EN 55032:2015+A1:2020
EN 55035:2017+A11:2020
EN IEC 61000-3-2:2019+A1:2021
EN 61000-3-3:2013+A2:2021

TEST REPORT

For

XIAMEN HYSEN CONTROL TECHNOLOGY CO., LTD

2F, No.888 Yuan long Industrial Park, Haicang District, Xiamen, Fujian, China

Tested Model: HY02TP WIFI
Series Model: HY02TPR WIFI

Report Type:	**Product Name:**
Original Report	THERMOSTAT

Project Engineer:	Jack Shen
Report Number:	RXM220314053-01C
Report Date:	2022-06-11
Reviewed By:	Chris Wang
Prepared By:	Bay Area Compliance Laboratories Corp. (Kunshan) No.248 Chenghu Road, Kunshan, Jiangsu province, China Tel: +86-0512-86175000 Fax: +86-0512-88934268 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	XIAMEN HYSEN CONTROL TECHNOLOGY CO., LTD
Product:	THERMOSTAT
Test Model:	HY02TP WIFI
Series Model:	HY02TPR WIFI
Rate Voltage:	AC 90-240V
*Highest Operation Frequency:	2472MHz

**Note 1: The highest operating frequency was provided by the applicant.*
Note 2: The difference between test model and series model were explained in the attached declaration letter.

All measurement and test data in this report was gathered from production sample serial number: RXM220314053-1. (Assigned by BACL(Kunshan). The EUT supplied by the applicant was received on 2022-03-14.)

Objective

This test report is prepared on behalf of *XIAMEN HYSEN CONTROL TECHNOLOGY CO., LTD* in accordance with

EN 55032: Electromagnetic compatibility of multimedia equipment - Emission requirements.

EN 55035: Electromagnetic compatibility of multimedia equipment - Immunity requirements.

EN IEC 61000-3-2, Limits - Limits for harmonic current emissions (equipment input current ≤ 16A per phase), and also in accordance with EN 61000-3-3, Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current<=16A per phase and mot subject to conditional connection.

The objective of the manufacturer is to determine compliance with EN 55032, EN 55035, EN IEC 61000-3-2 and EN 61000-3-3.

Test Methodology

CISPR 16-1-1:2019 Specification for radio disturbance and immunity measuring apparatus and methods Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus.

CISPR 16-1-4:2019+A1:2020 Specification for radio disturbance and immunity measuring apparatus and methods-Part 1-4: Radio disturbance and immunity measuring apparatus -Antennas and test sites for radiated disturbance measurements

CISPR 16-2-1:2014+COR1:2020 Specification for radio disturbance and immunity measuring apparatus and methods -Part 2-1: Methods of measurement of disturbance and immunity - Conducted disturbance measurements.

CISPR 16-2-3:2016+A1:2019 Specification for radio disturbance and immunity measuring apparatus and methods- Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements.

CISPR 16-4-2:2011+A2:2018+COR1:2019 Specification for radio disturbance and immunity measuring apparatus and methods-Part 4-2: Uncertainties, statistics and limit modeling-Measurement instrumentation uncertainty.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Kunshan).

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu Province, China.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in a typical mode (as normally used by a typical user)

Test Mode: Normal working

Pre-scan at two nominal voltages of 230V/50Hz and 110 V/60 Hz, only reserve data at 230V/50Hz that is worse than 110V/60Hz.

Equipment Software

"Smart home" software was used to test.

Equipment Modifications

No modifications were made to the EUT.

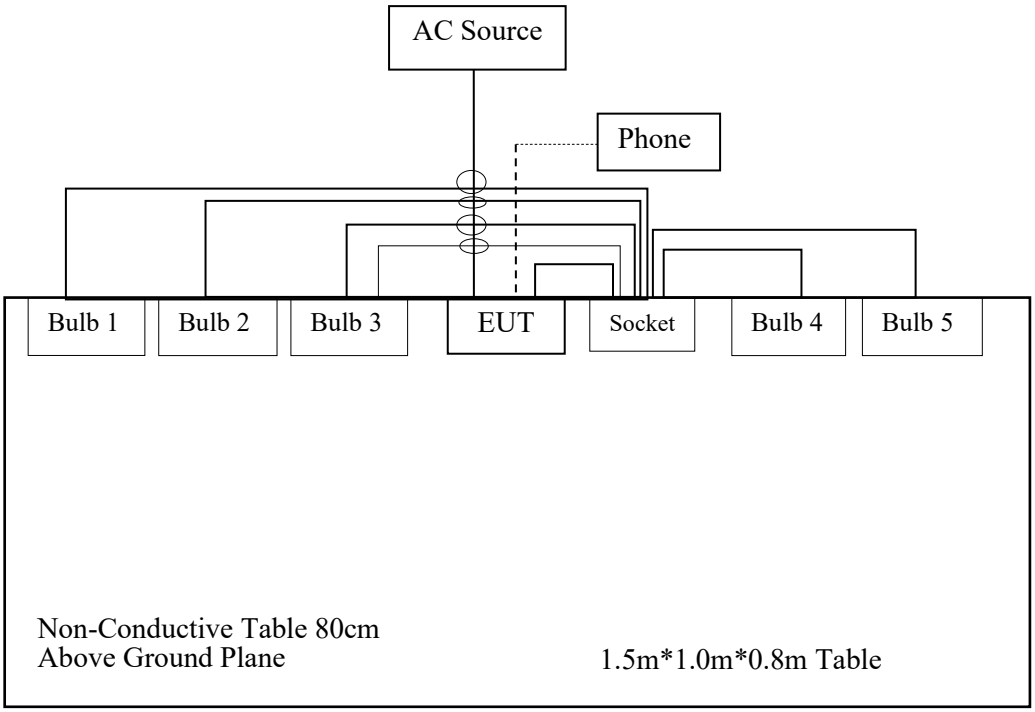
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Apple	Mobile Phone	/	/

External I/O Cable

Cable Description	Length (m)	From Port	To Port
Power Cable 1	1.2	AC Source	EUT
Power Cable 2	1.2	EUT	Socket
Power Cable 3	1.2	Socket	Bulb 1
Power Cable 4	1.2	Socket	Bulb 2
Power Cable 5	1.2	Socket	Bulb 3
Power Cable 6	1.2	Socket	Bulb 4
Power Cable 7	1.2	Socket	Bulb 5

Configuration of Radiation Test Setup



SUMMARY OF TEST RESULTS

EN 55032

RULE	DESCRIPTION	RESULTS
§ 5	Requirements Refer to Annex A A.3 Requirements for conducted emissions	Compliant
§ 5	Requirements Refer to Annex A A.2 Requirements for radiated emissions	Compliant

EN 55035

RULE	DESCRIPTION	RESULTS
§4.2.1	Electrostatic discharges IEC 61000-4-2	Compliant
§4.2.2.2	Continuous RF electromagnetic field disturbances IEC 61000-4-3	Compliant
§4.2.4	Electrical fast transients/burst IEC 61000-4-4	Compliant
§4.2.5	Surges IEC 61000-4-5	Compliant
§4.2.2.3	Continuous induced RF disturbances IEC 61000-4-6	Compliant
§4.2.3	Power frequency magnetic field IEC 61000-4-8	Compliant
§4.2.6	Voltage dips and interruptions IEC 61000-4-11	Compliant

EN IEC 61000-3-2

RULE	DESCRIPTION	RESULTS
§6, §7	Harmonic Current Emissions	Compliant

EN 61000-3-3

RULE	DESCRIPTION	RESULTS
§5, §6	Voltage Fluctuations and Flicker	Compliant

EN 55032 §5 Requirements ,Refer to Annex A A.3 Requirements for Conducted Emissions

Measurement Uncertainty

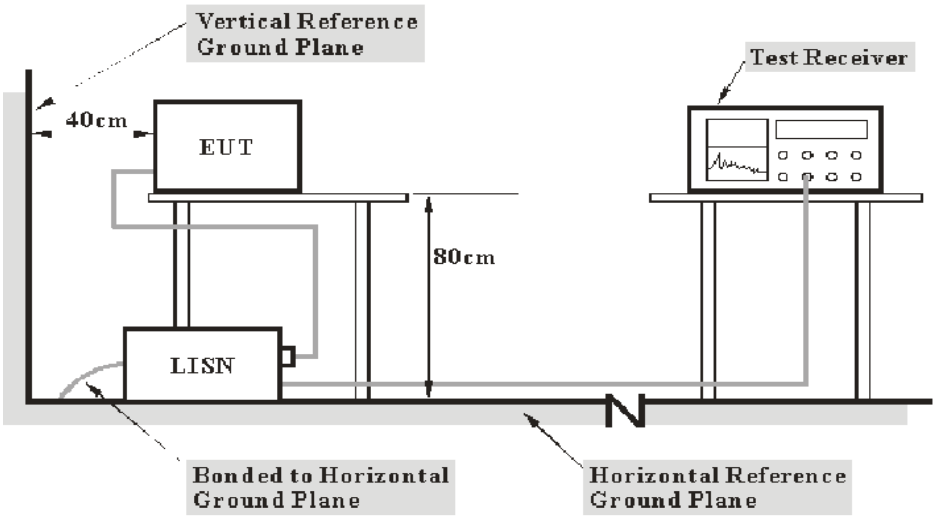
Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
–compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
–Non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
If U_{lab} is greater than U_{cispr} of Table 1, then:
–compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
–Non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

Table 1 - Values of U_{cispr}

Item	Frequency Range	Measurement Uncertainty	U_{cispr}
Conducted Emissions	150 kHz~30 MHz	3.19 dB	3.4 dB

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with CISPR 16-1-1:2019, CISPR 16-2-1:2014+COR1:2020 measurement procedures. The specification used was with the EN 55032 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle. The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	VBW
150 kHz - 30 MHz	9 kHz	30 kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESR	107416	2021-07-30	2022-07-29
Rohde & Schwarz	LISN	ENV216	101115	2021-11-27	2022-11-26
Rohde & Schwarz	Pulse limiter	ESH3-Z2	100552	2021-08-10	2022-08-09
Audix	Test Software	e3	V9	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-15	015	2021-08-15	2022-08-14

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Procedure

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

Level & Over Limit Calculation

The Level is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Level (dBµV) = Read level (dBµV) + Factor (dB)

The "**Over Limit**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, an Over Limit of 7 dB means the emission is 7 dB above the limit. The equation for Over Limit calculation is as follows:

Over Limit (dB) = Level (dBµV) - Limit (dBµV)

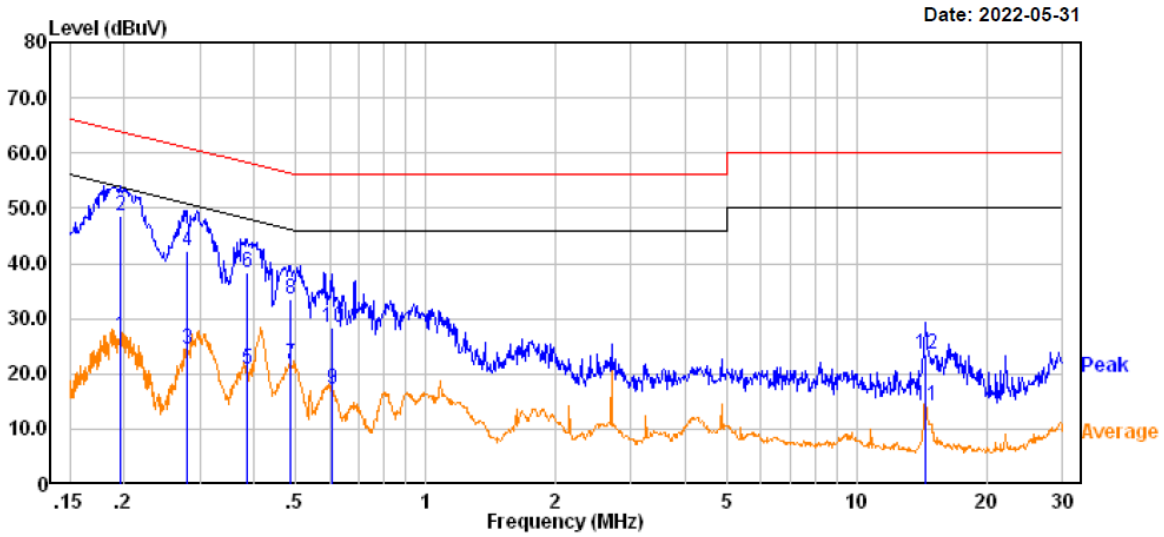
Test Data

Environmental Conditions

Temperature:	23.1℃
Relative Humidity:	51 %
ATM Pressure:	101.2 kPa

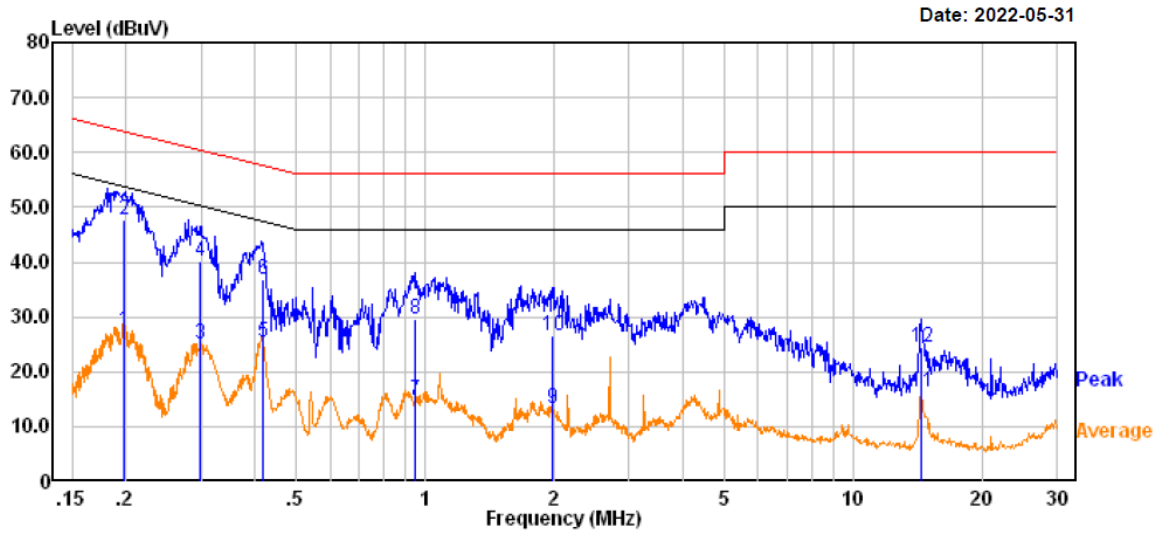
The testing was performed by Gang Liu on 2022-05-31.

Line:



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.195	7.40	19.40	26.80	53.81	-27.01	Average
2	0.195	29.10	19.40	48.50	63.81	-15.31	QP
3	0.280	4.90	19.42	24.32	50.83	-26.51	Average
4	0.280	22.70	19.42	42.12	60.83	-18.71	QP
5	0.385	1.30	19.44	20.74	48.18	-27.44	Average
6	0.385	18.90	19.44	38.34	58.18	-19.84	QP
7	0.486	2.30	19.46	21.76	46.23	-24.47	Average
8	0.486	14.00	19.46	33.46	56.23	-22.77	QP
9	0.606	-2.11	19.46	17.35	46.00	-28.65	Average
10	0.606	8.89	19.46	28.35	56.00	-27.65	QP
11	14.490	-5.71	19.80	14.09	50.00	-35.91	Average
12	14.490	3.79	19.80	23.59	60.00	-36.41	QP

Neutral:



	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	
1	0.198	8.20	19.40	27.60	53.68	-26.08	Average
2	0.198	28.30	19.40	47.70	63.68	-15.98	QP
3	0.297	5.49	19.43	24.92	50.33	-25.41	Average
4	0.297	20.69	19.43	40.12	60.33	-20.21	QP
5	0.417	6.00	19.45	25.45	47.51	-22.06	Average
6	0.417	17.40	19.45	36.85	57.51	-20.66	QP
7	0.948	-4.70	19.46	14.76	46.00	-31.24	Average
8	0.948	10.20	19.46	29.66	56.00	-26.34	QP
9	1.983	-6.10	19.47	13.37	46.00	-32.63	Average
10	1.983	7.00	19.47	26.47	56.00	-29.53	QP
11	14.418	-3.60	19.79	16.19	50.00	-33.81	Average
12	14.418	4.70	19.79	24.49	60.00	-35.51	QP

EN 55032 §5 Requirements ,Refer to Annex A A.2 Requirements for Radiated Emissions

Measurement Uncertainty

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

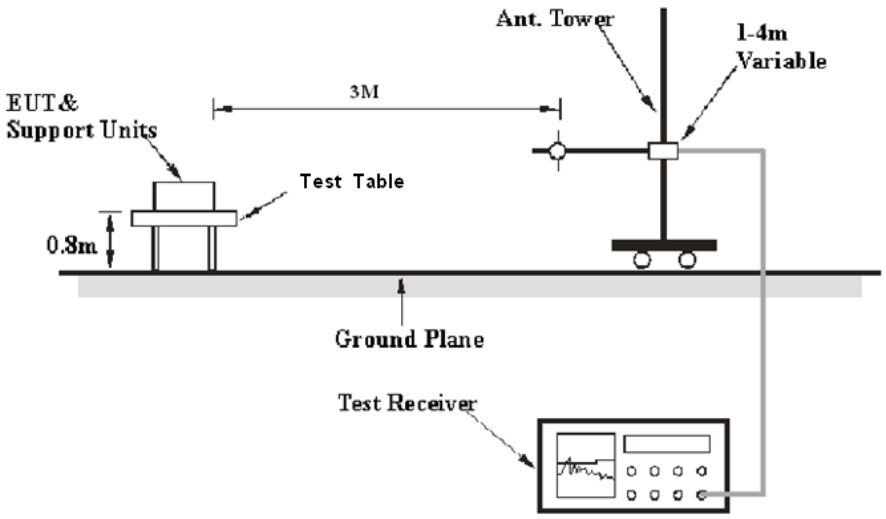
If U_{lab} is less than or equal to U_{cispr} of Table 1, then:
–compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
–Non - compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.
If U_{lab} is greater than U_{cispr} of Table 1, then:
–compliance is deemed to occur if no measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit;
–Non - compliance is deemed to occur if any measured disturbance level, increased by ($U_{lab} - U_{cispr}$), exceeds the disturbance limit.

Table 1 - Values of U_{cispr}

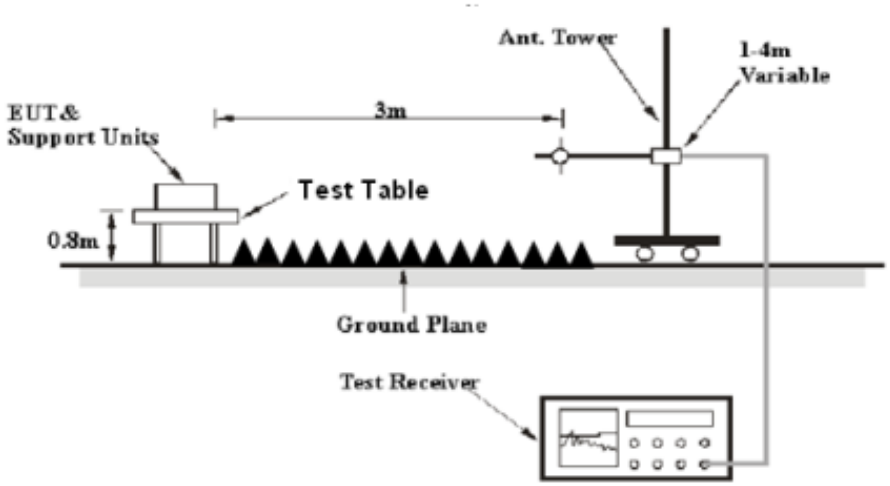
Item	Frequency Range	Measurement Uncertainty	U_{cispr}
Radiated Emissions	30 MHz~1 GHz	6.11 dB	6.3 dB
	1 GHz~6 GHz	4.45 dB	5.2 dB

Test System Setup

Below 1GHz:



Above 1GHz:



Radiated Top View:

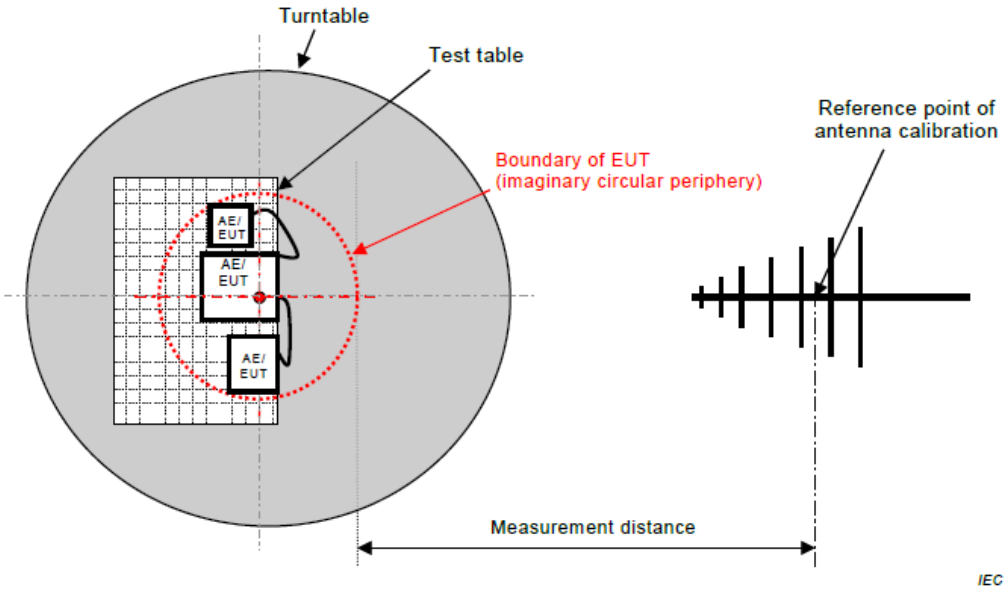


Figure C.1 – Measurement distance

The radiated emission tests below 1GHz were performed in the 3 meters chamber test site, above 1GHz were performed in the 3 meters chamber test site, using the setup accordance with the CISPR 16-1-1:2019, CISPR16-1-4:2019+A1:2020, CISPR 16-2-3:2016+A1:2019. The specification used was EN 55032 Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 6 GHz.

During the radiated emission test, the EMI test receiver Setup was set with the following configurations:

Frequency Range	RBW	VBW	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	QP
Above 1 GHz	1 MHz	3 MHz	Peak
	1 MHz	3 MHz	AVG

If the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is at least 10 dB below the QP emission limit, there's no need to record the measured QP level of the emissions in the report.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sonoma Instrument	Amplifier	310N	171205	2021-08-14	2022-08-13
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2021-08-18	2022-08-17
Champrotek	Chamber1#	3m-SAC 966	N/A	2022-05-08	2025-05-07
Sunol Sciences	Hybrid Antenna	JB3	A090314-2	2020-01-07	2023-01-06
Rohde & Schwarz	Auto test Software	EMC32	100361	N/A	N/A
MICRO-COAX	Coaxial Cable	Cable-8	008	2021-08-15	2022-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2021-08-15	2022-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2021-08-15	2022-08-14
MICROTRONICS	Band Reject Filter	BRM50702	G024	2021-08-05	2022-08-04
A.H. Systems,inc.	Amplifier	PAM-0118P	512	2021-08-14	2022-08-13
Albatross	Chamber 2#	3m-SAC 966	N/A	2022-05-08	2025-05-07
ETS	Horn Antenna	3115	9311-4159	2020-07-15	2023-07-14
Rohde & Schwarz	EMI Test Receiver	ESU40	100207/040	2022-03-16	2023-03-15
MICRO-COAX	Coaxial Cable	Cable-4	004	2021-08-15	2022-08-14
MICRO-COAX	Coaxial Cable	Cable-5	005	2021-08-15	2022-08-14

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude (dBμV/m) = Meter Reading (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV/m) – Corrected Amplitude (dBμV/m)

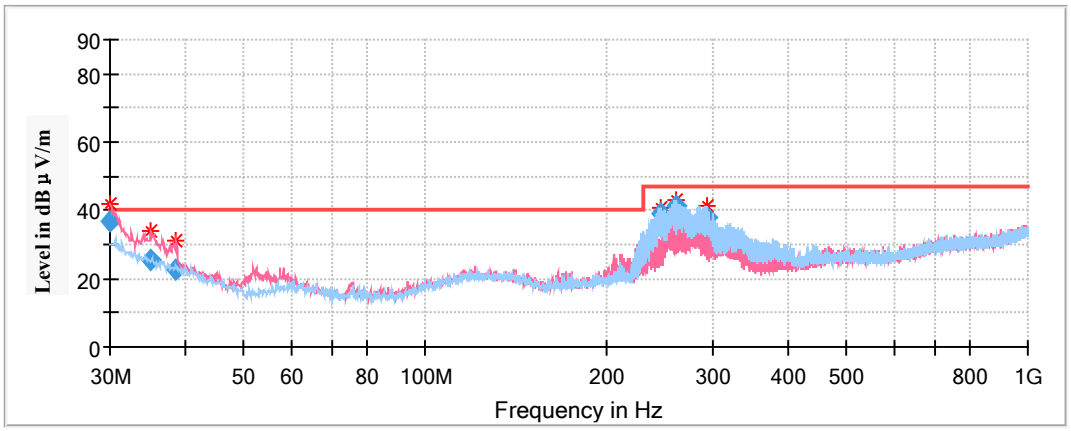
Test Data

Environmental Conditions

Temperature:	20-25℃
Relative Humidity:	50-52 %
ATM Pressure:	101-101.5 kPa

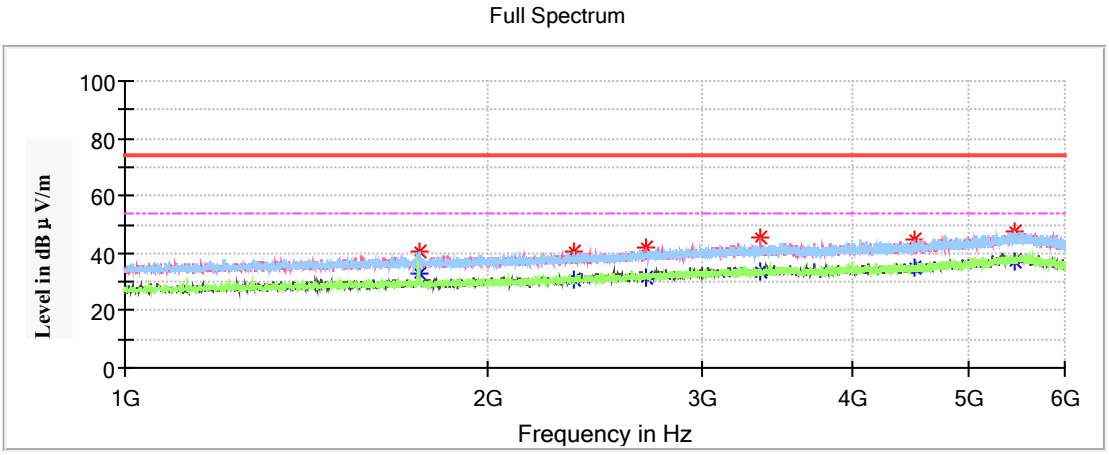
The testing was performed by Jerry Zhang on 2022-06-02 for below 1GHz and William Yin for 2022-06-03 of above 1GHz.

Below 1 GHz:



Frequency (MHz)	Corrected Amplitude Quasi Peak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.006450	36.89	40.00	3.11	100.0	V	143.0	-3.7
35.090300	25.29	40.00	14.71	100.0	V	252.0	-6.9
38.600350	22.62	40.00	17.38	100.0	V	116.0	-8.7
245.342100	38.91	47.00	8.09	100.0	H	337.0	-12.0
261.101400	41.14	47.00	5.86	100.0	H	347.0	-11.7
293.597700	38.14	47.00	8.86	100.0	H	326.0	-11.0

Above 1GHz:



Frequency (MHz)	Corrected Amplitude		Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
	Max Peak (dBµV/m)	Average (dBµV/m)						
1751.000000	---	33.02	54.00	20.98	100.0	H	59.0	-4.9
1751.000000	40.33	---	74.00	33.67	100.0	H	59.0	-4.9
2356.000000	---	30.67	54.00	23.33	100.0	H	346.0	-3.2
2356.000000	40.61	---	74.00	33.39	100.0	H	346.0	-3.2
2699.000000	---	31.45	54.00	22.55	100.0	H	208.0	-1.9
2699.000000	41.75	---	74.00	32.25	100.0	H	208.0	-1.9
3362.000000	---	33.56	54.00	20.44	200.0	V	213.0	0.0
3362.000000	45.19	---	74.00	28.81	200.0	V	213.0	0.0
4499.500000	---	34.91	54.00	19.09	100.0	V	202.0	2.2
4499.500000	44.72	---	74.00	29.28	100.0	V	202.0	2.2
5444.000000	---	37.33	54.00	16.67	100.0	V	250.0	5.8
5444.000000	47.34	---	74.00	26.66	100.0	V	250.0	5.8

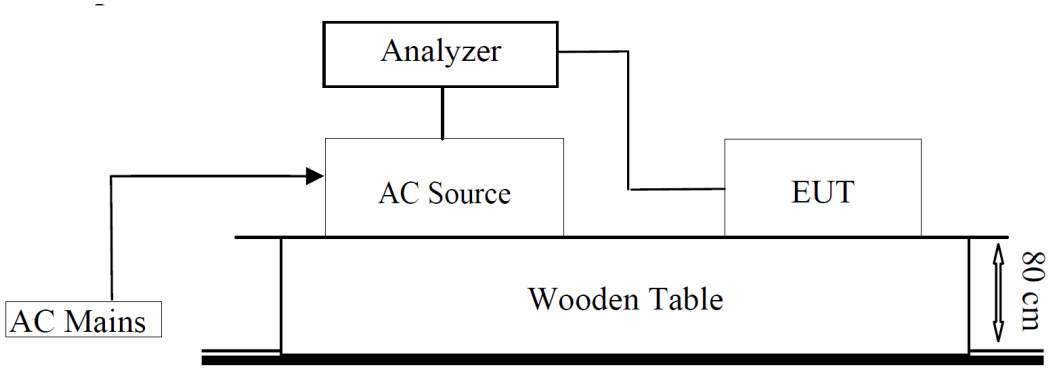
EN IEC 61000-3-2- HARMONIC CURRENT EMISSIONS

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Harmonic & Flicker Analyzer	DPA 500N	P1402129120	2021-11-27	2022-11-26
EM TEST	AC Power Source	ACS 500N	P1251107475	2021-11-27	2022-11-26
EM TEST	Test Software	net.control	Version 3.0.0	N/A	N/A

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test System Setup



Test Standard

EN IEC 61000-3-2:2019+A1:2021

Test product class:

Class A: - Balanced three-phase equipment
- Household appliances excluding equipment identified as class D
- Tools excluding portable tools
- Dimmers for incandescent lamps
- Audio equipment

Class B: - Portable tools
- Arc welding equipment, which is not professional equipment

Class C: - Lighting equipment

Class D: Equipment having a specified power less than or equal to 600w, of the following type:
- Personal computer and personal computer monitors
- Television receivers
- refrigerators and freezers having one or more variable-speed drives to control compressor motor(s).

Application of limits:

The EUT belongs to Class A equipment; the harmonics of the input current shall not exceed the values given in Table 1.

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 [a]

Harmonic order *h*	Maximum permissible harmonic current expressed as a percentage of the input current at the fundamental frequency %
2	2
3	27 [b]
5	10
7	7
9	5
$11 \le h \le 39$ (odd harmonics only)	3

[a] For some Class C products, other emission limits apply (see 7.4).

[b] The limit is determined based on the assumption of modern lighting technologies having power factors of 0,90 or higher.

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
$13 \leq n \leq 39$ (odd harmonics only)	$\frac{3,85}{n}$	See Table 1

Test Data

Environmental Conditions

Date of test:	11:20 09. June. 2022
Measurement file name:	Harmonics_3_2_Ed5.rsd
Tester:	Phil Zhou
Standard used:	EN/IEC 61000-3-2 Ed5 Quasi-stationary Equipment class C (Limit factor: 1.00)
Observation time:	600s
Windows width:	10 periods - (IEC 61000-4-7 Edition 2002 + A1:2008)
Customer:	XIAMEN HYSEN CONTROL TECHNOLOGY CO., LTD
E. U. T.:	THERMOSTAT
Model:	HY02TP WIFI
Test Mode	Normal working

Average and Maximum harmonic current results									
Hn	Average				Maximum				Harmonic Result
	Ieff [A]	of Limit [%]	Limit [A]	Result	Ieff [A]	of Limit [%]	Limit [A]	Result	
1	3.821				3.822				
2	0.006	0.658	0.972	n/a	0.007	0.311	2.160	n/a	n/a
3	0.025	1.215	2.070	PASS	0.026	0.557	4.600	PASS	PASS
4	0.004	0.970	0.387	n/a	0.004	0.463	0.860	n/a	n/a
5	0.004	0.408	1.026	n/a	0.005	0.199	2.280	n/a	n/a
6	0.004	1.463	0.270	n/a	0.004	0.694	0.600	n/a	n/a
7	0.004	0.633	0.693	n/a	0.005	0.299	1.540	n/a	n/a
8	0.004	1.896	0.207	n/a	0.004	0.884	0.460	n/a	n/a
9	0.005	1.289	0.360	n/a	0.005	0.606	0.800	n/a	n/a
10	0.004	2.220	0.166	n/a	0.004	1.218	0.368	n/a	n/a
11	0.004	1.244	0.297	n/a	0.004	0.585	0.660	n/a	n/a
12	0.003	2.345	0.138	n/a	0.003	1.113	0.307	n/a	n/a
13	0.004	1.998	0.189	n/a	0.004	0.924	0.420	n/a	n/a
14	0.003	2.135	0.118	n/a	0.003	1.012	0.263	n/a	n/a
15	0.002	1.331	0.135	n/a	0.002	0.661	0.300	n/a	n/a
16	0.003	2.470	0.104	n/a	0.003	1.176	0.230	n/a	n/a
17	0.003	2.389	0.119	n/a	0.003	1.151	0.265	n/a	n/a
18	0.002	1.902	0.092	n/a	0.002	0.916	0.204	n/a	n/a
19	0.001	0.742	0.107	n/a	0.001	0.418	0.237	n/a	n/a
20	0.001	1.696	0.083	n/a	0.002	0.913	0.184	n/a	n/a
21	0.002	1.842	0.096	n/a	0.002	0.903	0.214	n/a	n/a
22	0.001	1.974	0.075	n/a	0.002	0.966	0.167	n/a	n/a
23	0.001	1.079	0.088	n/a	0.001	0.546	0.196	n/a	n/a
24	0.001	1.714	0.069	n/a	0.001	0.844	0.153	n/a	n/a
25	0.001	1.589	0.081	n/a	0.001	0.767	0.180	n/a	n/a
26	0.001	1.925	0.064	n/a	0.001	0.967	0.142	n/a	n/a
27	0.001	1.791	0.075	n/a	0.002	0.925	0.167	n/a	n/a
28	0.001	1.778	0.059	n/a	0.001	0.872	0.131	n/a	n/a
29	0.001	1.605	0.070	n/a	0.001	0.796	0.155	n/a	n/a
30	0.001	2.137	0.055	n/a	0.001	1.059	0.123	n/a	n/a
31	0.001	2.203	0.065	n/a	0.002	1.103	0.145	n/a	n/a
32	0.001	2.144	0.052	n/a	0.001	1.065	0.115	n/a	n/a
33	0.001	1.943	0.061	n/a	0.001	0.997	0.136	n/a	n/a
34	0.001	2.229	0.049	n/a	0.001	1.123	0.108	n/a	n/a
35	0.001	2.452	0.058	n/a	0.002	1.230	0.129	n/a	n/a
36	0.001	2.218	0.046	n/a	0.001	1.085	0.102	n/a	n/a
37	0.001	2.432	0.055	n/a	0.001	1.166	0.122	n/a	n/a
38	0.001	2.166	0.044	n/a	0.001	1.058	0.097	n/a	n/a
39	0.001	2.207	0.052	n/a	0.001	1.168	0.115	n/a	n/a
40	0.001	2.342	0.041	n/a	0.001	1.176	0.092	n/a	n/a

Note: Harmonic currents less than 0.6 % of the input current measured under the test conditions, or less than 5 mA, whichever is greater, are disregarded.

Harmonic voltage results				
Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	232.331	101.013		
2	0.213	0.093	0.200	PASS
3	0.039	0.017	0.900	PASS
4	0.052	0.023	0.200	PASS
5	0.068	0.030	0.400	PASS
6	0.033	0.014	0.200	PASS
7	0.044	0.019	0.300	PASS
8	0.026	0.011	0.200	PASS
9	0.073	0.032	0.200	PASS
10	0.017	0.007	0.200	PASS
11	0.065	0.028	0.100	PASS
12	0.007	0.003	0.100	PASS
13	0.075	0.033	0.100	PASS
14	0.030	0.013	0.100	PASS
15	0.071	0.031	0.100	PASS
16	0.025	0.011	0.100	PASS
17	0.073	0.032	0.100	PASS
18	0.018	0.008	0.100	PASS
19	0.097	0.042	0.100	PASS
20	0.026	0.011	0.100	PASS
21	0.040	0.017	0.100	PASS
22	0.012	0.005	0.100	PASS
23	0.068	0.030	0.100	PASS
24	0.012	0.005	0.100	PASS
25	0.028	0.012	0.100	PASS
26	0.022	0.009	0.100	PASS
27	0.066	0.029	0.100	PASS
28	0.008	0.003	0.100	PASS
29	0.029	0.012	0.100	PASS
30	0.014	0.006	0.100	PASS
31	0.056	0.024	0.100	PASS
32	0.015	0.006	0.100	PASS
33	0.029	0.013	0.100	PASS
34	0.009	0.004	0.100	PASS
35	0.051	0.022	0.100	PASS
36	0.013	0.006	0.100	PASS
37	0.043	0.019	0.100	PASS
38	0.018	0.008	0.100	PASS
39	0.033	0.014	0.100	PASS
40	0.006	0.003	0.100	PASS

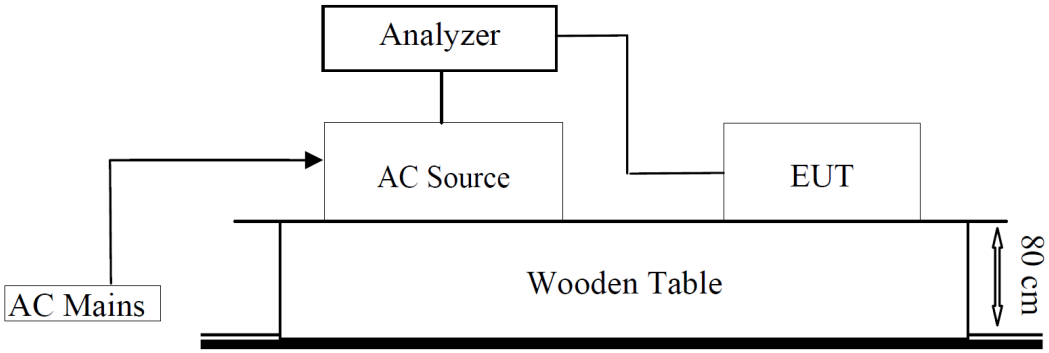
EN 61000-3-3 VOLTAGE FLUCTUATION AND FLICKER

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Harmonic & Flicker Analyzer	DPA 500N	P1402129120	2021-11-27	2022-11-26
EM TEST	AC Power Source	ACS 500N	P1251107475	2021-11-27	2022-11-26
EM TEST	Test Software	net. control	Version 3.0.0	N/A	N/A

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test System Setup



Test Standard

EN 61000-3-3:2013+A2:2021

Flicker Test Limits:

The limits shall be applicable to voltage fluctuations and flicker at the supply terminals of the equipment under test, measured or calculated according to clause 4 under test conditions described in clause 6 and annex A. Tests made to prove compliance with the limits are considered to be type tests.
The following limits apply:
– the value of Pst shall not be greater than 1,0;
– the value of Plt shall not be greater than 0,65;
–the Tmax, the accumulated time value of d(t) with a deviation exceeding 3,3 % during a single voltage change at the EUT terminals, shall not exceed 500 ms;
– the relative steady-state voltage change, dc, shall not exceed 3,3 %;
– the maximum relative voltage change dmax, shall not exceed
a) 4 % without additional conditions;
b) 6 % for equipment which is:
– switched manually;
– switched automatically more frequently than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds), or manual restart, after a power supply interruption.

Note: The cycling frequency will be further limited by the Pst and Plt limit. For example: a dmax of 6 % producing a rectangular voltage change characteristic twice per hour will give a Plt of about 0.65. c) 7 % for equipment which is - attended whilst in use (for example: hair dryers, vacuum cleaners, kitchen equipment such as mixers, garden equipment such as lawn mowers, portable tools such as electric drills), or– switched on automatically, or is intended to be switched on manually, no more than twice per day, and also has either a delayed restart (the delay being not less than a few tens of seconds) or manual restart, after a power supply interruption.

In the case of equipment having several separately controlled circuits in accordance with 6.6, limits b) and c) shall apply only if there is delayed or manual restart after a power supply interruption; for all equipment with automatic switching which is energized immediately on restoration of supply after a power supply interruption, limits a) shall apply; for all equipment with manual switching, limits b) or c) shall apply depending on the rate of switching. Pst and Plt requirements shall not be applied to voltage changes caused by manual switching. The limits shall not be applied to voltage changes associated with emergency switching or emergency interruptions.

Test Data

Environmental Conditions

Temperature:	24.5 °C
Relative Humidity:	50 %
ATM Pressure:	101.5 kPa

Date of test:	13:20 09 June. 2022
Tester:	Phil Zhou
Standard used:	EN/IEC 61000-3-3 Ed.3 Flicker
Short time (Pst):	10 min
Observation time:	120 min (12 Flicker measurement)
Rated test voltage:	230V / 50Hz according IEC 61000-4-15 Ed.2
Flicker Impedance:	Zref (IEC 60725)
Customer:	XIAMEN HYSEN CONTROL TECHNOLOGY CO., LTD
E. U. T.:	THERMOSTAT
Model:	HY02TP WIFI
EUT operation mode	Normal working

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.058	0.65	PASS
Plt	0.026	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	< 0.2	4.00	PASS
Tmax [s]	0.000	0.50	PASS

EN 55035 §4.2.1 ELECTROSTATIC DISCHARGE (IEC 61000-4-2)

Measurement Uncertainty

U_{lab} (measurement uncertainty of lab) and U_{IEC} (measurement uncertainty of IEN 61000-4-2) please refer to the following:

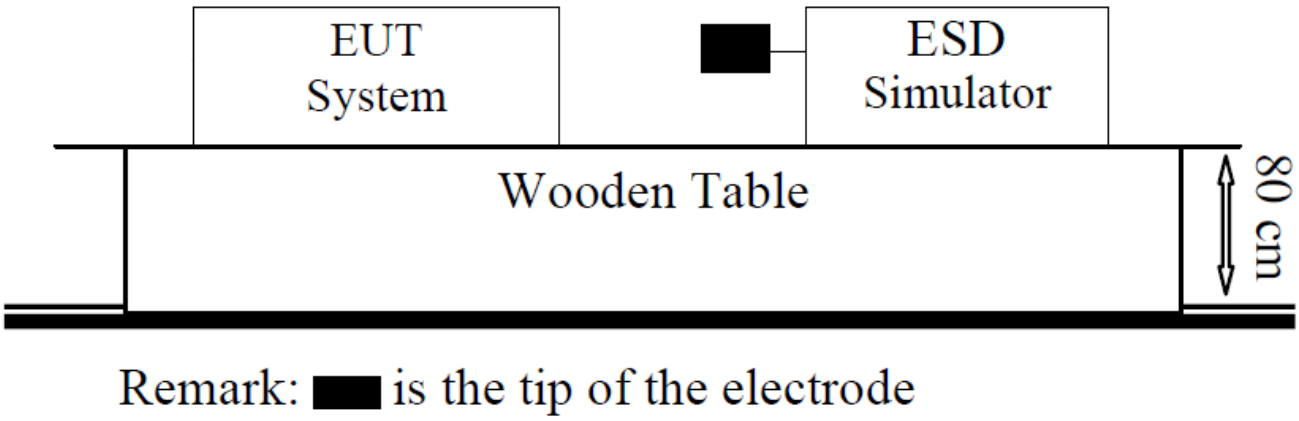
Parameter	U_{IEN}	U_{lab}
Rise time t_r	≤ 15%	15%
Peak current I_p	≤ 7%	6.30%
Current at 30 ns	≤ 7%	6.30%
Current at 60 ns	≤ 7%	6.30%

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
TESEQ	ESD Simulator	NSG 438	1079	2022-03-16	2023-03-15

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test System Setup



Remark: ■ is the tip of the electrode

IEC 61000-4-2 specifies that a tabletop EUT shall be placed on a non-conducting table which is 80 centimeters above a ground reference plane and that floor mounted equipment shall be placed on an insulating support approximately 10 centimeters above a ground plane. During the tests, the EUT is positioned over a ground reference plane in conformance with this requirement.

For tabletop equipment, a 1.6 by 0.8-meter metal sheet (HCP) is placed on the table and connected to the ground plane via a metal strap with two 470 k Ohms resistors in series. The EUT and attached cables are isolated from this metal sheet by *0.5-millimeter* thick insulating material. A Vertical Coupling Plane (VCP) grounded on the ground plane through the same configuration as in the HCP is used.

Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-2:2008)
Test level 3 for Air Discharge at ±8 kV
Test level 2 for Contact Discharge at ±4 kV

Test Level

Level	Test Voltage Contact Discharge (±kV)	Test Voltage Air Discharge (±kV)
1.	2	2
2.	4	4
3.	6	8
4.	8	15
X.	Special	Special

Performance criteria: B

Test Procedure

Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

Contact Discharge:

All the procedure shall be same as Section 8.3.1 of IEC 61000-4-2, except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

Indirect discharge for horizontal coupling plane:

At least 50 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1 m from the EUT and with the discharge electrode touching the coupling plane.

Indirect discharge for vertical coupling plane:

At least 50 single discharges shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m * 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

Test Data

Environmental Conditions

Temperature:	18 ºC
Relative Humidity:	43 %
ATM Pressure:	101.5 kPa

The testing was performed by Kaka Lei on 2022-06-03.

Table 1: Electrostatic Discharge Immunity (Air Discharge)

Test Points Location	Test Levels								
	-2 kV	+2 kV	-4 kV	+4 kV	-8 kV	+8 kV	-15 kV	+15 kV	X
1~14	A	A	A	A	A	A	/	/	/

Table 2: Electrostatic Discharge Immunity (Contact Discharge)

Test Points Location	Test Levels								
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	X
/	/	/	/	/	/	/	/	/	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

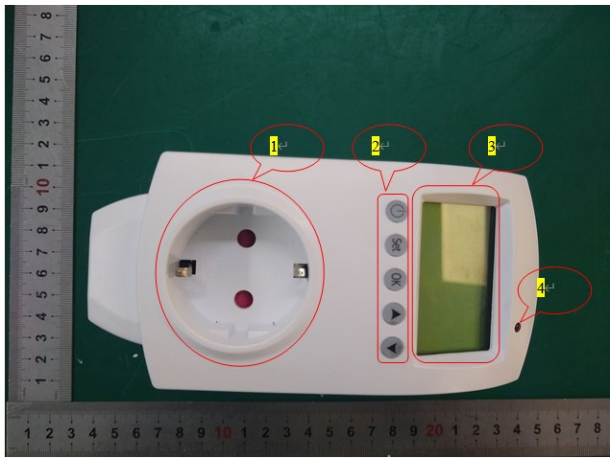
Test Points Location	Test Levels								
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	X
Front Side	A	A	A	A	/	/	/	/	/
Back Side	A	A	A	A	/	/	/	/	/
Left Side	A	A	A	A	/	/	/	/	/
Right Side	A	A	A	A	/	/	/	/	/

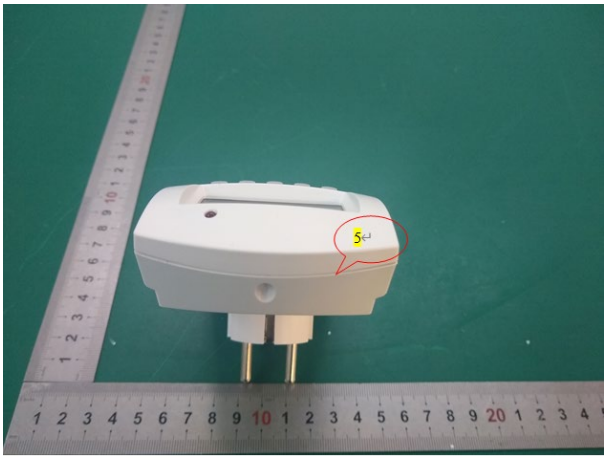
Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

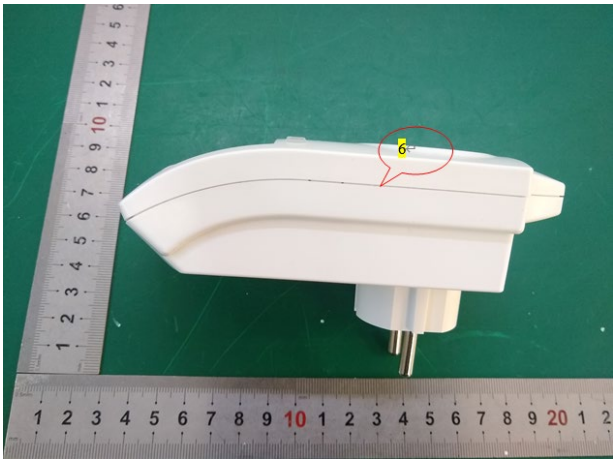
Test Points Location	Test Levels								
	-2 kV	+2 kV	-4 kV	+4 kV	-6 kV	+6 kV	-8 kV	+8 kV	X
Front Side	A	A	A	A	/	/	/	/	/
Back Side	A	A	A	A	/	/	/	/	/
Left Side	A	A	A	A	/	/	/	/	/
Right Side	A	A	A	A	/	/	/	/	/

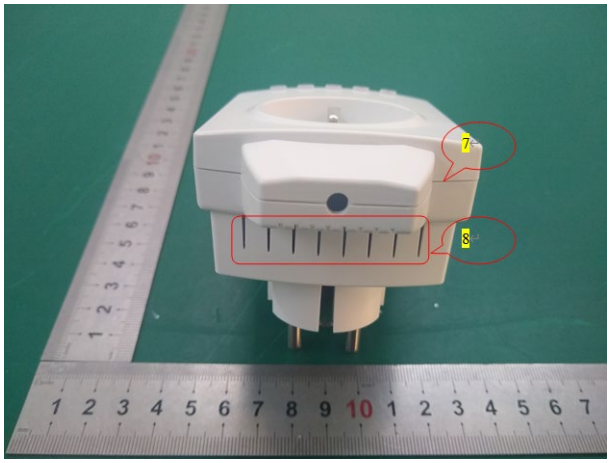
Note: “A” stands for, during test, operate as intended no loss of function, no degradation of performance, and after test, no degradation of performance, no loss of function.

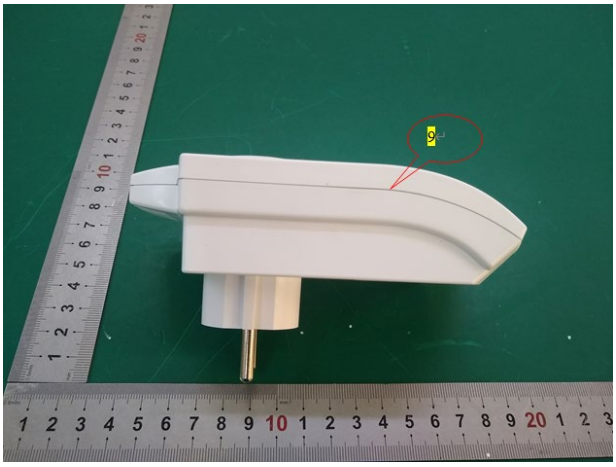
Test point as follows:

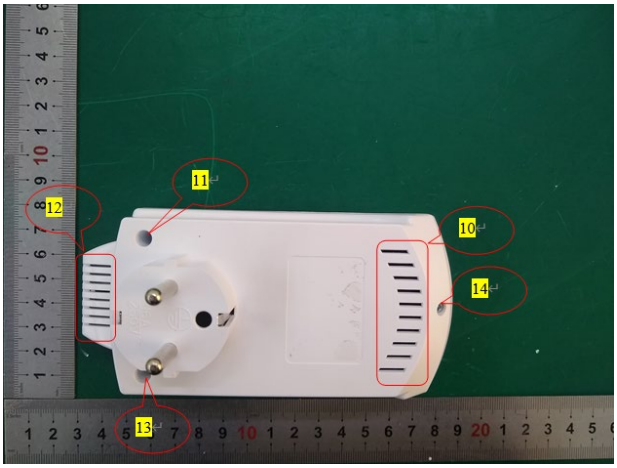












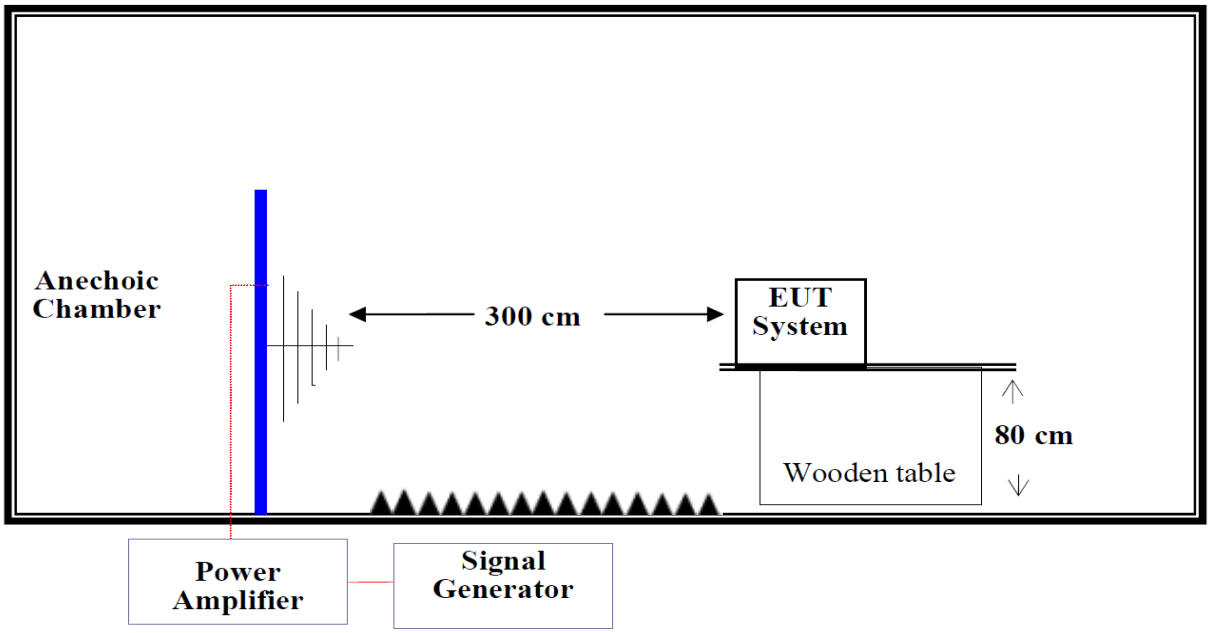
EN 55035 §4.2.2.2 CONTINUOUS RF ELECTROMAGNETIC FIELD DISTURBANCES (IEC 61000-4-3)

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Signal Generator	E4428C	MY49070179	2021-07-26	2022-07-25
AR	Power Amplifier	200W1000M3A	18062	N/A	N/A
AR	Broadband Antenna	ATL80M1G	0350122	N/A	N/A
AR	Power Amplifier	60S1G6	0369442	N/A	N/A
ETS	HornAntenna	3115	6229	2020-01-07	2023-01-06
AR	Test Software	emcware	N/A	N/A	N/A

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements, traceable to National Primary Standards and International System of Units (SI).

Test System Setup



Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-3:2020)
Test level 2 at 3V / m

Test Level

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

Performance criteria: A

Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above the ground. The EUT is set 3 meters away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarizations of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera is used to monitor EUT. We observe directly phone outside of the Chamber.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Field Strength	3 V/m (Test Level 2)
2. Radiated Signal	AM 80%, 1kHz sin wave
3. Scanning Frequency	80 - 1000 MHz,
4. Dwell Time	3 Sec.
5. Test step	1%
6. Field Strength	3 V/m (Test Level 2)
7. Radiated Signal	AM 80%, 1kHz sin wave
8. Spotting Frequency	1800MHz, 2600MHz, 3500MHz, 5000MHz
9. Dwell Time	3 Sec.
10. Test step	1%

Test Data

Environmental Conditions

Temperature:	18 ℃
Relative Humidity:	43 %
ATM Pressure:	101.5 kPa

The testing was performed by Phil Zhou on 2022-06-03.

Frequency Range (MHz)	Front Side (3 V/m)		Rear Side (3 V/m)		Left Side (3 V/m)		Right Side (3 V/m)	
	VERT	HORI	VERT	HORI	VERT	HORI	VERT	HORI
80-1000	A	A	A	A	A	A	A	A
1800	A	A	A	A	A	A	A	A
2600	A	A	A	A	A	A	A	A
3500	A	A	A	A	A	A	A	A
5000	A	A	A	A	A	A	A	A

Note: “A” stands for, during test, operate as intended no loss of function, no degradation of performance, and after test, no degradation of performance, no loss of function.

EN 55035 §4.2.4 ELECTRICAL FAST TRANSIENT/BUSRST (IEC 61000-4-4)

Measurement Uncertainty

U_{lab} (measurement uncertainty of lab) and U_{IEN} (measurement uncertainty of IEN 61000-4-4) please refer to the following:

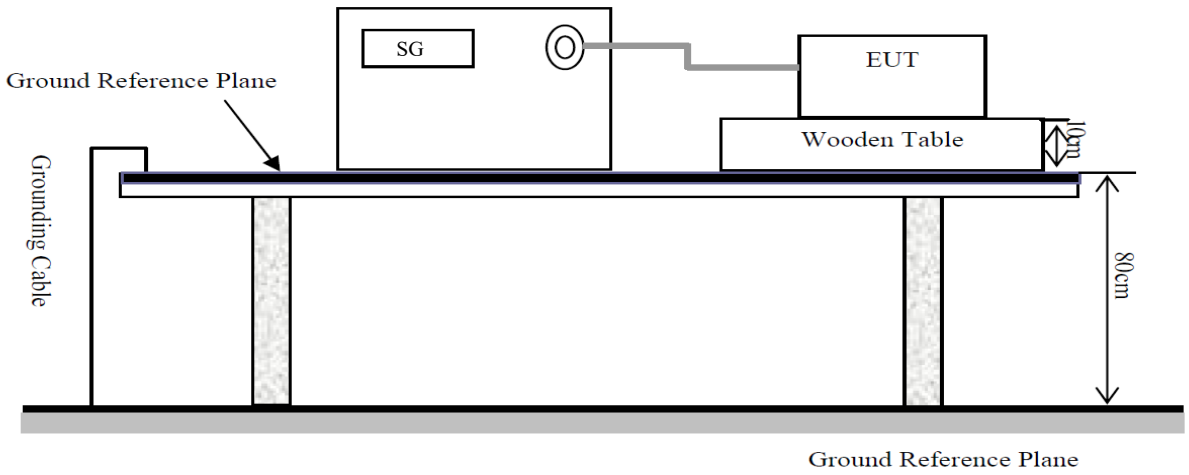
Parameter	U_{EN}	U_{lab}
Rise time t_r	6.20%	6.20%
Peak voltage value V_p	8.60%	8.60%
Voltage pulse width t_w	5.90%	5.90%

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Auto Transformer	MV2616	0403-16	N/A	N/A
HTEC	Single Fault Power Supply	HV1P16T	214401	2021-11-21	2022-11-20
HTEC	Integrated Immunity Tester	HCOMPACT 7	214402	2021-11-21	2022-11-20

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test System Setup



Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-4:2012)
AC Mains: Test level 2 at 1 kV

Test Level

Open Circuit Output Test Voltage ±10%				
Level	Power ports, earth port (PE)		Signal and control ports	
	Voltage(kV)	Repetition frequency(kHz)	Voltage(kV)	Repetition frequency(kHz)
1	0.5	5 or 100	0.25	5 or 100
2	1		0.5	
3	2		1	
4	4		2	
X	Special	Special	Special	Special

Performance Criterion: B

Test Procedure

The EUT was arranged for Power Line Coupling and for I/O Line Coupling through a capacitive clamp, where applicable. (Note: The I/O coupling test using a capacitive clamp is performed on the I/O interface cables that are longer in length than 3 meters.) A metal ground plane 2.4 meter by 2.0 meter was placed between the floor and the table and is connected to the earth by a 2.0 meter ground rod. The ground rod is connected to the test facility's electrical earth.

Test Data

Temperature:	18℃
Relative Humidity:	43 %
ATM Pressure:	101.5 kPa

The testing was performed by Phil Zhou on 2022-06-03.

Test Ports		Test Levels (kV) Repetition frequency(5kHz)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC Mains Power Input Ports	L	A	A	A	A	/	/	/	/
	N	A	A	A	A	/	/	/	/
	L + N	A	A	A	A	/	/	/	/
	L + PE	A	A	A	A	/	/	/	/
	N + PE	A	A	A	A	/	/	/	/
	L + N + PE	A	A	A	A	/	/	/	/
Signal ports	/	/	/	/	/	/	/	/	/

Note: "A" stands for, during test, operate as intended no loss of function, no degradation of performance, and after test, no degradation of performance, no loss of function.

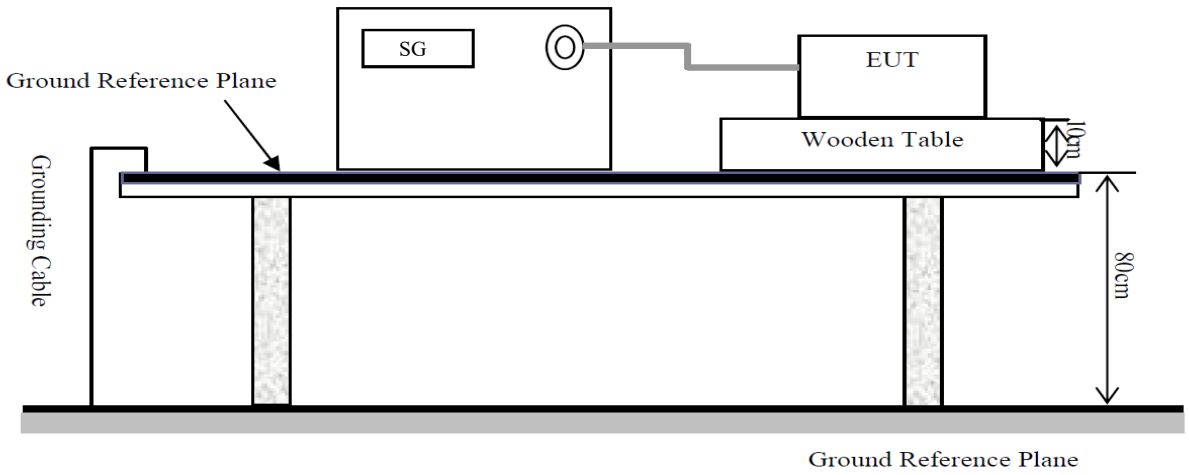
EN 55035 §4.2.5 SURGES (IEC 61000-4-5)

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Auto Transformer	MV2616	0403-16	N/A	N/A
HTEC	Single Fault Power Supply	HV1P16T	214401	2021-11-21	2022-11-20
HTEC	Integrated Immunity Tester	HCOMPACT 7	214402	2021-11-21	2022-11-20

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test System Setup



Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-5:2014+A1:2017)
AC Mains: L-N: Test level 3 at 1 kV
L/N-PE: Test level 3 at 2 kV

Test Level

Level	Open Circuit Output Test Voltage ±10%(kV)		Performance Criterion	
	Line-to-line	Line-to-ground	AC Mains	Signal Port
1	---	0.5	---	---
2	0.5	1	---	---
3	1	2	B	---
4	2	4	---	---
X	Special	Special	---	---

Test Procedure

1) For line to line coupling mode, provide a 1 kV 1.2/50us voltage surge (at open-circuit condition).
2) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
3) Different phase angles are done individually.
4) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

Test Data

Environmental Conditions

Temperature:	18℃
Relative Humidity:	43 %
ATM Pressure:	101.5 kPa

The testing was performed by Phil Zhou on 2022-06-03.

Test Ports		Test Levels (kV)							
		+0.5	-0.5	+1.0	-1.0	+2.0	-2.0	+4.0	-4.0
AC Mains power input ports	L - N	A	A	A	A	/	/	/	/
	L - PE	A	A	A	A	A	A	/	/
	N - PE	A	A	A	A	A	A	/	/

Note: “A” stands for, during test, operate as intended no loss of function, no degradation of performance, and after test, no degradation of performance, no loss of function.

EN 55035 §4.2.2.3 CONTINUOUS INDUCED RF DISTURBANCES (IEC 61000-4-6)

Measurement Uncertainty

U_{lab} (measurement uncertainty of lab) and U_{IEN} (measurement uncertainty of IEN 61000-4-6) please refer to the following:

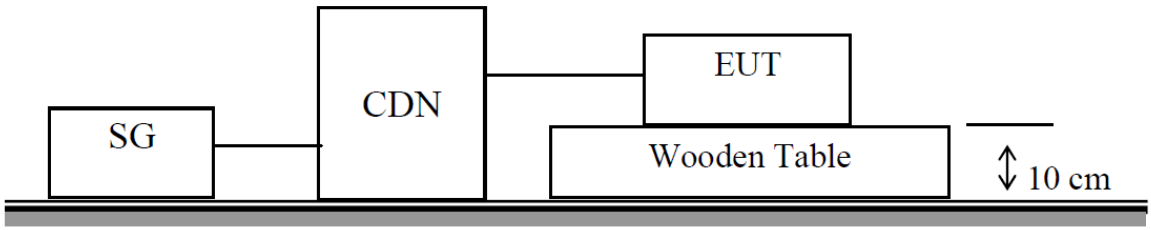
Parameter	U_{IEN}	U_{lab}
CDN calibration process	1.27 dB	1.27 dB
CDN test process	1.36 dB	1.36 dB

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Signal Generator	8648C	3537A01810	2021-07-30	2022-07-29
SPANAWAVE	Power Amplifier	PAS-000023-25	AA00535	N/A	N/A
Dressler	Attenuator	ATT 6/75	510020010004	N/A	N/A
COM-POWER	CDN	CDN M325E	521164	2021-07-30	2022-07-29
BACL	Test Software	Main_CS_Test	N/A	N/A	N/A

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Setup



Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-6:2013)
Test level 2 at 3 V (r.m.s.), 0.15 MHz ~ 10 MHz,
Test level X at 3 V -1V(r.m.s.), 10 MHz ~ 30 MHz,
Test level 1 at 1 V (r.m.s.), 30 MHz ~ 80 MHz

Test Level

Level	Voltage Level (r.m.s.) (U_0)
1	1
2	3
3	10
X	Special

Performance Criterion: A

Test Procedure

1) Let the EUT work in test mode and test it.
2) The EUT are placed on an insulating support 0.1 m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3 m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
3) The disturbance signal described below is injected to EUT through CDN.
4) The EUT operates within its Charingal mode(s) under intended climatic conditions after power on.
5) The frequency range is swept from 150 kHz to 80 MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave.
6) The rate of sweep shall not exceed 1.5*10-3decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
7) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

Test Data

Environmental Conditions

Temperature:	18℃
Relative Humidity:	43 %
ATM Pressure:	101.5 kPa

The testing was performed by Phil Zhou on 2022-06-03.

Test Ports	Test equipment	Frequency Range (MHz)	Voltage Level (e.m.f.) U0			
			1V	3V	10V	3V~1V
AC Mains power input ports	CDN M325E	0.15-10	/	A	/	/
		10-30	/	/	/	A
		30-80	A	/	/	/
Signal ports	/	0.15-10	/	/	/	/
		10-30	/	/	/	/
		30-80	/	/	/	/

Note: “A” stands for, during test, operate as intended no loss of function, no degradation of performance, and after test, no degradation of performance, no loss of function.

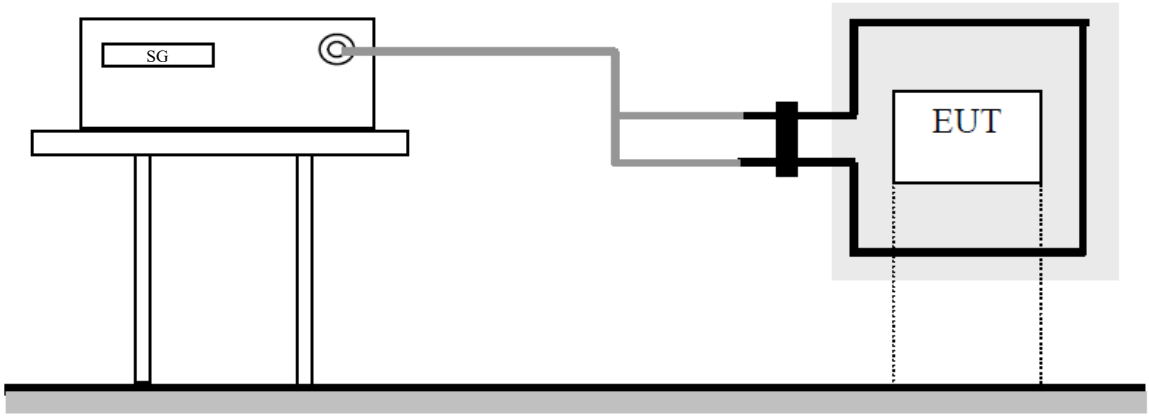
EN 55035 §4.2.3 POWER FREQUENCY MAGNETIC FIELD (IEC 61000-4-8)

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Loop Antenna	MS100N	P1334123835	2022-02-14	2025-02-13
EM TEST	Current Transformer	MC2630	P1303109259	2022-03-16	2023-03-15
EM TEST	AC Power Source	ACS 500N	P1251107475	2021-11-27	2022-11-26

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Setup



Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-8:2009)
Test level 1 at 1 A/m

Test Level

Level	Magnetic Field Strength A/m
1	1
2	3
3	10
4	30
5	100
X.	Special

Performance Criteria: A

Test Procedure

The EUT shall be subjected to the test magnetic field by using the induction coil of standard dimensions (1 m*1 m). The induction coil shall then be rotated by 90 in order to expose the EUT to the test field with different orientations.

Test Data

Environmental Conditions

Temperature:	18℃
Relative Humidity:	43%
ATM Pressure:	101.5kPa

The testing was performed by Phil Zhou on 2022-06-03.

Level	Magnetic Field Strength A/m	X (Horizontal)	Y (Vertical)	Z (Special)
1	1	A	A	A
2	3	/	/	/
3	10	/	/	/
4	30	/	/	/
5	100	/	/	/
X	Special	/	/	/

Note: “A” stands for, during test, operate as intended no loss of function, no degradation of performance, and after test, no degradation of performance, no loss of function.

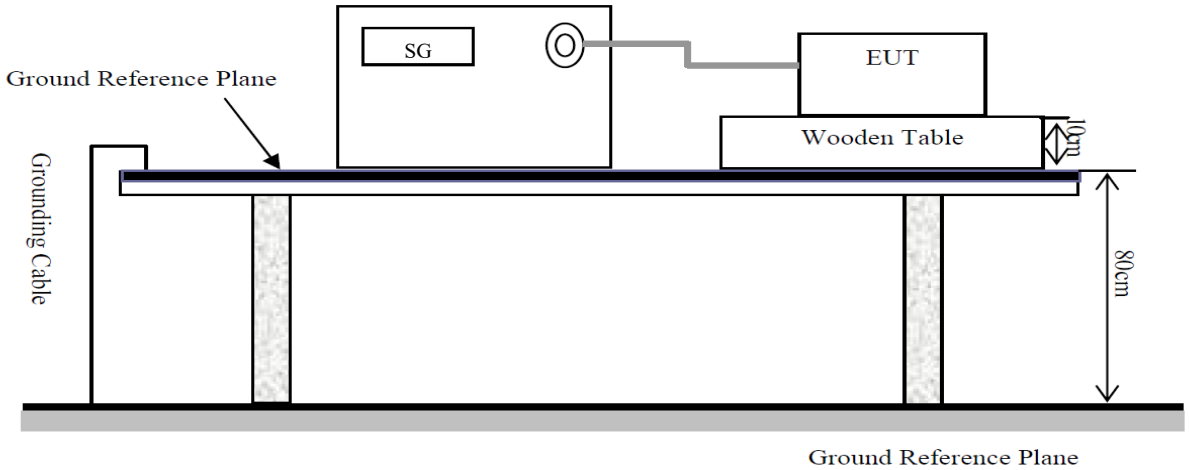
EN 55035 §4.2.6 VOLTAGE DIPS AND INTERRUPTIONS (IEC 61000-4-11)

Test Equipment

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
EM TEST	Auto Transformer	MV2616	0403-16	N/A	N/A
EM TEST	Single Phase AC Fault Power Supply	HV1P16T	214401	2021-11-21	2022-11-20
EM TEST	Transient Integrated Immunity Generator	HCOMPACT 7	214402	2021-11-21	2022-11-20

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Kunshan) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

Test Setup



Test Standard

EN 55035:2017+A11:2020 (IEC 61000-4-11:2020)

Test levels and Performance Criterion

Test Level	Cycle	Performance criterion
Voltage dips: <5 % residual voltage	0.5	B
Voltage dips: 70 % residual voltage	25&30	C
Voltage interruptions: <5 % residual voltage	250&300	C

Test Procedure

1) The interruption is introduced at selected phase angles with specified duration.
2) Record any degradation of performance.

Test Data

Environmental Conditions

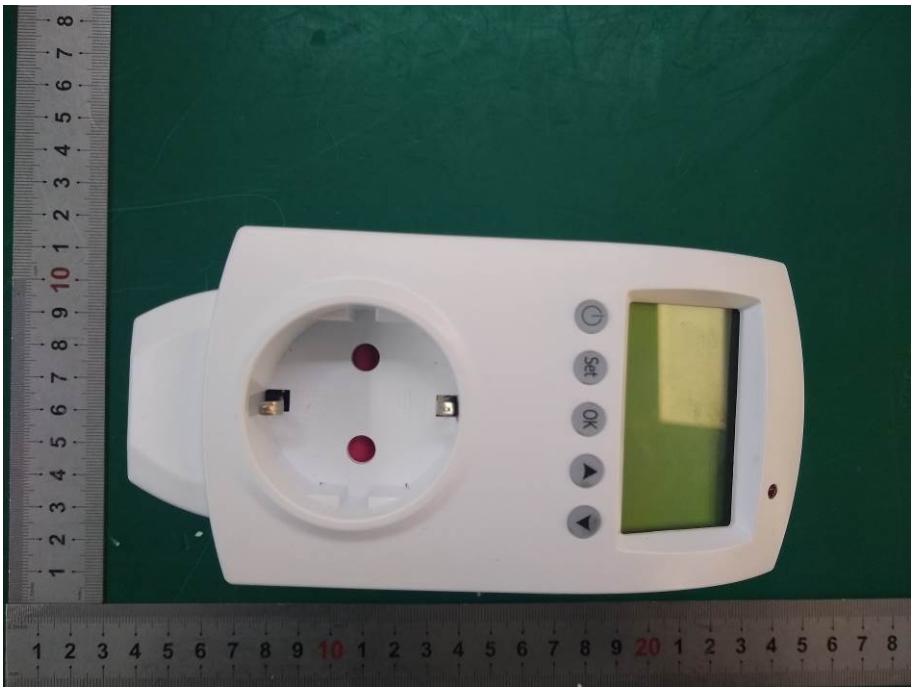
Temperature:	18 ºC
Relative Humidity:	43 %
ATM Pressure:	101.5 kPa

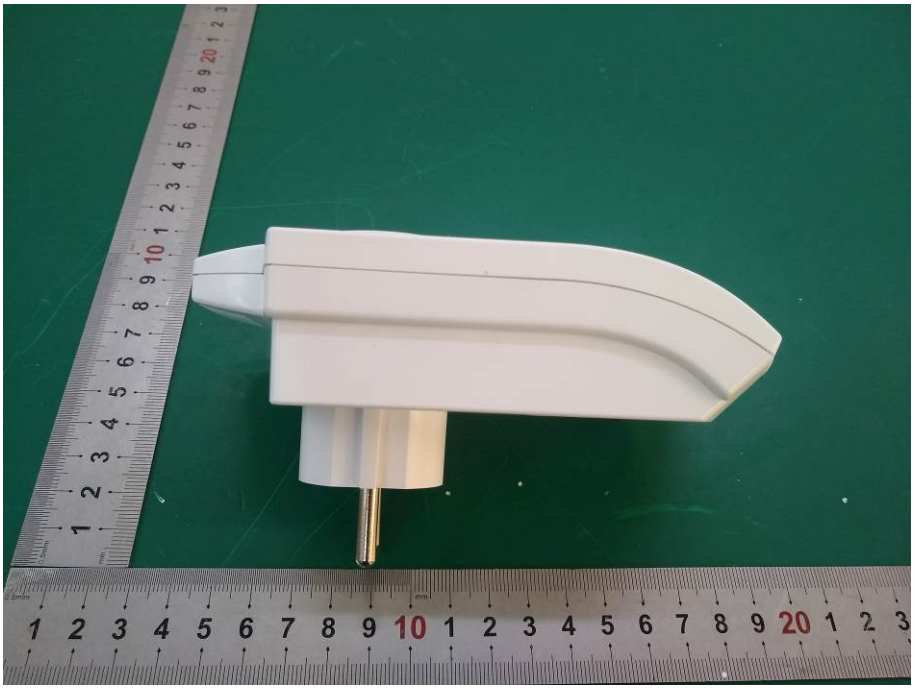
The testing was performed by Phil Zhou on 2022-06-03.

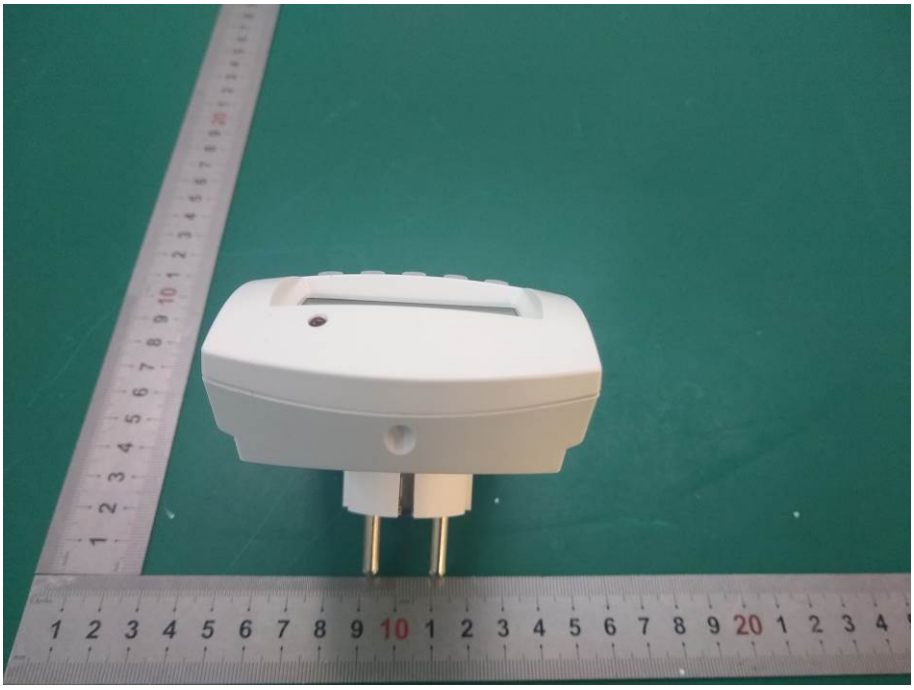
Test Level	Cycle	Phase Angle	Result
Voltage dips: <5 % residual voltage	0.5	0/90/180/270	A
Voltage dips: 70 % residual voltage	25	0/90/180/270	A
Voltage interruptions: <5 % residual voltage	250	0/90/180/270	B

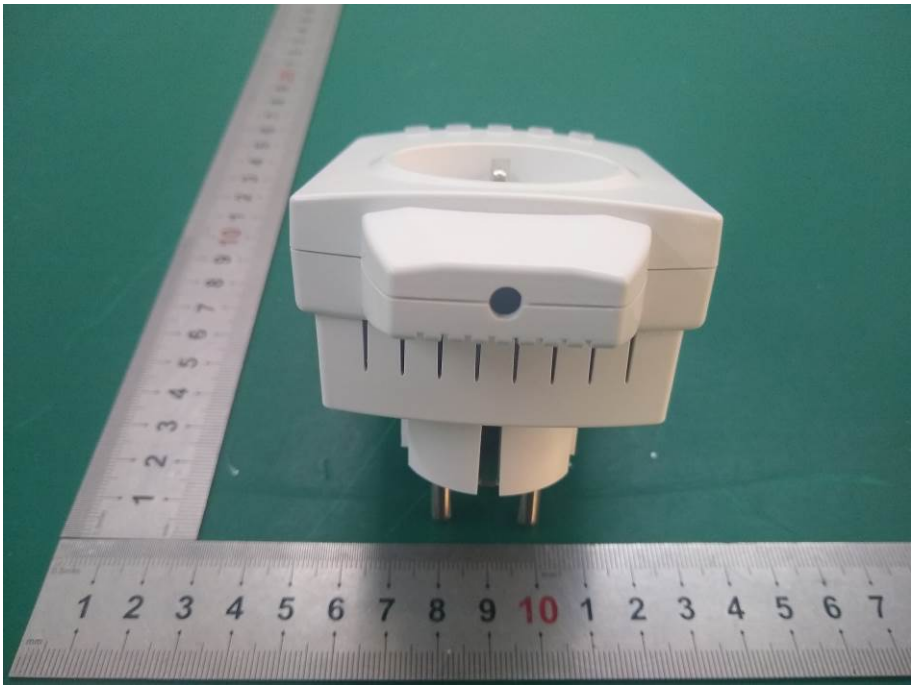
Note:
1. “A” stands for, during test, operate as intended no loss of function, no degradation of performance, and after test, no degradation of performance, no loss of function.
2. “B” stands for, during test, operate as intended temporary loss of function, and after test, no degradation of performance, no loss of function.

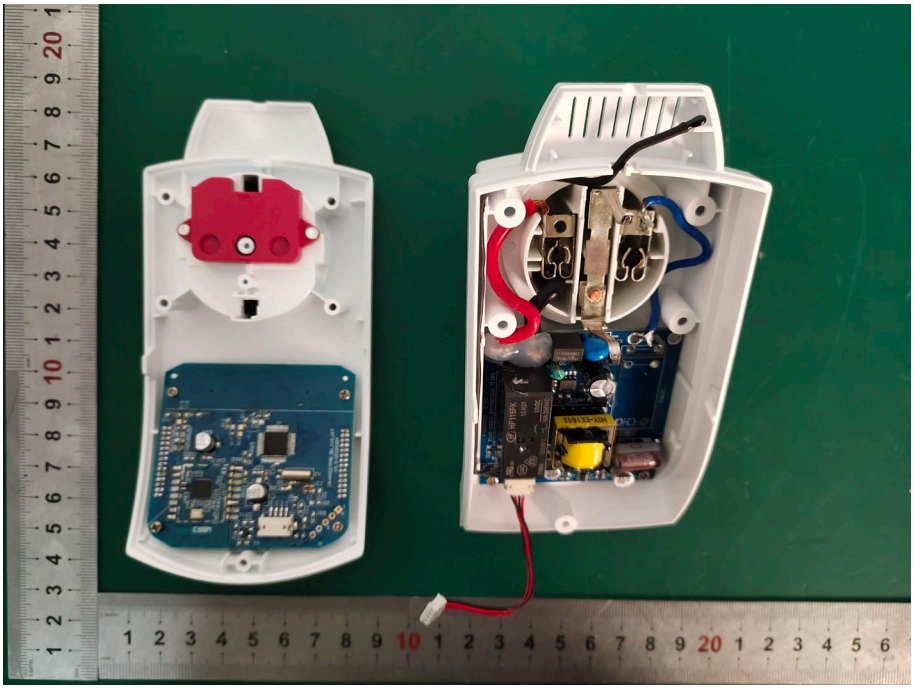
EXHIBIT A - EUT PHOTOGRAPHS

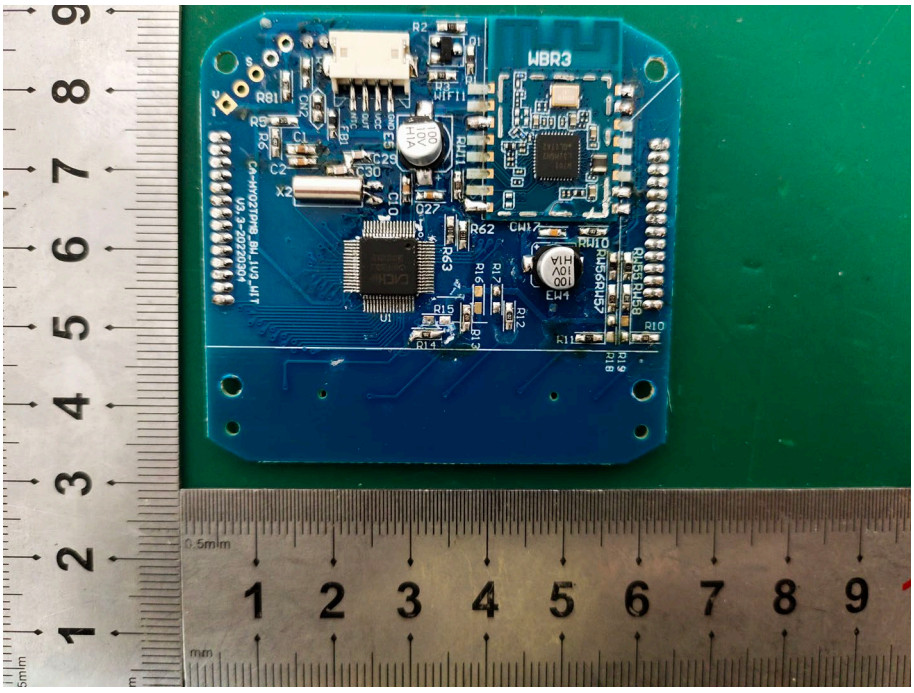


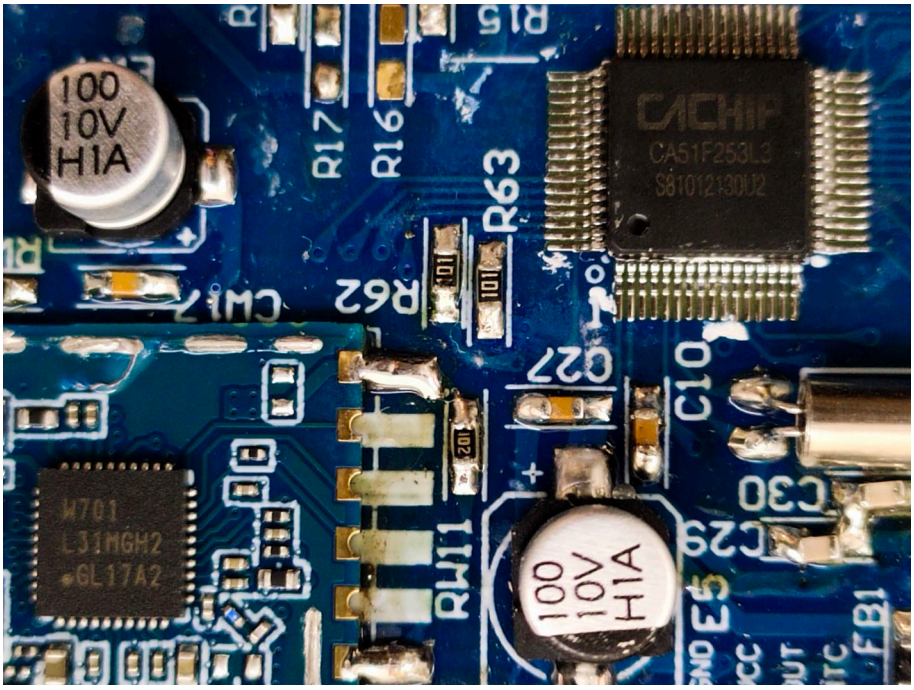









WBR3


100
10V
H1A
R17
R16
R63
R62
CA51F253L3
W701
L31MGH2
GL17A2
Q27
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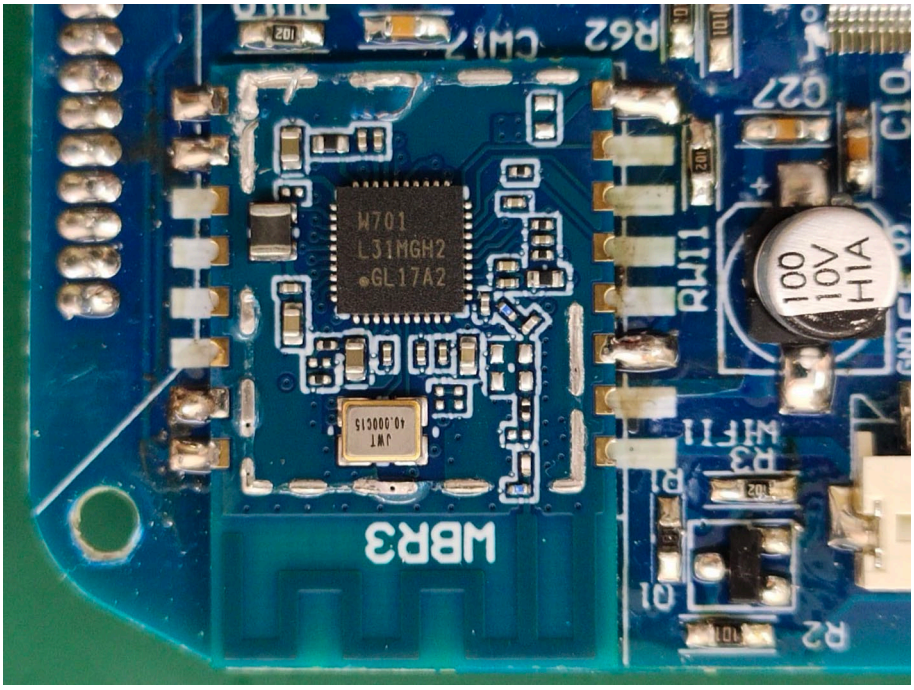
C30
C29
RW11
100
10V
H1A
FB1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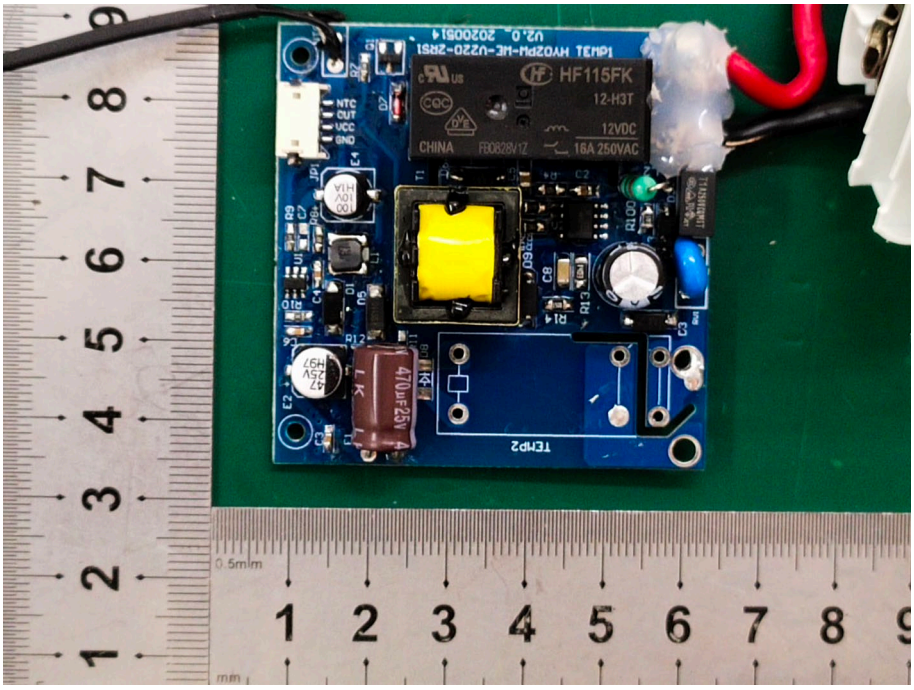
R2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12-H3T
12VDC
16A 250VAC
CHINA
470uF25V
TEMP2

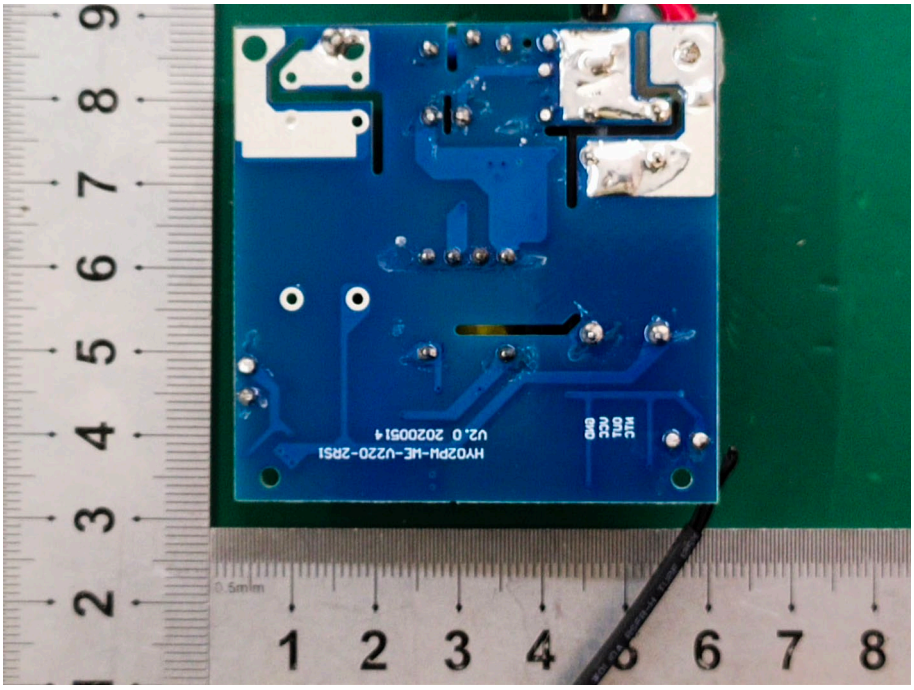
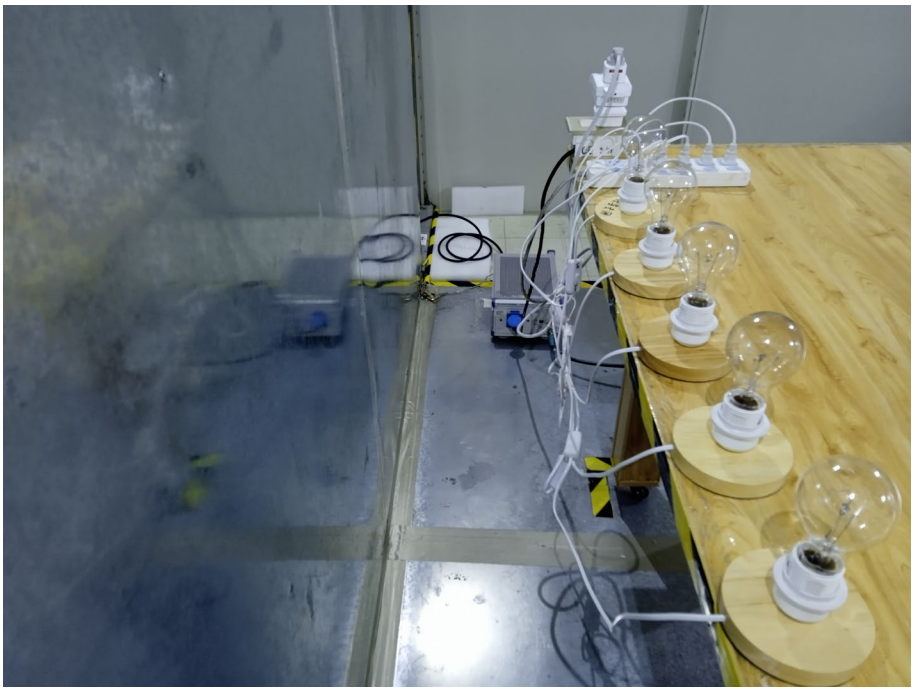

HY02PW-ME-V220-2RS1
V2.0 20200514

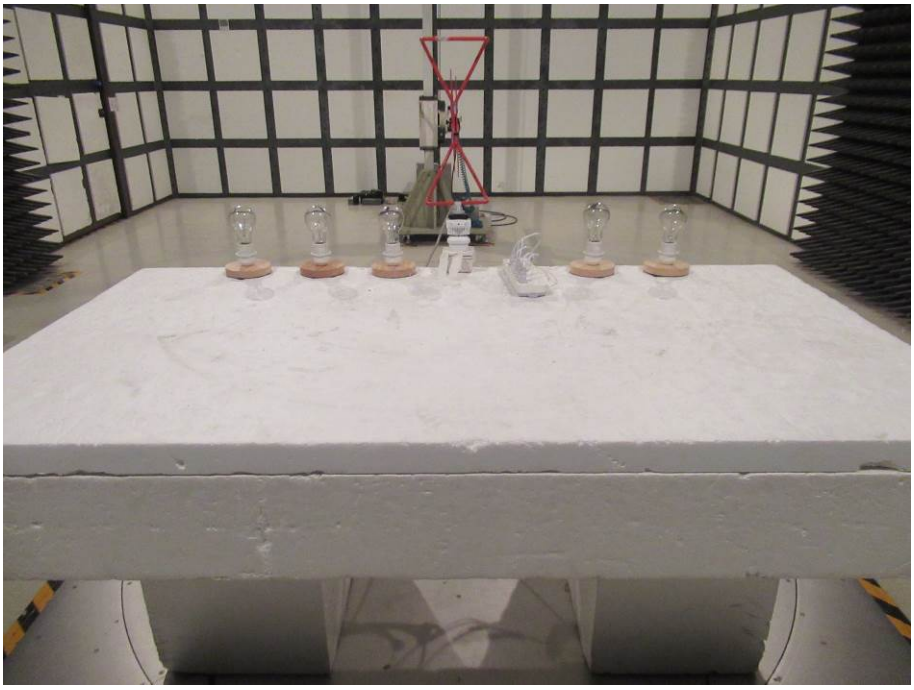
EXHIBIT B – TEST SETUP PHOTOGRAPHS

Conducted Emissions - Front View

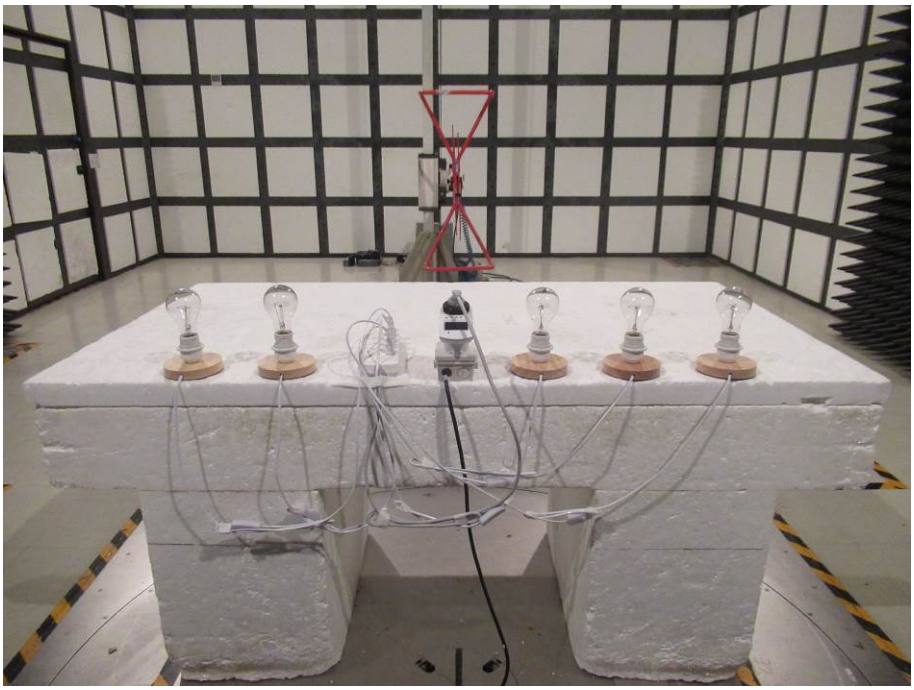
Conducted Emissions - Left View



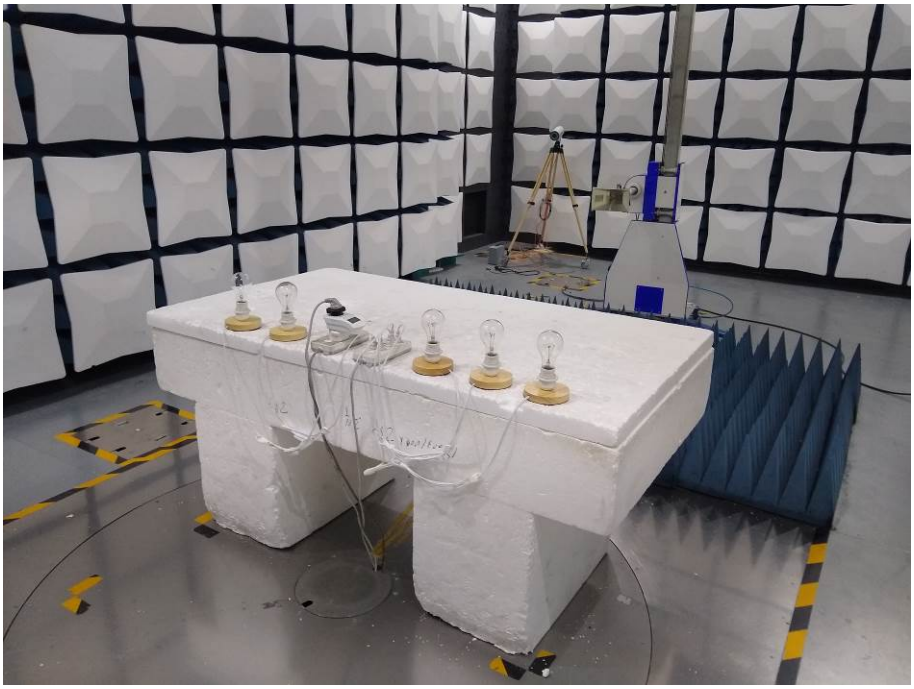
Radiated Emissions - Front View



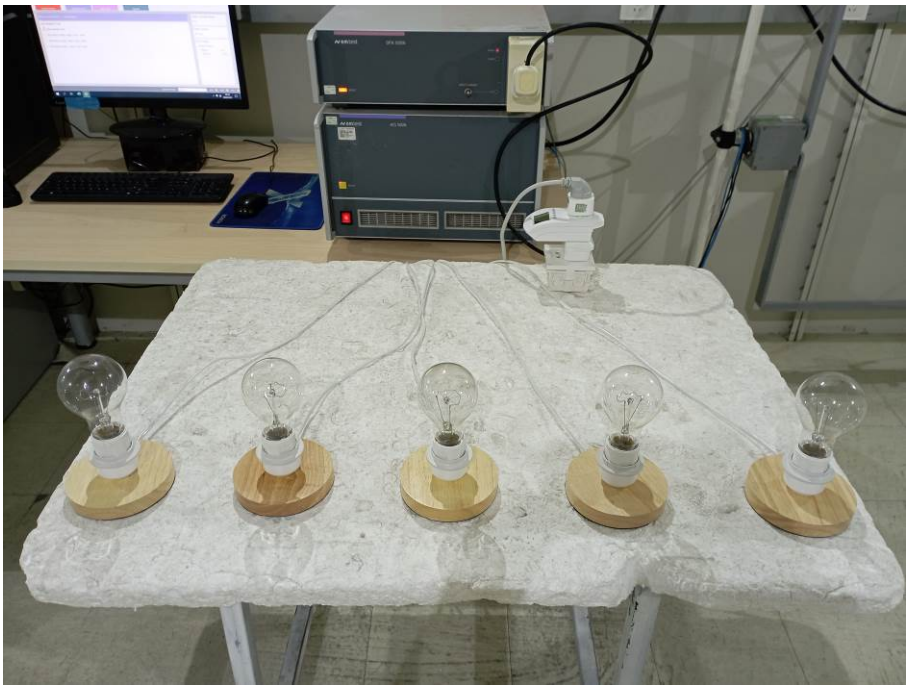
Radiated Emissions - Rear View



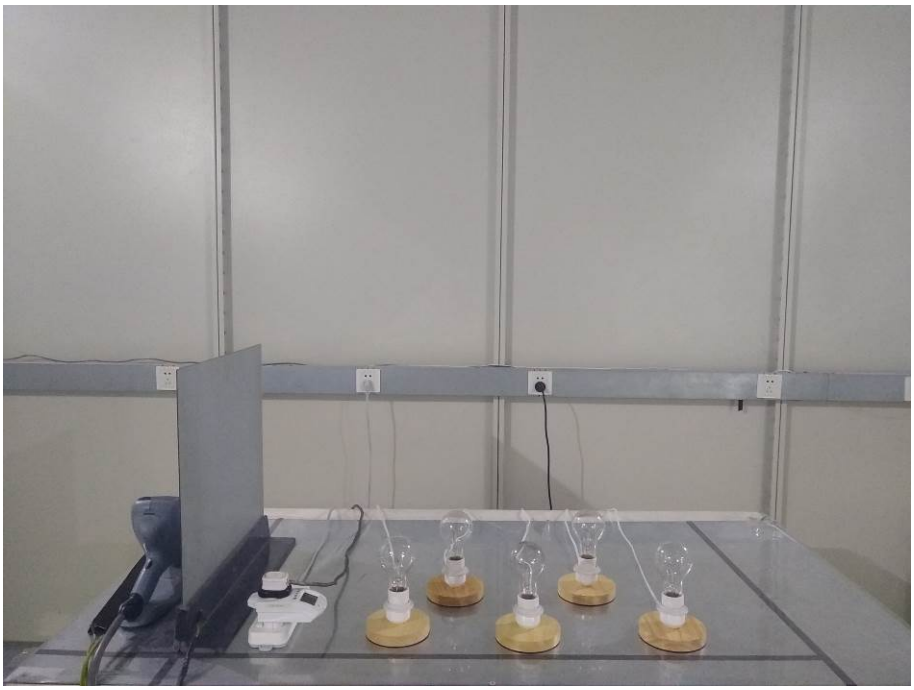
Radiated Emissions Side View (Above 1GHz)



Flicker Test Setup Photo

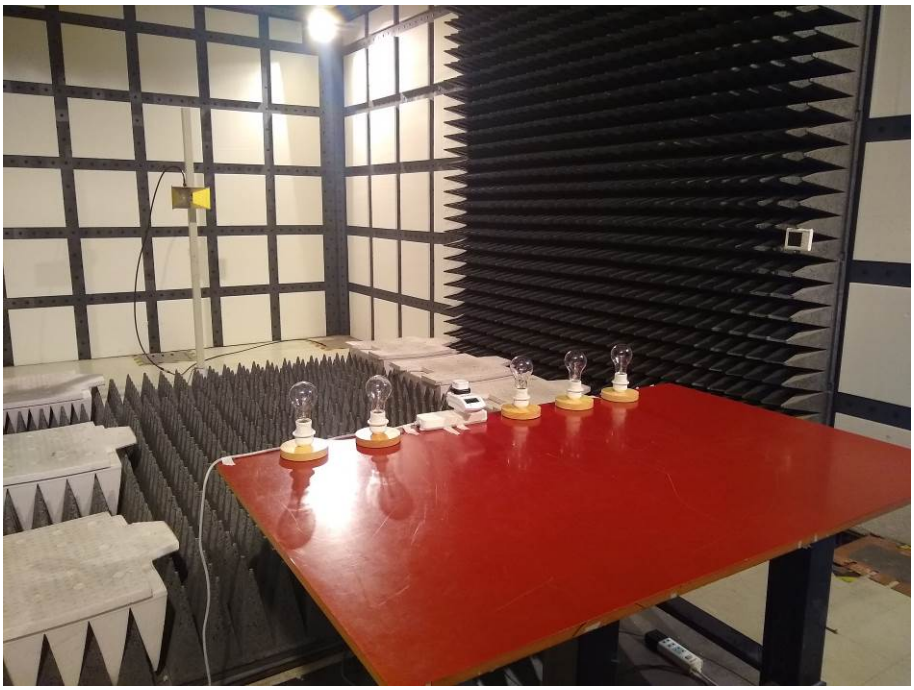


ESD Test Setup Photo

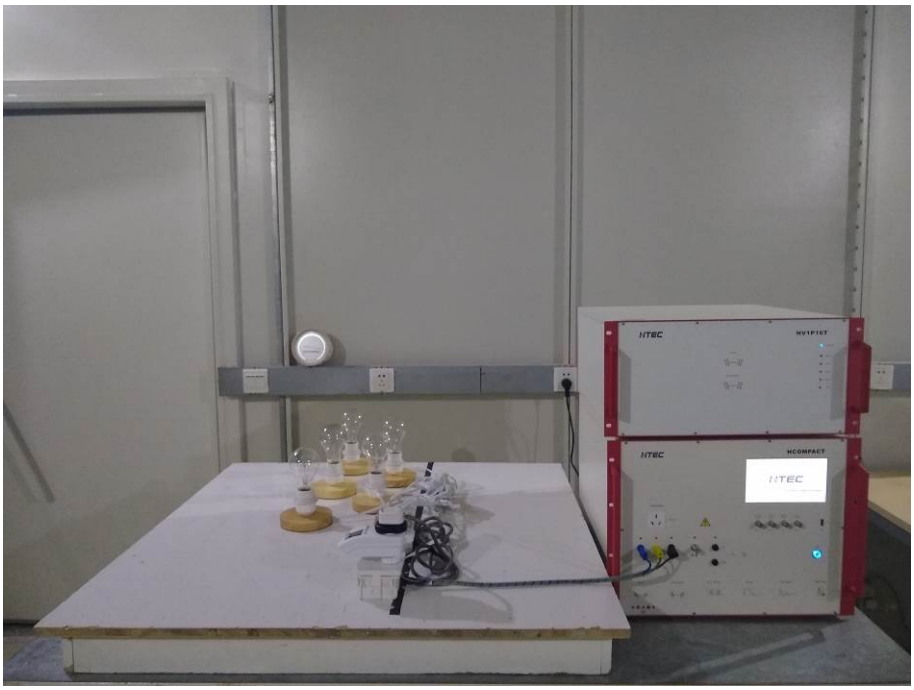


RS Test Setup Photo (Below 1GHz)

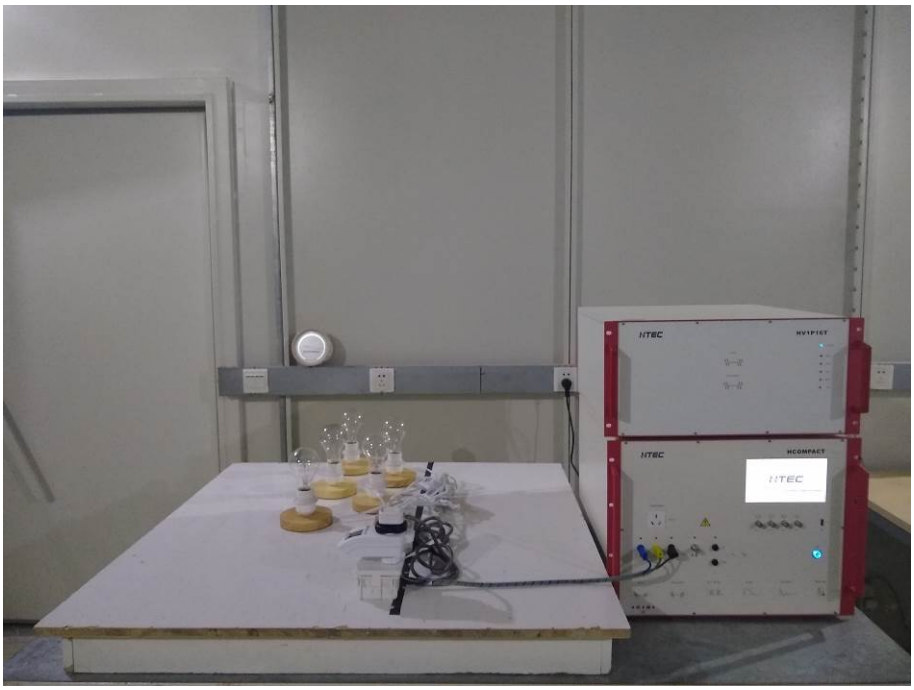
RS Test Setup Photo (Above 1GHz)



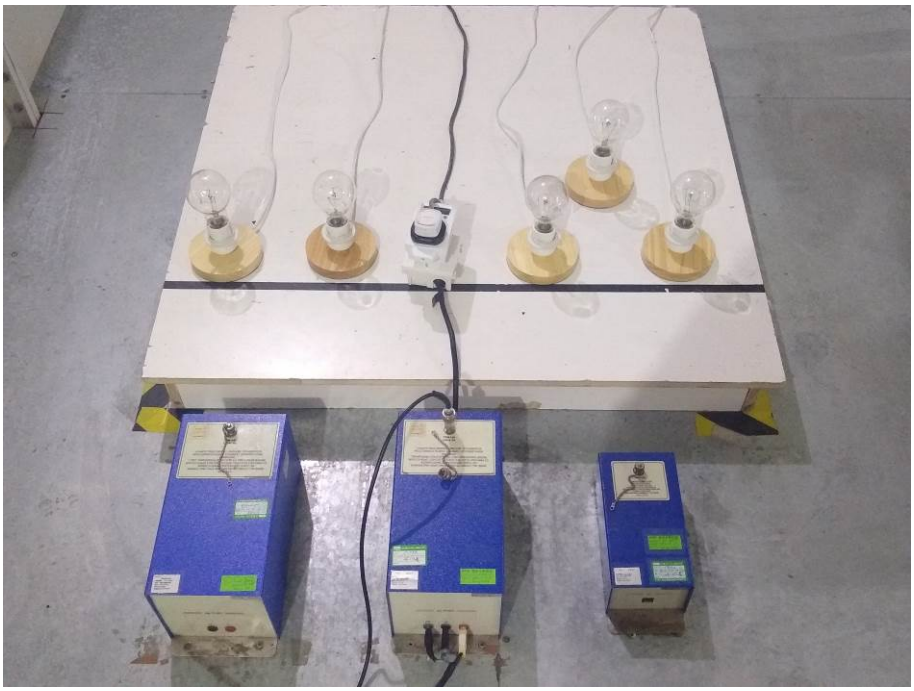
EFT/B Test Setup Photo



Surge Test Setup Photo

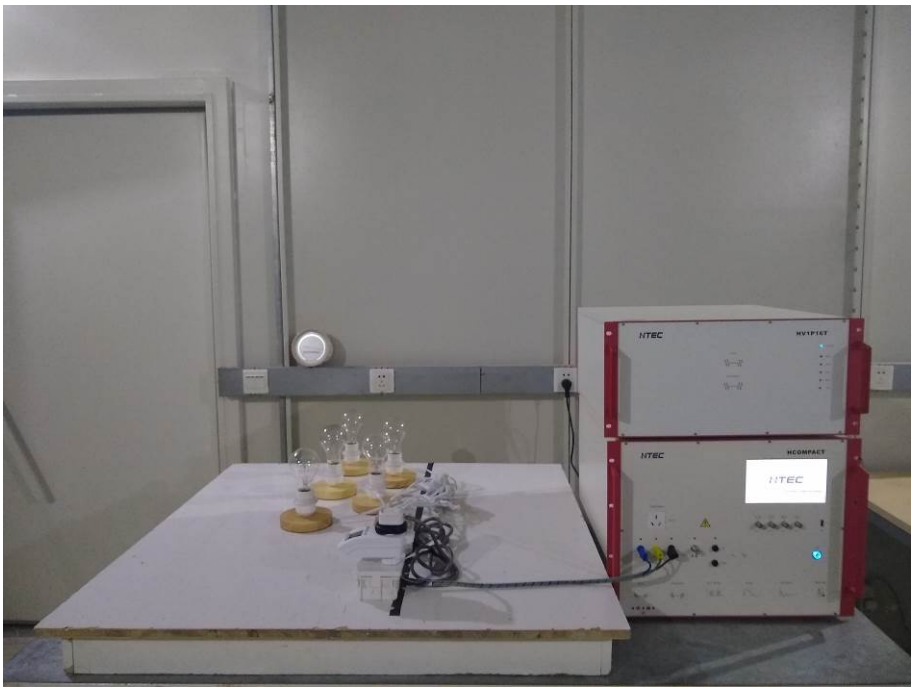


CS Test Setup Photo

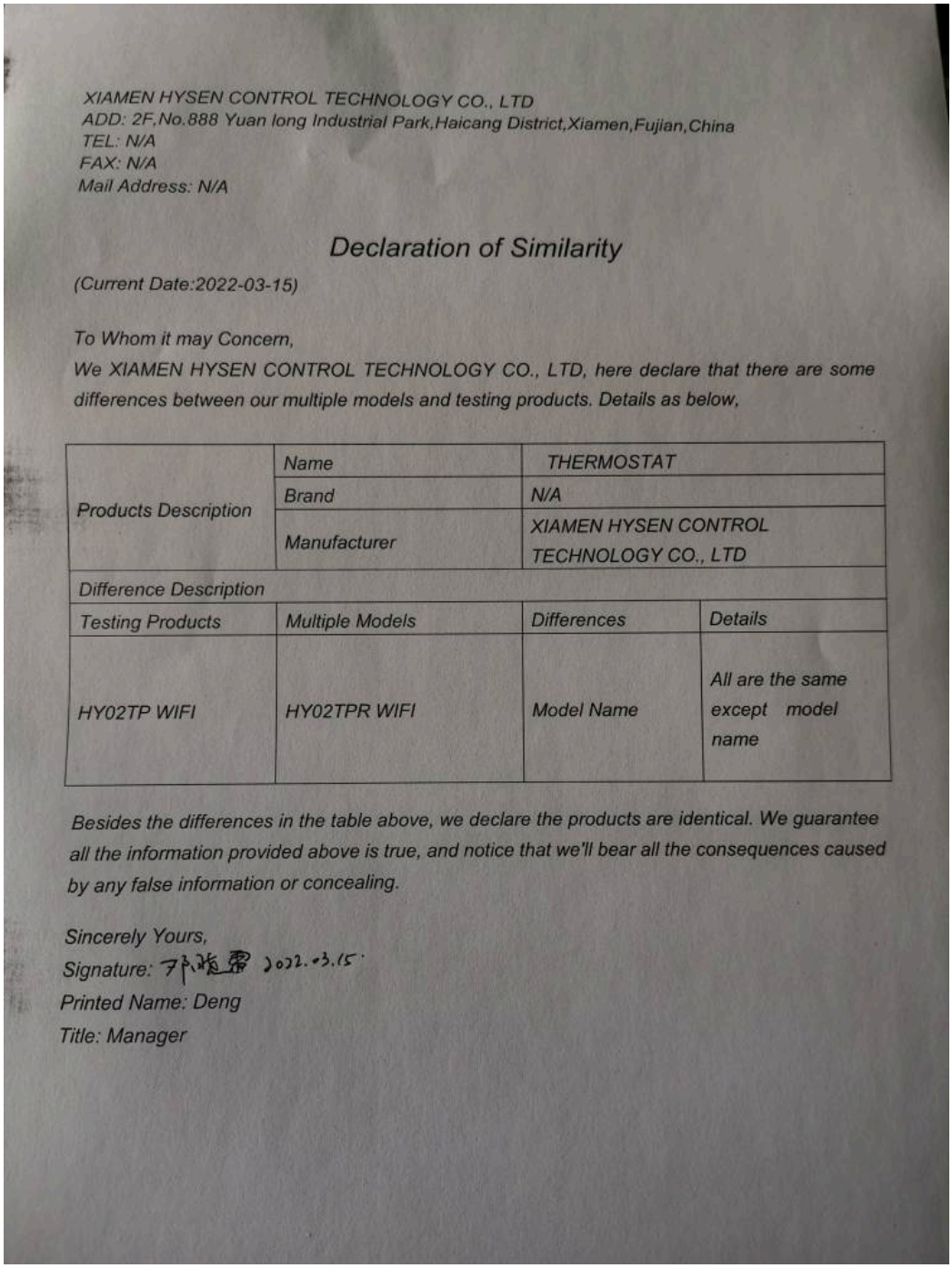


PFMF Test Setup Photo

Dips Test Setup Photo



PRODUCT SIMILARITY DECLARATION LETTER



XIAMEN HYSEN CONTROL TECHNOLOGY CO., LTD
ADD: 2F,No.888 Yuan long Industrial Park,Haicang District,Xiamen,Fujian,China
TEL: N/A
FAX: N/A
Mail Address: N/A

Declaration of Similarity

(Current Date:2022-03-15)

To Whom it may Concern,
We XIAMEN HYSEN CONTROL TECHNOLOGY CO., LTD, here declare that there are some differences between our multiple models and testing products. Details as below,

Products Description	Name	THERMOSTAT	
	Brand	N/A	
	Manufacturer	XIAMEN HYSEN CONTROL TECHNOLOGY CO., LTD	
Difference Description			
Testing Products	Multiple Models	Differences	Details
HY02TP WIFI	HY02TPR WIFI	Model Name	All are the same except model name

Besides the differences in the table above, we declare the products are identical. We guarantee all the information provided above is true, and notice that we'll bear all the consequences caused by any false information or concealing.

Sincerely Yours,
Signature: 2022.03.15
Printed Name: Deng
Title: Manager

Declarations

1: BACL(Kunshan) is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk'*'. Customer model name, addresses, names, trademarks etc. are not considered data.

2: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

3: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

4: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

5: This report cannot be reproduced except in full, without prior written approval of the Company.

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*******END OF REPORT*******