EMC TEST REPORT

For Electromagnetic Interference of

Report Reference No. ..... :	EA1812129E 01001
Engineer (name + signature) ..... :	Wite Chen
Approved by (name + signature)..... :	Fred Zhu
Date of issue ..... :	Jan. 23, 2019
Testing Laboratory..... :	Dongguan Anci Electronic Technology Co., Ltd.
Address ..... :	1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong China
Applicant's name..... :	XUN WINR ELECTRONICS CO.,LTD.
Address ..... :	No. 11, Minying 3rd Road, Shangnan Industry Zone, Yuanzhou Town 516123, Huizhou City, Guangdong Province, PRC
Manufacturer ..... :	XUN WINR ELECTRONICS CO.,LTD.
Address ..... :	No. 11, Minying 3rd Road, Shangnan Industry Zone, Yuanzhou Town 516123, Huizhou City, Guangdong Province, PRC
Test specification:	
EUT description..... :	Power Supply
Trade Mark..... :	XUN WINR or PLASMAMADE® Absolute Science
Model/Type reference ..... :	V-1202000-ED, V-1202000-UD
Input Ratings ..... :	100-240V~,50/60Hz,0.6AMax
Output Ratings ..... :	12Vdc,2.0A

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This product belong to Catalog II equipment, so no applicable 37

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1 .GENERAL INFORMATION

1.1 CERTIFICATION

Testing Laboratory..... :	Dongguan Anci Electronic Technology Co., Ltd.
Address ..... :	1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong, China
Applicant's name..... :	XUN WINR ELECTRONICS CO.,LTD.
Address ..... :	No. 11, Minying 3rd Road, Shangnan Industry Zone, Yuanzhou Town 516123, Huizhou City, Guangdong Province, PRC
Manufacturer ..... :	XUN WINR ELECTRONICS CO.,LTD.
Address ..... :	No. 11, Minying 3rd Road, Shangnan Industry Zone, Yuanzhou Town 516123, Huizhou City, Guangdong Province, PRC
Factory……..:.	XUN WINR ELECTRONICS CO.,LTD.
Address……:….	No. 11, Minying 3rd Road, Shangnan Industry Zone, Yuanzhou Town 516123, Huizhou City, Guangdong Province, PRC

Test specification:

EUT description..... :	Power Supply
Trade Mark ..... :	XUN WINR or PLASMAMADE® Absolute Science
Model/Type reference ..... :	V-1202000-ED, V-1202000-UD
Test Sample……:	V-1202000-UD
Input Ratings ..... :	100-240V~,50/60Hz,0.6AMax
Output Ratings ..... :	12Vdc,2.0A
Tested Power……..:	I/P: 230Vac, 50Hz, 120V/60Hz
Standards ..... :	EN 55014-1: 2017 EN 55014-2: 2015 EN 61000-3-2: 2014 EN 61000-3-3: 2013

The device described above was tested by Dong Guan Anci Electronic Technology Co., Ltd. to determine the maximum emission levels emanated from the device and severity levels of the device endure and its performance criterion. The measurement results are contained in this test report and Dong Guan Anci Electronic Technology Co., Ltd. assumes full responsibility for the accuracy and completeness of these measurements. This report shows the EUT is technically compliance with the above official standards.

This report applies to the above sample only and shall not be reproduced in part without written approval of Dong Guan Anci Electronic Technology Co., Ltd.

1.2 PRODUCT INFORMATION

1.This Power Supply is used for household used.

2.The specified Max. ambient temperature is +40°C.

3.Model V-1202000-UD is class II with appliance inlet.

4.Mode V-1202000-ED is class II with Non-detachable supply cord.

5.Model V-1202000-ED and model V-1202000-UD used the same schematics and PCB layout.

All tests was performed on model V-1202000-UD.

The EUT passed the test.

1.3 Details about the Test Laboratory

Test Site 1:

Company name: Dongguan Anci Electronic Technology Co., Ltd.

1-2 Floor, Building A, No.11, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

Telephone: +86-769- 8507 5888

Fax: +86-769- 8507 5898

Test Site 2:

Company name: Guangdong Dongguan Quality Supervision Testing Center

No.2 South Industry Road, Dongguan Songshan Lake Sci.&Tech.

Industrial Park

Guangdong Province

China

Telephone: +86 769 2307 1111

Fax: +86 769 2307 7221

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Emission			
Standard	Test Item	Judgment	Remark
EN 55014-1: 2017	Conducted Emission	PASS	
	Disturbance Power Measurement	PASS	
	Radiated Emission	N/A	**NOTE (4)**
EN 61000-3-2:2014	Harmonic Current Emission	N/A	**NOTE (2)**
EN 61000-3-3:2013	Voltage Fluctuations & Flicker	PASS	

Immunity (EN 55014-2: 2015)				
Section	Test Item	Performance Criteria	Judgment	Remark
EN 61000-4-2:2009	Electrostatic Discharge	B	PASS	
EN 61000-4-3:2006 +A1:2008+A2: 2010	RF electromagnetic field	A	N/A	**NOTE (5)**
EN 61000-4-4:2012	Fast transients	B	PASS	
EN 61000-4-5:2014	Surges	B	PASS	
EN 61000-4-6:2014	Injected Current	A	PASS	
EN 61000-4-11:2004	Volt. Interruptions Volt. Dips	C **NOTE (3)**	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

(2) The power consumption of EUT is less than 75W and no Limits apply.

(3) Voltage dip: 30% reduction – Performance Criteria **C**

Voltage dip: 60% reduction – Performance Criteria **C**

Voltage Interruption: 100% reduction – Performance Criteria **C**

(4) If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2GHz. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1GHz, measurement shall only be made up to 5 GHz. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 40 GHz, whichever is less.

(5) Test in the shielding room.

2.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U (dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	3.19	

B. Disturbance Power Measurement :

Test Site	Method	Measurement Frequency Range	U (dB)	NOTE
C01	ANSI	30 MHz ~ 300MHz	2.96	

2.2 DESCRIPTION OF TEST MODES

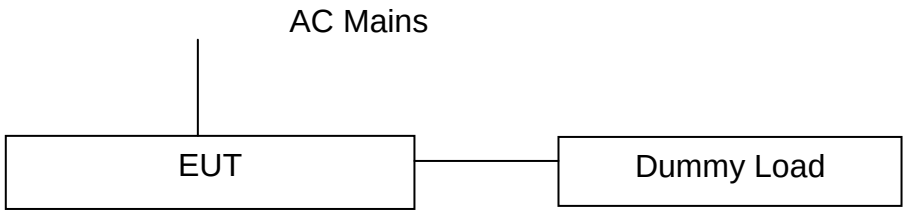
To investigate the maximum EMI characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

For Conducted Test	
Pretest Mode	Description
Mode 1	Full Load

For Disturbance Power Test	
Final Test Mode	Description
Mode 1	Full Load

For EMS Test	
Final Test Mode	Description
Mode 1	Full Load

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3. EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 LIMITS OF CONDUCTED EMISSION(MAINS PORT) (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Limit (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	59 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

3.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	LISN	Schwarzbeck	NSLK 8127	8127-669	2019-05-23
2	10 db attenuator	JFW	50FP-010-H4	43608 46-427-1	2019-05-23
3	RF Cable	N/A	N/A	2#	2019-05-23
4	EMI Test Receiver	Rohde & Schwarz	ESCI	101358	2019-05-23

Remark: ” N/A” denotes No Model No. , Serial No. or No Calibration specified.

3.1.3 TEST PROCEDURE

a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

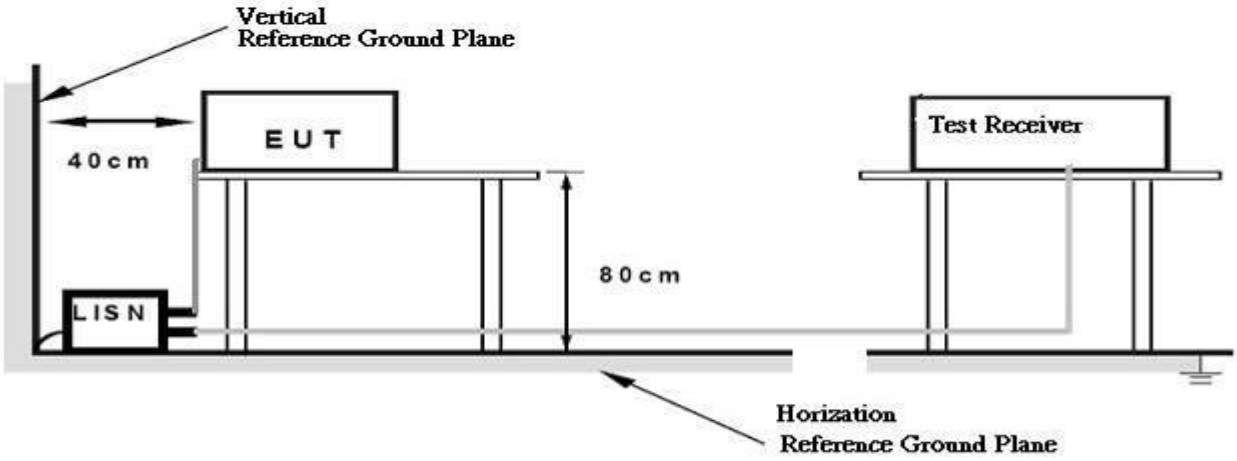
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation

3.1.5 TEST SETUP



3.1.6 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use.

3.1.7 TEST RESULTS

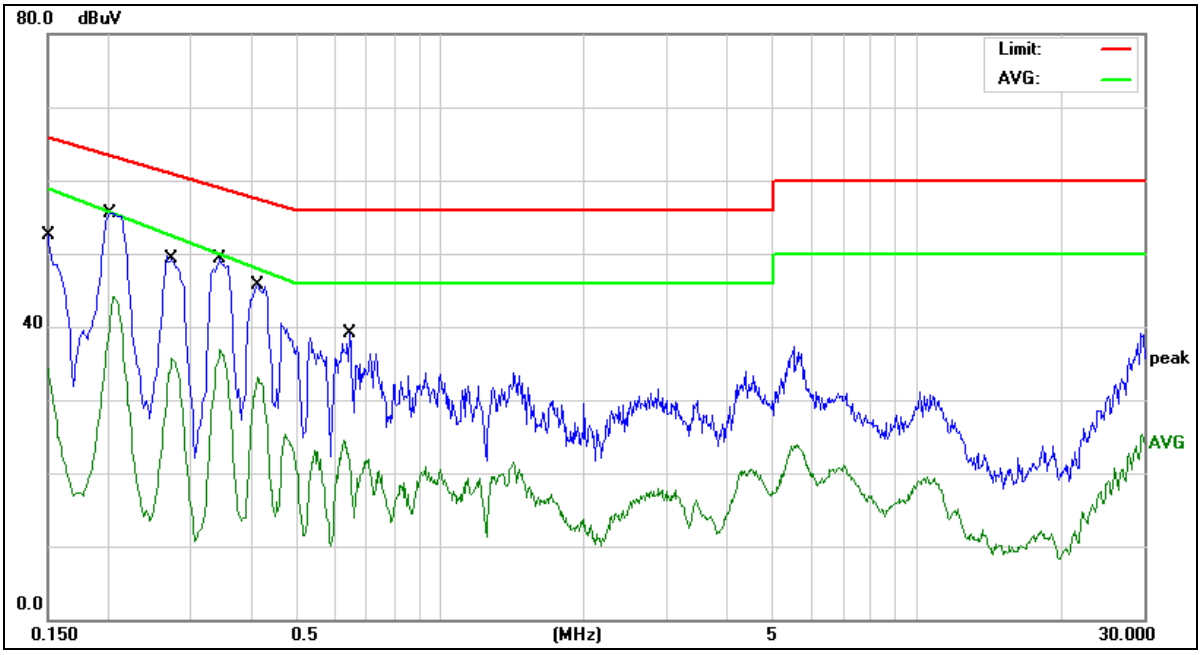
EUT：	Power Supply	**Model No. ：**	V-1202000-UD
Temperature：	26℃	**Relative Humidity：**	60 %
Pressure：	1008 hPa	**Test Power ：**	AC 230V/50Hz, 120V/60Hz
Test Mode ：	Full Load		

Remark：

(1) Reading in which marked as QP means measurements by using Quasi-Peak Detector ,and AV means measurements by using Average Detector.

(2) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.

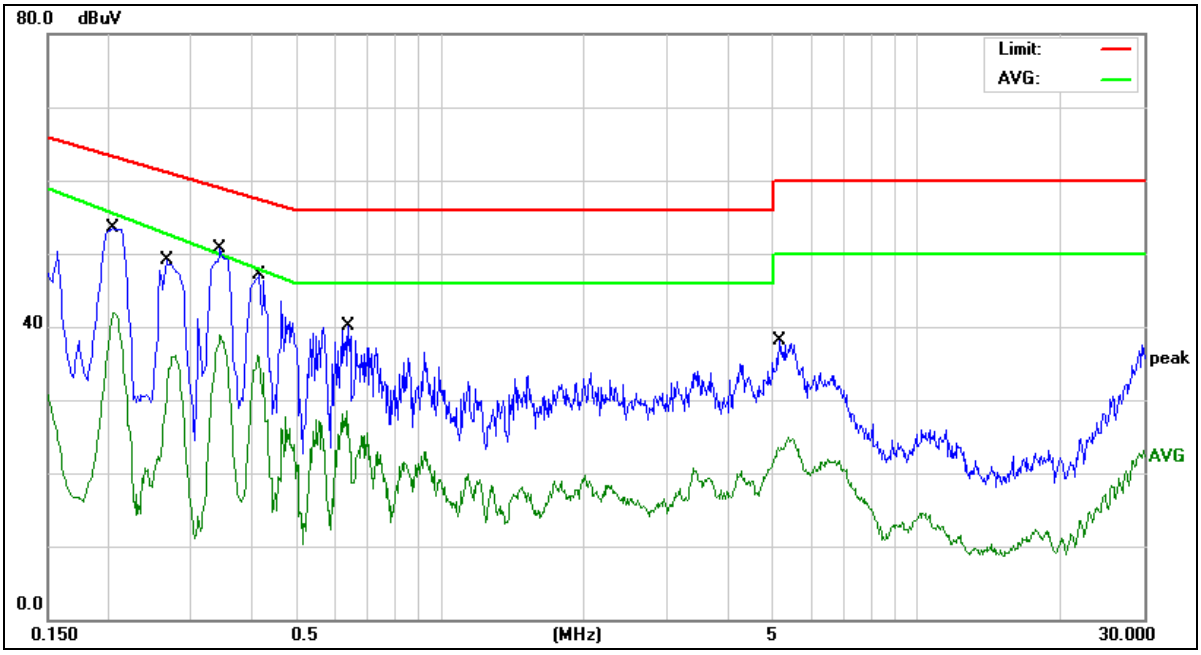
(3) Measuring frequency range from 150KHz to 30MHz.



Site:	**843**	**Phase:L1**	**Temperature(C):26(C)**
Limit:	**EN 55014-1 QP**		**Humidity(%):60%**
EUT:	**Power Supply**	**Test Time:**	**2019-01-20**
M/N.:	**V-1202000-UD**	**Power Rating:**	**AC 230V/50Hz**
Mode:	**Full Load**	**Test Engineer:**	**Jack**
Note:			

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.1500	34.20	10.72	44.92	65.99	-21.07	QP	
2	0.1500	21.39	10.72	32.11	58.99	-26.88	AVG	
3 *	0.2020	41.59	10.67	52.26	63.52	-11.26	QP	
4	0.2020	28.93	10.67	39.60	55.78	-16.18	AVG	
5	0.2740	34.65	10.64	45.29	60.99	-15.70	QP	
6	0.2740	22.74	10.64	33.38	52.49	-19.11	AVG	
7	0.3460	35.45	10.61	46.06	59.06	-13.00	QP	
8	0.3460	24.32	10.61	34.93	49.97	-15.04	AVG	
9	0.4140	31.86	10.58	42.44	57.57	-15.13	QP	
10	0.4140	21.31	10.58	31.89	48.04	-16.15	AVG	
11	0.6460	21.95	10.59	32.54	56.00	-23.46	QP	
12	0.6460	10.15	10.59	20.74	46.00	-25.26	AVG	

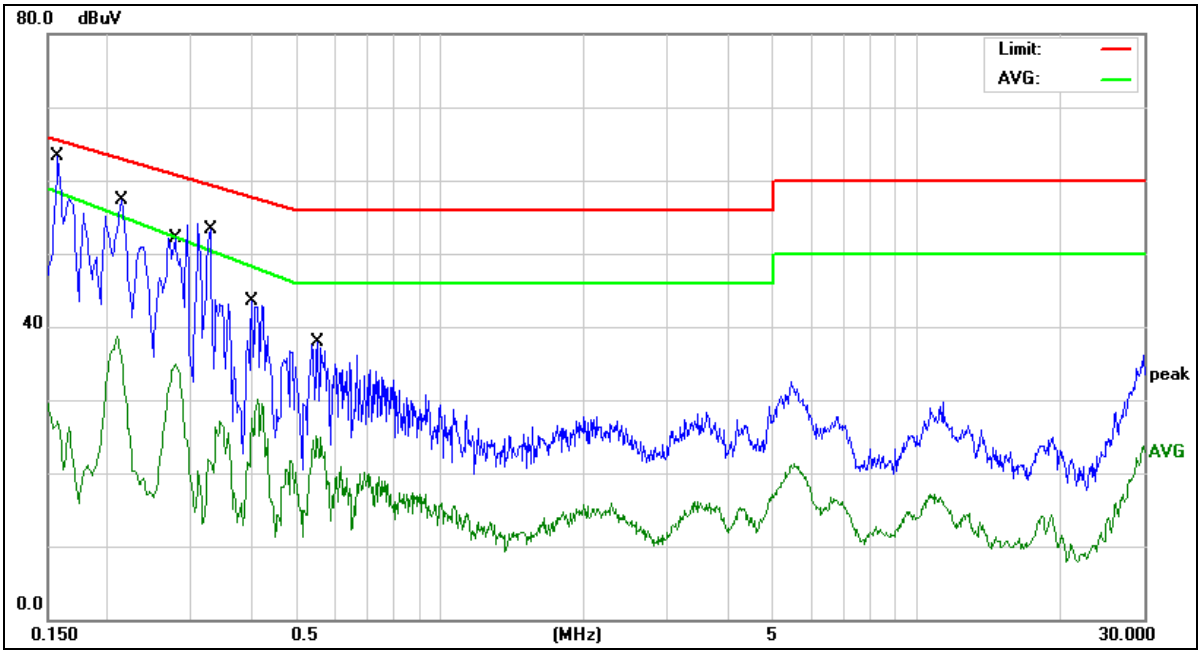
*:Maximum data x:Over limit !:over margin



Site:	**843**	**Phase:N**	**Temperature(C):26(C)**
Limit:	**EN 55014-1 QP**		**Humidity(%):60%**
EUT:	**Power Supply**	**Test Time:**	**2019-01-20**
M/N.:	**V-1202000-UD**	**Power Rating:**	**AC 230V/50Hz**
Mode:	**Full Load**	**Test Engineer:**	**Jack**
Note:			

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.2060	40.14	10.67	50.81	63.36	-12.55	QP	
2	0.2060	30.65	10.67	41.32	55.57	-14.25	AVG	
3	0.2660	33.53	10.64	44.17	61.24	-17.07	QP	
4	0.2660	18.07	10.64	28.71	52.81	-24.10	AVG	
5 *	0.3460	36.71	10.61	47.32	59.06	-11.74	QP	
6	0.3460	27.50	10.61	38.11	49.97	-11.86	AVG	
7	0.4180	33.31	10.58	43.89	57.49	-13.60	QP	
8	0.4180	24.22	10.58	34.80	47.93	-13.13	AVG	
9	0.6419	26.26	10.59	36.85	56.00	-19.15	QP	
10	0.6419	16.10	10.59	26.69	46.00	-19.31	AVG	
11	5.1539	21.91	10.54	32.45	60.00	-27.55	QP	
12	5.1539	14.19	10.54	24.73	50.00	-25.27	AVG	

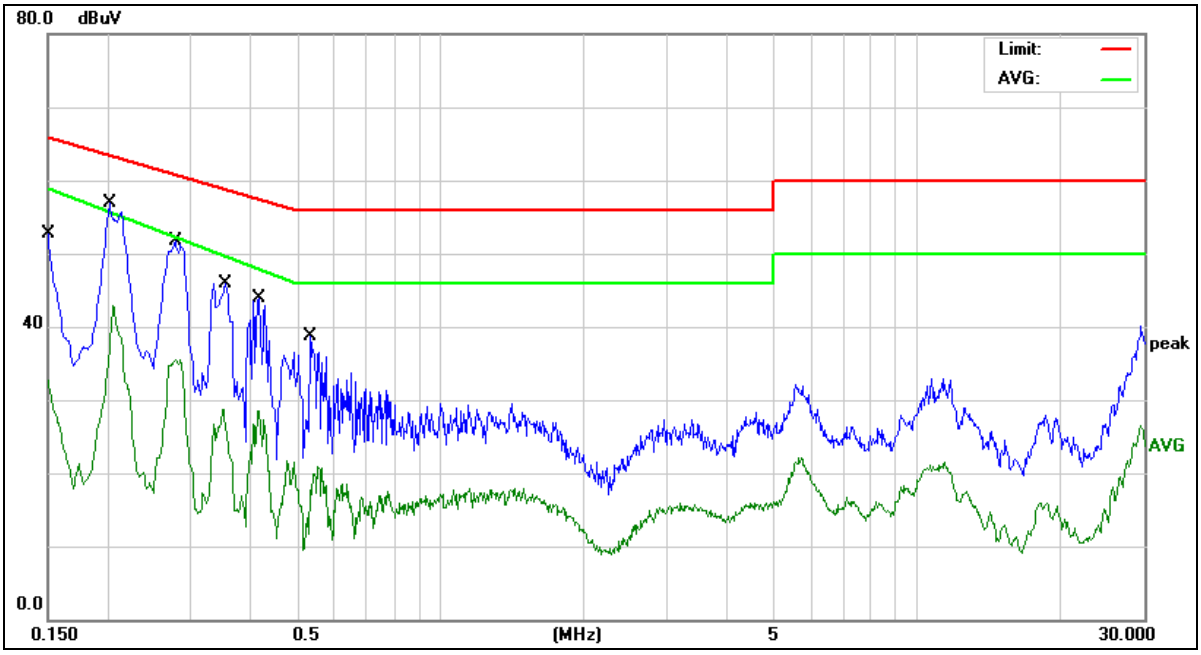
*:Maximum data x:Over limit !:over margin



Site:	**843**	**Phase:N**	**Temperature(C):26(C)**
Limit:	**EN 55014-1 QP**		**Humidity(%):60%**
EUT:	**Power Supply**	**Test Time:**	**2019-01-20**
M/N.:	**V-1202000-UD**	**Power Rating:**	**AC 120V/60Hz**
Mode:	**Full Load**	**Test Engineer:**	**Jack**
Note:			

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1 *	0.1580	40.35	10.71	51.06	65.56	-14.50	QP	
2	0.1580	12.30	10.71	23.01	58.43	-35.42	AVG	
3	0.2140	36.88	10.67	47.55	63.04	-15.49	QP	
4	0.2140	20.87	10.67	31.54	55.16	-23.62	AVG	
5	0.2779	34.57	10.63	45.20	60.88	-15.68	QP	
6	0.2779	21.84	10.63	32.47	52.34	-19.87	AVG	
7	0.3300	28.88	10.62	39.50	59.45	-19.95	QP	
8	0.3300	10.14	10.62	20.76	50.48	-29.72	AVG	
9	0.4020	28.28	10.59	38.87	57.81	-18.94	QP	
10	0.4020	16.10	10.59	26.69	48.35	-21.66	AVG	
11	0.5540	22.49	10.57	33.06	56.00	-22.94	QP	
12	0.5540	13.33	10.57	23.90	46.00	-22.10	AVG	

*:Maximum data x:Over limit !:over margin



Site:	**843**	**Phase:L1**	**Temperature(C):26(C)**
Limit:	**EN 55014-1 QP**		**Humidity(%):60%**
EUT:	**Power Supply**	**Test Time:**	**2019-01-20**
M/N.:	**V-1202000-UD**	**Power Rating:**	**AC 120V/60Hz**
Mode:	**Full Load**	**Test Engineer:**	**Jack**
Note:			

No.	Frequency (MHz)	Reading Level(dBuV)	Factor (dB)	Measure-ment(dBuV)	Limit (dBuV)	Over (dB)	Detector	Comment
1	0.1500	33.19	10.72	43.91	65.99	-22.08	QP	
2	0.1500	19.37	10.72	30.09	58.99	-28.90	AVG	
3 *	0.2020	39.59	10.67	50.26	63.52	-13.26	QP	
4	0.2020	25.19	10.67	35.86	55.78	-19.92	AVG	
5	0.2779	36.09	10.63	46.72	60.88	-14.16	QP	
6	0.2779	24.04	10.63	34.67	52.34	-17.67	AVG	
7	0.3540	27.24	10.60	37.84	58.87	-21.03	QP	
8	0.3540	13.56	10.60	24.16	49.73	-25.57	AVG	
9	0.4180	27.63	10.58	38.21	57.49	-19.28	QP	
10	0.4180	16.03	10.58	26.61	47.93	-21.32	AVG	
11	0.5340	20.30	10.57	30.87	56.00	-25.13	QP	
12	0.5340	7.45	10.57	18.02	46.00	-27.98	AVG	

*:Maximum data x:Over limit !:over margin

3.2 DISTURBANCE POWER MEASUREMENT

3.2.1 LIMITS OF DISTURBANCE POWER MEASUREMENT

FREQUENCY (MHz)	Limit (at 3m)	
	QP（dBpW）	AV(dBpw)
30 – 300	45 – 55	35 – 45

Notes:

(1) The tighter limit applies at the band edges.

3.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Absorbing clamp	LUTHI	MDS 21	4202	2019-05-11
2	6 db attenuator	N/A	N/A	N/A	2019-05-23
3	RF Cable	N/A	N/A	3#	2019-05-23
4	EMI Test Receiver	Rohde & Schwarz	ESCI	101358	2019-05-23

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

3.2.3 TEST PROCEDURE

a. The EUT was placed on a non-metallic table of 0.8 m of height above the floor and at least 0.8m from other metallic objects and from any person. The lead to be measured shall be stretched in a straight horizontal line for a length sufficient to accommodate the absorbing clamp and to permit the necessary adjustment of its position for tuning.

b. Any other lead than that to be measured shall disconnected..

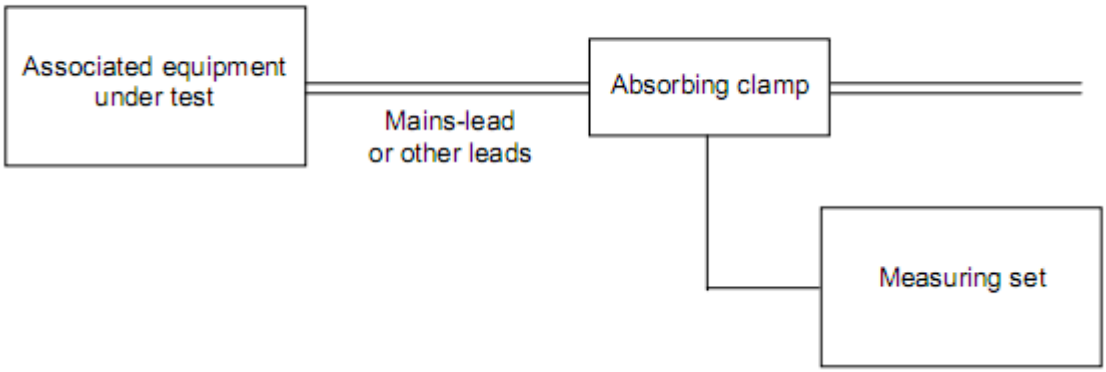
c. At each test frequency the absorbing clamp shall be moved along the lead until the maximum value is found between a position adjacent to the equipment under test and a distance of 6 m

d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.4 DEVIATION FROM TEST STANDARD

No deviation

3.2.5 TEST SETUP



3.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 3.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.7 TEST RESULTS

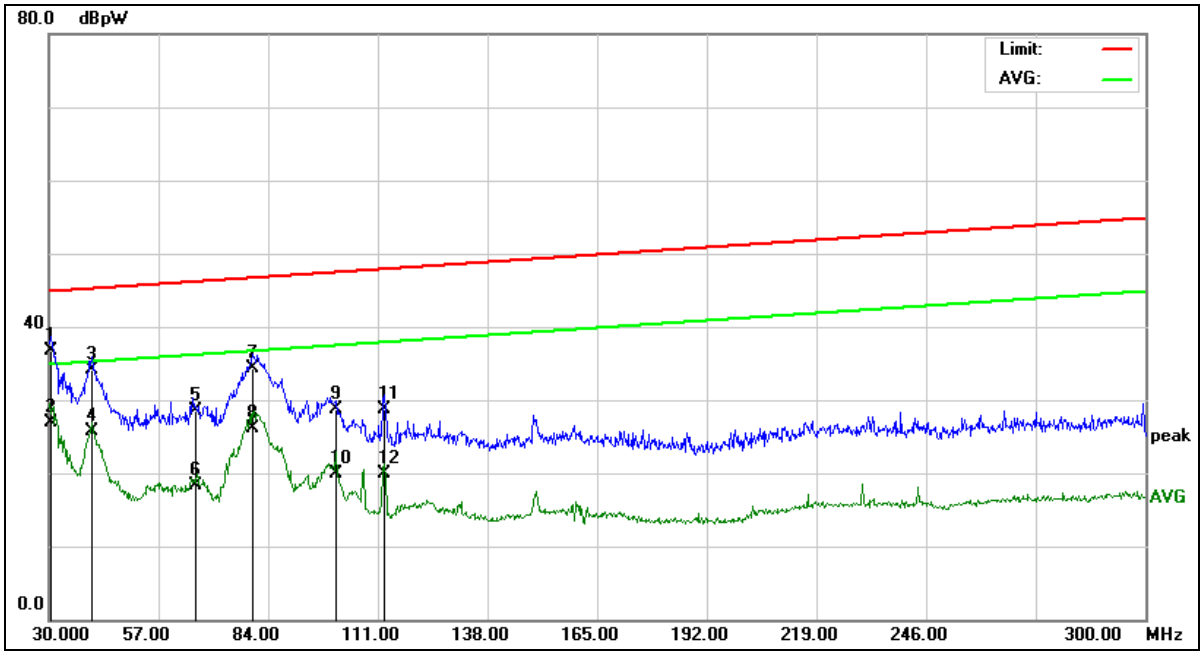
EUT：	Power Supply	**Model No. ：**	V-1202000-UD
Temperature：	26℃	**Relative Humidity：**	60%
Pressure：	1009 hPa	**Test Power ：**	AC 230V/50Hz, AC 120V/60Hz
Test Mode ：	Full Load		

Remark：

(1) Reading in which marked as QP means measurements by using Quasi-Peak Detector ,and AV means measurements by using Average Detector.

(2) All readings are QP Mode value unless otherwise stated AVG in column of『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.

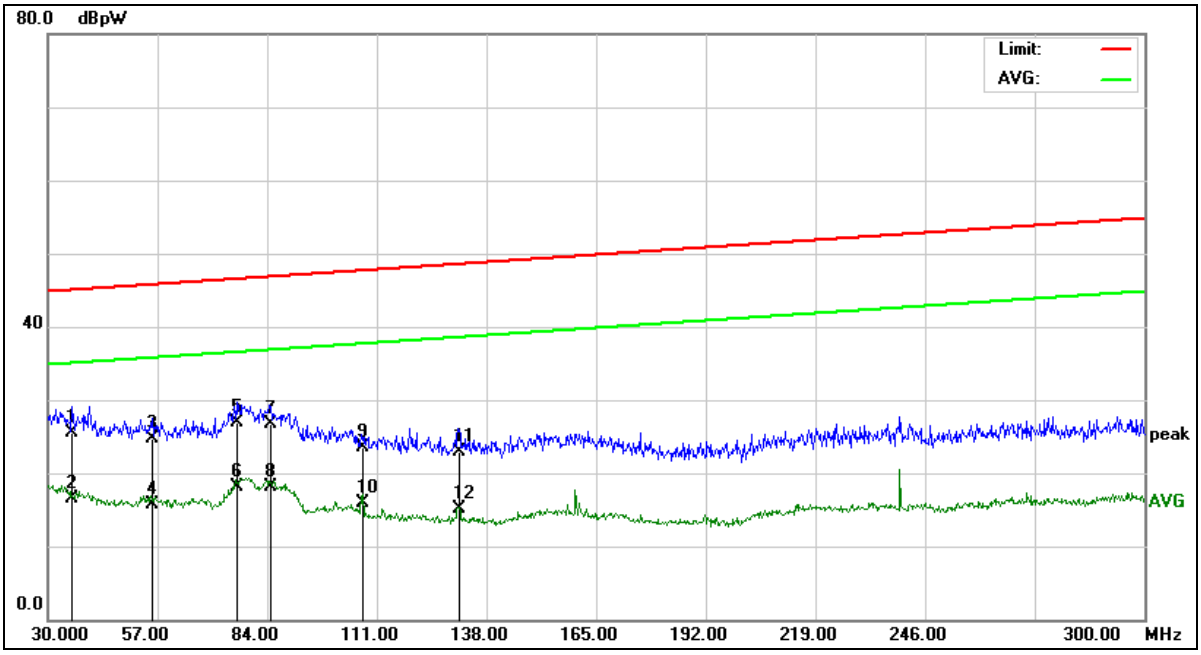
(3) Measuring frequency range from 30MHz to 300MHz.



Site:	**843**		**Temperature(C):26(C)**
Limit:	**EN55014-1 Clamp(QP)**		**Humidity(%):60%**
EUT:	**Power Supply**	**Test Time:**	**2019-01-20**
M/N.:	**V-1202000-UD**	**Power Rating:**	**AC 230V/50Hz**
Mode:	**Full Load**	**Test Engineer:**	**Jack**
Note:	**AC**		

No.	Frequency (MHz)	Reading Level(dBpW)	Factor (dB)	Measure-ment(dBpW)	Limit (dBpW)	Over (dB)	Detector	Comment
1	30.5600	10.47	26.33	36.80	45.02	-8.22	QP	
2 *	30.5600	0.57	26.33	26.90	35.02	-8.12	AVG	
3	40.7200	8.37	25.64	34.01	45.40	-11.39	QP	
4	40.7200	0.07	25.64	25.71	35.40	-9.69	AVG	
5	66.1200	4.46	24.13	28.59	46.34	-17.75	QP	
6	66.1200	-5.81	24.13	18.32	36.34	-18.02	AVG	
7	80.2400	10.04	24.28	34.32	46.86	-12.54	QP	
8	80.2400	1.73	24.28	26.01	36.86	-10.85	AVG	
9	100.8000	4.77	23.98	28.75	47.62	-18.87	QP	
10	100.8000	-4.16	23.98	19.82	37.62	-17.80	AVG	
11	112.6400	5.18	23.50	28.68	48.06	-19.38	QP	
12	112.6400	-3.53	23.50	19.97	38.06	-18.09	AVG	

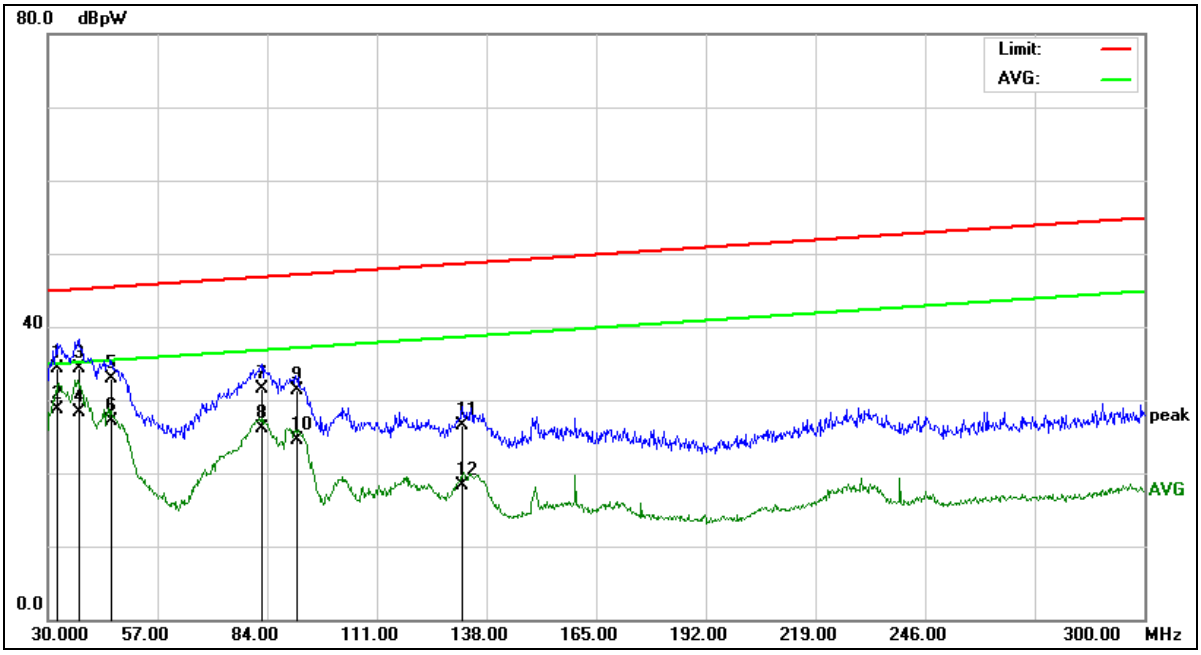
*:Maximum data x:Over limit !:over margin



Site:	**843**		**Temperature(C):26(C)**
Limit:	**EN55014-1 Clamp(QP)**		**Humidity(%):60%**
EUT:	**Power Supply**	**Test Time:**	**2019-01-20**
M/N.:	**V-1202000-UD**	**Power Rating:**	**AC 230V/50Hz**
Mode:	**Full Load**	**Test Engineer:**	**Jack**
Note:	**DC**		

No.	Frequency (MHz)	Reading Level(dBpW)	Factor (dB)	Measure-ment(dBpW)	Limit (dBpW)	Over (dB)	Detector	Comment
1	36.0400	-0.47	25.88	25.41	45.22	-19.81	QP	
2	36.0400	-9.41	25.88	16.47	35.22	-18.75	AVG	
3	55.8800	0.40	24.35	24.75	45.96	-21.21	QP	
4	55.8800	-8.55	24.35	15.80	35.96	-20.16	AVG	
5	76.6800	2.46	24.41	26.87	46.73	-19.86	QP	
6 *	76.6800	-6.27	24.41	18.14	36.73	-18.59	AVG	
7	84.7200	2.61	24.04	26.65	47.03	-20.38	QP	
8	84.7200	-6.01	24.04	18.03	37.03	-19.00	AVG	
9	107.4800	-0.24	23.71	23.47	47.87	-24.40	QP	
10	107.4800	-7.85	23.71	15.86	37.87	-22.01	AVG	
11	131.2400	-0.27	23.19	22.92	48.75	-25.83	QP	
12	131.2400	-8.15	23.19	15.04	38.75	-23.71	AVG	

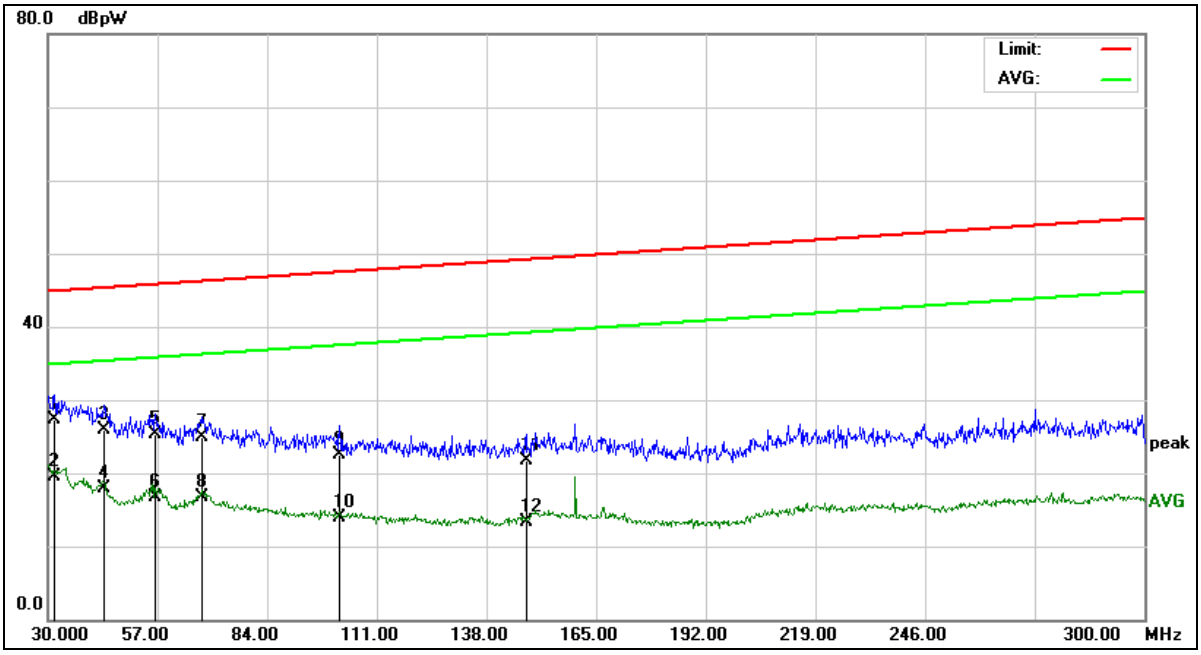
*:Maximum data x:Over limit !:over margin



Site:	**843**		**Temperature(C):26(C)**
Limit:	**EN55014-1 Clamp(QP)**		**Humidity(%):60%**
EUT:	**Power Supply**	**Test Time:**	**2019-01-20**
M/N.:	**V-1202000-UD**	**Power Rating:**	**AC 120V/60Hz**
Mode:	**Full Load**	**Test Engineer:**	**Jack**
Note:	**AC**		

No.	Frequency (MHz)	Reading Level(dBpW)	Factor (dB)	Measure-ment(dBpW)	Limit (dBpW)	Over (dB)	Detector	Comment
1	32.4400	8.13	26.16	34.29	45.09	-10.80	QP	
2 *	32.4400	2.57	26.16	28.73	35.09	-6.36	AVG	
3	37.8000	8.59	25.81	34.40	45.29	-10.89	QP	
4	37.8000	2.59	25.81	28.40	35.29	-6.89	AVG	
5	45.5200	7.84	25.03	32.87	45.57	-12.70	QP	
6	45.5200	2.09	25.03	27.12	35.57	-8.45	AVG	
7	82.8800	7.44	24.14	31.58	46.96	-15.38	QP	
8	82.8800	1.97	24.14	26.11	36.96	-10.85	AVG	
9	91.2800	7.34	23.90	31.24	47.27	-16.03	QP	
10	91.2800	0.53	23.90	24.43	37.27	-12.84	AVG	
11	132.1600	3.27	23.22	26.49	48.78	-22.29	QP	
12	132.1600	-4.85	23.22	18.37	38.78	-20.41	AVG	

*:Maximum data x:Over limit !:over margin



Site:	**843**		**Temperature(C):26(C)**
Limit:	**EN55014-1 Clamp(QP)**		**Humidity(%):60%**
EUT:	**Power Supply**	**Test Time:**	**2019-01-20**
M/N.:	**V-1202000-UD**	**Power Rating:**	**AC 120V/60Hz**
Mode:	**Full Load**	**Test Engineer:**	**Jack**
Note:	**DC**		

No.	Frequency (MHz)	Reading Level(dBpW)	Factor (dB)	Measure-ment(dBpW)	Limit (dBpW)	Over (dB)	Detector	Comment
1	31.6800	1.16	26.23	27.39	45.06	-17.67	QP	
2 *	31.6800	-6.82	26.23	19.41	35.06	-15.65	AVG	
3	43.9199	0.70	25.20	25.90	45.52	-19.62	QP	
4	43.9199	-7.32	25.20	17.88	35.52	-17.64	AVG	
5	56.5200	1.00	24.28	25.28	45.98	-20.70	QP	
6	56.5200	-7.60	24.28	16.68	35.98	-19.30	AVG	
7	68.0400	0.58	24.38	24.96	46.41	-21.45	QP	
8	68.0400	-7.75	24.38	16.63	36.41	-19.78	AVG	
9	101.8800	-1.52	23.94	22.42	47.66	-25.24	QP	
10	101.8800	-10.00	23.94	13.94	37.66	-23.72	AVG	
11	147.8800	-1.51	23.30	21.79	49.37	-27.58	QP	
12	147.8800	-9.92	23.30	13.38	39.37	-25.99	AVG	

*:Maximum data x:Over limit !:over margin

3.3 HARMONICS CURRENT MEASUREMENT

3.3.1 LIMITS OF HARMONICS CURRENT MEASUREMENT

Table 1 – Limits for Class A equipment

Harmonic order n	Maximum permissible harmonic current A
Odd harmonics	
3	2,30
5	1,14
7	0,77
9	0,40
11	0,33
13	0,21
$15 \le n \le 39$	$0{,}15\ \frac{15}{n}$
Even harmonics	
2	1,08
4	0,43
6	0,30
$8 \le n \le 40$	$0{,}23\ \frac{8}{n}$

Table 2 – Limits for Class C equipment

Harmonic order n	Maximum permissible harmonic currrent expressed as a percentage of the input current at the fundamental frequency %
2	2
3	$30 \cdot \lambda$ *
5	10
7	7
9	5
$11 \le n \le 39$ (odd harmonics only)	3
* λ is the circuit power factor	

Table 3 – Limits for Class D equipment

Harmonic order n	Maximum permissible harmonic current per watt mA/W	Maximum permissible harmonic current A
3	3,4	2,30
5	1,9	1,14
7	1,0	0,77
9	0,5	0,40
11	0,35	0,33
$13 \le n \le 39$ (odd harmonics only)	$\frac{3{,}85}{n}$	See Table 1

3.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	HARMONICS	California Instruments	500IIXCTS-400 -413/PACS-1	1337A01345	2019-11-25

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

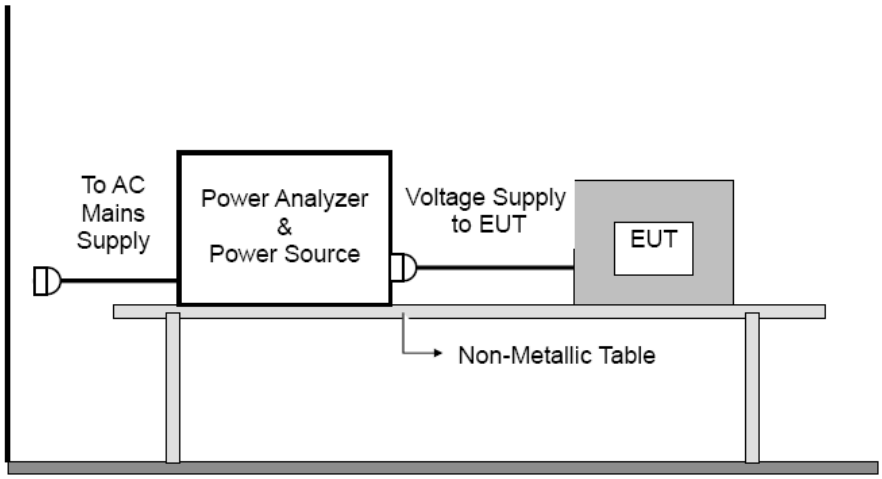
3.3.3 TEST PROCEDURE

a. Test was performed according to the procedures specified in Clause 5.0 of IEC555-2 and/or Sub-clause 6.2 of IEC/EN 61000-3-2 depend on which standard adopted for compliance measurement.
b. All types of harmonic current and/or voltage fluctuation in this report are assessed by direct measurement using flicker-meter.
c. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.3.4 DEVIATION FROM TEST STANDARD

No deviation

3.3.5 TEST SETUP



3.3.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 3.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

3.3.7 TEST RESULTS

The power consumption of EUT is less than 75W and no Limits apply.

3.4 VOLTAGE FLUCTUATION AND FLICKS MEASUREMENT

3.4.1 LIMITS OF VOLTAGE FLUCTUATION AND FLICKSMEASUREMENT

Tests	Limits		Descriptions
	IEC555-3	IEC/EN 61000-3-2	
Pst	≤ 1.0, Tp= 10 min.	≤ 1.0, Tp= 10 min.	Short Term Flicker Indicator
Plt	N/A	≤ 0.65, Tp=2 hr.	Long Term Flicker Indicator
dc	≤ 3 %	≤ 3.3 %	Relative Steady-State V-Chang
dmax	≤ 4 %	≤ 4 %	Maximum Relative V-change
d (t)	N/A	≤ 3.3% for > 500 ms	Relative V-change characteristic

3.4.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	HARMONICS	California Instruments	500IIXCTS-400 -413/PACS-1	1337A01345	2019-11-25

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

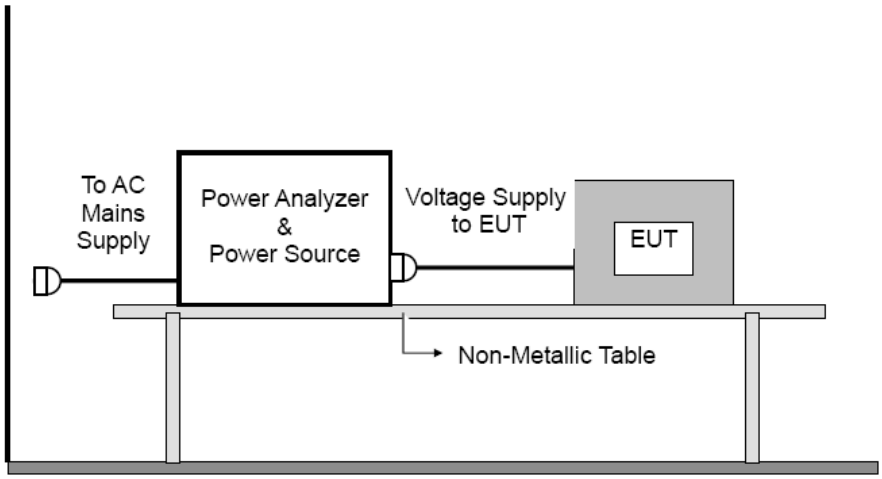
3.4.3 TEST PROCEDURE

a. Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in Clause 5.0/6.0 of IEC555-3 and/or Clause 6.0/4.0 of IEC/EN 61000-3-3 depend on which standard adopted for compliance measurement.
b. All types of harmonic current and/or voltage fluctuation in this report are assessed by direct measurement using flicker-meter.
c. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.4.4 DEVIATION FROM TEST STANDARD

No deviation

3.4.5 TEST SETUP



3.4.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 3.1.6 Unless otherwise a special operating condition is specified in the follows during the testing.

3.4.7 TEST RESULTS

According EN61000-3-3 Clause 6, for voltage changes caused b manual switching ,equipment is deemed to comply without further testing if the maximum r.m.s input current(including inrush current)evalueated over each 10 ms half-period between zero-crossings does not exceed 20A,and the supply current after inrush is within a variation band of 1.5A.

4. IMMUNITY TEST

4.1 STANDARD COMPLIANCE/SERVRITY LEVEL/CRITERIA

Tests Standard No.	TEST SPECIFICATION Level	Test Mode Test Ports	Perform. Criteria	Remark
1. ESD IEC/EN 61000-4-2	8KV air discharge 4KV contact discharge	Direct Mode	B	PASS
	4KV HCP discharge 4KV VCP discharge	Indirect Mode	B	PASS
2. RS IEC/EN 61000-4-3	80 MHz to 1000 MHz 3V/m(rms), 1 KHz, 80%, AM modulated	Enclosure	A	N/A
3. EFT/Burst IEC/EN 61000-4-4	1.0KV(peak) 5/50ns Tr/Th 5KHz Repetition Freq.	AC Power Port	B	PASS
	0.5 KV(peak) 5/50ns Tr/Th 5KHz Repetition Freq.	CTL/Signal Data Line Port	B	N/A
4. Surges IEC/EN 61000-4-5	1 KV(5P/5N) 1.2/50(8/20) Tr/Th us	L-N	B	PASS
	2 KV(5P/5N) 1.2/50(8/20) Tr/Th us	L-PE N-PE	B	N/A
5 Injected Current IEC/EN 61000-4-6	0.15 MHz to 230 MHz 1V(rms), 1KHz 80%, AM Modulated 150Ω source impedance	CTL/Signal Port	A	N/A
	0.15 MHz to 230 MHz 3V(rms), 1KHz 80%, AM Modulated 150Ω source impedance	AC Power Port	A	PASS
	0.15 MHz to230 MHz 1V(rms), 1KHz 80%, AM Modulated 150Ω source impedance	DC Power Port	A	N/A

6 Volt. Interruptions Volt. Dips IEC/EN 61000-4-11	Voltage Dips: AC Line 100/240V, 50Hz i) 30% reduction for 25 period, Performance Criterion C ii) 60% reduction for 10 period, Performance Criterion C Voltage Interruptions: 100% reduction for 0.5 period Performance Criterion C Voltage Dips: AC Line 100/240V, 60Hz i) 30% reduction for 30 period, Performance Criterion C ii) 60% reduction for 12 period, Performance Criterion C Voltage Interruptions: 100% reduction for 0.5 period Performance Criterion C	AC Power Port	C	PASS

* Remark:

(1) “N/A”: denotes test is not applicable in this Test Report.

(2) ESD test was carried out in ESD room.

(3) Other test was carried out in EMS room.

4.2 GENERAL PERFORMANCE CRITERIA

According to **EN55014-2**standard, the general performance criteria as following:

Criterion A	The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. 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 by what the user product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion B	After the test, the equipment shall continue to operate as intended without operator Intervention. No degradation of performance or loss of function is allowed, after the application of the phenomenon below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state if stored data allowed to persist after the test. 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 by what the user may reasonably expect from the equipment if used as intended.
Criterion C	Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

4.3 GENERAL PERFORMANCE CRITERIA TEST SETUP

The EUT tested system was configured as the statements of **3.1.6** Unless otherwise a special operating condition is specified in the follows during the testing.

4.4 ESD TESTING

4.4.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Required Performance	B
Discharge Voltage:	Air Discharge: 2kV/4kV/8kV/15kV (Direct) Contact Discharge: 2kV/4kV/6kV/8kV (Direct/Indirect)
Polarity:	Positive & Negative
Number of Discharge:	Air Discharge: 10 times at each test point Contact Discharge: min. 200 times in total
Discharge Mode:	Contact and Air
Discharge Period:	1 second minimum

4.4.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	ESD Simulator	Prima	ESD61002B	PR13012530	2019-05-11

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

4.4.3 TEST PROCEDURE

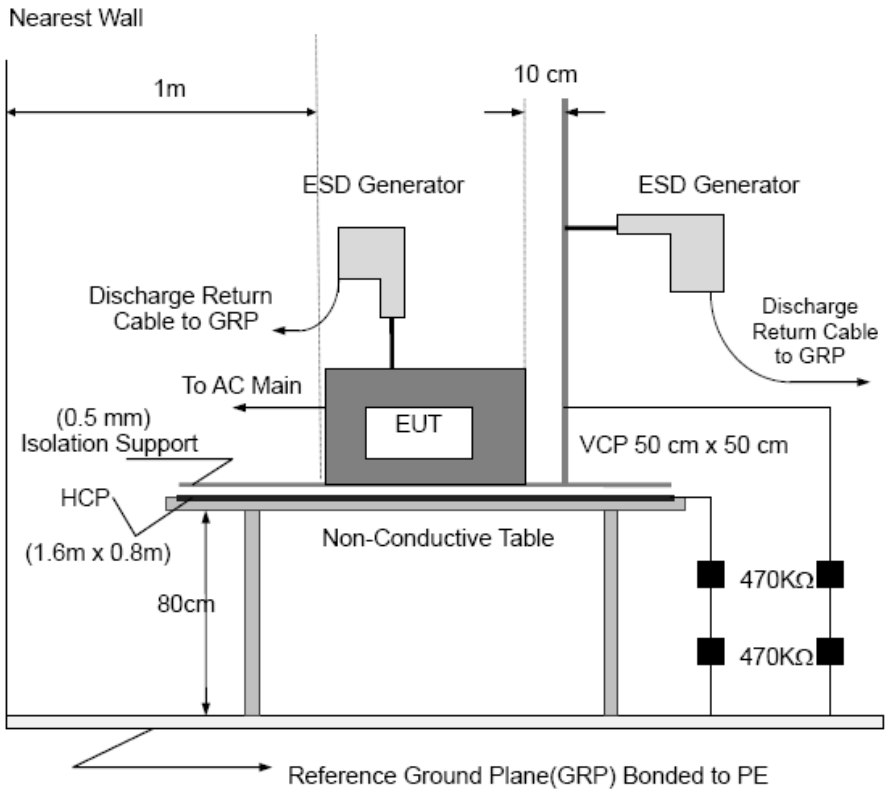
The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

a. Contact discharge was applied to conductive surfaces and coupling planes of the EUT.
   During the test, it was performed with single discharges. For the single discharge time between successive single discharges was at least 1 second. The EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points. One of the test points shall be subjected to at least 50 indirect discharges to the center 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 are available, then at least 200 indirect discharges shall be applied in the indirect mode. Test shall be performed at a maximum repetition rate of one discharge per second.
   Vertical Coupling Plane (VCP):
   The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.
   The four faces of the EUT will be performed with electrostatic discharge.
   Horizontal Coupling Plane (HCP):
   The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.
   The four faces of the EUT will be performed with electrostatic discharge.
b. Air discharges at insulation surfaces of the EUT.
   It was at least ten single discharges with positive and negative at the same selected point.
c. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940k total impedance. The equipment under test, was installed in a representative system as described in section 7 of IEC /EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

FLOOR-STANDING EQUIPMENT

The equipment under test was installed in a representative system as described in section 7 of IEC/EN 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of0.1-meter thickness. The GRP consisted of a sheet of aluminum that is at least 0.25mm thick, and 2.5meters square connected to the protective grounding system and extended at least 0.5 meters from the EUT on all sides.

4.4.6 TEST RESULTS

Mode	Air Discharge								Contact Discharge							
	2KV		4KV		8KV		15KV		2KV		4KV		6KV		8KV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N
1	--	--	A	A	A	A	--	--	--	--	--	--	--	--	--	--
2	--	--	--	--	--	--	--	--	A	A	A	A	--	--	--	--
3	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	--	--	--	--	--	--	--	--	--	--			--	--	--	--
5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6	-	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
8	--	--	--	--	-	--	--	--	--	--	--	--	--	--	--	--
9	--	--	--	--	-	--	--	--	--	--	--	--	--	--	--	--
Criteria	**B**								**B**							
Result	**A**								**A**							
Judgment	**PASS**								**PASS**							

Mode	HCP Discharge								VCP Discharge							
	2KV		4KV		6KV		8KV		2KV		4KV		6KV		8KV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N
1	-	--	A	A	--	--	--	--	-	--	A	A	--	--	--	--
2	--	--	A	A	--	--	--	--	--	--	A	A	--	--	--	--
3	--	--	A	A	-	--	--	--	--	--	A	A	-	--	--	--
4	-	--	A	A	--	--	--	--	-	--	A	A	--	--	--	--
Criteria	**B**								**B**							
Result	**A**								**A**							
Judgment	**PASS**								**PASS**							

Note:

1) P/N denotes the Positive/Negative polarity of the output voltage.
2) Test condition:
   Direct discharges: Minimum 50 times (Positive/Negative) at each point. Air discharges / Indirect (HCP/VCP): Minimum 20 times (Positive/Negative) at each point.
3) Test location(s) in which discharge (Air and contact discharge) to be described as following
4) The Indirect (HCP/VCP) discharges description of test point as following:
   1.left side 2.right side 3.front side 4.rear side
5) N/A - denotes test is not applicable in this test report
7) Criteria B: The EUT function loss during the test, but self-recoverable after the test.

Test location description:

No	Description	No	Description	No	Description
1	Slot 4 Points	4	DC port		
2	Output 2 Point	5			
3		6			

4.5 RS TESTING

4.5.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-3
Required Performance	A
Frequency Range:	80 MHz - 1000 MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Polarity of Antenna:	Horizontal and Vertical
Test Distance:	3 m
Antenna Height:	1.5 m
Dwell Time:	at least 3 seconds

4.5.2 MEASUREMENT INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Next Cal.
Signal Generator	Aglilet	N517113-50B	MY53050160	2019-10-21
Amplifier	A&R	150W1000M3	313157	2019-10-18
Amplifier	A&R	50SIG6M2	0342835	2019-11-07
Log-periodic Antenna	SCHWARZBECK	STLP 9128E	9128E-012	2019-01-19
Microwave log-periodic antenna	SCHWARZBECK	STLP 9149	9149.222	2019-12-13
Isotropic Field Probe	A&R	FL700	0342652	2019-09-11
10 meter anechoic chamber	Albatross	10m	/	2020-06-26

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

4.5.3 TEST PROCEDURE

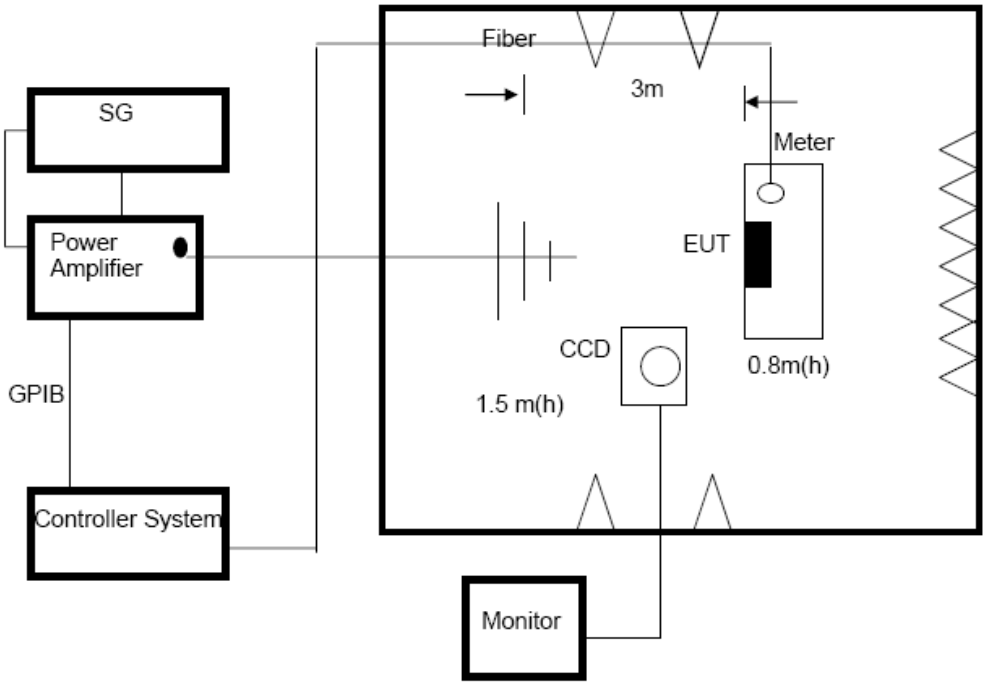
The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.
The testing distance from antenna to the EUT was 3 meters.
The other condition as following manner:

a. The field strength level was 3V/m.
b. The frequency range is swept from 80 MHz to 1000 MHz, with the signal 80%amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5x 10-3 decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
d. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

4.5.6 TEST RESULTS

This product belong to Catalog II equipment, so no applicable

4.6 EFT/BURST TESTING

4.6.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-4
Required Performance	B
Test Voltage:	Power Line：±1 kV
Polarity:	Positive & Negative
Impulse Frequency:	5 kHz
Impulse Wave shape :	5/50 ns
Burst Duration:	15 ms
Burst Period:	300 ms
Test Duration:	Not less than 1 min.

4.6.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Electrical Intelligent Transient Generator	Everfine	EMS61000-4B	G114921CA1341115	2019-05-23

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

4.6.3 TEST PROCEDURE

The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min.
The other condition as following manner:

a. The length of power cord between the coupling device and the EUT should not exceed 1 meter.

b. Both positive and negative polarity discharges were applied.

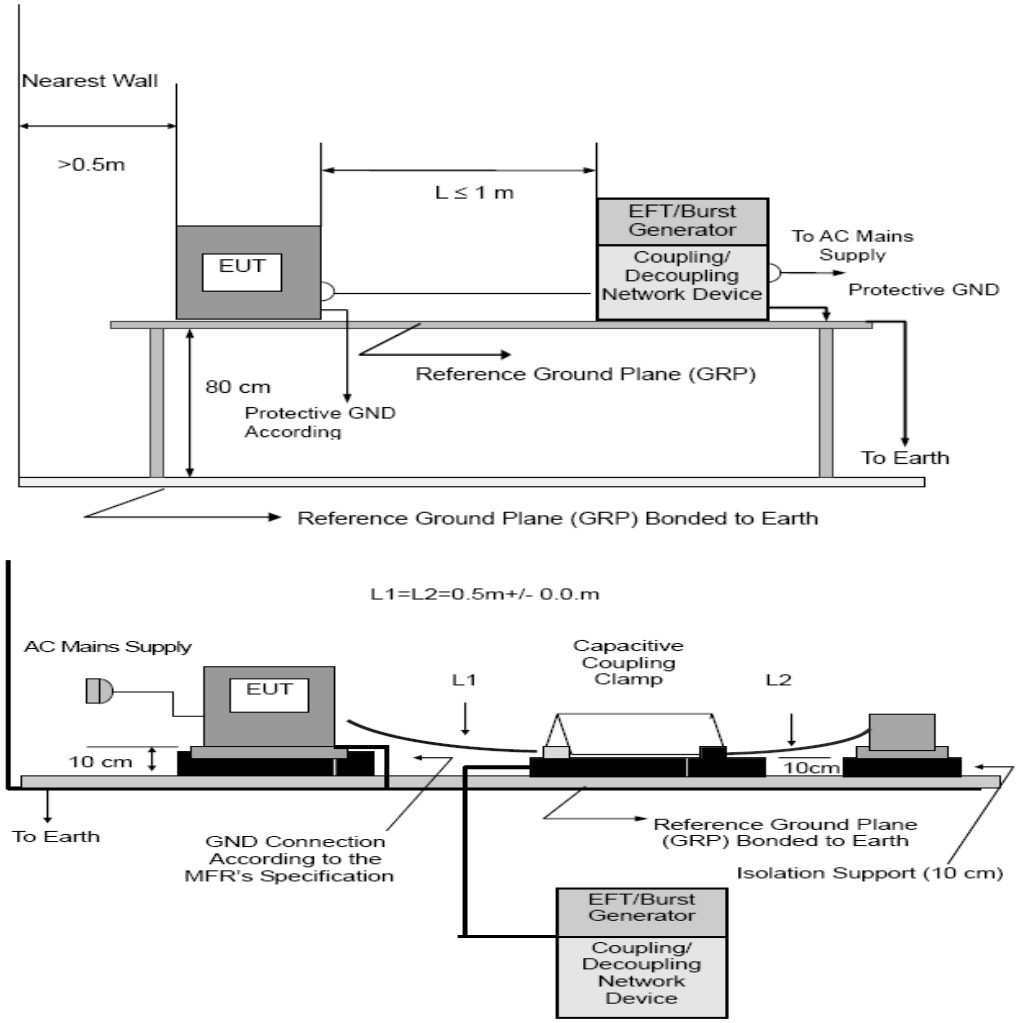
c. The duration time of each test sequential was 1 minute

d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table (0.8m high) standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system. A minimum distance of 0.5m was provided between the EUT and the walls of the laboratory or any other metallic structure.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC/EN 61000-4-4 and its cables, were isolated from the Ground Reference Plane by an insulating support that is 0.1-meter thick. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system.

4.6.6 TEST RESULTS

Mode	AC Power Line		DC Power Line		Signal/Control Line	
Test Level	1KV		0.5KV		0.5KV	
Port(s)	Polarity	Results	Polarity	Results	Polarity	Results
Line (L)	P	A	P		P	
	N	A	N		N	
Neutral (N)	P	A	P		P	
	N	A	N		N	
Ground (PE)	P		P		P	
	N		N		N	
Signal/Control Line	P		P		P	
	N		N		N	
Criteria	**B**		**B**		**B**	
Result	**A**		**--**		**--**	
Judgment	**PASS**		**N/A**		**N/A**	

1) P/N denotes the Positive/Negative polarity of the output voltage.

2) N/A - denotes test is not applicable in this test report

3) Criteria A: There was no change operated with initial operating during the test.

4) Criteria B: The EUT function loss during the test, but self-recoverable after the test.

5) Criteria C: The system shut down during the test.

4.7 SURGE TESTING

4.7.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-5
Required Performance	B
Wave-Shape:	Combination Wave 1.2/50 us Open Circuit Voltage 8 /20 us Short Circuit Current
Test Voltage:	Power Line：0.5 kV, 1 kV, 2 kV
Surge Input/Output:	L-N, L-PE, N-PE
Generator Source:	2 ohm between networks
Impedance:	12 ohm between network and ground
Polarity:	Positive/Negative
Phase Angle:	0 /90/180/270
Pulse Repetition Rate:	1 time / min. (maximum)
Number of Tests:	5 positive and 5 negative at selected points

4.7.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Lightning surge generator	Prima	SUG61005CX	PR13065597	2019-05-23

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

4.7.3 TEST PROCEDURE

a. For EUT:

The surge is to be applied to the EUT terminals via the capacitive coupling network. Decoupling networks are 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. The power cord between the EUT and the coupling/decoupling networks shall be 2meters in length (or shorter).

b. For test applied to unshielded unsymmetrically operated interconnection lines of EUT:

The surge is applied to the lines via the capacitive coupling. The coupling /decoupling networks shall not influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

c. For test applied to unshielded symmetrically operated interconnection /telecommunication lines of EUT:

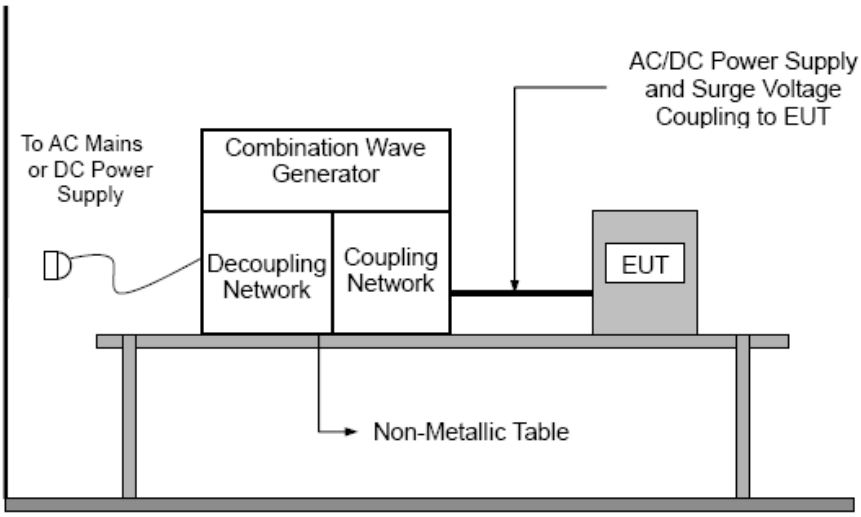
The surge is applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestor cannot be specified. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.7.4 DEVIATION FROM TEST STANDARD

No deviation

4.7.5 TEST SETUP



4.7.6 TEST RESULTS

Wave Form / EUT Ports Tested	1.2/50(8/20) us						Criteria	Judgment
	Polarity	Phase	Voltage					
			0.5kV	1kV	1.5kV	2kV		
L - N	+/-	0°					B	PASS
	+/-	90°		B				
	+/-	180°						
	+/-	270°		B				
L - PE	+/-	0°					B	N/A
	+/-	90°						
	+/-	180°						
	+/-	270°						
N - PE	+/-	0°					B	N/A
	+/-	90°						
	+/-	180°						
	+/-	270°						
Signal Line (N/A)	+/-	0°					B	N/A
	+/-	90°						
	+/-	180°						
	+/-	270°						
Signal Line (N/A)	+/-	0°					B	N/A
	+/-	90°						
	+/-	180°						
	+/-	270°						

Note:

1) N/A - denotes test is not applicable in this Test Report

4.8 INJECTION CURRENT TESTING

4.8.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-6
Required Performance	A
Frequency Range:	0.15 MHz - 230 MHz
Field Strength:	3 Vr.m.s.
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Dwell Time:	at least 3 seconds

4.8.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	CONDUCTED IMMUNITY TEST SYSTEM	FRANKONIA	CIT-10	102D1253	2019-10-08
2	CDN	FRANKONIA	CDN M2+M3	A3011059	2019-10-08
3	Electromagnetic clamp	FRANKONIA	KEMZ-801	21044	2019-10-08

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

4.8.3 TEST PROCEDURE

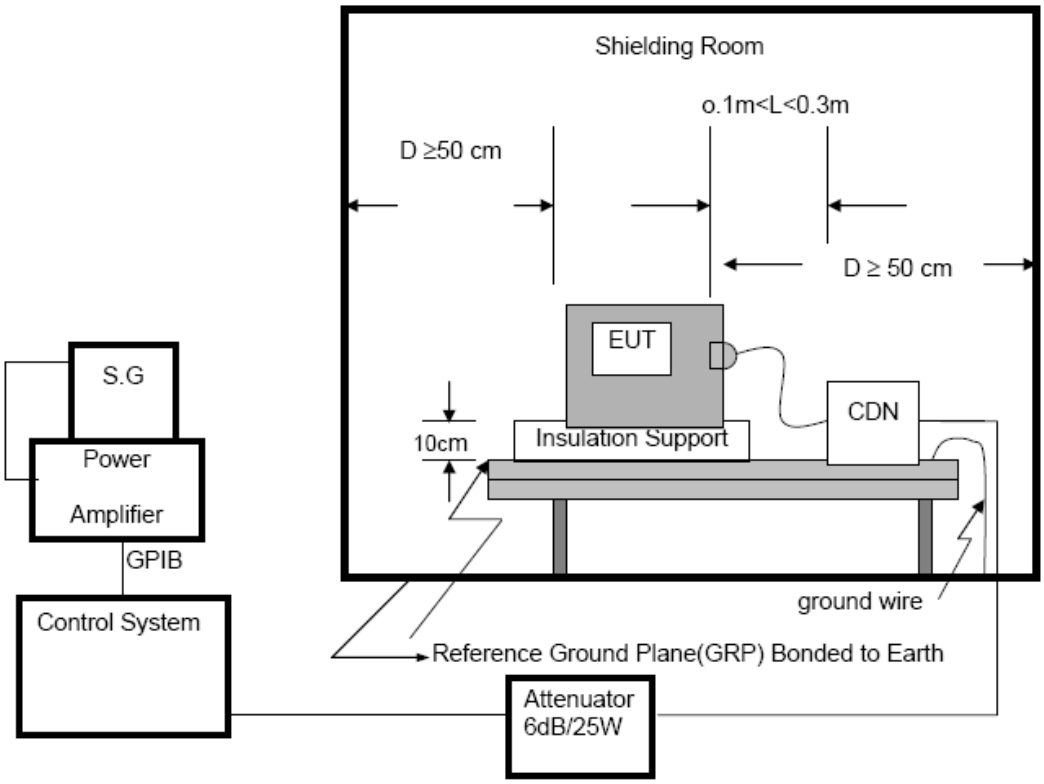
The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min.
The other condition as following manner:

a. The field strength level was 3V.
b. The frequency range is swept from 150 KHz to 80 MHz, with the signal 80%amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5x 10-3 decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
c. The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
d. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.8.4 DEVIATION FROM TEST STANDARD

No deviation

4.8.5 TEST SETUP



For the actual test configuration, please refer to the related Item –EUT Test Photos.

NOTE:

FLOOR-STANDING EQUIPMENT

The equipment to be tested is placed on an insulating support of 0.1 meters height above a ground reference plane. All relevant cables shall be provided with the appropriate coupling and decoupling devices at a distance between 0.1 meters and 0.3 meters from the projected geometry of the EUT on the ground reference plane.

4.8.6 TEST RESULTS

Test Ports (Mode)	Freq. Range MHz)	Field Strength	Perform. Criteria	Results	Judgment
Input/ Output AC. Power Port	0.15 ---230	3V(rms) AM Modulated 1000Hz, 80%	**A**	**A**	**PASS**
Input/ Output DC. Power Port	0.15 --- 230	1V(rms) AM Modulated 1000Hz, 80%	**A**	**--**	**N/A See note 3)**
Signal Line	0.15 --- 230		**A**	**--**	**N/A See note 2)**
control lines	0.15 --- 230		**A**	**--**	**N/A See note 2)**

Note:

1) N/A - denotes test is not applicable in this Test Report.
2) Applicable only to ports interfacing with cables whose total length may exceed 3m according to the manufacturer's function specification.
3) Not applicable to battery operated appliances that cannot be connected to the mains while in use. Not applicable to input ports intended for connection to a battery or a rechargeable battery which shall be removed or disconnected from the apparatus for recharging. Apparatus with a d.c. power input port intended for use with an a.c. − d.c. power adaptor shall be tested on the a.c. power input of the a.c.- d.c. power adaptor specified by the manufacturer or, where none is so specified, using a typical a.c. − d.c. power adaptor. For d.c. input and output ports intended to be connected permanently, the test is only applicable to cables longer than 3 m.

4.9 VOLTAGE INTERRUPTION/DIPS TESTING

4.9.1 TEST SPECIFICATION

Basic Standard:	IEC/EN 61000-4-11
Required Performance**:**	C (For 300% Voltage Dips) C (For 60% Voltage Dips) C (For 100% Voltage Interruptions)
Test Duration Time:	Minimum three test events in sequence
Interval between Event:	Minimum ten seconds
Phase Angle:	0°
Test Cycle:	3 times

4.9.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Voltage Dips And Interruptions Generator	Everfine	EMS61000-11K	G113317CA8341117	2019-05-23

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

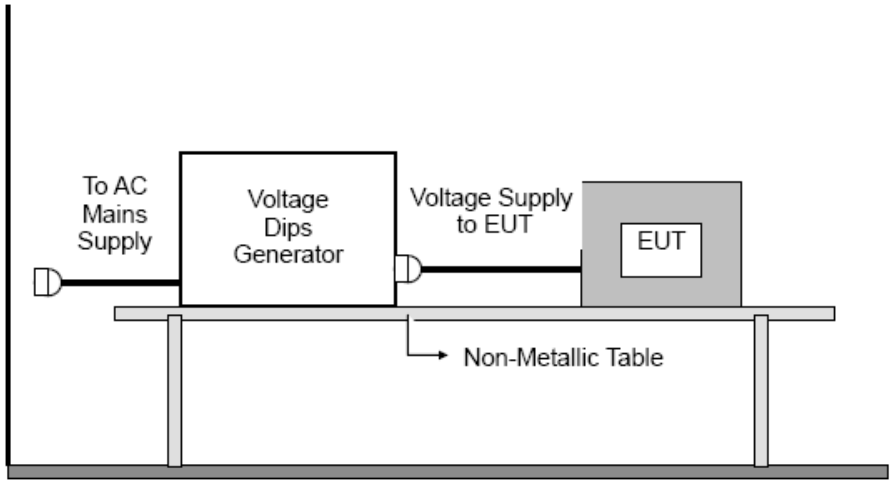
4.9.3 TEST PROCEDURE

The EUT shall be tested for each selected combination of test levels and duration with a sequence of three dips/interruptions with intervals of 10 s minimum (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

4.9.4 DEVIATION FROM TEST STANDARD

No deviation

4.9.5 TEST SETUP



For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.9.6 TEST RESULTS

Voltage Reduction	Periods	Perform Criteria	Results	Judgment
AC 240V/50Hz, AC 100V/50Hz				
Voltage dip 30%	25	C	B	PASS
Voltage dip 60%	10	C	B	PASS
Interruption 100%	0.5	C	A	PASS
AC 240V/60Hz, AC 100V/60Hz				
Voltage dip 30%	30	C	B	PASS
Voltage dip 60%	12	C	B	PASS
Interruption 100%	0.5	C	A	PASS

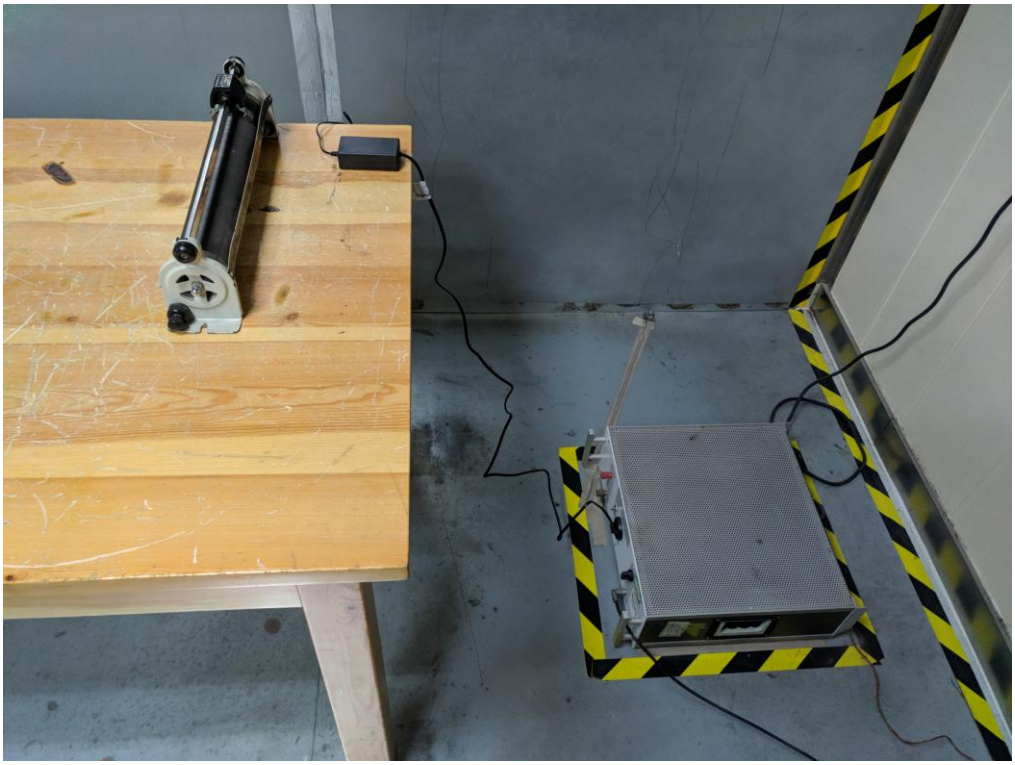
Note:

1) N/A - denotes test is not applicable in this test report.

5. ATTACHMENT

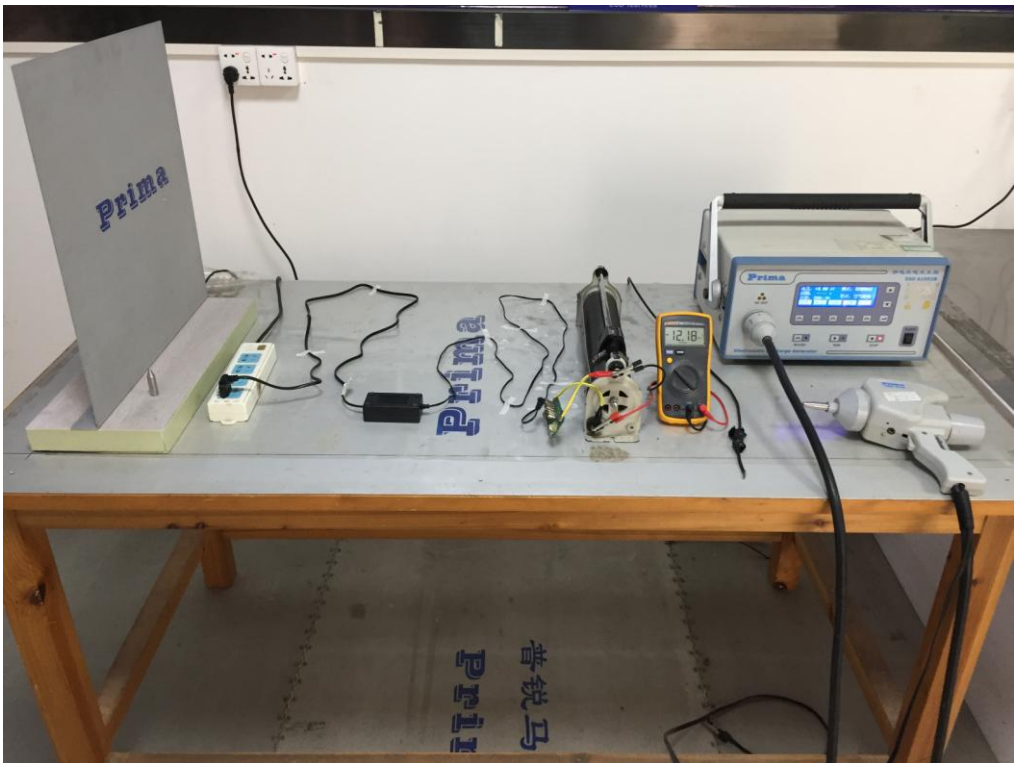
5.1 EUT TEST PHOTO

Conducted Emission Measurement Photo

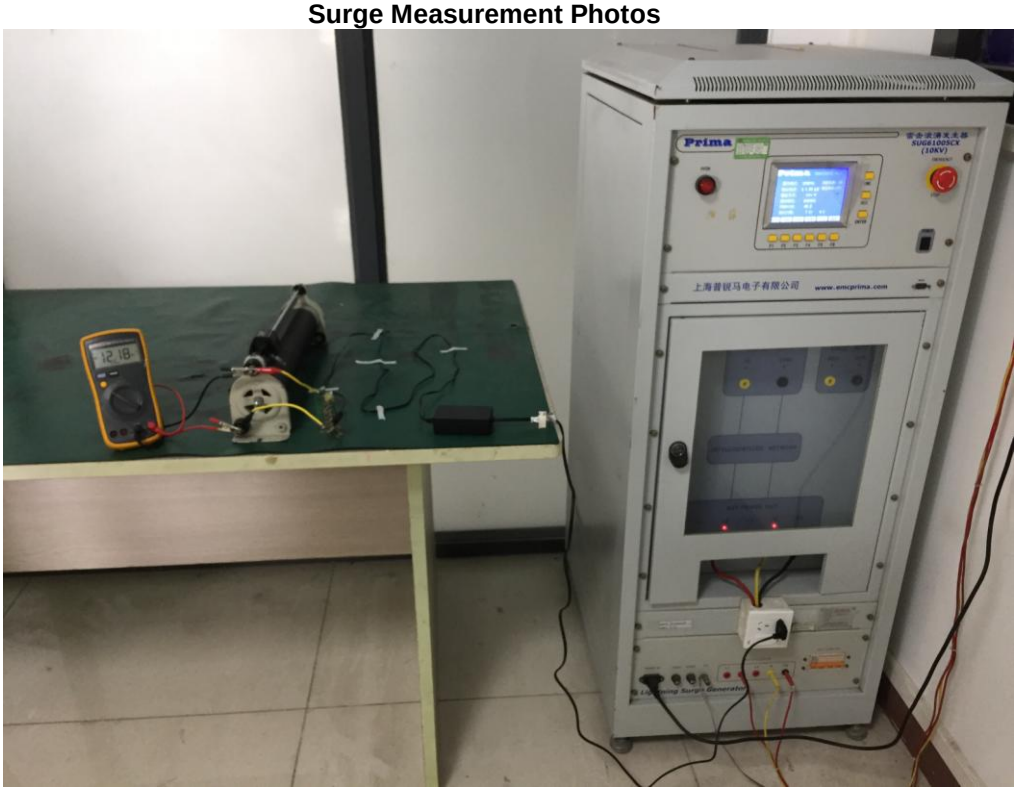


Disturbance Power Measurement Photo

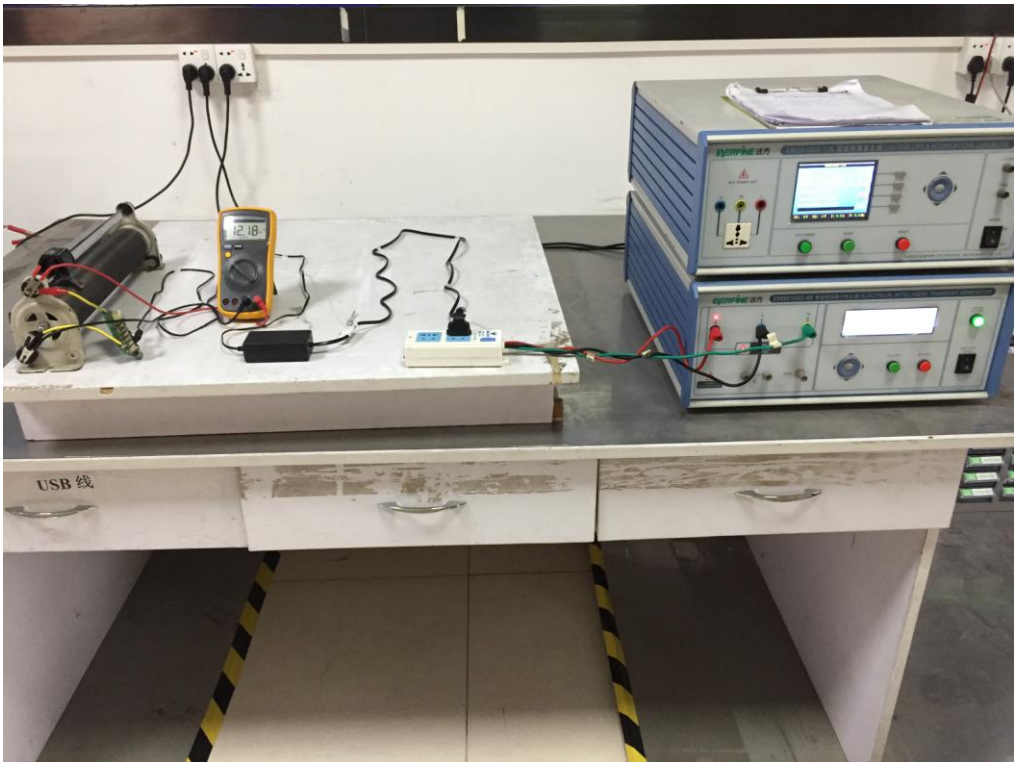
ESD Measurement Photos



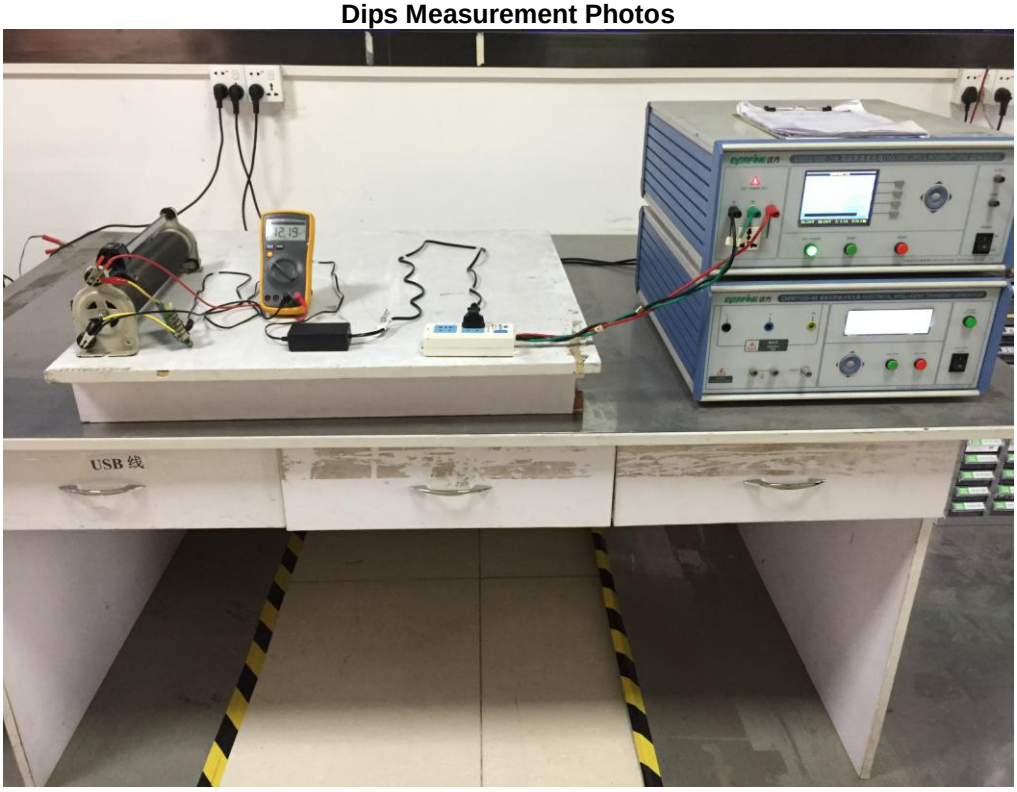
Surge Measurement Photos



EFT Measurement Photos



Dips Measurement Photos



5.2 EUT PHOTO

Figure 1 Overall view of unit for model V-1202000-ED

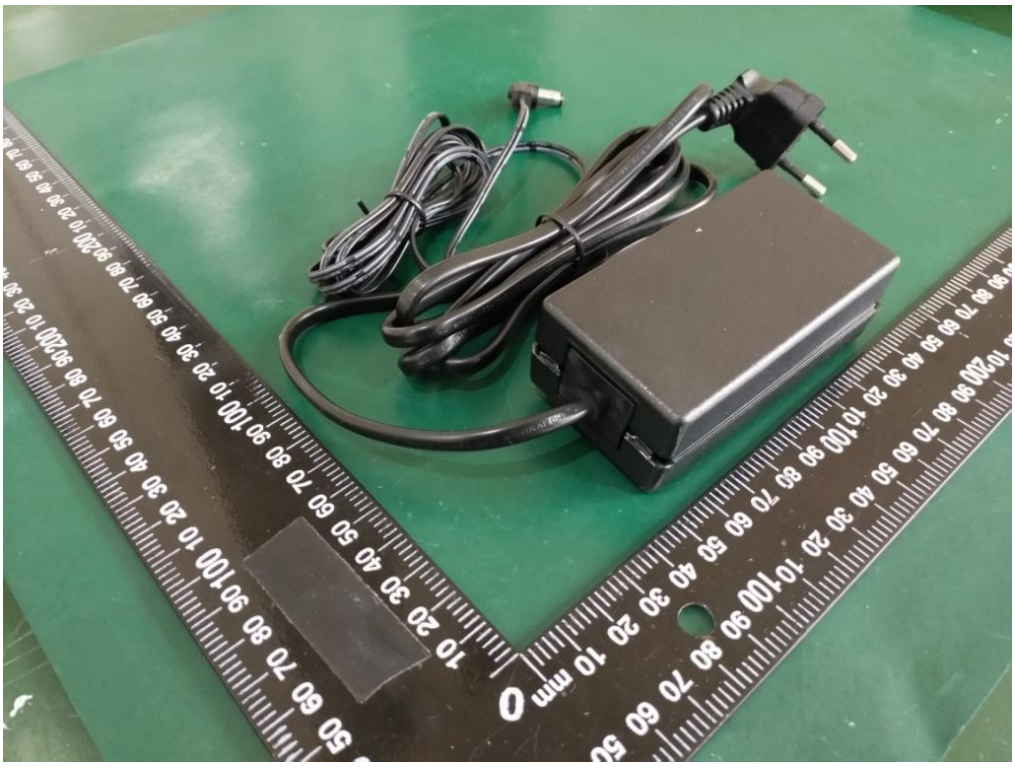


Figure 2 Overall view of unit for model V-1202000-ED

Figure 3 Internal view of unit for model V-1202000-ED

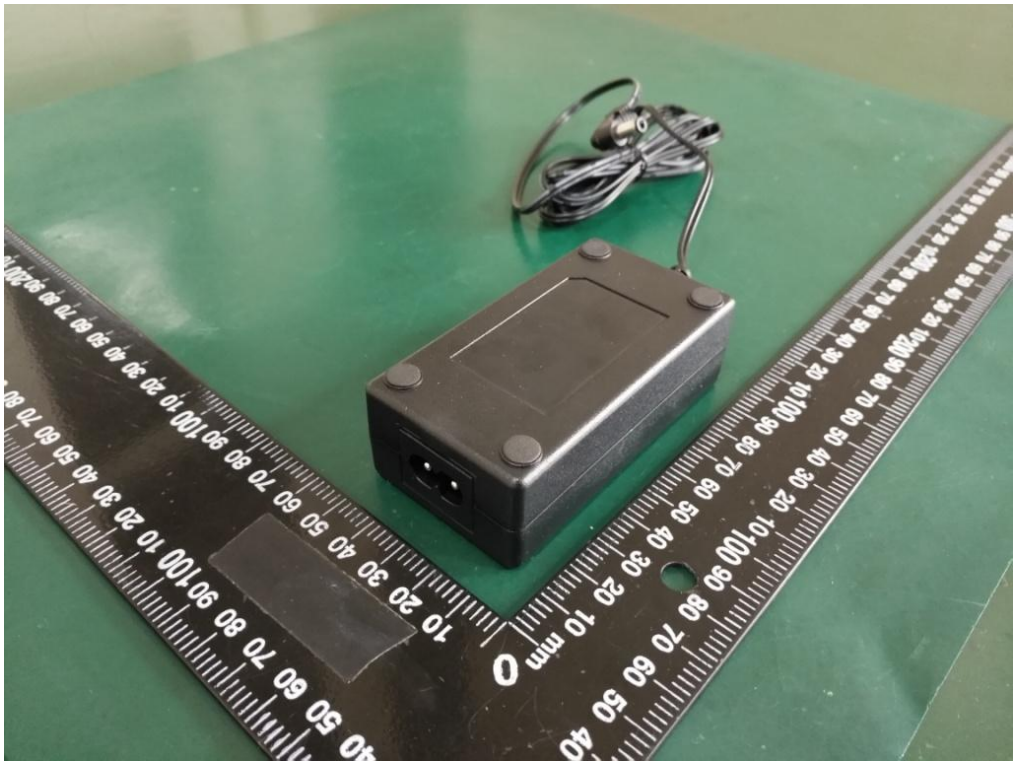


Figure 4 Overall view of unit for model V-1202000-UD

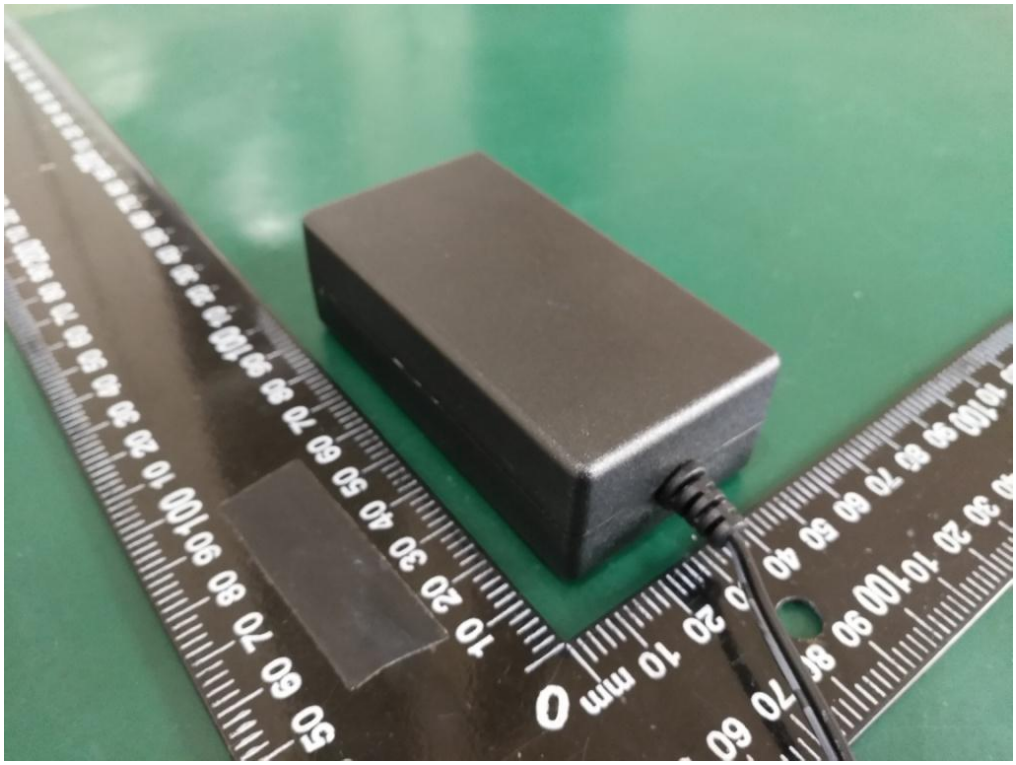


Figure 5 Overall view of unit for model V-1202000-UD

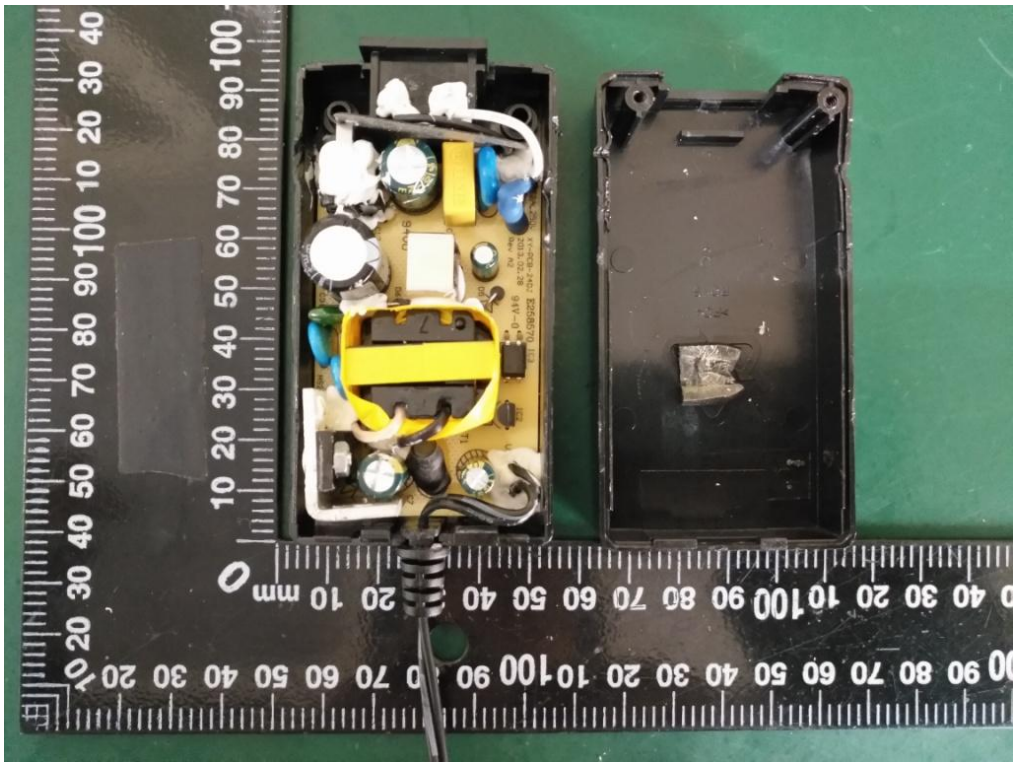


Figure 6 Internal view of unit for model V-1202000-UD

Figure 7 Internal view of unit for model V-1202000-UD

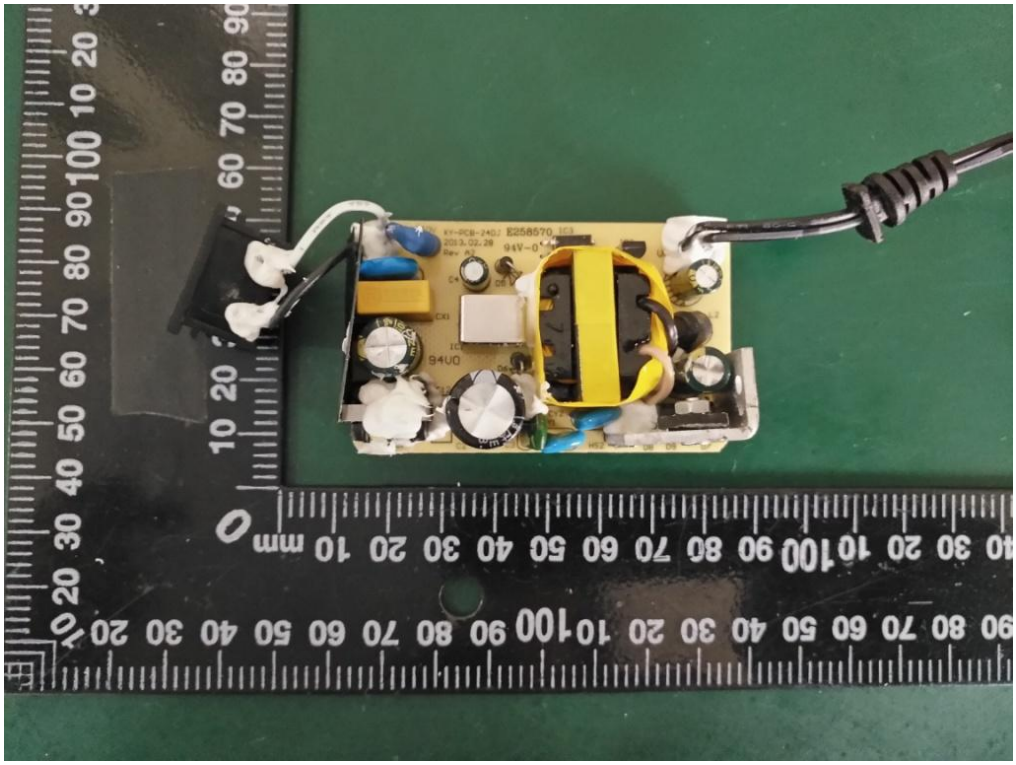


Figure 7 Top view of PCB

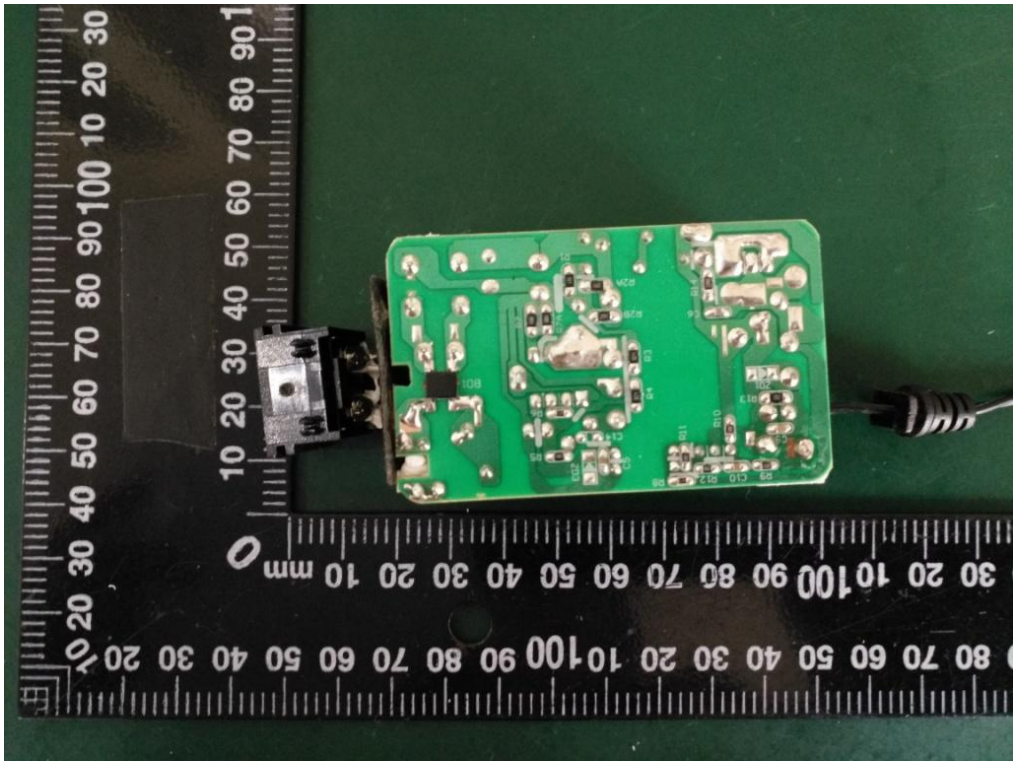


Figure 8 Bottom view of PCB