




<b>TEST REPORT</b> <b>IEC 62368-1</b> <b>Audio/video, information and communication technology equipment</b> <b>Part 1: Safety requirements</b>	
Report Number .....	200702410SHA-001
Date of issue .....	2020-09-21
	Modification 1: 2021-07-20
Total number of pages .....	40
Name of Testing Laboratory preparing the Report .....	Intertek Testing Services Shanghai
Applicant's name .....	Lumi United Technology Co., Ltd
Address .....	8th Floor, JinQi Wisdom Valley, No.1 Tangling Road, Liuxian Ave, Taoyuan Residential District, Nanshan District, Shenzhen.China
<b>Test specification:</b>	
Standard.....	EN 62368-1: 2014+A11: 2017
Test procedure .....	CE Testing
Non-standard test method .....	N/A
TRF template used .....	IECEE OD-2020-F1:2020, Ed.1.3
Test Report Form No. ....	IEC62368_1D
Test Report Form(s) Originator ..	UL(US)
Master TRF.....	Dated 2021-02-04
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<b>Test Item description</b> .....	Hub M1S
<b>Trade Mark(s)</b> .....	
<b>Manufacturer</b> .....	Same as applicant
<b>Model/Type reference</b> .....	HM1S-G01
<b>Ratings</b> .....	100-240V~, 50/60Hz, 0.2A, Class II

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
<input checked="" type="checkbox"/>	<b>Testing Laboratory:</b>	Intertek Testing Services Shanghai
<b>Testing location/ address .....</b>		Building No. 86, 1198 Qinzhou Road (North) 200233 Shanghai CHINA
<b>Tested by (name, function, signature) .....</b>		Eli Shui (Engineer) 
<b>Approved by (name, function, signature) .....</b>		Sam Li (Mandated Reviewer) 
<hr/>		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 1:</b>	
<b>Testing location/ address .....</b>		
<b>Tested by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<hr/>		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 2:</b>	
<b>Testing location/ address .....</b>		
<b>Tested by (name, function, signature) .....</b>		
<b>Witnessed by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<hr/>		
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 3 :</b>	
<input type="checkbox"/>	<b>Testing procedure: CTF Stage 4:</b>	
<b>Testing location/ address .....</b>		
<b>Tested by (name, function, signature) .....</b>		
<b>Witnessed by (name, function, signature) .....</b>		
<b>Approved by (name, function, signature) .....</b>		
<b>Supervised by (name, function, signature) .....</b>		

<p><b>List of Attachments (including a total number of pages in each attachment):</b> Page 29-40: Photograph</p>	
<p><b>Summary of testing:</b> All tests are performed and the most disadvantageous results are recorded. We conclude that the appliances comply with this standard.</p>	
<p><b>Tests performed (name of test and test clause):</b>            4.1.2 Use of components            4.7 Torque test of Devices Forming a Part of Mains Plug            5.2 Classification of electrical energy sources            5.4.1.4, 6.3, 6.4, 9.0, B.2.6, B.3, B.4, Annex G.5.3, G.5.4 Heating test and abnormal &amp; fault condition test            5.4.1.8 Determination of working voltage            5.4.1.10.3 Ball pressure test            5.4.2, 5.4.3 Measurement of Clearance and Creepage Distances            5.4.4.2, 5.4.4.5 c), 5.4.4.9 Distance through insulation measurements            5.4.8 Humidity test            5.4.9 Electric strength test            6.2.2 Electrical Power Source (PS) measurements for classification            Annex B.2.5 Input test            Annex B.3, B.4 Abnormal operating and fault condition tests            Annex T.4, T.5 Steady force test, 100 N or 250 N            Annex T.7 Drop test            Annex T.8 Stress relief test            The equipment under test (EUT) fulfilled the test requirement according to the standard EN 62368-1:2014+A11: 2017</p>	<p><b>Testing location:</b>            Intertek Testing Services Shanghai            Building No.86, 1198 Qinzhou Road (North), 200233 Shanghai, China</p>
<p><b>Summary of compliance with National Differences:</b>  <b>List of countries addressed</b>            Group and national differences for the CENELEC countries have been checked.</p> <p><input checked="" type="checkbox"/> <b>The product fulfils the requirements of EN 62368-1:2014+A11: 2017.</b></p>	
<p><b>Statement concerning the uncertainty of the measurement systems used for the tests</b>            (may be required by the product standard or client)</p> <p><input type="checkbox"/> <b>Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:</b>  <b>Procedure number, issue date and title:</b>            Calculations leading to the reported values are on file with the NCB and testing laboratory that conducted the testing.</p> <p><input type="checkbox"/> <b>Statement not required by the standard used for type testing</b>            (Note: When IEC or ISO standard requires a statement concerning the uncertainty of the measurement systems used for tests, this should be reported above. The informative text in parenthesis should be delete in both cases after selecting the applicable option)</p>	

**Copy of marking plate (representative):**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



**Note:**

The above markings are the minimum requirements required by this safety standard. For the final production samples, the additional markings which do not give rise to misunderstanding may be added.

<b>TEST ITEM PARTICULARS:</b>	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection.....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance.....	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> + ____% / - ____% <input type="checkbox"/> None
Supply Connection – Type .....	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other: _____
Considered current rating of protective device as part of building or equipment installation .....	16A Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input checked="" type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment .....	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Class II with functional earthing <input type="checkbox"/> Not classified
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient:	40°C
IP protection class .....	<input type="checkbox"/> IPX0 <input checked="" type="checkbox"/> IP20
Power Systems .....	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input type="checkbox"/> IT - ____ V <sub>L-L</sub>
Altitude during operation (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> <5000 m
Altitude of test laboratory (m) .....	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> <50 m
Mass of equipment (kg) .....	0.14 Kg
<b>POSSIBLE TEST CASE VERDICTS:</b>	
- test case does not apply to the test object.....	N/A

- test object does meet the requirement .....	P (Pass)
- test object does not meet the requirement .....	F (Fail)
<b>TESTING:</b>	
Date of receipt of test item .....	2021-04-15
Date (s) of performance of tests .....	2021-04-15 to 2021-05-09
<b>GENERAL REMARKS:</b>	
<p><b>"(See Enclosure #)" refers to additional information appended to the report.</b>  <b>"(See appended table)" refers to a table appended to the report.</b></p> <p><b>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</b></p> <p>Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty. This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.</p> <p><b>Note: this report is not valid without original test report.</b></p>	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC60060-2:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided .....	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies) .....</b>	Guangdong New Energy Technology Co., Ltd. Floor1-4, Building 2, No.197 plant, East Side of Xinhua Road, Tongqiao Town, Zhongkai High-tech Zone, Huizhou City, Guangdong Province, China
<b>GENERAL PRODUCT INFORMATION:</b>	
<p><b>Product Description –</b>  This EUT is a hub (multi-functional gateway), provide Wi-Fi, Zigbee function, contains one alarm speaker and eighteen LEDs.  EUT links to a serious of sensors/controllers, Wi-Fi router and cellphone by Wi-Fi or Zigbee.  For indoor use only.</p>	

**Modification 1:**

The original test report ref. No. 200702410SHA-001, dated 2020-09-21 has modification on 2021-07-20 to include the following changes:

1. Added one alternative source for plastic enclosure and plug holder, see table 4.1.2 for details.
2. Added one alternative source for Transformer, see table 4.1.2 for details.
3. Added one alternative source for CM choke, see table 4.1.2 for details.
4. Added one alternative source for Y1 capacitor, see table 4.1.2 for details.
5. Changed design of ventilation openings, see photograph for details.

After review, the required tests were conducted.

Clause concerned:

4.1.2 Use of components

4.7 Torque test of Devices Forming a Part of Mains Plug

5.2 Classification of electrical energy sources

5.4.1.4, 6.3, 6.4, 9.0, B.2.6, B.3, B.4, Annex G.5.3, G.5.4 Heating test and abnormal & fault condition test

5.4.1.8 Determination of working voltage

5.4.1.10.3 Ball pressure test

5.4.2, 5.4.3 Measurement of Clearance and Creepage Distances

5.4.4.2, 5.4.4.5 c), 5.4.4.9 Distance through insulation measurements

5.4.8 Humidity test

5.4.9 Electric strength test

6.2.2 Electrical Power Source (PS) measurements for classification

Annex B.2.5 Input test

Annex B.3, B.4 Abnormal operating and fault condition tests

Annex T.4, T.5 Steady force test, 100 N or 250 N

Annex T.7 Drop test

Annex T.8 Stress relief test

**Additional application considerations –**

- |                                                    |                                        |
|----------------------------------------------------|----------------------------------------|
| - normal conditions <b>N.C.</b>                    | - single fault conditions <b>S.F.C</b> |
| - functional insulation <b>FI</b>                  | - basic insulation <b>BI</b>           |
| - double insulation <b>DI</b>                      | - supplementary insulation <b>SI</b>   |
| - between parts of opposite polarity BOP           | - reinforced insulation <b>RI</b>      |
| - short circuit <b>SC</b> - open circuit <b>OC</b> |                                        |
| - overload <b>O/L</b>                              |                                        |

**Indicate used abbreviations (if any)**

**N/A**



<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
<p>(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.)            (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)</p>	
<p><b>Electrically-caused injury (Clause 5):</b>            (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification)            Example: +5 V dc input</p>	
	ES1
Source of electrical energy	Corresponding classification (ES)
All secondary circuits & components	ES1
All primary circuits & components	ES3
<p><b>Electrically-caused fire (Clause 6):</b>            (Note: List sub-assembly or circuit designation and corresponding energy source classification)            Example: Battery pack (maximum 85 watts):</p>	
	PS2
Source of power or PIS	Corresponding classification (PS)
All secondary circuits & components	PS1
All primary circuits & components	PS3
<p><b>Injury caused by hazardous substances (Clause 7)</b>            (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.)            Example: Liquid in filled component</p>	
	Glycol
Source of hazardous substances	Corresponding chemical
N/A	N/A
<p><b>Mechanically-caused injury (Clause 8)</b>            (Note: List moving part(s), fan, special installations, etc. &amp; corresponding MS classification based on Table 35.)            Example: Wall mount unit</p>	
	MS2
Source of kinetic/mechanical energy	Corresponding classification (MS)
Sharp edges and corners	MS1
Equipment mass	MS1
<p><b>Thermal burn injury (Clause 9)</b>            (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.)            Example: Hand-held scanner – thermoplastic enclosure</p>	
	TS1
Source of thermal energy	Corresponding classification (TS)
All accessible parts	TS1
<p><b>Radiation (Clause 10)</b>            (Note: List the types of radiation present in the product and the corresponding energy source classification.)            Example: DVD – Class 1 Laser Product</p>	
	RS1
Type of radiation	Corresponding classification (RS)
LED Light	RS1

<b>OVERVIEW OF EMPLOYED SAFEGUARDS</b>				
<b>Clause</b>	<b>Possible Hazard</b>			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES1: All secondary circuits & components	N/A	N/A	N/A
Ordinary	ES3: All primary circuits & components	N/A	N/A	Enclosure
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	PS1: All secondary circuits & components	N/A	N/A	N/A
All combustible materials within the fire enclosure	PS3: All primary circuits & components	Comply with Clause 6.3	Fire enclosure	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3:High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Equipment mass	N/A	N/A	N/A
Ordinary	MS1: Sharp edges and Corners	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: All accessible parts	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: LED Light	N/A	N/A	N/A
Supplementary Information:				
(1) See attached energy source diagram for additional details.				
(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" Single Fault				

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Clause	Requirement + Test	Result - Remark	Verdict

4	GENERAL REQUIREMENTS		P
4.1.1	Acceptance of materials, components and subassemblies	(See appended table 4.1.2)	P
4.1.2	Use of components	(See appended table 4.1.2)	P
4.4.4	Safeguard robustness		P
4.4.4.2	Steady force tests .....	(See Annex T.4, T.5)	P
4.4.4.3	Drop tests .....	(See Annex T.7)	P
4.4.4.4	Impact tests .....	(See Annex T.6)	N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests .....	No such parts.	N/A
4.4.4.6	Glass Impact tests .....	No glass used.	N/A
4.4.4.7	Thermoplastic material tests.....	(See Annex T.8)	P
4.4.4.8	Air comprising a safeguard.....	(See Annex T)	N/A
4.4.4.9	Accessibility and safeguard effectiveness		P
4.7	Equipment for direct insertion into mains socket - outlets		P
4.7.2	Mains plug part complies with the relevant standard.....	EN 50075	P
4.7.3	Torque (Nm) .....	Max. 0.034Nm	P

5	ELECTRICALLY-CAUSED INJURY		P
5.2.1	Electrical energy source classifications.....	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits		P
5.2.2.2	Steady-state voltage and current.....	(See appended table 5.2)	P
5.2.2.3	Capacitance limits .....	No X cap. used.	N/A
5.2.2.4	Single pulse limits .....	No single pulse.	N/A
5.2.2.5	Limits for repetitive pulses .....	No repetitive pulses.	N/A
5.2.2.6	Ringling signals .....	No ringling signals.	N/A
5.2.2.7	Audio signals .....	No audio signals.	N/A
5.3	Protection against electrical energy sources	See table "OVERVIEW OF EMPLOYED SAFEGUARDS"	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		P
5.3.2.1	Accessibility to electrical energy sources and safeguards		P
5.3.2.2	Contact requirements		P
	a) Test with test probe from Annex V .....	ES3 voltages less than 420 V peak	P
	b) Electric strength test potential (V) .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Air gap (mm) .....		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material		P
5.4.1.3	Humidity conditioning .....	(See sub-clause 5.4.8)	P
5.4.1.4	Maximum operating temperature for insulating materials .....	(See appended table 5.4.1.4)	P
5.4.1.5	Pollution degree .....	Pollution degree 2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such circuit.	N/A
5.4.1.8	Determination of working voltage		P
5.4.1.9	Insulating surfaces		P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		P
5.4.1.10.2	Vicat softening temperature .....		N/A
5.4.1.10.3	Ball pressure .....	(See appended table 5.4.1.10.3)	P
5.4.2	Clearances		P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2)	P
5.4.2.3	Determining clearance using required withstand voltage .....	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage .....	2500V <sub>peak</sub>	—
	b) d.c. mains transient voltage .....	No connections to d.c. mains.	—
	c) external circuit transient voltage .....	No connections to external circuit with transient voltage.	—
	d) transient voltage determined by measurement ... :	Option was not used.	—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	(See appended table 5.4.2.4)	N/A
5.4.2.5	Multiplication factors for clearances and test voltages .....	Up to 2000m.	N/A
5.4.3	Creepage distances .....	(See appended table 5.4.3)	P
5.4.3.1	General		P
5.4.3.3	Material Group .....	Material group IIIb is used	—
5.4.4	Solid insulation		P
5.4.4.2	Minimum distance through insulation .....	(See appended table 5.4.4.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material	Tube used in the transformers as functional/basic insulation.	P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material		P
	Number of layers (pcs)..... :	Min. 2pcs	N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		P
5.4.4.9	Solid insulation at frequencies >30 kHz..... :	Evaluated according to 5.4.9.1	P
5.4.8	Humidity conditioning		P
	Relative humidity (%)..... :	93	—
	Temperature (°C)..... :	25	—
	Duration (h)..... :	48	—
5.4.9	Electric strength test..... :	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test		P
5.4.9.2	Test procedure for routine tests		N/A
5.5	Components as safeguards		
5.5.1	General		P
5.5.2	Capacitors and RC units	Certified Y Capacitor used.	P
5.5.2.1	General requirement		P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector..... :		N/A
5.5.3	Transformers	(See Annex G.5.3)	P

<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		P
6.2.2.2	Power measurement for worst-case load fault ... :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault..... :	(See appended table 6.2.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.2.2.4	PS1 .....	All secondary circuits inside the equipment enclosure	P
6.2.2.5	PS2 .....		N/A
6.2.2.6	PS3 .....	All Primary circuits inside the equipment enclosure	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials .....	(See appended table 5.4.1.5, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A

<b>9</b>	<b>THERMAL BURN INJURY</b>		P
9.2	Thermal energy source classifications	TS1 for accessible surfaces.	P
9.3	Safeguard against thermal energy sources		N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard .....		N/A

<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements.....	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers .....		N/A
B.2.3	Supply voltage and tolerances		P
B.2.5	Input test.....	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....	(See appended table B.3)	P
B.3.2	Covering of ventilation openings		P
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector .....	No such parts	N/A
B.3.5	Maximum load at output terminals .....	(See appended table B.3)	P
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		P
B.4	Simulated single fault conditions		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
B.4.2	Temperature controlling device open or short-circuited .....		N/A
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....		N/A
B.4.4	Short circuit of functional insulation	(See appended table B.4)	P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions		P
B.4.9	Battery charging under single fault conditions ... :		N/A
<b>G</b>	<b>COMPONENTS</b>		P
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components.....	Approved TIW used	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	Physical separation provided.	P
G.5.1.2 b)	Construction subject to routine testing		N/A
G.5.2	Endurance test on wound components		N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....		—
	Temperature (°C) .....		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		P
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1).....	Meet the requirement in G.5.3.2 and G.5.3.3	P
	Position.....	Used in a low-voltage power supply	—
	Method of protection .....	Non-inherently short-circuit proof transformers protected by electronic circuit	—
G.5.3.2	Insulation		P

<b>IEC 62368-1</b>			
Clause	Requirement + Test	Result - Remark	Verdict
	Protection from displacement of windings..... :	The end turns are reliably fixed by tape, the whole transformer varnished	—
G.5.3.3	Overload test ..... :	(See appended table B.3)	P
G.5.3.3.1	Test conditions		P
G.5.3.3.2	Winding Temperatures testing in the unit		P
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.6</b>	<b>Wire Insulation</b>		P
G.6.1	General	Certified TIW is used as secondary winding.	P
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		P
G.11.1	General requirements	Certified Y1 capacitor used between primary and secondary circuit.	P
G.11.2	Conditioning of capacitors and RC units		P
G.11.3	Rules for selecting capacitors		P
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		P
	Figures O.1 to O.20 of this Annex applied..... :	All applicable figures	—
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		<b>P</b>
T.1	General requirements		P
T.2	Steady force test, 10 N ..... :	(See appended table T.2)	N/A
T.3	Steady force test, 30 N ..... :	Not applicable.	N/A
T.4	Steady force test, 100 N ..... :	(See appended table T.5)	P
T.5	Steady force test, 250 N ..... :	Not applicable.	N/A
T.6	Enclosure impact test	Not applicable.	N/A
	Fall test		N/A
	Swing test		N/A
T.7	Drop test ..... :	(See appended table T.7)	P
T.8	Stress relief test ..... :	(See appended table T.8)	P
	Torque value (Nm)..... :		—



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components					P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1</sup>	
Plastic enclosure	LG CHEM LTD	LUPOY GP-1006F(f1), LUPOY GP-1006F(m)(#)(f1)	Min. thickness 2.0mm, rated V-0, 110°C	UL94 EN 62368-1	UL E67171 & Test with appliance	
<b>Alt.</b>	<b>Covestro Deutschland AG</b>	<b>FR6005+(z)</b>	<b>Min. thickness 2.0mm, rated V-0, 125°C</b>	<b>UL94 EN 62368-1</b>	<b>UL E41613 &amp; Test with appliance</b>	
PCB	KINGBOARD LAMINATES HOLDINGS LTD	KB-6160A	Min. thickness 1.5mm, V-0, 130°C	UL746 EN 62368-1	UL E123995 & Test with appliance	
Alternative	SHENGYI TECHNOLOGY CO LTD	S1141	Min. thickness 1.5mm, V-0, 130°C	UL746 EN 62368-1	UL E109769 & Test with appliance	
Alternative	Interchangeable	Interchangeable	Min. thickness 1.5mm, V-0, 130°C	UL796:2016 IEC60707:1999	S, ETL, UL& Other EU certification marks	
LED	Yongji Evercolor Opto Electronics Co., Ltd.	ECF11- 1414QRTGQB W/B/SG	20mA, 3Vdc comply with IEC 62471	EN 62471 EN 62368-1	Intertek Report No. 200801773SH A-001&Tested with appliance	
Power plug holder	LG CHEM LTD	LUPOY GP-1006F(f1), LUPOY GP-1006F(m)(#)(f1)	Min. thickness 2.0mm, rated V-0, 110°C	UL94 EN 62368-1	UL E67171 & Test with appliance	
<b>Alt.</b>	<b>Covestro Deutschland AG</b>	<b>FR6005+(z)</b>	<b>Min. thickness 2.0mm, rated V-0, 125°C</b>	<b>UL94 EN 62368-1</b>	<b>UL E41613 &amp; Test with appliance</b>	
Fuse resistor(F1)	Uniroyal Electronics Industry Co., Ltd.	KFR series	22Ω,2.0W	EN 60065	VDE 40040587	
Varistor (R19)	SHANTOU HIGH- NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	10D471Kd	300VAC, 125°C, 2.5kV/1.25kA, V-1	EN 61051-1 EN 61051-2	VDE 40023049	
Alternative	HUIZHOU SONGLONGXINDIA N ELECTRONICS TECHNOLOGY CO LTD	10D471K	300VAC, 85°C, 2.5kV/1.25kA, V-1	EN 61051-1 EN 61051-2	VDE 40040037	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1</sup>
CM choke (L6)	SHENZHEN ZYD ELECTRONICS CO.,LTD	EE8.3	Min.10mH, Class A	EN 62368-1	Tested with appliance
<b>Alt.</b>	<b>Dongguan TNK Electronic Technology CO ,LTD</b>	<b>TDB1389</b>	<b>Min.10mH, Class A</b>	<b>EN 62368-1</b>	<b>Tested with appliance</b>
Y1 capacitor(C27)	SHANTOU HIGH- NEW TECHNOLOGY DEVELOPMNT ZONE SONGTIAN ENTERPRISE CO LTD	CD	400V~, 2200pF, 125°C, Y1 type, 25/125/21/C	EN 60384-14	VDE 40025754
<b>Alt.</b>	<b>Shaanxi Huaxing Electronics Development Co. Ltd</b>	<b>CT7Y1</b>	<b>400V~, 2200pF, 125°C, Y1 type, 25/125/21/C</b>	<b>EN 60384-14</b>	<b>VDE 40015542</b>
Opto-coupler(U5)	Everlight Electronics Co., Ltd	EL817	Ext.cl 7.0mm, cr 8.0mm Int.cr=thermal cycling DTI: Min.0.4mm	EN 60747-5-5	VDE 132249
Alternative	LITE-ON TECHNOLOGY CORP	LTV-817	Ext.cl 7.0mm, cr 8.0mm Int.cr=thermal cycling DTI: Min.0.4mm	EN 60747-5-5	VDE 40015248
Transformer(T1)	SHENZHEN ZYD ELECTRONICS CO.,LTD	EPC13	Class E	EN 62368-1	Tested with appliance
<b>Alt.</b>	<b>Dongguan TNK Electronic Technology CO ,LTD</b>	<b>TDF109</b>	<b>Class B</b>	<b>EN 62368-1</b>	<b>Tested with appliance</b>
- Bobbin	CHANG CHUN PLASTICS CO LTD	T375HF	min. thickness: 0.75mm, V-0, 150°C	UL746 EN 62368-1	UL E59481 & Test with appliance
<b>Alt.</b>	<b>DONGGUAN RONGHE CO LTD</b>	<b>T375J</b>	<b>min. thickness: 0.75mm, V-0, 150°C</b>	<b>UL746 EN 62368-1</b>	<b>UL E491437 &amp; Test with appliance</b>
- primary magnet wire	SIHUI HENGHUI ELECTRICAL APPLIANCES CO LTD	UEW/155	155°C	UL1446 EN 62368-1	UL E337948 & Test with appliance
<b>Alt.</b>	<b>ZHUHAI SUNTEK WIRE CO LTD</b>	<b>@*xUEW 180</b>	<b>180°C</b>	<b>UL1446 EN 62368-1</b>	<b>UL E234867 &amp; Test with appliance</b>

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity <sup>1</sup>
- triple insulated wire	SHENZHEN KAIZHONG HEDONG NEW MATERIALS CO LTD	TIW-B*	130°C, Class B, reinforced insulation	UL2353 EN 62368-1	UL E357240 & Test with appliance
- insulation tape	CHANG SHU LIANG YI TAPE INDUSTRY CO., LTD	LY-XX*	130°C	UL510 EN 62368-1	UL E246820 & Test with appliance
<b>Alt.</b>	<b>SUZHOU MAILADUONA ELECTRIC MATERIAL CO LTD</b>	<b>CT*(c)(g)</b>	<b>130°C</b>	<b>UL510 EN 62368-1</b>	<b>UL E188295 &amp; Test with appliance</b>
- teflon tube	DONGGUAN LING FREE HARDWARE PLASTICS PRODUCT CO LTD	LING FREE PTFE TUBE	200°C	UL224 EN 62368-1	UL E352366 & Test with appliance
<b>Alt.</b>	<b>GREAT HOLDING INDUSTRIAL CO LTD</b>	<b>TFL</b>	<b>200°C</b>	<b>UL224 EN 62368-1</b>	<b>UL E156256 &amp; Test with appliance</b>
Supplementary information: <sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

<b>5.2</b>	<b>Table: Classification of electrical energy sources</b>	<b>P</b>	
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5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk or Vdc)	I (Apk or Arms)	Hz	
1	264 Vac	Primary circuit supplied by a.c. mains supply	Normal	--	--	--	ES3 (declared)
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
2	264 Vac	Secondary circuit after D1	Normal	18.0Vpk	--	66.7K	ES1
			Abnormal (OL)	--	--	--	
			Single fault – SC/OC	--	--	--	
3	264 Vac	Secondary circuit after C25	Normal	12.9Vdc	--	--	ES1
			Abnormal (OL)	--	--	--	
			Single fault – SC/OC	--	--	--	

5.2.2.3 – Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		

5.2.2.4 – Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

5.2.2.5 – Repetitive Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	
Test Conditions: Normal – Test with rated output current. Abnormal – Test with max. output current. Supplementary information: SC=Short Circuit, OC=Short Circuit.							

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements				P	
	Supply voltage (V) .....	90	264		—	
	Ambient T <sub>min</sub> (°C) .....	24.5	24.2		—	
	Ambient T <sub>max</sub> (°C) .....	24.8	24.4		—	
	T <sub>ma</sub> (°C) .....	40.0	40.0		—	
Maximum measured temperature T of part/at:		T (°C)			Allowed T <sub>max</sub> (°C)	
		Horizontal	Vertical	Horizontal	Vertical	
	PCB near U3	87.2	87.5	79.9	81.5	130
	PCB near R19	83.2	83.4	79.1	80.5	130
	PCB near L6	84.5	84.8	81.5	83.4	130
	PCB near C26	92.5	92.9	92.9	94.4	130
	Transformer T1 winding	102.6	102.3	105.3	105.1	110*
	Transformer T1 core	100.5	100.5	102.4	103.6	Ref.
	U5 body	93.2	92.2	94.3	94.7	110
	C27 body	91.8	91.0	92.7	93.0	125
	PCB near D1	100.3	99.4	100.8	102.8	130
	PCB near C25	89.8	88.9	89.9	92.2	130
	PCB near U1	93.4	93.6	92.3	93.6	130
	PCB near U10	83.1	83.9	82.5	84.0	130
	PCB near U9	79.2	80.0	79.0	80.8	130
	PCB near U12	97.8	99.2	97.4	99.0	130

IEC 62368-1							
Clause	Requirement + Test		Result - Remark		Verdict		
LED body	67.8	69.4	67.6	70.0	Ref.		
Plastic Enclosure inside	86.6	86.9	87.2	88.4	110		
For accessible parts, below temperatures are adjusted to ambient of 25 °C							
Plastic Enclosure outside	43.9	44.9	43.4	44.5	77		
Key switch	34.3	34.5	33.7	34.5	60		
Supplementary information: *: as the temperature of winding was measured by thermocouples, the limit value was reduced by 10°C.							
Temperature T of winding:	t <sub>1</sub> (°C)	R <sub>1</sub> (Ω)	t <sub>2</sub> (°C)	R <sub>2</sub> (Ω)	T (°C)	Allowed T <sub>max</sub> (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
Supplementary information:							

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm) .....	≤ 2 mm			—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Transformer Bobbin	DONGGUAN RONGHE CO LTD	125	0.8	
Plug holder material	Covestro Deutschland AG	125	1.2	
Supplementary information:				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequenc y (kHz) <sup>1</sup>	Required cl (mm)	cl (mm) <sup>2</sup>	Required <sup>3</sup> cr (mm)	cr (mm)
Primary trace to secondary trace of Y1-Capacitor(C27) (RI)	2000	240	60Hz	2.54	6.2	5.0	6.2
Primary winding to secondary winding of transformer(T1) (RI)	2000	240	66.7kHz	2.54	7.3	5.0	7.3
Core to secondary pins of transformer(T1) (RI)	2000	240	66.7kHz	2.54	5.2	5.0	5.2
Primary component to secondary component (RI)	2000	240	60Hz	2.54	5.2	5.0	5.2
Supplementary information: Note 1: Only for frequency above 30 kHz Note 2: See table 5.4.2.4 if this is based on electric strength test Note 3: Provide Material group IIIb <b>FI-</b> functional insulation <b>RI-</b> reinforce insulation							

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Clause	Requirement + Test	Result - Remark	Verdict

<b>5.4.2.3</b>	<b>TABLE: Minimum Clearances distances using required withstand voltage</b>			P
	<b>Overvoltage Category (OV):</b>			II
	<b>Pollution Degree:</b>			2
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
Primary trace to secondary trace of Y1-Capacitor(C27) (RI)		2500	3.0	6.2
Primary winding to secondary winding of transformer(T1) (RI)		2500	3.0	7.3
Core to secondary pins of transformer(T1) (RI)		2500	3.0	5.2
Primary component to secondary component (RI)		2500	3.0	5.2
Supplementary information: <b>FI</b> - functional insulation <b>RI</b> -reinforce insulation				

<b>5.4.4.2, 5.4.4.5 c) 5.4.4.9</b>	<b>TABLE: Distance through insulation measurements</b>					P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Enclosure (RI)	420	<100kHz	PC	0.4	Min. 2.0	
Bobbin (RI)	420	<100kHz	PMC	0.4	Min. 2.0	
Supplementary information: <b>RI</b> -reinforce insulation						

<b>5.4.9</b>	<b>TABLE: Electric strength tests</b>				<b>P</b>
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
Basic/supplementary insulation:					
L to N (disconnect fuse resistor)		DC	2500	No	
Transformer T1 secondary to core		DC	2500	No	
Reinforced insulation:					
Primary circuit to plastic enclosure		DC	4000	No	
Primary circuit to secondary circuit		DC	4000	No	
Transformer T1 primary to secondary		DC	4000	No	
1 layer transformer insulation tape		DC	4000	No	
Supplementary information: -					

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Clause	Requirement + Test	Result - Remark	Verdict

6.2.2		Table: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s <sup>*)</sup>	PS Classification	
A	All primary circuit/ components	Power (W) :	-	-	PS3 (declared)	
		V <sub>A</sub> (V) :	-	-		
		I <sub>A</sub> (A) :	-	-		
B	All secondary circuit/components (after T1 secondary pin)	Power (W) :	9.64	-	PS1	
		V <sub>A</sub> (V) :	12.85	-		
		I <sub>A</sub> (A) :	0.75	-		

Supplementary Information:

(\*) Measurement taken only when limits at 3 seconds exceed PS1 limits



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Clause	Requirement + Test	Result - Remark	Verdict

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
90/50Hz	0.084	--	4.68	--	F1	0.084	Maximum normal load.
100/50Hz	0.077	0.2	4.64	--	F1	0.077	
240/50Hz	0.036	0.2	4.58	--	F1	0.036	
264/50Hz	0.034	--	4.63	--	F1	0.034	
90/60Hz	0.085	--	4.70	--	F1	0.085	
100/60Hz	0.078	0.2	4.65	--	F1	0.078	
240/60Hz	0.037	0.2	4.59	--	F1	0.037	
264 /60Hz	0.034	--	4.63	--	F1	0.034	
Supplementary information:							

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Clause	Requirement + Test	Result - Remark	Verdict

B.3		TABLE: Abnormal operating condition tests							P
Ambient temperature (°C) .....		See below							—
Power source for EUT: Manufacturer, model/type, output rating . :		-							—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
Transformer T1 output	Overload	264	2h	F1	0.106	K	T1 winding: 124.8°C T1 core: 120.1°C Enclosure: 55.6°C. Key Switch: 43.2°C.	Max load 13V/0.8A, when load exceed 0.8A, unit shut down, No damaged, No hazard. Ambient: 24.7 °C.	
Ventilation openings	Blocked	264	2h	F1	0.040	K	T1 winding: 113.0°C T1 core: 111.6°C Enclosure: 50.2°C. Key Switch: 40.7°C.	Work normally Ambient: 24.8 °C.	
<p>Supplementary information: Test table is provided to record abnormal and fault conditions for all applicable energy sources including Thermal burn injury. Column "Abnormal/Fault." Specify if test condition by indicating "Abnormal" then the condition for a Clause B.3 test or "Single Fault" then the condition for Clause B.4.</p>									

B.4		TABLE: Fault condition tests							P
Ambient temperature (°C) .....		25-30							—
Power source for EUT: Manufacturer, model/type, output rating . :		Chroma, 61512, 18kVA							—
Component No.	Fault Condition	Supply voltage, (V)	Test time	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
Transformer T1 output (5V)	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.	
Speaker	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.	

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Clause	Requirement + Test				Result - Remark			Verdict
D1	S/C	264	1s	F1	> 16	--	--	Fuse opened FET damaged. No hazard.
C23	S/C	264	1s	F1	> 16	--	--	Fuse opened FET damaged. No hazard.
C26	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.
T1 pin 1-3	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.
T1 pin 5-6	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.
U5 pin(3-4)	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.
U5 pin(1)	O/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.
U3 pin+ to -	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.
C24	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.
C25	S/C	264	10min	F1	0.004	--	--	Unit shutdown, no damaged, No hazard.
U4 pin4-1	S/C	264	10min	F1	0.004	--	--	After SC, Unit shutdown, D3 damaged, repeat three times, the same result, no hazard
U4 pin4-5,6,7,8	S/C	264	10min	F1	> 16	--	--	After short circuit, fuse(F1)open ed immediately, no hazard

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:  
S/C - short circuit; O/C - open circuit; O/L - overload

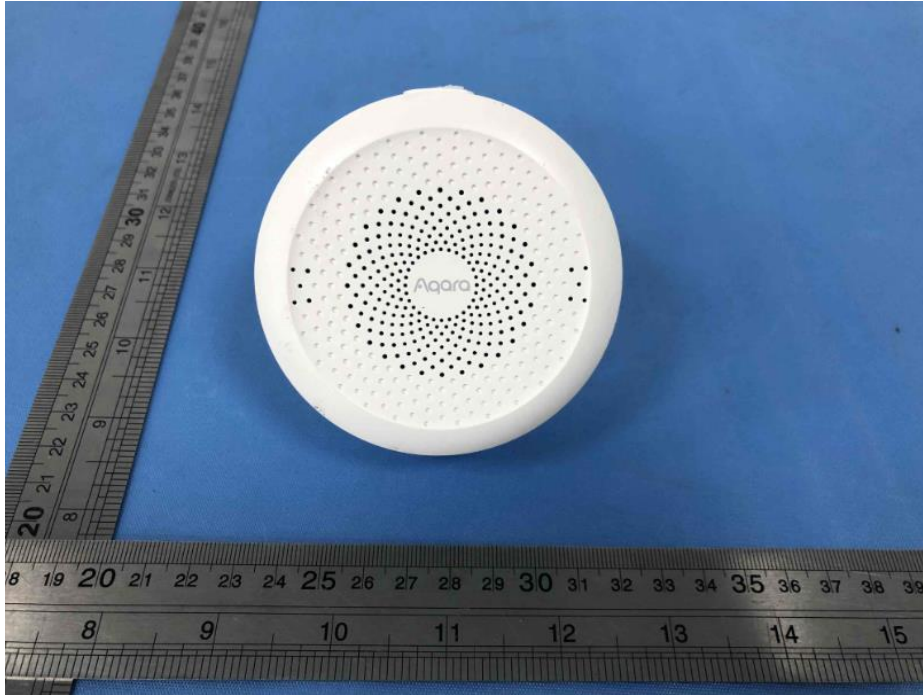
T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	
Plastic Enclosure	Plastic	2.0	100	5	No hazard	
Supplementary information:						

T.7	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Plastic enclosure	Plastic	2.0	1000	No hazard	
Supplementary information:					

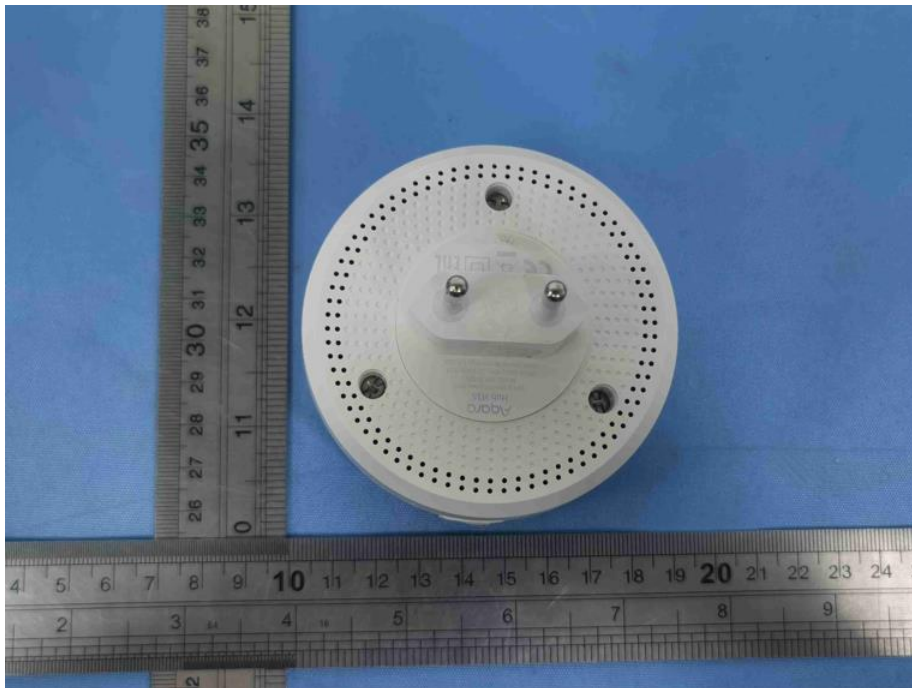
T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Plastic Enclosure	Plastic	2.0	70	7	No hazard	
Supplementary information:						

**Appendix No.1: Photographs**

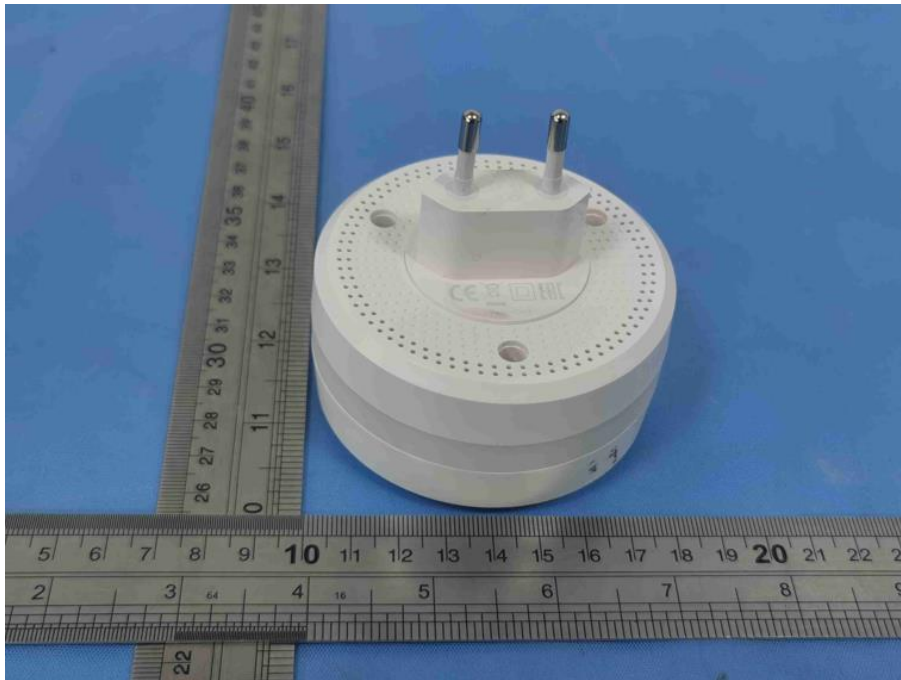
External view



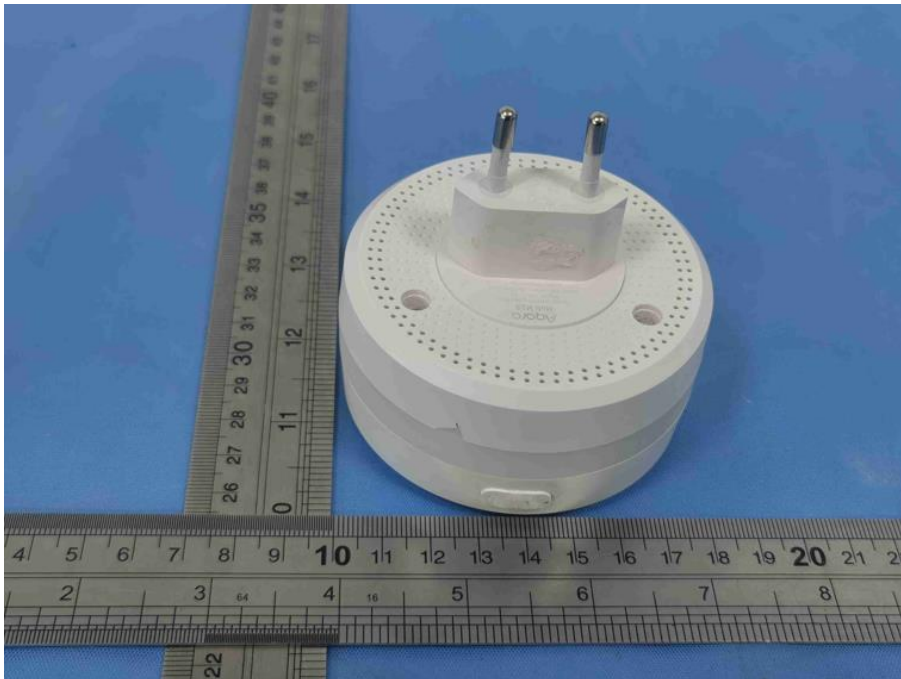
External view



External view

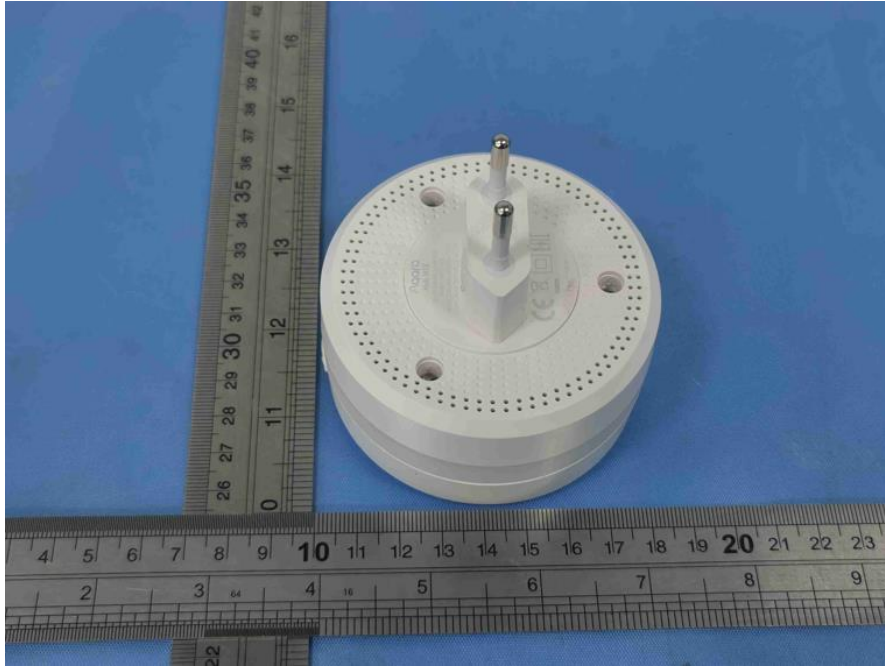


External view

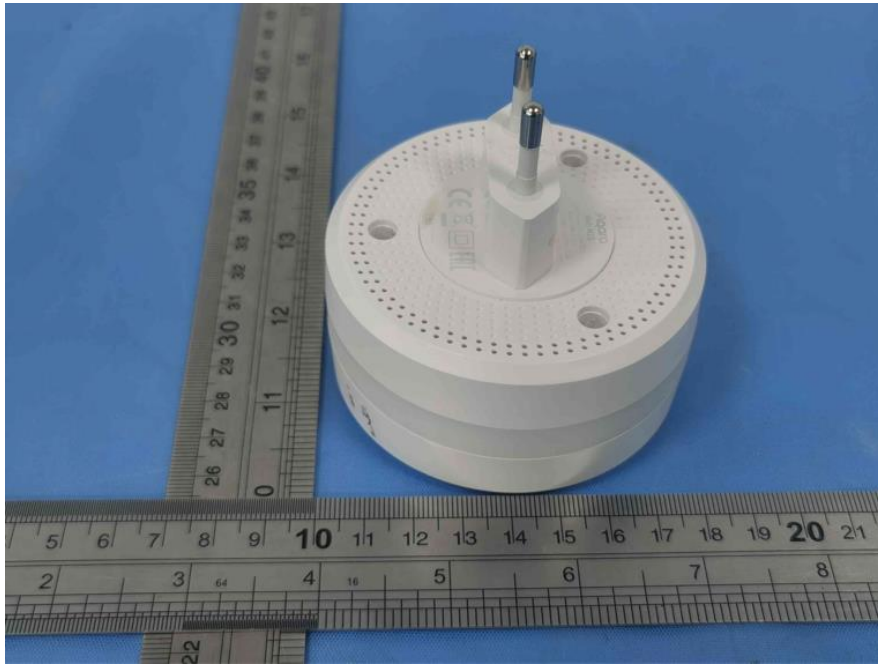




External view



External view



Internal view



Internal view

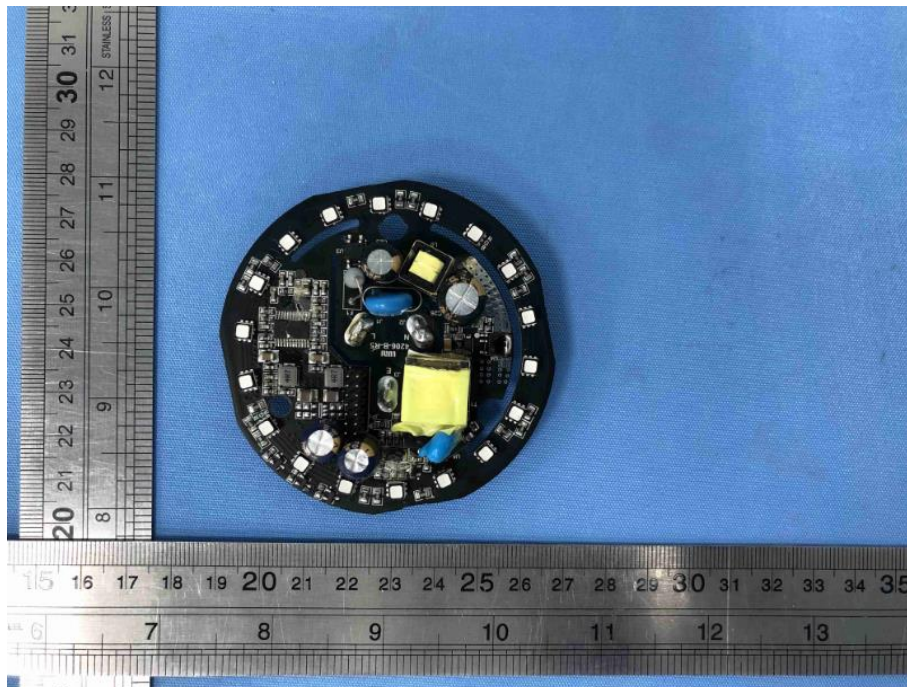




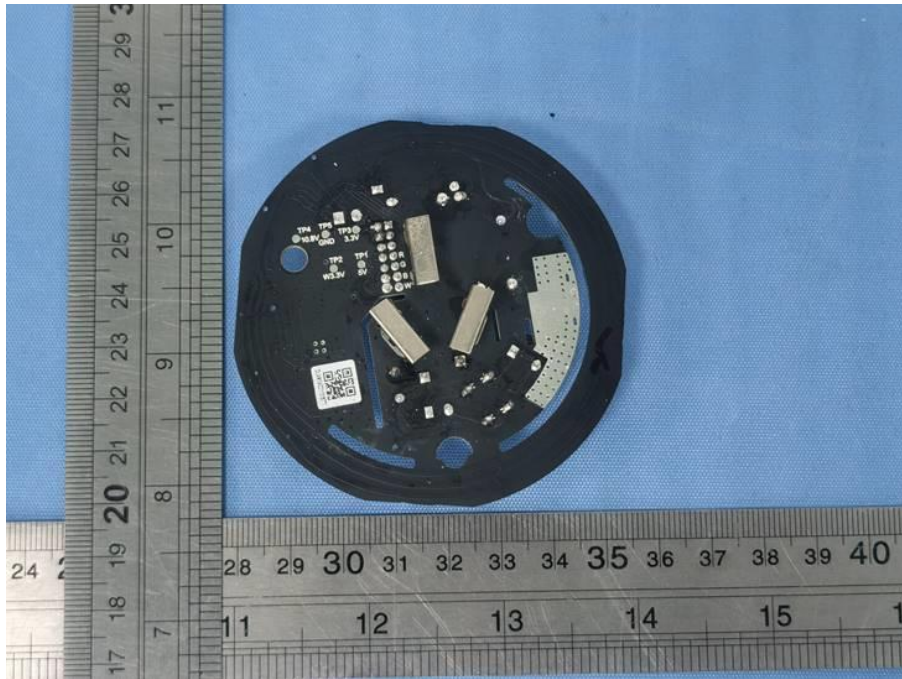
Internal view



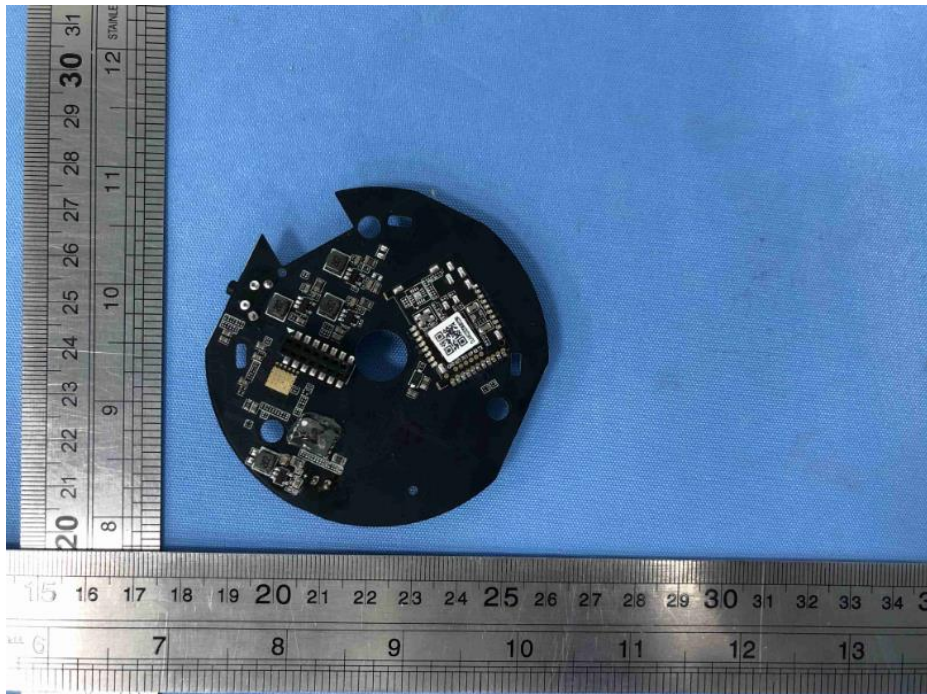
PCB



PCB

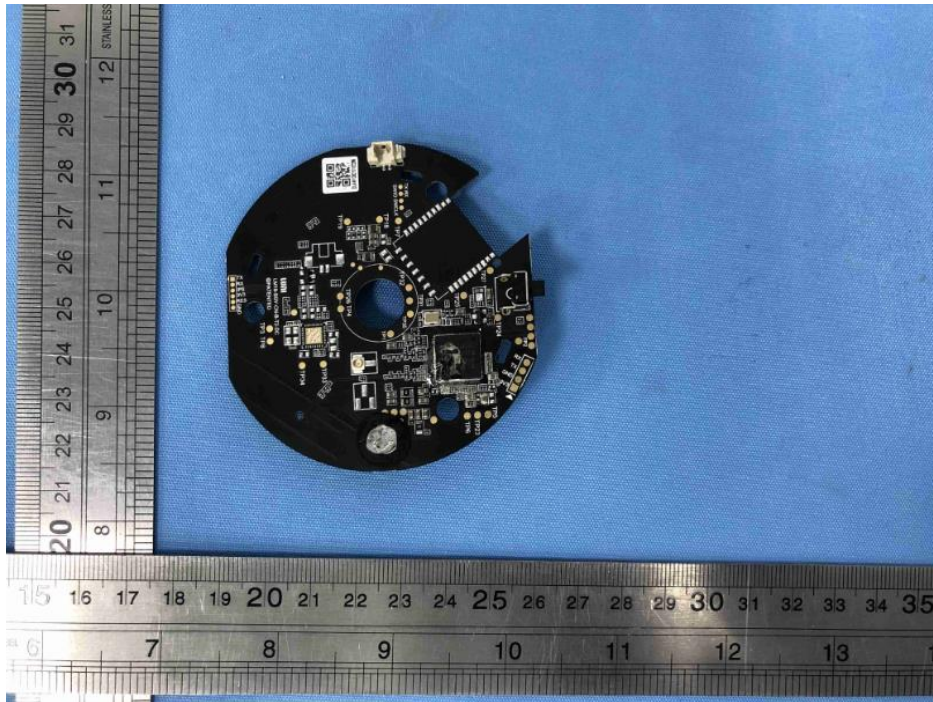


PCB

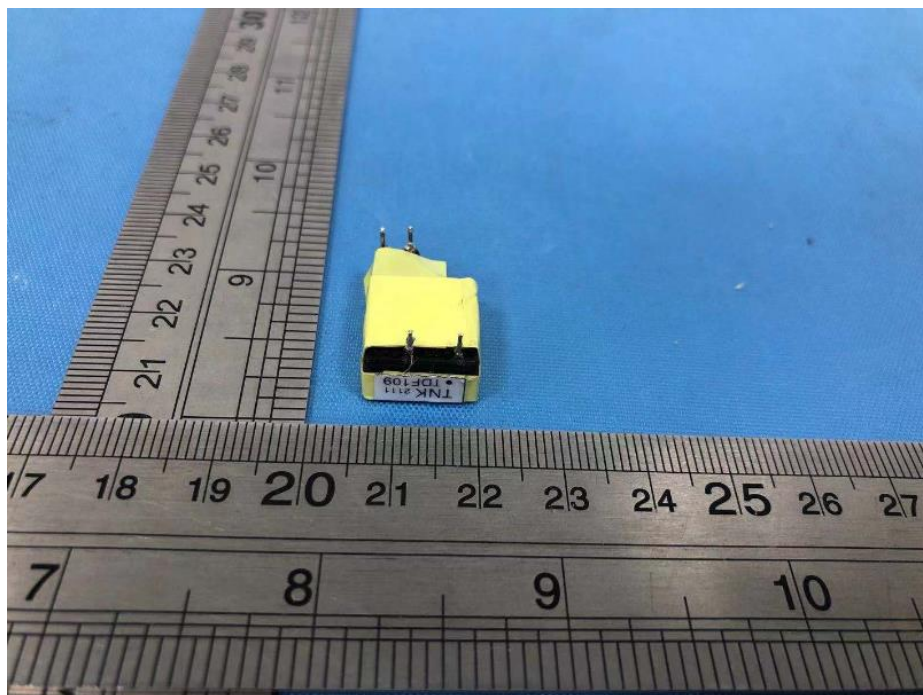




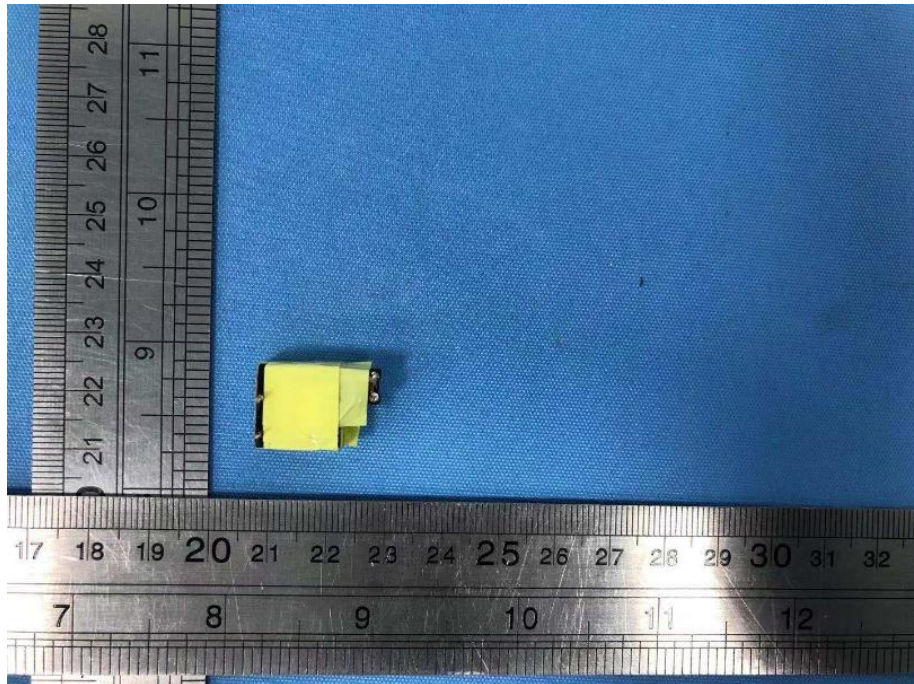
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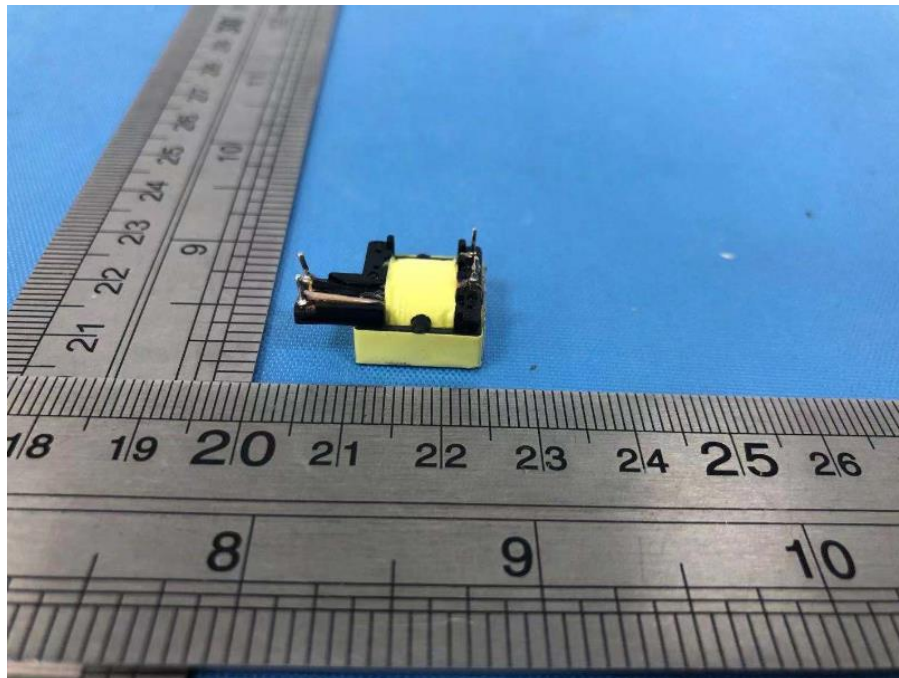
Transformer



Transformer

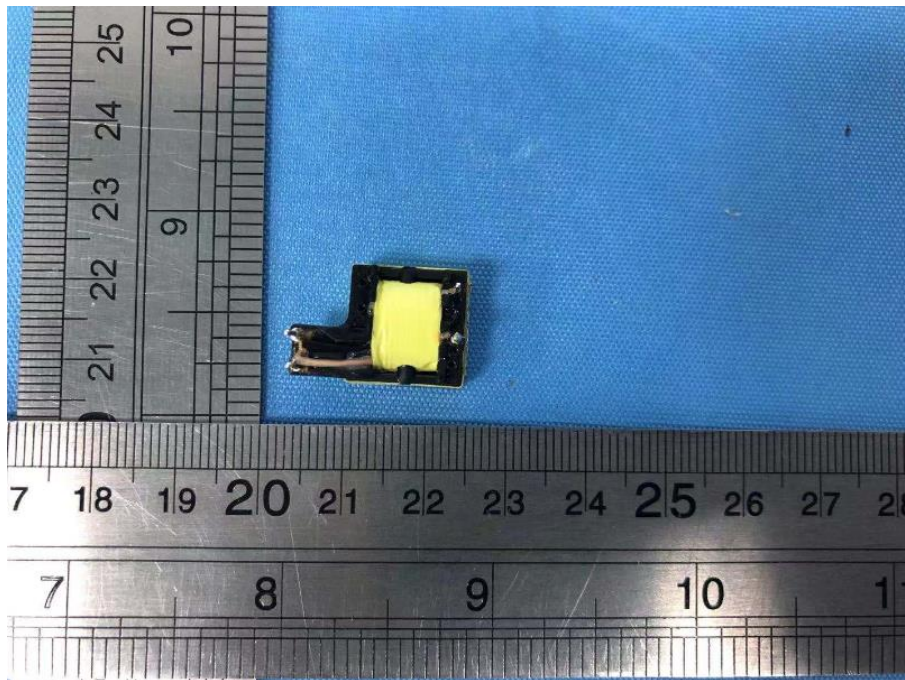


Transformer

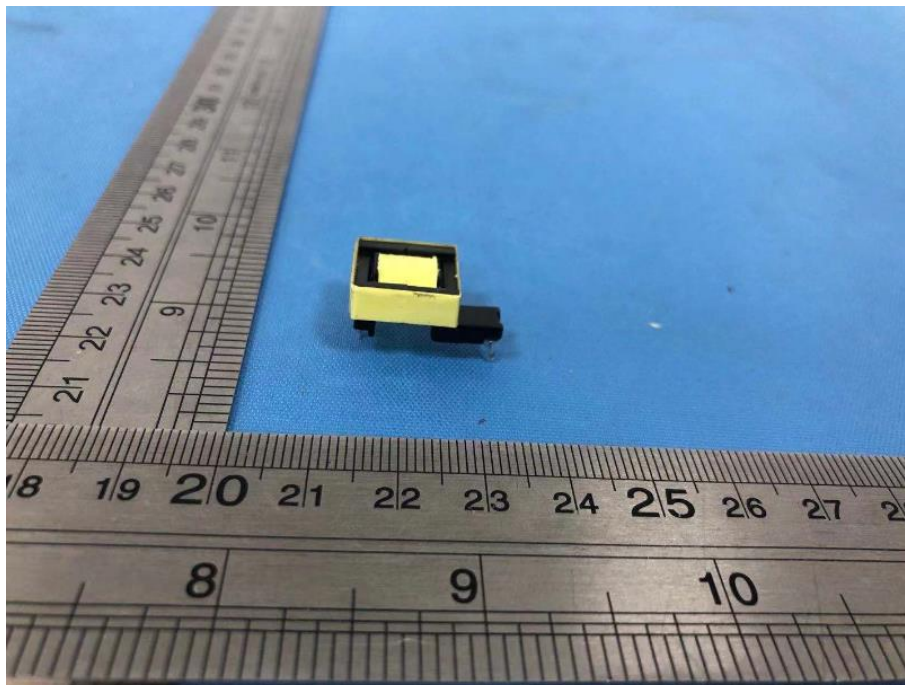




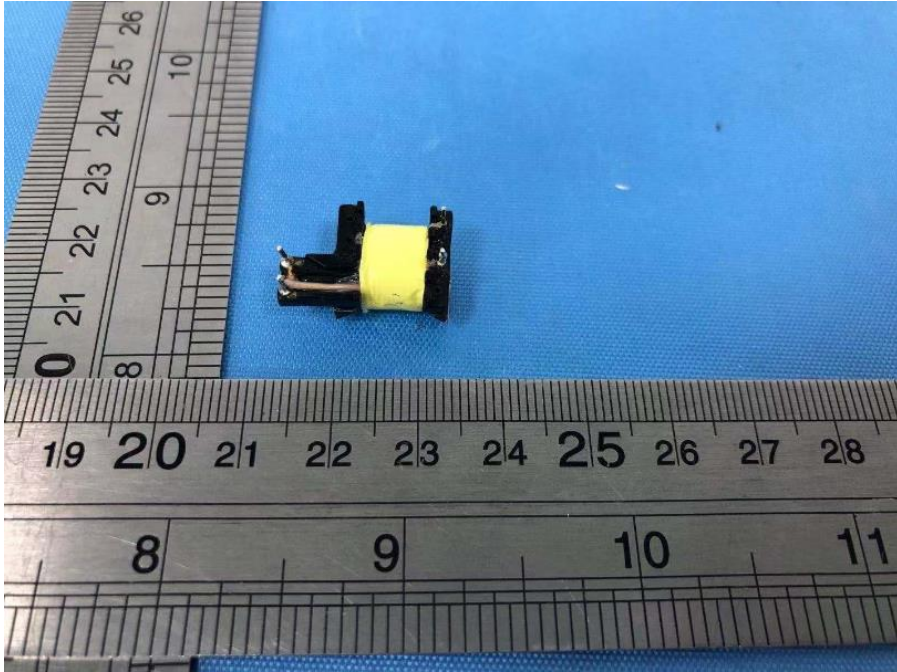
Transformer



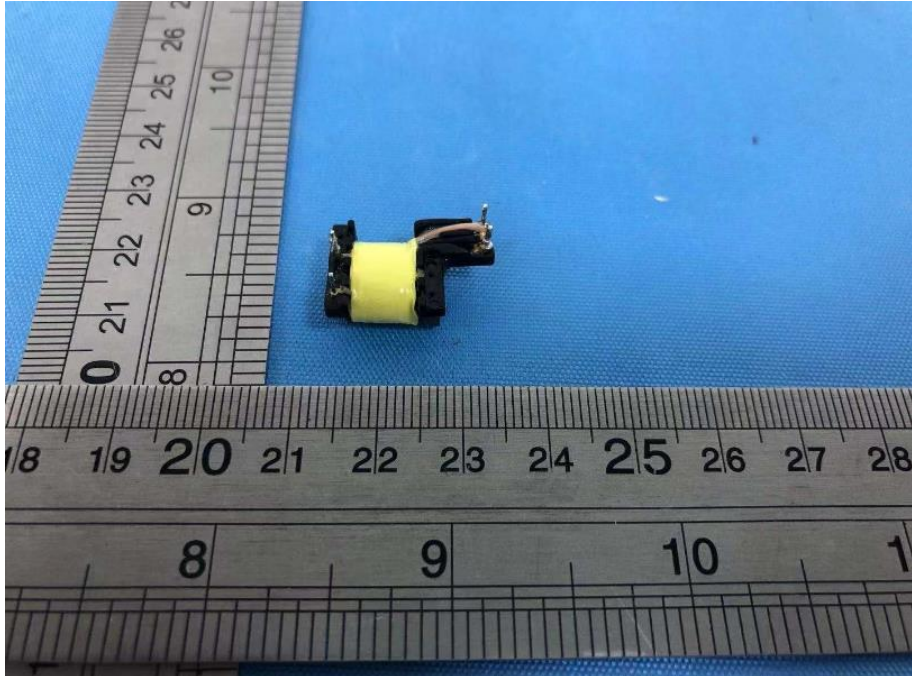
Transformer



Transformer

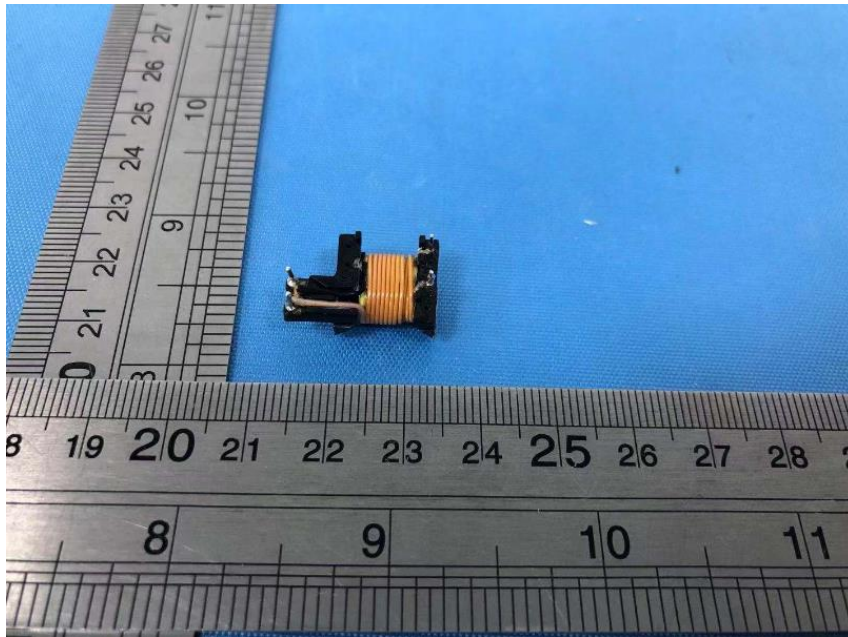


Transformer

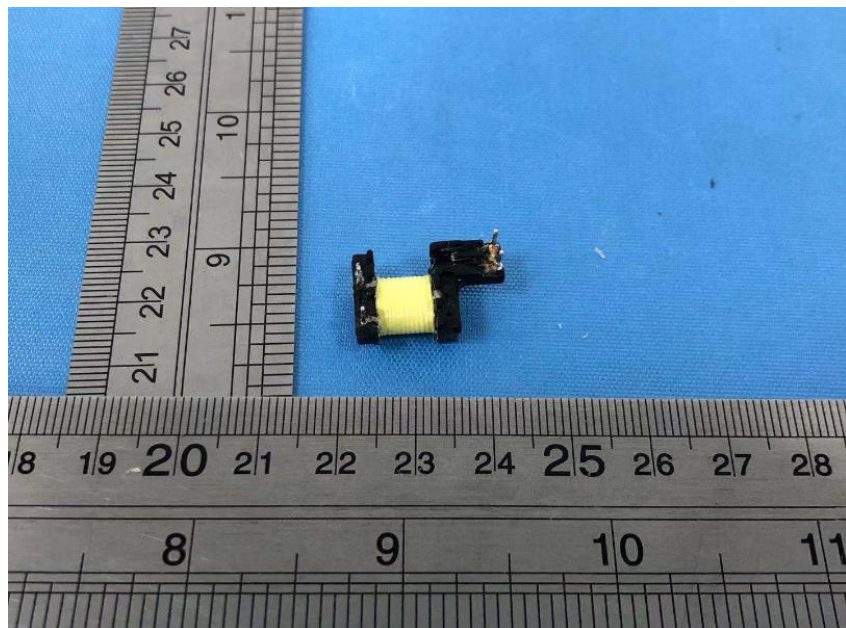




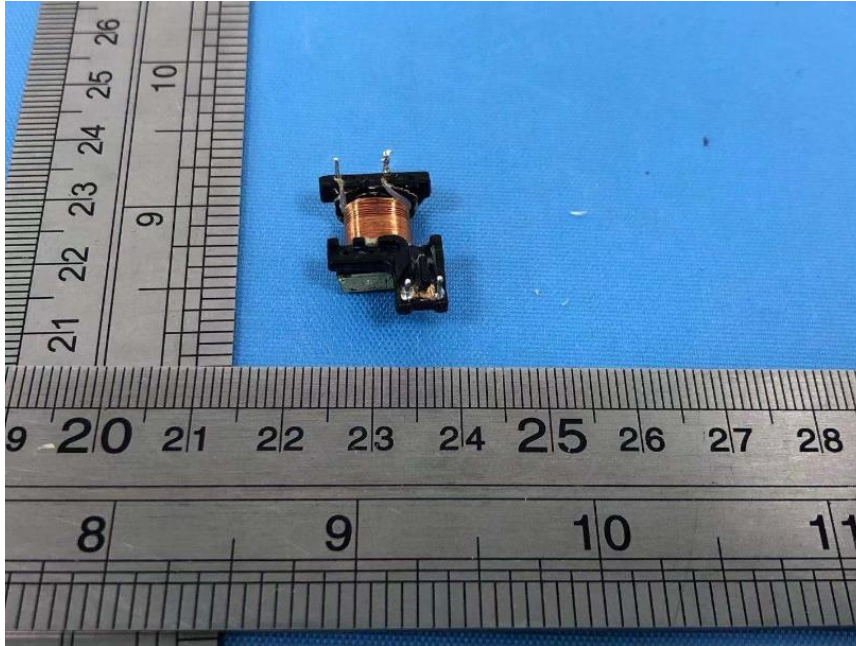
Transformer



Transformer



Transformer



Transformer

