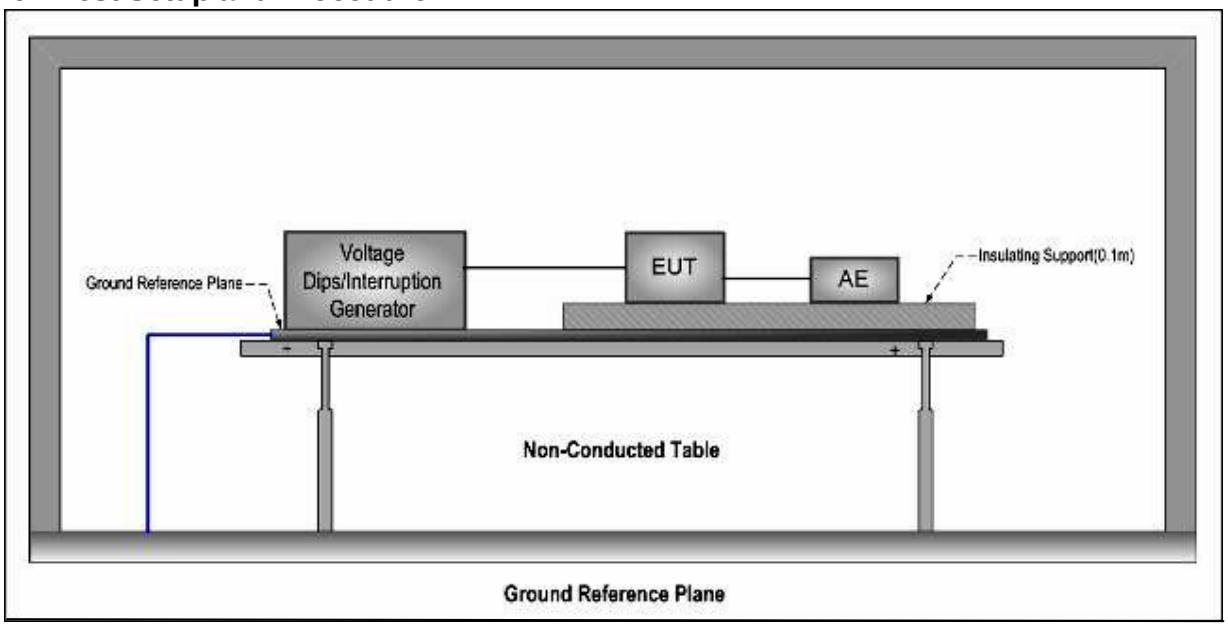
3.6.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 50 % RH Atmospheric Pressure: 101 kPa

EUT Operation: Full load and half load working mode.

3.6.2 Test Setup and Procedure



1. The EUT was placed on a ground reference plane(GRP) insulated by an insulating support 0,1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The test was performed with the EUT connected to the test generator with the shortest power supply cable as specified by the EUT manufacturer.
3. The EUT was tested for each selected combination of test level and duration with a sequence of three dips /interruptions with intervals of 10s minimum. Each representative mode of operation was tested.
4. For EUT with more than one power cord, each power cord was tested individually.

3.6.3 Test Results

For JYH7Z-0500250-AE, JYH7Z-0500250-CE, JYH7Z-2700058-BE

AC 100V 50/60Hz

Test Level %U_T	Phase	Duration of drop out in Periods		No of drop out	Time between drop out	Observations (Performance Criterion)
		50Hz	60Hz			
0	0°	0.5		3	10s	A
40	0°	10	12	3	10s	B
70	0°	25	30	3	10s	A

AC 240V 50/60Hz

Test Level %U_T	Phase	Duration of drop out in Periods		No of drop out	Time between drop out	Observations (Performance Criterion)
		50Hz	60Hz			
0	0°	0.5		3	10s	A
40	0°	10	12	3	10s	B
70	0°	25	30	3	10s	A

Remark:

$\mathbf{U_T}$ = the nominal supply voltage

A: No degradation in the performance of the EUT was observed.

B: The EUT was shut down during test, however, it could recover by automatically after test.

Performance B is within the acceptable criterion for Voltage Dips and Interruption test.

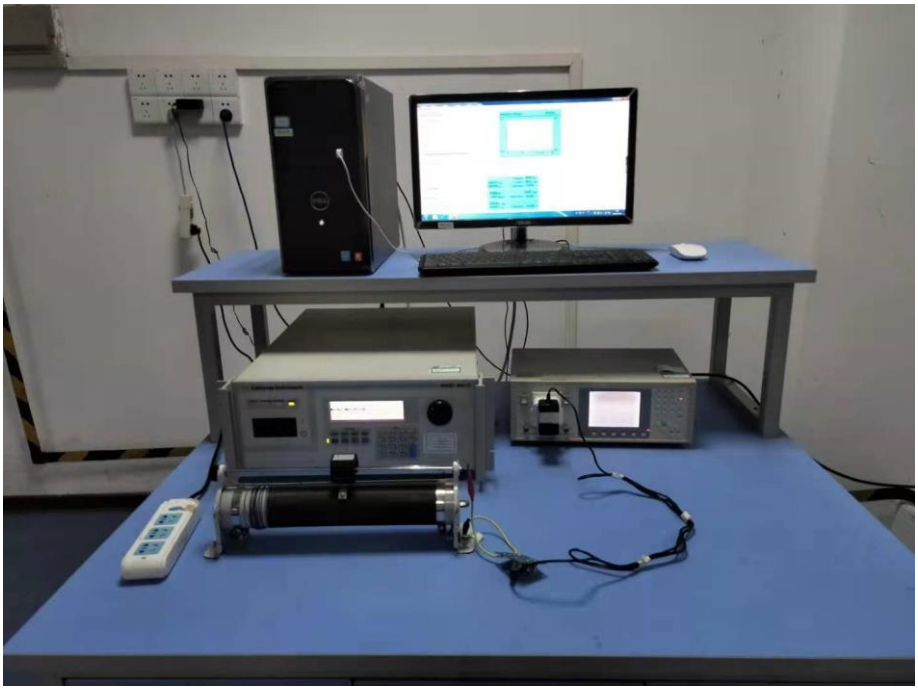
The EUT does meet the Voltage Dips and Interruptions requirements of Standard.

Section 4 Photographs

4.1 Conducted Emissions Mains Terminals Test Setup

4.2 Disturbance Power Test Setup

4.3 Harmonics and Flicker Test Setup



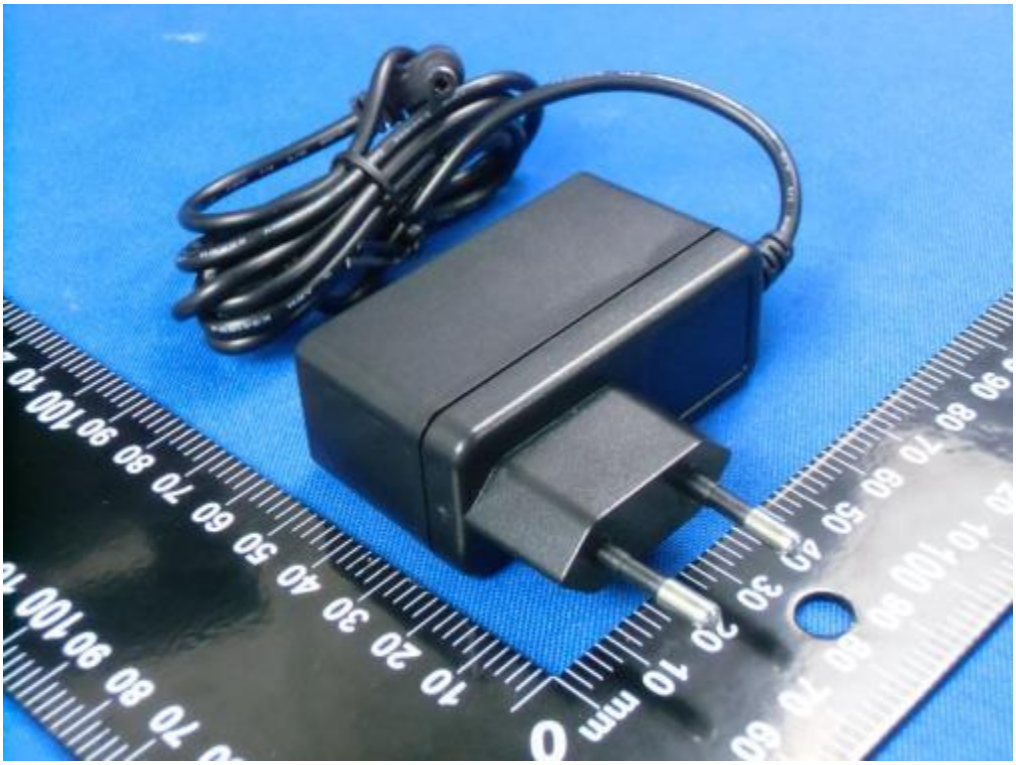
4.4 ESD Test Setup

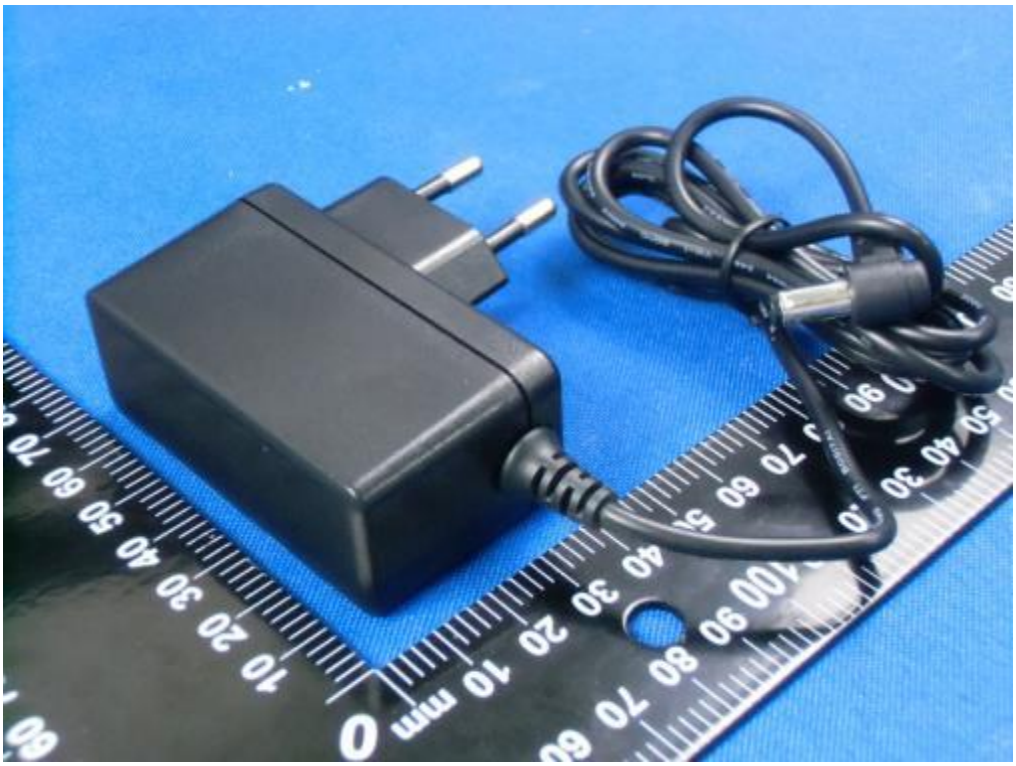
4.5 EFT on AC Test Setup

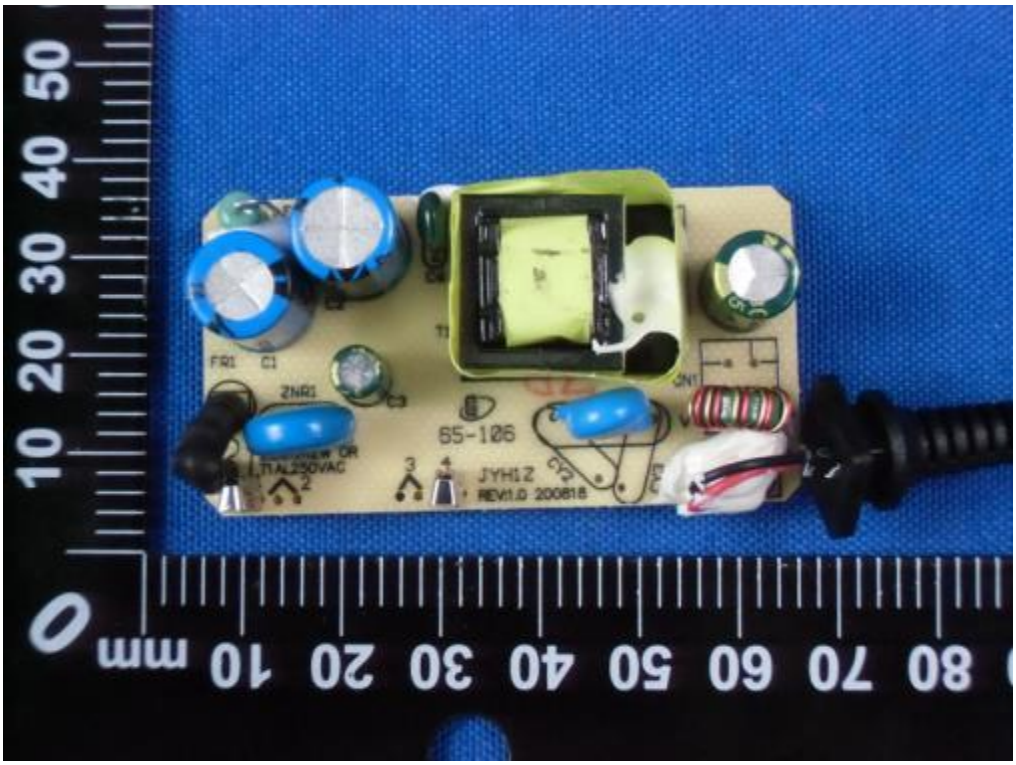
4.6 Surge on AC Test Setup

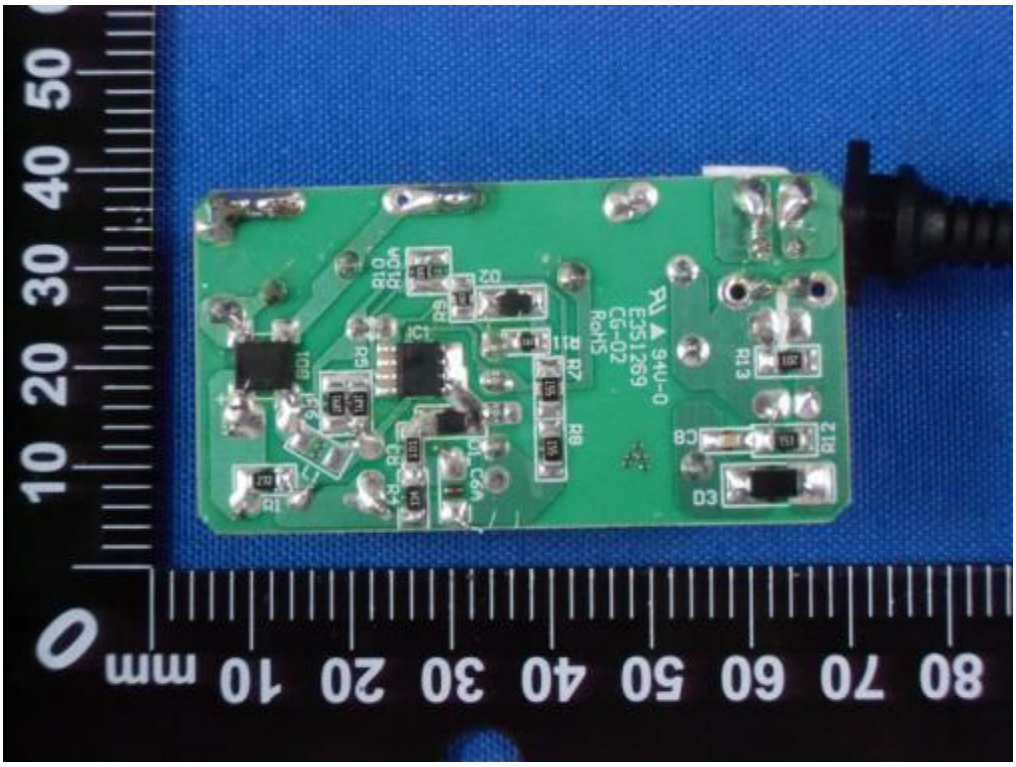
4.7 Voltage Dips and Interruptions Test Setup

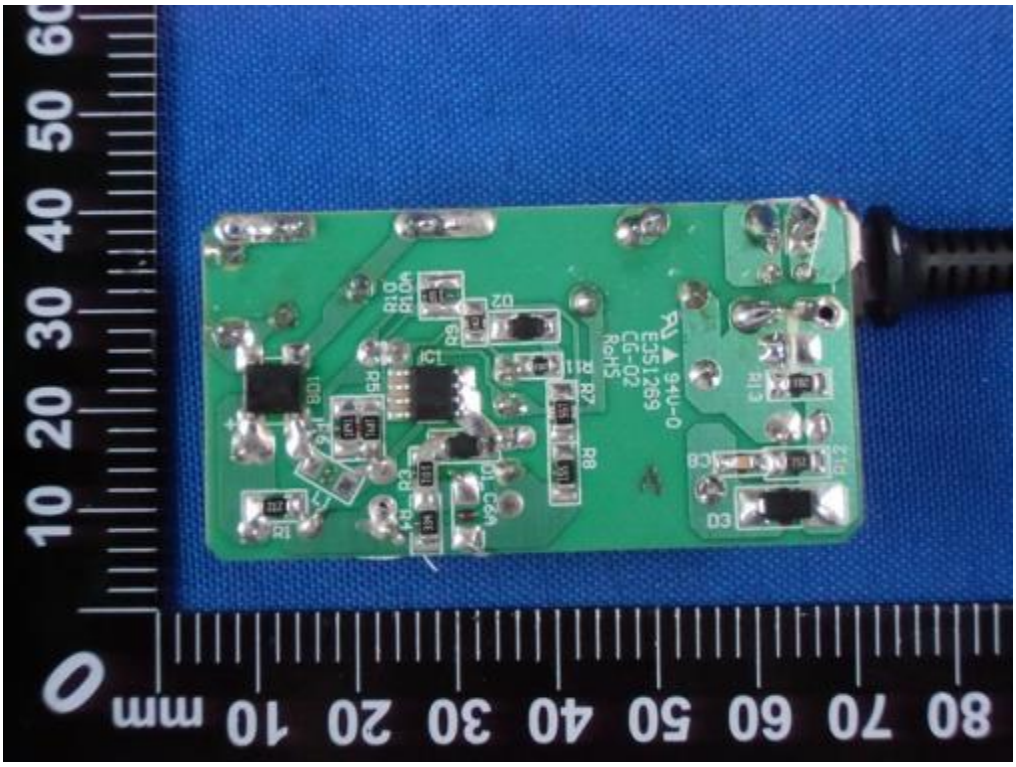
4.8 EUT Constructional Details

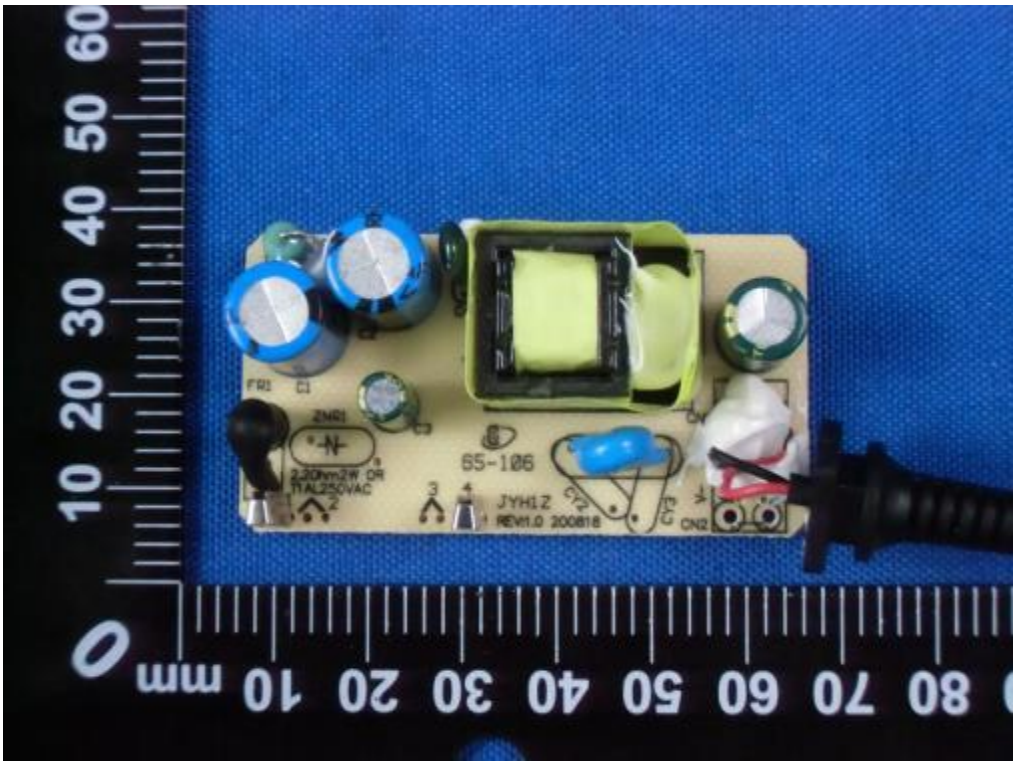


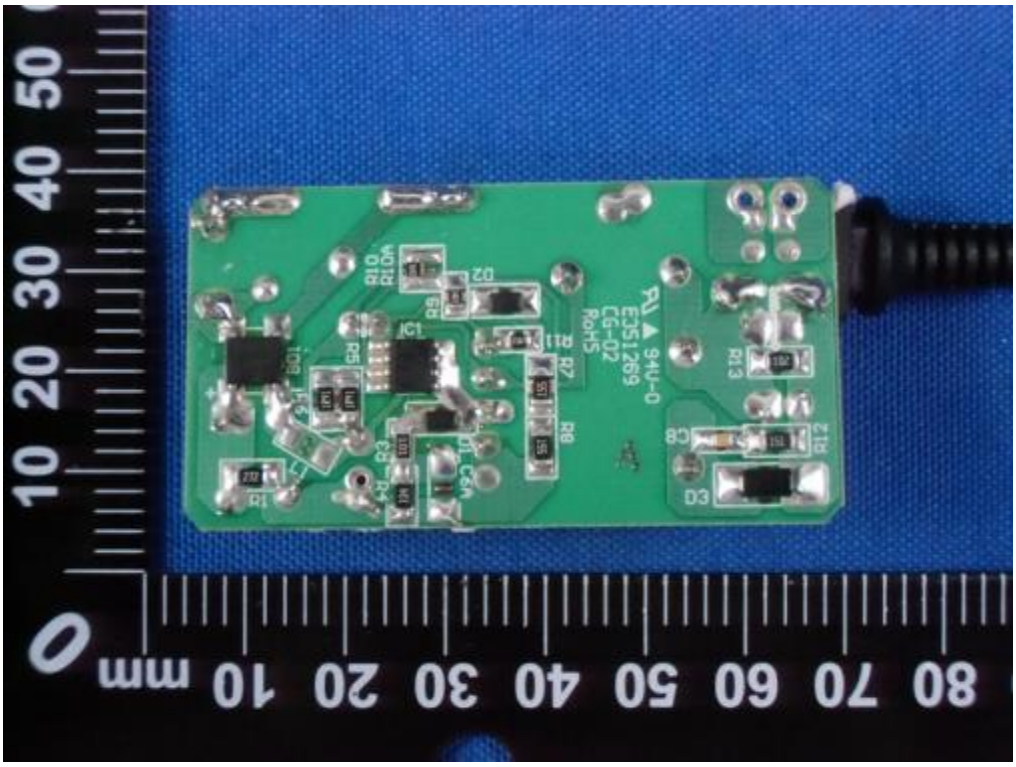


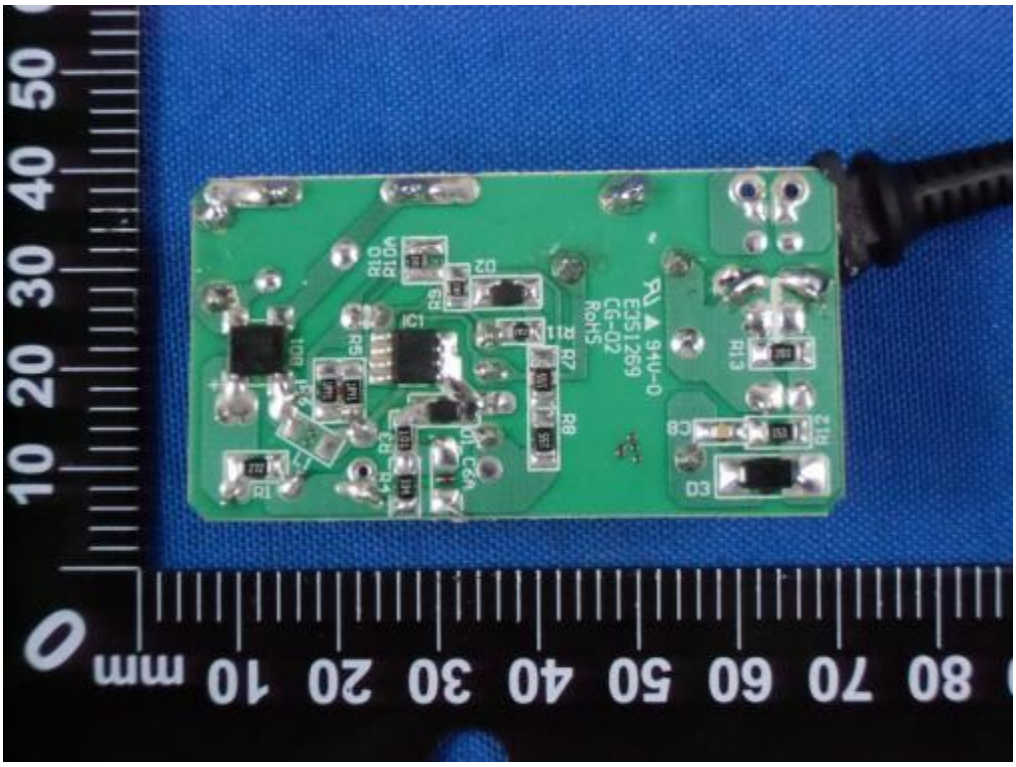


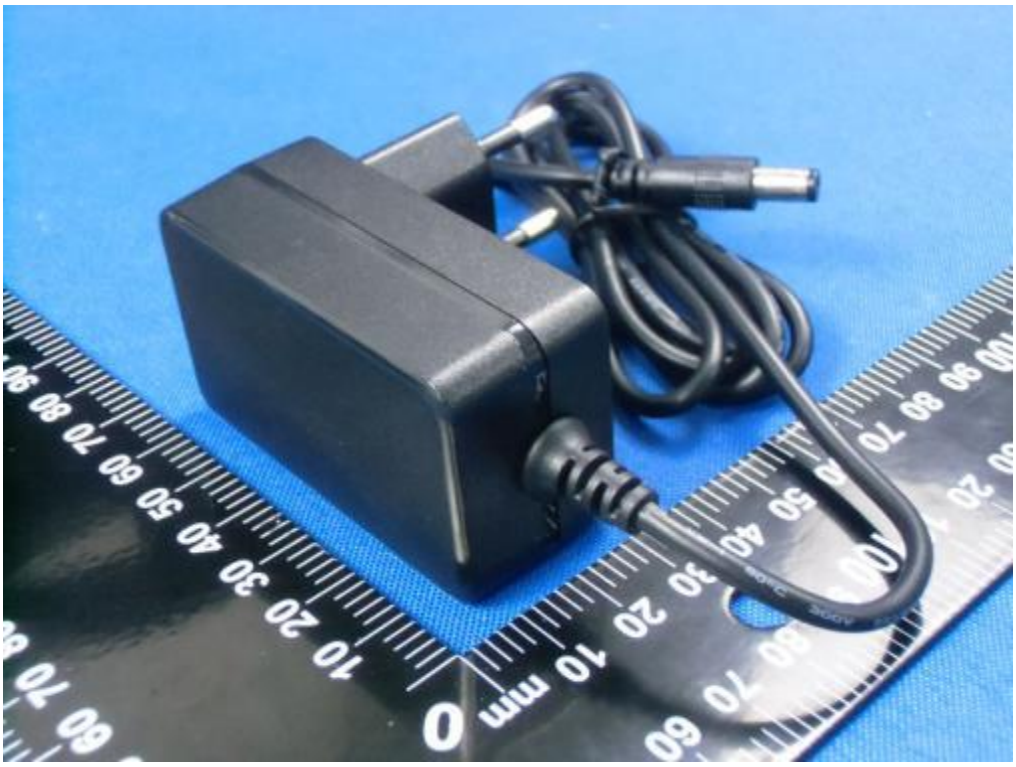


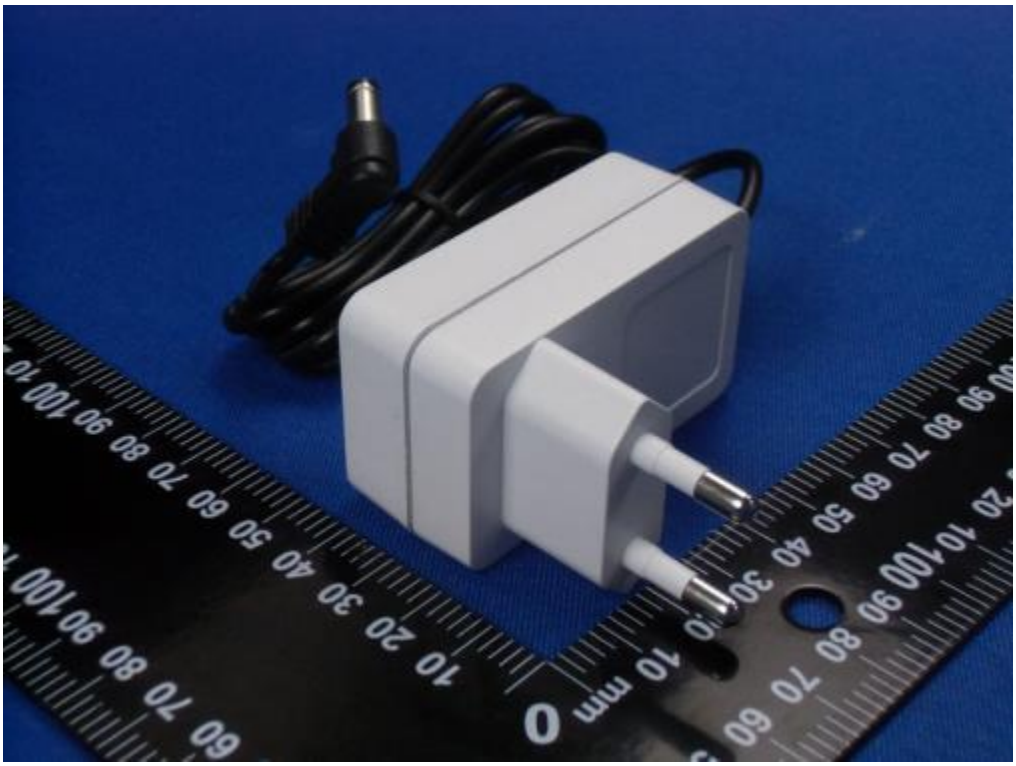


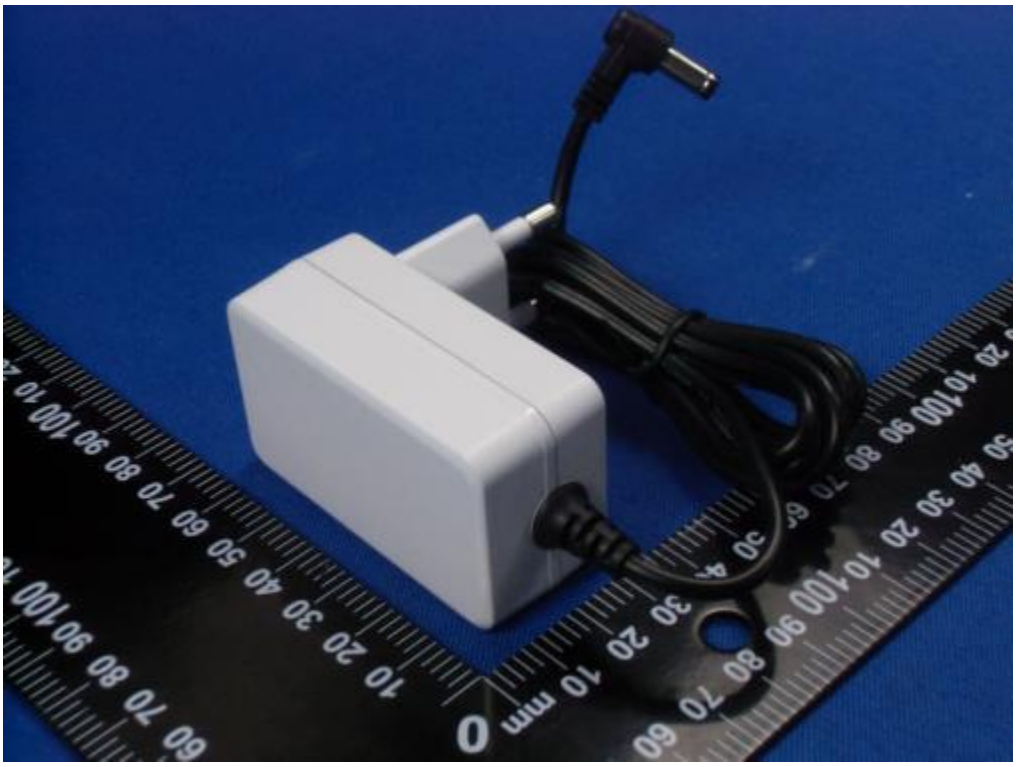


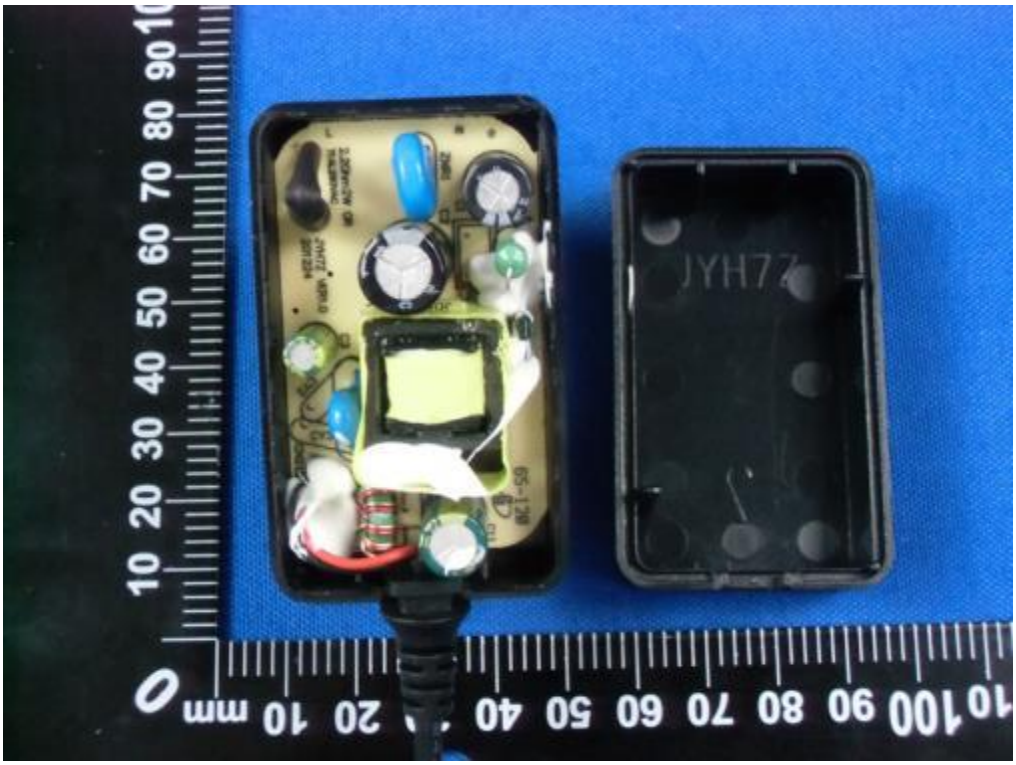


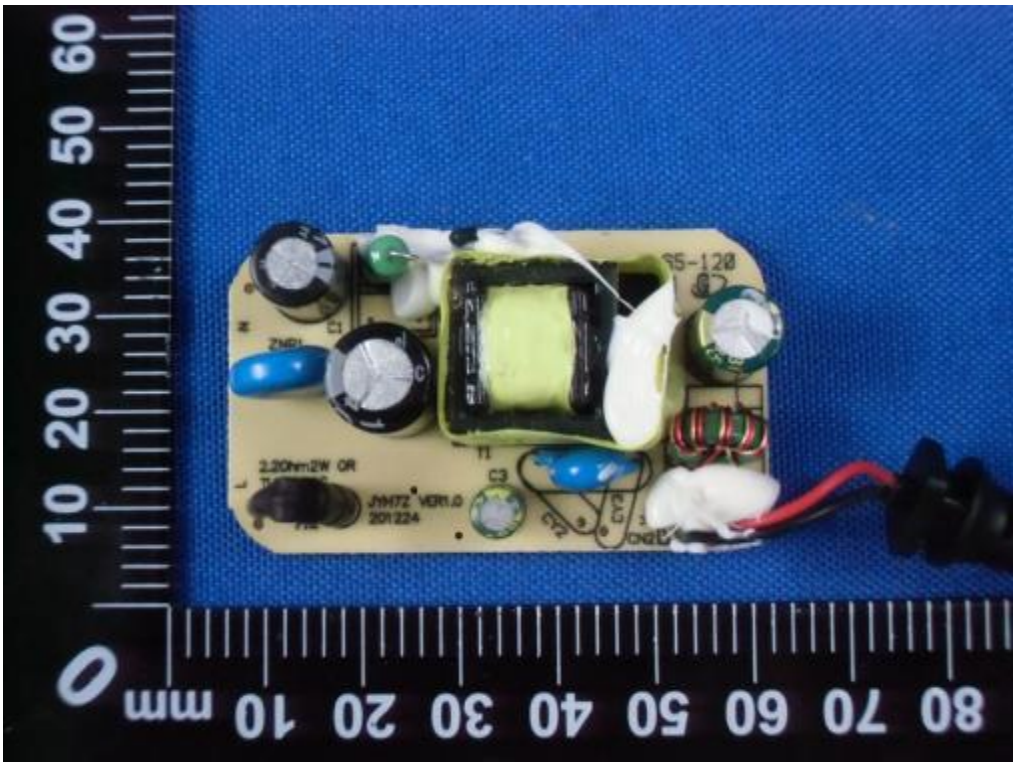


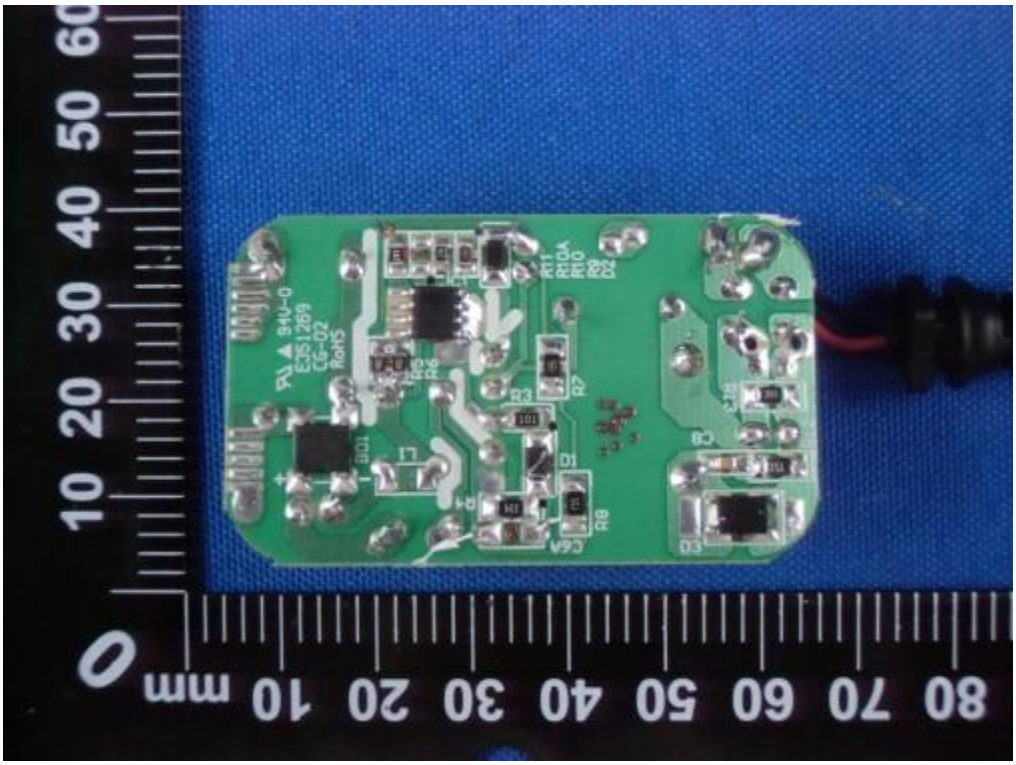


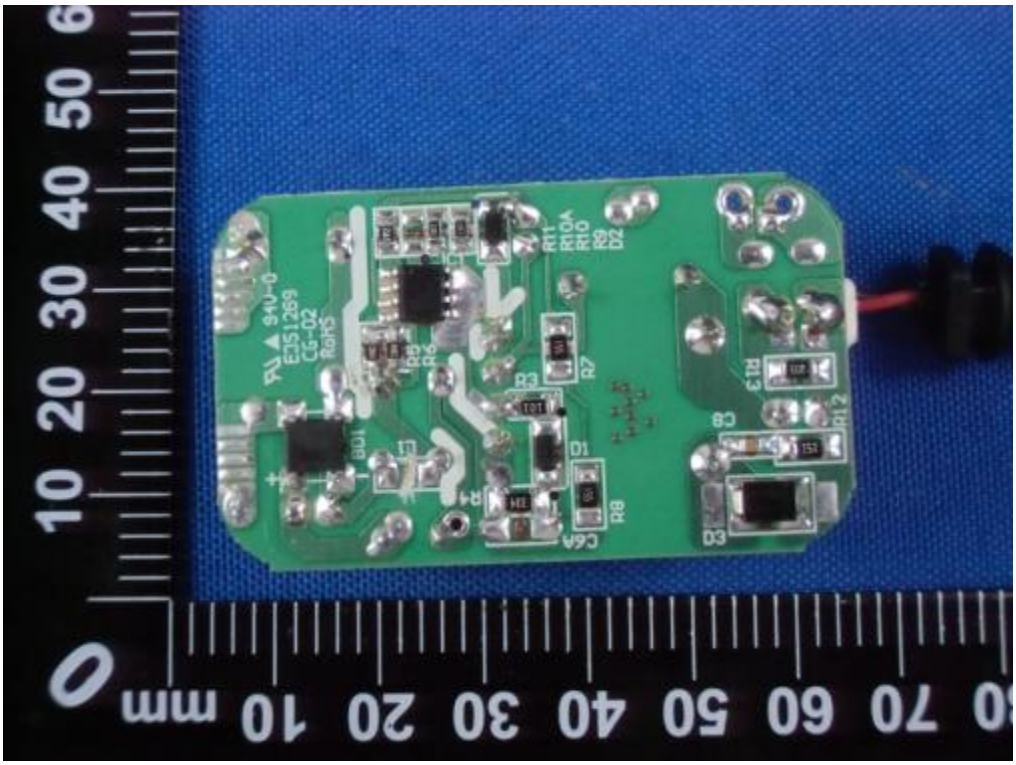


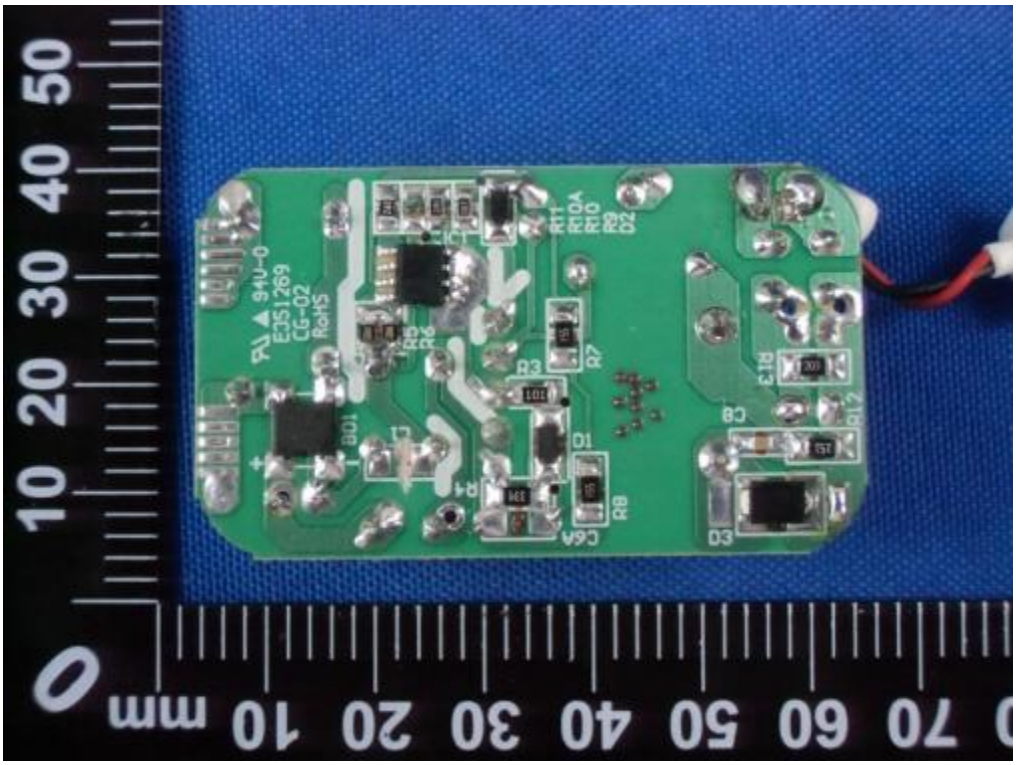


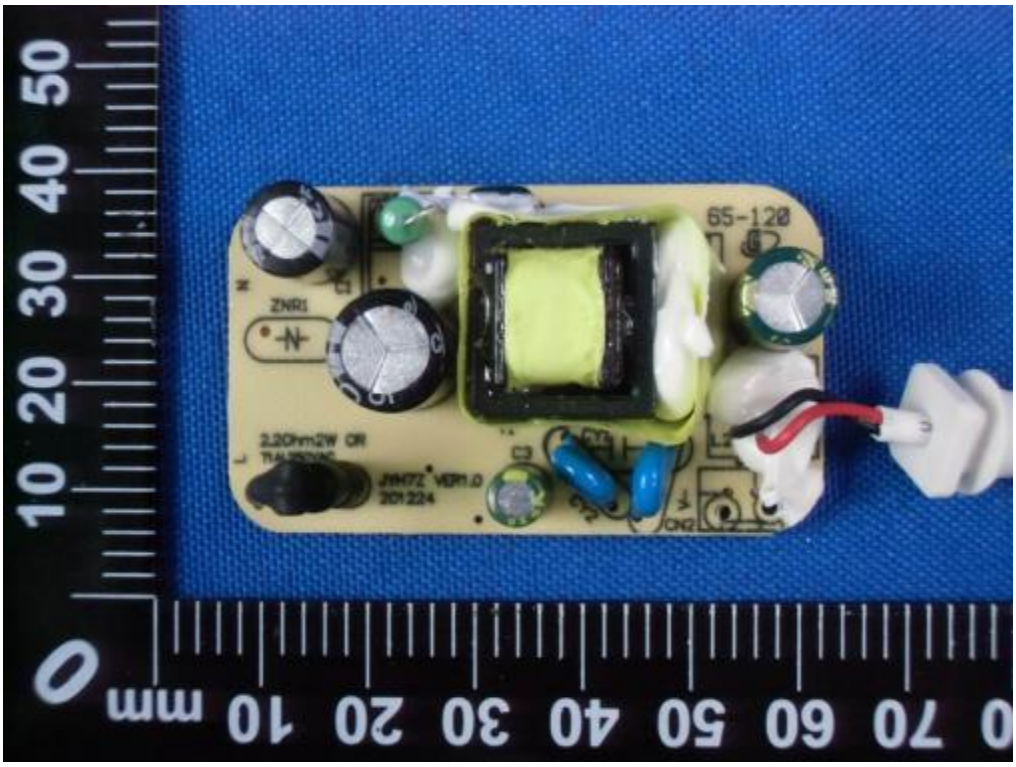


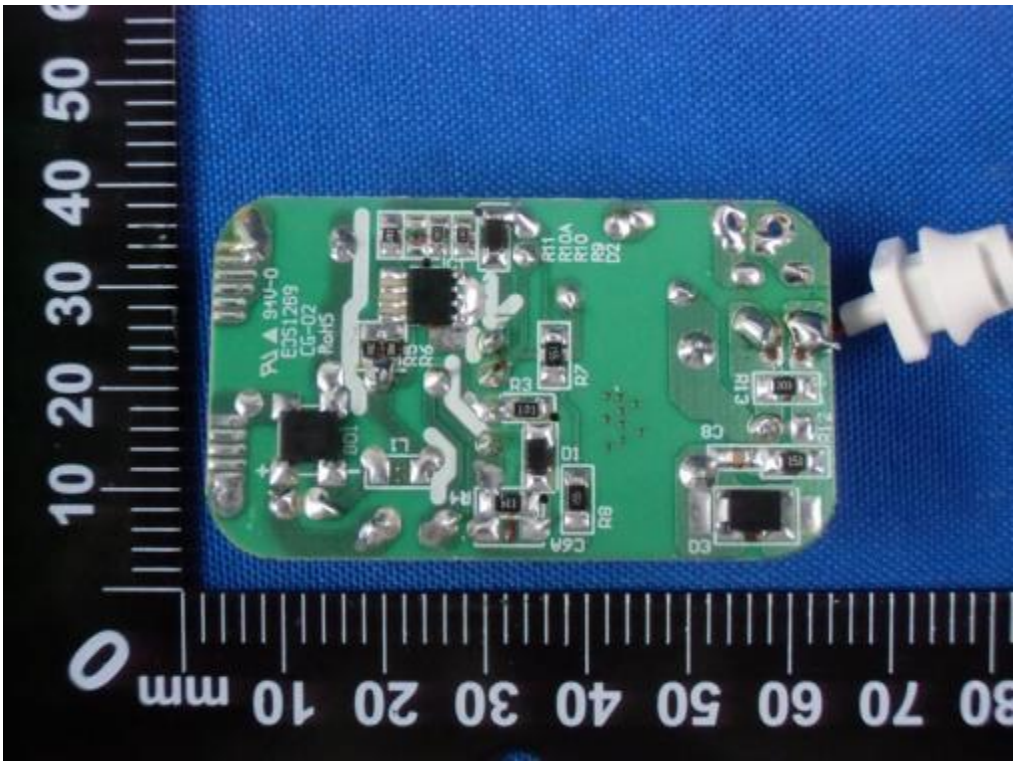


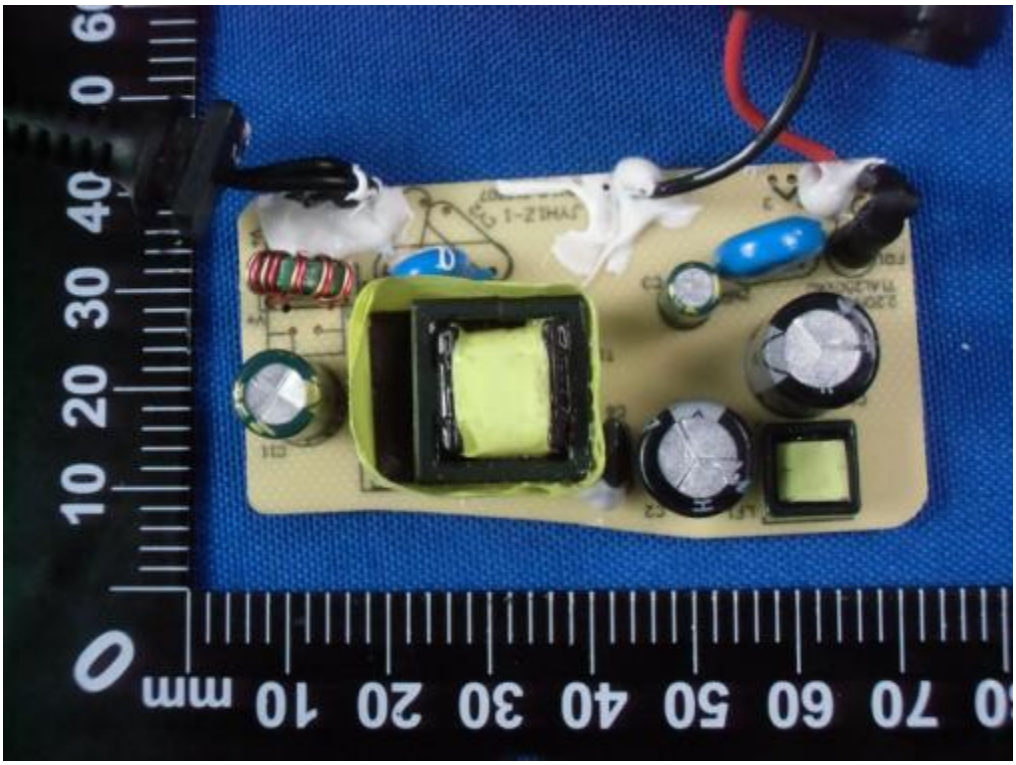


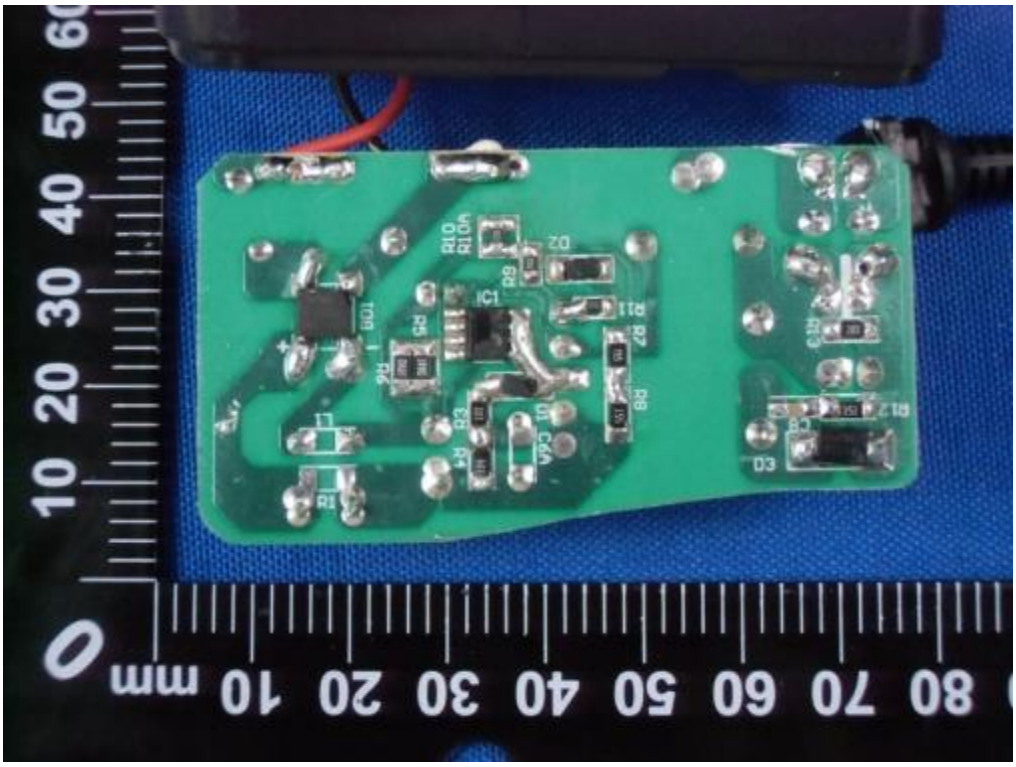


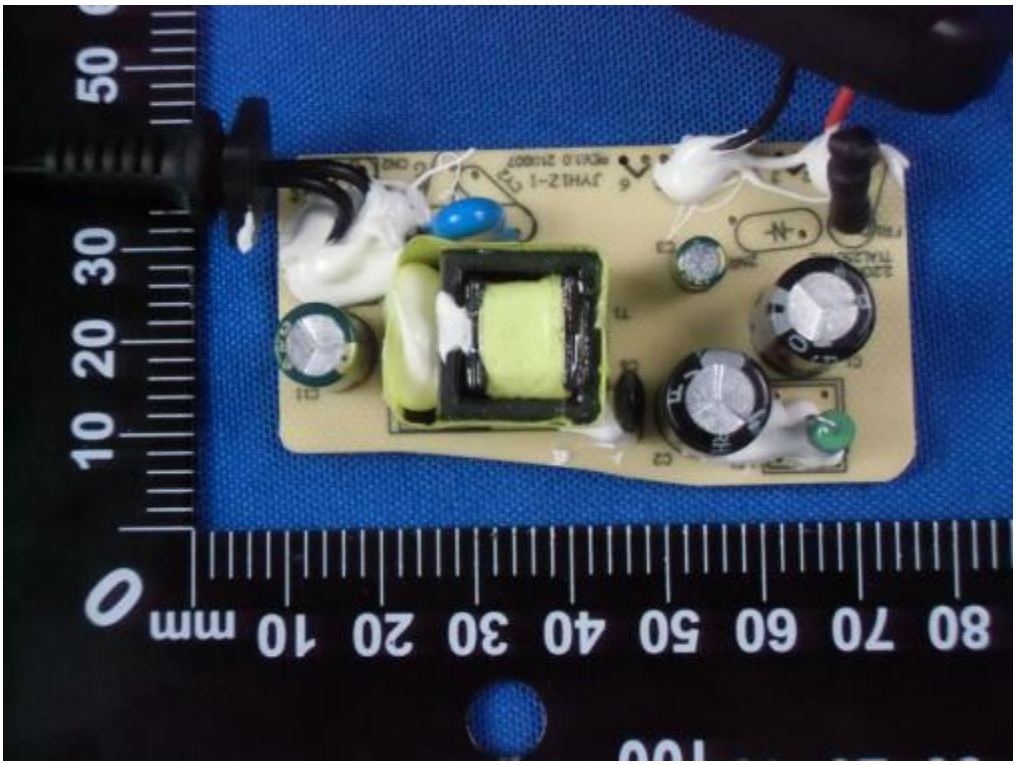


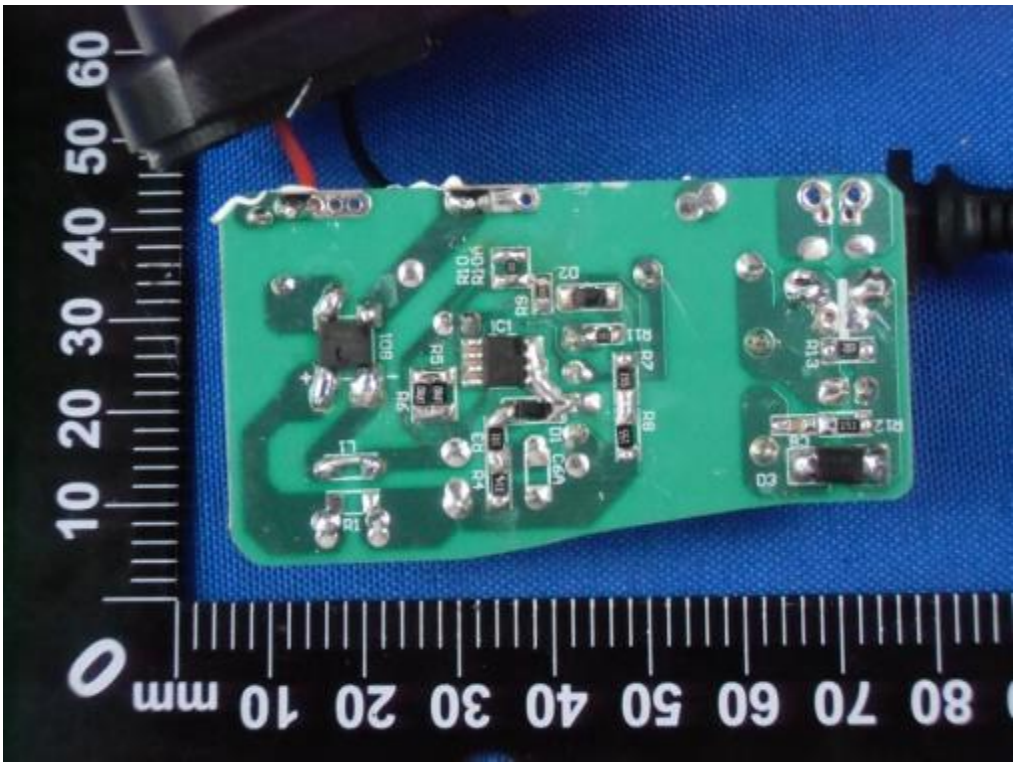


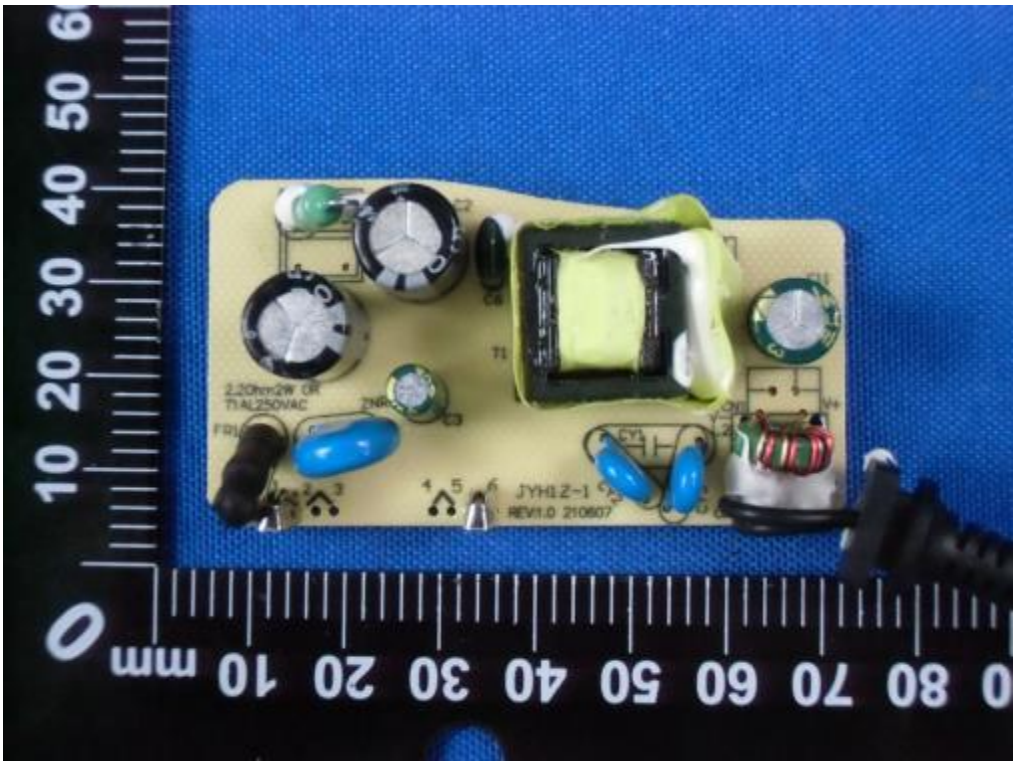


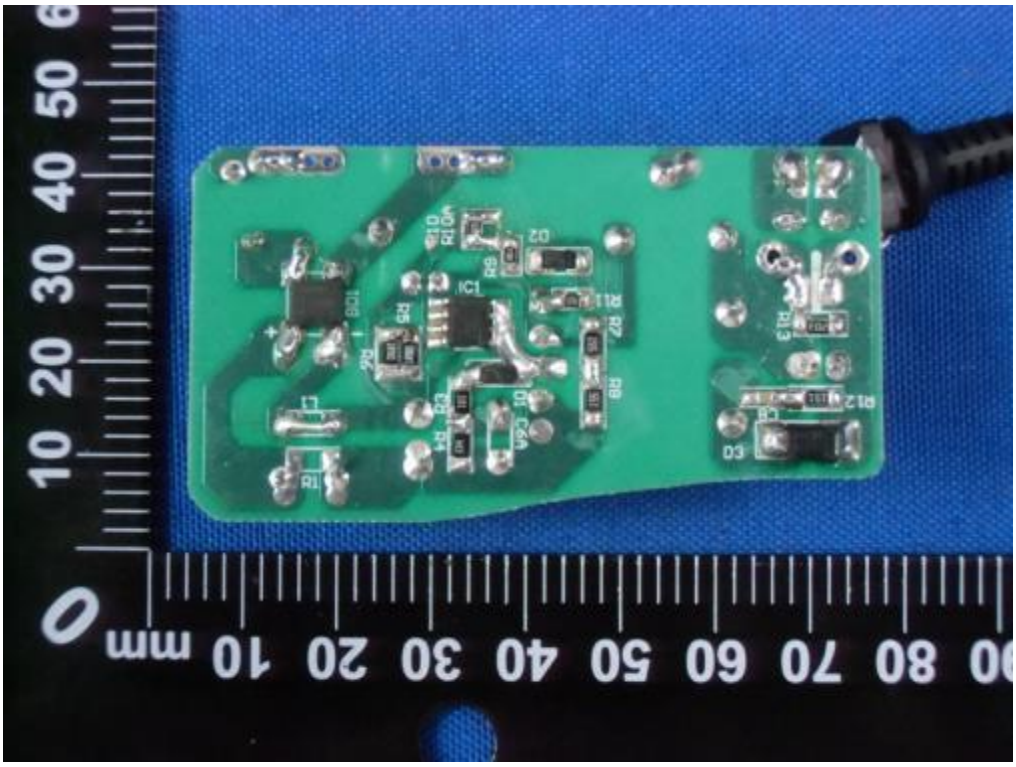


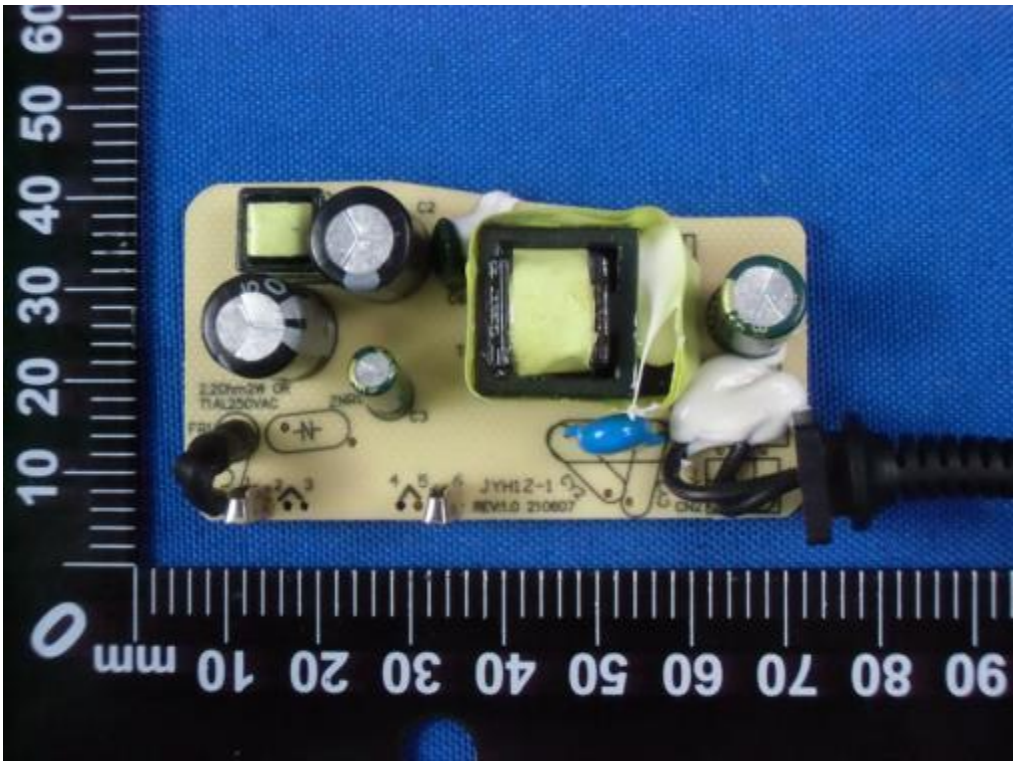


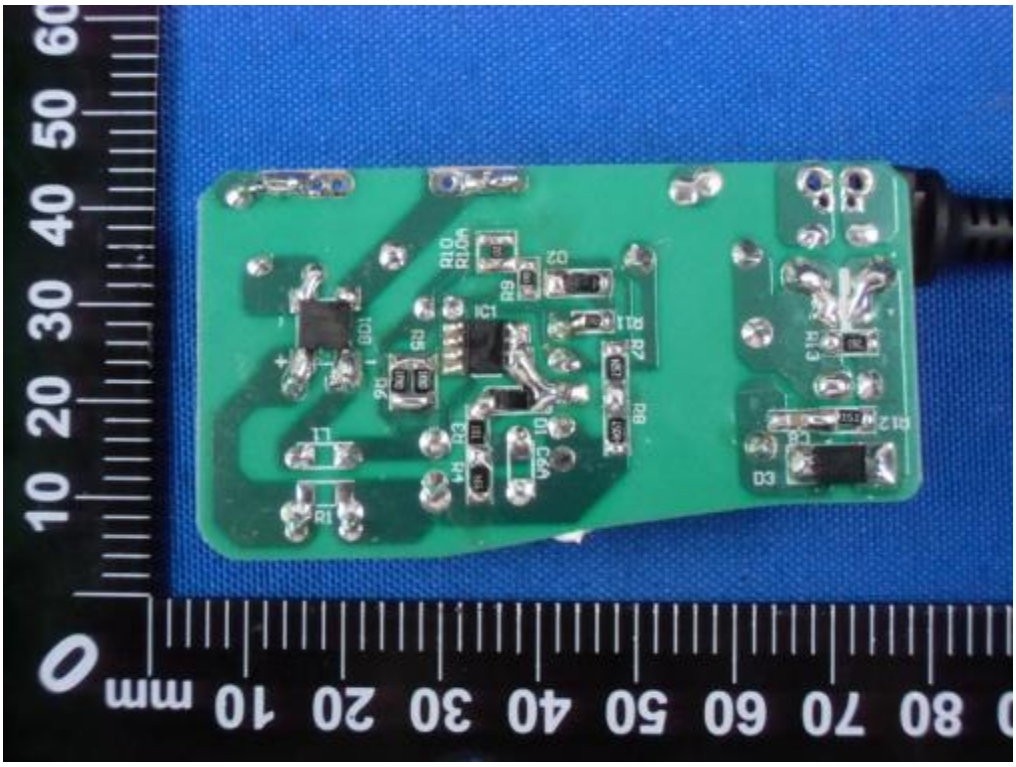












END OF THE TEST REPORT