

<b>TEST REPORT</b> <b>EN 62368-1</b> <b>Audio/video, information and communication technology equipment</b> <b>Part 1-Safety requirements</b>	
Report reference No .	: RXM200911053-SF
Compiled by (+ signature)	: Lin Xue
Approved by (+ signature)	: Safety Engineer: Jerry Liu
Date of issue	: 2020-11-17
Testing laboratory	: Bay Area Compliance Laboratories Corp. (Shenzhen)
Address	: 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China
Testing location	: As above
Applicant's name	: Xiamen Milesight IoT Co., Ltd.
Address	: 4/F,NO. 63-2 Wanghai Road, 2nd Software Park,Xiamen ,China
Manufacturer's name	: The same as applicant
Address	: The same as applicant
Factory's name	: N/A
Address	: N/A
Standard	: EN 62368-1:2014+A11:2017
Test sample(s) received	: 2020-09-26
Test in period	: 2020-09-27 to 2020-10-11
Procedure deviation	: N/A
Non-standard test method	: N/A
This test report is for the customer shown above and their specific product only. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Shenzhen).	
Type of test object	: LoRaWAN Gateway
Trademark	:  Milesight
Test Model	: UG65-L00E-868M-EA
Multiple Model	: UG65-L00E-868M, UG65-868M-EA, UG65-868M, UG65-L04EU-868M-EA, UG65-L04EU-868M
Manufacturer	: See above
Rating	: Input: 9-24V $\overline{\text{---}}$ 0.56A or PoE 802.3af

Copy of marking plate:



**Milesight**

Made in China

**LoRaWAN Gateway**

Model: UG65-L00E-868M-EA

Power Input: 9-24V DC or PoE 802.3af

FCC ID:2AOSV-UG65

LAN: 192.168.23.150

Username: admin Password: password

IMEI: 860425047368137

Xiamen Milesight IoT Co., Ltd.

4/F, No. 63-2 Wanghai Road, 2nd Software Park, Xiamen, China



**S/N 6221A3123846**



**MAC 24E124F0DC63-64**



**RoHS**



Note:

- The above label is a representative label, the labels for other models are identical to it except for model names.
- The CE marking may be lower than 5.0mm and WEEE symbol should be at least 7.0mm in height.
- Manufacturers shall ensure that the equipment bears a type, batch or serial number or other element allowing its identification.
- Manufacturers shall indicate on the electrical equipment their name, registered trade name or registered trade mark and the postal address at which they can be contacted.
- Importers shall indicate on the electrical equipment their name, registered trade name or registered trade mark and the postal address at which they can be contacted.
- This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.
- Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
- BACL 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.
- The test samples were in good condition and received: 2020-09-26.

<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 type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not Mains connected - <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance .....	<input type="checkbox"/> +10% /-10% <input type="checkbox"/> +20% /-15% <input type="checkbox"/> +____% / ____% <input checked="" type="checkbox"/> None: not directly connect to mains.
Supply Connection – Type .....	<input type="checkbox"/> pluggable equipment type A – <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input 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 checked="" type="checkbox"/> other: not directly connect to mains.
Considered current rating of protective device as part of building or equipment installation.....:	___A (20A for US and Canada) ; Installation location: <input type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input checked="" type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input checked="" type="checkbox"/> other: not directly connect to mains
Class of equipment .....	<input type="checkbox"/> Class I <input type="checkbox"/> Class II <input checked="" type="checkbox"/> Class III
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"/> IP20 <input checked="" type="checkbox"/> IP_65_
Power Systems .....	<input 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"/> ____ m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> ____ m
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> 0.56kg
<b>Possible test case verdicts</b> .....:	
- test case does not apply to the test object.....:	N/A(Not apply)
- test object does meet the requirement.....:	P(Pass)
- test object does not meet the requirement.....:	F(Fail)

**General remarks:**

”(see remark #)” refers to a remark appended to the report.

(see appended table)” refers to a table appended to the report.

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

Throughout this report a comma/ point is used as the decimal separator.

**General product information:**

1. The products under test is a LoRaWAN Gateway, classified as class III equipment. It is supplied by 48V --- 0.5A power over ethernet which complies with ES1 and PS3 according to EN62368-1, or supplied by 9-24V --- 0.56A external adapter complies with ES1 and PS2.
2. The product was submitted and tested for use at the manufacturer’s recommended ambient temperature (Tma) of 40°C.
3. Declaration of Similarity

Xiamen Milesight IoT Co., Ltd.  
Add:4/F,NO. 63-2 Wanghai Road, 2nd Software Park,Xiamen ,China  
Tel: 0592-5023060 Fax: 0592-5023065  
Emal: tongzl@milesight.com

**DECLARATION OF SIMILARITY**

Date: 2021-1-12

To whom it may concern

Dear Sir or Madam:

We, Xiamen Milesight IoT Co., Ltd., hereby declare that the product: LoRaWAN Gateway, model: UG65-L00E-868M,UG65-L04EU-868M-EA,UG65-L04EU-868M,UG65-868M-EA, UG65-868M is electrically identical with the model: UG65-L00E-868M-EA which was tested by BACL with the same electromagnetic emissions and electromagnetic compatibility characteristics. The difference between UG65-L04EU-868M-EA and UG65-L00E-868M-EA is that the model names are different, and the rest are the same. Meanwhile, the model names of UG65-L04EU-868M and UG65-L00E-868M are also different, and the rest are the same.

A description of the differences between the tested model and those that are declared similar are as follows:

The models have same software.

All the above models share one PCB board.The only difference between models is that some function devices paste or not paste.The below table show differences:

√: paste --: not paste

	LTE module	LoRa	External antenna
UG65-L00E-868M-EA	√(EC25-EC)	√(868)	√
UG65-L00E-868M	√(EC25-EC)	√(868)	-
UG65-L04EU-868M-EA	√(EC25-EC)	√(868)	√
UG65-L04EU-868M	√(EC25-EC)	√(868)	-
UG65-868M-EA	-	√(868)	√
UG65-868M	-	√(868)	-

Please contact me should there be need for any additional clarification or information.

Best Regards,

Signature: *Zhenlong Tong*

Printed Name: Zhenlong Tong

Title: Manager

<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
(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.)	
<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 <span style="float: right;">ES1</span>	
<b>Source of electrical energy</b>	<b>Corresponding classification (ES)</b>
Rate input: 9-24Vdc	ES1
Power over ethernet input: + 48Vd.c.	ES1
<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): <span style="float: right;">PS2</span>	
<b>Source of power or PIS</b>	<b>Corresponding classification (PS)</b>
Rate input: 9-24Vdc	PS2
Power over ethernet input: + 48Vd.c.	PS3
<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 <span style="float: right;">Glycol</span>	
<b>Source of hazardous substances</b>	<b>Corresponding chemical</b>
N/A	N/A
<b>Mechanically-caused injury (Clause 8)</b> (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit <span style="float: right;">MS2</span>	
<b>Source of kinetic/mechanical energy</b>	<b>Corresponding classification (MS)</b>
Sharp edges and Corners	MS1
Equipment mass <7kg	MS1
Wall mount unit >2m	MS3
<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 <span style="float: right;">TS1</span>	
<b>Source of thermal energy</b>	<b>Corresponding classification (TS)</b>
Metal enclosure	TS1
Accessible plastic enclosur	TS1
<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 <span style="float: right;">RS1</span>	
<b>Type of radiation</b>	<b>Corresponding classification (RS)</b>
LED indictor	Exempt Group

**ENERGY SOURCE DIAGRAM**

Indicate which energy sources are included in the energy source diagram. Insert diagram below

ES     PS     MS     TS     RS

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OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES1: Adapter input:+12Vd.c.	N/A	N/A	N/A
Ordinary	ES1: Power over ethernet input: + 48Vd.c.	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	PS3 circuit	See 6.3	See 6.4.5	N/A
Internal wiring	PS3 circuit	N/A	N/A	See 6.5
The other components/ materials	PS3 circuit	See 6.3	See 6.4.5	N/A
The other components/ materials	PS3 circuit	See 6.3	See 6.4.5	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)
Mouting on the wall >2m	MS3: Equipment mass	N/A	N/A	See 8.7.2
Ordinary	Sharp edges and Corners	N/A	N/A	N/A
Ordinary	Equipment mass <7kg	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	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				

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		P
4.1.1	Acceptance of materials, components and subassemblies	See appended table 4.1.2	P
4.1.2	Use of components	Components comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant IEC component standards. See appended table 4.1.2	P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions .....	(See Annex F)	P
4.4.4	Safeguard robustness	All solid safeguards are compliant with applicable requirements in Annex T.	N/A
4.4.4.2	Steady force tests .....	(See appended table Annex T.4, T.5)	P
4.4.4.3	Drop tests .....	1000mm drop test is applied three times on different directions no hazards as a result of test.	N/A
4.4.4.4	Impact tests .....		P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests .....		N/A
4.4.4.6	Glass Impact tests.....	Not made of glass	N/A
4.4.4.7	Thermoplastic material tests .....		N/A
4.4.4.8	Air comprising a safeguard .....		N/A
4.4.4.9	Accessibility and safeguard effectiveness	All other safeguards shall remain effective.	P
4.5	Explosion	Compliance is checked by inspection and tests as specified in Clause B.2, Clause B.3 and Clause B.4.	P
4.6	Fixing of conductors		N/A
4.6.1	Fix conductors not to defeat a safeguard		N/A
4.6.2	10 N force test applied to .....		N/A
4.7	Equipment for direct insertion into mains socket - outlets		N/A
4.7.2	Mains plug part complies with the relevant standard .....		N/A
4.7.3	Torque (Nm).....		N/A
4.8	Products containing coin/button cell batteries		N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children		—

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict
	removing the battery .....		
4.8.4	Battery Compartment Mechanical Tests .....	No battery compartment used.	N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object .....	(See Annex P)	N/A

<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		<b>P</b>
5.2.1	Electrical energy source classifications .....	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	(See appended table 5.2)	P
5.2.2.2	Steady-state voltage and current .....	(See appended table 5.2)	P
5.2.2.3	Capacitance limits .....		N/A
5.2.2.4	Single pulse limits .....		N/A
5.2.2.5	Limits for repetitive pulses .....		N/A
5.2.2.6	Ringing signals .....		N/A
5.2.2.7	Audio signals .....		N/A
5.3	Protection against electrical energy sources		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		N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V .....		N/A
	b) Electric strength test potential (V) .....		N/A
	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	No such terminals	N/A
5.4.1.3	Humidity conditioning .....	No hygroscopic insulation	N/A
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 considered	—
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		N/A
5.4.1.8	Determination of working voltage		N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.2	Vicat softening temperature .....		N/A
5.4.1.10.3	Ball pressure .....		N/A
5.4.2	Clearances		N/A
5.4.2.2	Determining clearance using peak working voltage		N/A
5.4.2.3	Determining clearance using required withstand voltage .....		N/A
	a) a.c. mains transient voltage .....		—
	b) d.c. mains transient voltage .....		—
	c) external circuit transient voltage .....		—
	d) transient voltage determined by measurement...		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test		N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....		N/A
5.4.3	Creepage distances .....		N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group .....		—
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation .....		N/A
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		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....		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		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz.....		N/A
5.4.5	Antenna terminal insulation		N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ) .....		—
5.4.6	Insulation of internal wire as part of supplementary safeguard .....		N/A

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%) .....		—
	Temperature (°C) .....		—
	Duration (h) .....		—
5.4.9	Electric strength test.....		N/A
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit		N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test.....		N/A
5.4.10.2.3	Steady-state test .....		N/A
5.4.11	Insulation between external circuits and earthed circuitry.....		N/A
5.4.11.1	Exceptions to separation between external circuits and earth		N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage $U_{op}$ (V) .....		—
	Nominal voltage $U_{peak}$ (V) .....		—
	Max increase due to variation $U_{sp}$ .....		—
	Max increase due to ageing $\Delta U_{sa}$ .....		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....		—
5.5	Components as safeguards		
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector .....		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable .....		N/A
5.6	Protective conductor		N
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm <sup>2</sup> ) .....		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm <sup>2</sup> ).....		—
	Protective current rating (A) .....		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm).....		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω) .....		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current .....		N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection).....		—
	Multiple connections to mains (one connection at a time/simultaneous connections).....		—
5.7.4	Earthed conductive accessible parts .....		N/A
5.7.5	Protective conductor current		N/A
	Supply Voltage (V) .....		—
	Measured current (mA) .....		—

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict
	Instructional Safeguard .....		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits		N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits		N/A
	a) Equipment with earthed external circuits Measured current (mA) .....		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) .....		N/A

<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
6.2.2.4	PS1 .....		N/A
6.2.2.5	PS2 .....		P
6.2.2.6	PS3 .....		P
6.2.3	Classification of potential ignition sources		N/A
6.2.3.1	Arcing PIS .....		N/A
6.2.3.2	Resistive PIS .....		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) No ignition occurred, and no part of the equipment attained a temperature value greater than 300 °C.	P
6.3.1 (b)	Combustible materials outside fire enclosure		N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	The method for control fire spread is used	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions .....		N/A
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits	No supplementary safeguards are needed for protection against PS1	N/A
6.4.5	Control of fire spread in PS2 circuits	See below	P
6.4.5.2	Supplementary safeguards .....	Metal enclosure, All components in PS2 circuit are made Min. V-2 or VTM-2 materials, and mounted on Min. V-1 class PCB.	P
6.4.6	Control of fire spread in PS3 circuit	Metal enclosure and plastic enclosure	P
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General .....		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers	Metal enclosure and V-0 fire enclosure required.	P
6.4.8.1	Fire enclosure and fire barrier material properties		P
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure	Metal enclosure and V-0 fire enclosure required.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		P
6.4.8.3.1	Fire enclosure and fire barrier openings		P
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....	No opening	N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....	No opening	N/A
	Flammability tests for the bottom of a fire enclosure .....		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....	Not such construction	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating.....	Metal enclosure and V-0 fire enclosure required.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	Internal wires in PS3 circuits comply with VW-1.	P
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....	See appended table 4.1.2.	—

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Clause	Requirement + Test	Result - Remark	Verdict
6.5.3	Requirements for interconnection to building wiring..... :		N/A
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	USB output 5.0V	P

7	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions..... :		—
7.5	Use of instructional safeguards and instructions		N/A
	Instructional safeguard (ISO 7010).....:		—
7.6	Batteries..... :	See Annex M	N/A

8	<b>MECHANICALLY-CAUSED INJURY</b>		P
8.1	General		P
8.2	Mechanical energy source classifications	MS1: Sharp edges and corners; MS1: Equipment mass <7kg; MS3: wall mounted >2m	P
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts	Motor can't be access	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard :		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....:		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard.....:		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test.....:		N/A
8.6	Stability	MS1, Mass<7kg, no stability requirements	N/A
8.6.1	Product classification		N/A
	Instructional Safeguard.....:		—
8.6.2	Static stability		N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....:		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt.....:		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force).....:		N/A
	Position of feet or movable parts.....:		—
8.7	Equipment mounted to wall or ceiling	MS3: wall mounted >2m	P
8.7.1	Mounting Means (Length of screws (mm) and mounting surface).....:	See the manual	P
8.7.2	Direction and applied force.....:	16.46N for vertical	P
8.8	Handles strength		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force.....:		N/A
8.9	Wheels or casters attachment requirements	No wheels or casters used	N/A
8.9.1	Classification		N/A
8.9.2	Applied force.....:		—
8.10	Carts, stands and similar carriers		N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard.....:		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force.....:		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....:		—
8.10.6	Thermoplastic temperature stability (°C).....:		N/A
8.11	Mounting means for rack mounted equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i> .....		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas .....		N/A
	Button/Ball diameter (mm) .....		—

9	THERMAL BURN INJURY		P
9.2	Thermal energy source classifications	See appended table 9.0. All touch temperatures are measured to classified as TS1. No safeguard is required.	P
9.3	Safeguard against thermal energy sources		N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard	See appended table 9.0, and not exceed table 38 limit.	N/A
9.4.2	Instructional safeguard .....		N/A

10	RADIATION		P
10.2	Radiation energy source classification	RS1: LED indicator	P
10.2.1	General classification		N/A
10.3	Protection against laser radiation	No laser within the EUT	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault .....		N/A
	Instructional safeguard .....		—
	Tool .....		—
10.4	Protection against visible, infrared, and UV radiation	No visible, infrared, and UV radiation within the EUT	N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons .....		N/A
10.4.1.b)	RS3 accessible to a skilled person .....		N/A
	Personal safeguard (PPE) instructional safeguard .....		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1 .....		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions .....		N/A
10.4.1.e)	Enclosure material employed as safeguard is opaque .....		N/A
10.4.1.f)	UV attenuation .....		N/A
10.4.1.g)	Materials resistant to degradation UV .....		N/A
10.4.1.h)	Enclosure containment of optical radiation .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.i)	Exempt Group under normal operating conditions .....		N/A
10.4.2	Instructional safeguard.....		N/A
10.5	Protection against x-radiation	No x-radiation within the EUT	N/A
10.5.1	X- radiation energy source that exists equipment .....		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards .....		N/A
	Instructional safeguard for skilled person .....		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation .....		—
	Abnormal and single-fault condition .....		N/A
	Maximum radiation (pA/kg) .....		N/A
10.6	Protection against acoustic energy sources		N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A) .....		N/A
	Output voltage, unweighted r.m.s. ....		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards .....		N/A
	Equipment safeguard prevent ordinary person to RS2 .....		—
	Means to actively inform user of increase sound pressure .....		—
	Equipment safeguard prevent ordinary person to RS2 .....		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output .....		—
10.6.5.2	Corded listening devices with digital input		N/A
	Maximum dB(A) .....		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A) .....		—
<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		<b>P</b>
B.2	Normal Operating Conditions		P

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Clause	Requirement + Test	Result - Remark	Verdict
B.2.1	General requirements .....	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers .....	No such parts	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 .....		P
B.3.2	Covering of ventilation openings	(See appned table B.3 and B.4)	N/A
B.3.3	D.C. mains polarity test	No connection to the d.c. mains	N/A
B.3.4	Setting of voltage selector.....	No voltage selector	N/A
B.3.5	Maximum load at output terminals .....	See appended table B.4	N/A
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	(See appended table B.4)	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited.....	No such parts used for the equipment	N/A
B.4.3	Motor tests	(See appended table B.4)	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....	(See appended table B.4)	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		N/A
B.4.6	Short circuit or disconnect of passive components		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	During and after single fault conditions, accessible parts do not exceed the relevant energy class and no flame and ignition inside the equipment.	P
B.4.9	Battery charging under single fault conditions .....		N/A
<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A
<b>D</b>	<b>TEST GENERATORS</b>		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) .....		—
	Rated load impedance ( $\Omega$ ) .....		—
E.2	Audio amplifier abnormal operating conditions		N/A
<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		P
F.1	General requirements	Equipment is provided with operator instructions.	P
	Instructions – Language .....	English version evaluated.	—
F.2	Letter symbols and graphical symbols		P
F.2.1	Letter symbols according to IEC60027-1		P
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	See copy of marking plate	P
F.3.2	Equipment identification markings	See copy of marking plate	P
F.3.2.1	Manufacturer identification .....	See copy of marking plate	—
F.3.2.2	Model identification .....	See copy of marking plate	—
F.3.3	Equipment rating markings	Refer below	P
F.3.3.1	Equipment with direct connection to mains	Not direct connection to mains	N/A
F.3.3.2	Equipment without direct connection to mains		N/A
F.3.3.3	Nature of supply voltage .....		—
F.3.3.4	Rated voltage .....		—
F.3.3.4	Rated frequency .....		—
F.3.3.6	Rated current or rated power .....		—
F.3.3.7	Equipment with multiple supply connections	POE and adapter supply	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.4	Voltage setting device	No voltage setting device.	N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings.....:		N/A
F.3.5.2	Switch position identification marking .....		N/A
F.3.5.3	Replacement fuse identification and rating markings.....:		N/A
F.3.5.4	Replacement battery identification marking .....		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)		N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking .....	IP20	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking	The markings on the equipment is durable and legible, and shall be easily discernable under normal lighting conditions	P
F.3.10	Test for permanence of markings	Rubbing the marking by hand for 15 s with piece of cloth soaked with water and, at a different place for on a second sample. For 15 s with a piece of cloth soaked with petroleum spirit .after this test, marking is legible and can not be easily possible to remove marking and show no curling .	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		P
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction		N/A
<b>G</b>	<b>COMPONENTS</b>		N/A
<b>G.1</b>	<b>Switches</b>		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	General requirements	No such components	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
<b>G.3</b>	<b>Protection Devices</b>		N/A
G.3.1	Thermal cut-offs	No such components	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691		N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) .....		—
	Single Fault Condition .....		—
	Test Voltage (V) and Insulation Resistance ( $\Omega$ ) ..		—
G.3.3	PTC Thermistors	No such components	N/A
G.3.4	Overcurrent protection devices		N/A
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided		N/A
G.3.5.2	Single faults conditions .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
<b>G.4</b>	<b>Connectors</b>		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration .....		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
<b>G.5</b>	<b>Wound Components</b>		N/A
G.5.1	Wire insulation in wound components .....		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
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>		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) .....		N/A
	Position .....		—
	Method of protection .....		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings .....		—
G.5.3.3	Overload test.....		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
<b>G.5.4</b>	<b>Motors</b>		N/A
G.5.4.1	General requirements	(See appended table B.4)	N/A
	Position .....	Inside of enclosure.	—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V).....		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V).....		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits	(See appended table B.4)	N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....	(See appended table B.4 and clause G.5.3)	N/A
	Electric strength test (V) .....		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V).....		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....		—
<b>G.6</b>	<b>Wire Insulation</b>		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
<b>G.7</b>	<b>Mains supply cords</b>		N/A
G.7.1	General requirements		N/A
	Type .....		—
	Rated current (A).....		—
	Cross-sectional area (mm <sup>2</sup> ), (AWG) .....		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non- detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements		N/A
	Strain relief test force (N) .....		—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm) ... :		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry .....		N/A
G.7.5	Non-detachable cord bend protection	Detachable cord used.	N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....		—
	Diameter (m) .....		—
	Temperature (°C) .....		—

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		N/A
G.8.1	General requirements	No such components	N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....		N/A
G.8.3.3	Temporary overvoltage .....		N/A
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		N/A
G.9.1 a)	Manufacturer defines limit at max. 5A.		N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....		—
G.9.1 d)	IC limiter output current (max. 5A) .....		—
G.9.1 e)	Manufacturers' defined drift .....		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
<b>G.12</b>	<b>Optocouplers</b>		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....		N/A
	Type test voltage Vini .....		—
	Routine test voltage, Vini,b .....		—
<b>G.13</b>	<b>Printed boards</b>		N/A
G.13.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.13.2	Uncoated printed boards		N/A
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction)..... :		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation..... :		N/A
	Number of insulation layers (pcs) ..... :		—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements ..... :		N/A
<b>G.15</b>	<b>Liquid filled components</b>		N/A
G.15.1	General requirements		N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage ..... :		N/A
c1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
c2)	Test voltage ..... :		—
d1)	10,000 cycles on and off using capacitor with smallest capacitance resistor with largest resistance specified by manufacturer		N/A
d2)	Capacitance ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
d3)	Resistance .....		—
<b>H</b>	<b>CRITERIA FOR TELEPHONE RINGING SIGNALS</b>		N/A
H.1	General	Not connected to telephone line	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringling signal		N/A
H.3.1.1	Frequency (Hz) .....		—
H.3.1.2	Voltage (V) .....		—
H.3.1.3	Cadence; time (s) and voltage (V) .....		—
H.3.1.4	Single fault current (mA): .....		—
H.3.2	Tripping device and monitoring voltage .....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—
<b>J</b>	<b>INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION</b>		N/A
	General requirements		N/A
<b>K</b>	<b>SAFETY INTERLOCKS</b>		N/A
K.1	General requirements		N/A
K.2	Components of safety interlock safeguard mechanism .....		N/A
K.3	Inadvertent change of operating mode		N/A
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance .....		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....		N/A
K.7.2	Overload test, Current (A) .....		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....		N/A
<b>L</b>	<b>DISCONNECT DEVICES</b>		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
<b>M</b>	<b>EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS</b>		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....		—
M.4.2.2 b)	Single faults in charging circuitry .....		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....		N/A
M.6.2	Leakage current (mA) .....		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ (m <sup>3</sup> /s) .....		—
M.8.2.3	Correction factors.....		—
M.8.2.4	Calculation of distance $d$ (mm) .....		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....		N/A
<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		N/A
	Metal(s) used .....	Pollution degree considered	—
<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		N/A
	Figures O.1 to O.20 of this Annex applied.....		—
<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		N/A
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) .....		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts .....		N/A
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....		N/A
P.3	Safeguards against spillage of internal liquids		N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C).....		—
	Tr (°C) .....		—
	Ta (°C) .....		—
P.4.2 b)	Abrasion testing .....		N/A
P.4.2 c)	Mechanical strength testing .....		N/A
<b>Q</b>	<b>CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING</b>		<b>P</b>
Q.1	Limited power sources		P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		P
	- Regulating network limited output under normal operating and simulated single fault condition		P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	(See appended table Annex Q.1)	P
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) .....		—
	Current limiting method.....		—
<b>R</b>	<b>LIMITED SHORT CIRCUIT TEST</b>		<b>N/A</b>
R.1	General requirements		N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A). .....		N/A
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		<b>N/A</b>
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Samples, material .....		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material .....		—
	Wall thickness (mm).....		—
	Conditioning (°C).....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material .....		—
	Wall thickness (mm).....		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material .....		—
	Wall thickness (mm).....		—
	Conditioning (test condition), (°C).....		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		<b>P</b>
T.1	General requirements		N/A
T.2	Steady force test, 10 N .....		N/A
T.3	Steady force test, 30 N .....		N/A
T.4	Steady force test, 100 N .....	(See appended table T.4)	P
T.5	Steady force test, 250 N .....	(See appended table T.5)	P

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Clause	Requirement + Test	Result - Remark	Verdict
T.6	Enclosure impact test		P
	Fall test	(See appended table T.6)	P
	Swing test		N/A
T.7	Drop test .....		N/A
T.8	Stress relief test .....		P
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J) .....		—
	Height (m) .....		—
T.10	Glass fragmentation test .....		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....		—
<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLOSION</b>		<b>N/A</b>
U.1	General requirements	No such components	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen .....		N/A
<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		<b>P</b>
V.1	Accessible parts of equipment		P
V.2	Accessible part criterion		P

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Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 62368-1 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES (Audio/video, information and communication technology equipment Part 1: Safety requirements)	
Differences according to .....	EN 62368-1:2014+A11:2017
Attachment Form No. ....	EU_GD_IEC62368_1B
Attachment Originator .....	Intertek Semko AB
Master Attachment .....	Date (2017-09-22)
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	CENELEC COMMON MODIFICATIONS (EN)	N/A
1	NOTE Z1	N/A
4.Z1	Protective devices included as integral parts of the equipment or as parts of the building installation:	N/A
	a) Included as parts of the equipment	N/A
	b) For components in series with the mains; by devices in the building installation	N/A
	c) For pluggable type B or permanently connected; by devices in the building installation	N/A
5.4.2.3.2.4	Interconnection with external circuit	N/A
10.2.1	Additional requirements in 10.5.1	N/A
10.5.1	RS1 compliance measurement conditions	N/A
10.6.2.1	EN 71-1:2011, 4.20 and methods and distances	N/A
10.Z1	Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz	N/A
G.7.1	NOTE Z1	N/A

ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)	N/A
4.1.15	<b>Denmark, Finland, Norway and Sweden:</b> Class I pluggable equipment type A marking	N/A
4.7.3	<b>United Kingdom:</b> Torque test socket-outlet BS 1363, and the plug part BS 1363.	N/A
5.2.2.2	<b>Denmark:</b> Warning for high touchcurrent	N/A
5.4.11.1 and Annex G	<b>Finland and Sweden:</b> Separation of the telecommunication network from earth	N/A
5.5.2.1	<b>Norway:</b> Capacitors rated for the applicable line-to-line voltage (230 V).	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	<b>Finland, Norway and Sweden:</b> Resistors used as basic safeguard or bridging basic insulation comply with G.10.1 and G.10.2.		N/A
5.6.1	<b>Denmark:</b> Protection for pluggable equipment type A; integral part of the equipment		N/A
5.6.4.2.1	<b>Ireland and United Kingdom:</b> The protective current rating is taken to be 13 A		N/A
5.6.5.1	<b>Ireland and United Kingdom:</b> Conductor sizes of flexible cords to be accepted by terminals for equipment rated 10 A to 13 A		N/A
5.7.5	<b>Denmark:</b> The installation instruction affixed to the equipment if high protective conductor current		N/A
5.7.6.1	<b>Norway and Sweden:</b> Television distribution system isolation text in user manual		N/A
5.7.6.2	<b>Denmark:</b> Warning for high touch current		N/A
B.3.1 and B.4	<b>Ireland and United Kingdom:</b> Tests conducted using an external miniature circuit breaker or protective devices included as an integral part of the direct plug-in equipment		N/A
G.4.2	<b>Denmark:</b> Appliances rated $\leq 13$ A provided with a plug according to DS 60884-2-D1:2011.		N/A
	Class I equipment provided with socket-outlets provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.		N/A
	If a single-phase equipment having rated $>13$ A or poly-phase equipment provided with a supply cord with a plug, plug in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.		N/A
	Mains socket outlets intended for providing power to Class II apparatus rated 2,5 A in accordance with DS 60884-2-D1:2011 standard sheet DKA 1-4a.		N/A
	Other current rating socket outlets in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.		N/A
	Mains socket-outlets with earth in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a		N/A
G.4.2	<b>United Kingdom:</b> The plug part of direct plug-in equipment assessed to BS 1363		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	<b>United Kingdom:</b> Equipment fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768		N/A
G.7.1	<b>Ireland:</b> Apparatus provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use		N/A
G.7.2	<b>Ireland and United Kingdom:</b> A power supply cord for equipment which is rated over 10 A and up to and including 13 A.		N/A
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		<b>N/A</b>
10.5.2	<b>Germany:</b> Cathode ray tube intended for the display of visual images, authorization or application of type approval and marking.		N/A

FINAL

EN 62368-1+A11			
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	
Enclosure	SABIC INNOVATIVE PLASTICS B V	505R	Min.V-0 Min.1.1mm 80°C	UL94 UL746	UL E45329	
Metal enclosure	Interchangeable	Interchangeable	Min.thickness 2.0mm	EN 62368- 1:2014+A11:20 17	Tested with equipment	
PCB	Interchageable	Interchageable	Min V-1, 105°C	UL 796	UL E352848	
Internal wire	Interchageable	Interchageable	Min.VW-1, 80°C	UL 758	UL	
Adapter	Dongguan Oriental Hero Electrical Factory	OH- 1015A1201000 U3-VDE	Input: 100-240Va.c. 50/60Hz 0.35A Output:12.0Vd.c. 1.0A 12.0W	IEC 60950- 1:2005 (Second Edition) + Am 1:2009 + Am 2:2013	Tested by TÜV Rheinland (Guangdong) Ltd. Repot No.: 50247622 001 Certificate No.: JPTUV-097426	

- Description <sup>1)</sup> :
Supplementary information: <sup>1)</sup> Description line content is optional. Main line description needs to clearly detail the component used for testing

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Clause	Requirement + Test	Result - Remark	Verdict
4.8.4, 4.8.5	<b>TABLE: Lithium coin/button cell batteries mechanical tests</b>		N/A
(The following mechanical tests are conducted in the sequence noted.)			
4.8.4.2	<b>TABLE: Stress Relief test</b>		—
<b>Part</b>	<b>Material</b>	<b>Oven Temperature (°C)</b>	<b>Comments</b>
4.8.4.3	<b>TABLE: Battery replacement test</b>		—
Battery part no. .... :			—
<b>Battery Installation/withdrawal</b>		<b>Battery Installation/Removal Cycle</b>	<b>Comments</b>
		1	
		2	
		3	
		4	
		5	
		6	
		8	
		9	
		10	
4.8.4.4	<b>TABLE: Drop test</b>		—
<b>Impact Area</b>	<b>Drop Distance</b>	<b>Drop No.</b>	<b>Observations</b>
4.8.4.5	<b>TABLE: Impact</b>		—
<b>Impacts per surface</b>	<b>Surface tested</b>	<b>Impact energy (Nm)</b>	<b>Comments</b>
4.8.4.6	<b>TABLE: Crush test</b>		—
<b>Test position</b>	<b>Surface tested</b>	<b>Crushing Force (N)</b>	<b>Duration force applied (s)</b>
Supplementary information:			
4.8.5	<b>TABLE: Lithium coin/button cell batteries mechanical test result</b>		N/A
<b>Test position</b>	<b>Surface tested</b>	<b>Force (N)</b>	<b>Duration force applied (s)</b>
Supplementary information:			

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict

<b>5.2</b>	<b>Table: Classification of electrical energy sources</b>	P
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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)	I (Apk or Arms)	Hz	
1	12.0VDC	Input power	Normal	--	---	---	ES1 (declared)
			Abnormal	--	---	---	
			Single fault	--	---	---	
2	48.0VDC	Power over Ethernet input	Normal	---	---	---	ES1
			Abnormal	---	---	---	
			Single fault	---	---	---	
			Abnormal	---	---	---	
			Single fault	---	---	---	

5.2.2.3 - Capacitance Limits

No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
---	---	---	Normal	---	---	---
			Abnormal	---	---	
			Single fault – SC/OC	---	---	

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	---	---	---	

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 –  
 Abnormal -  
 Supplementary information: SC=Short Circuit, OC=Short Circuit

<b>5.4.1.4,</b>	<b>TABLE: Temperature measurements</b>	P
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EN 62368-1+A11								
Clause	Requirement + Test	Result - Remark				Verdict		
<b>6.3.2, 9.0, B.2.6</b>								
	Supply voltage (V) ...:	9.0V		24.0V		—		
	Ambient T <sub>min</sub> (°C) .....	23.1	--	25.9	--	—		
	Ambient T <sub>max</sub> (°C) .....	24.5	Shift to Tma	26.7	Shift to Tma	—		
	Tma (°C) .....	--	40.0	--	40.0	—		
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)		
Ambient		24.5	40.0	28.5	40.0	--		
PCB1		35.4	50.9	38.8	50.3	105		
PCB2		37.8	53.3	44.7	52.1	105		
PCB3		35.1	50.6	40.6	49.0	105		
Input wire		35.1	50.6	40.2	47.8	105		
Internal enclosure		32.2	47.7	37.5	47.5	85		
<b>Measured Enclosure only</b>								
External Enclosure (>1s~<10s)		30.3	30.8	36.3	--	77		
Metal enclosure(>1s~<10s)		31.2	31.7	36.0	--	60		
Supplementary information: -Tma is 40°C Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)								
Temperature T of winding:		t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)								

<b>5.4.1.4, 6.3.2, 9.0, B.2.6</b>	<b>TABLE: Temperature measurements</b>						P
	Supply voltage (V) .....	PoE 48.0V		--		—	
	Ambient T <sub>min</sub> (°C) .....	25.9	--	--	--	—	
	Ambient T <sub>max</sub> (°C) .....	26.7	Shift to Tma	--	Shift to Tma	—	
	Tma (°C) .....	--	40.0	--	40.0	—	
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)	
Ambient		26.7	40.0	--	--	--	

EN 62368-1+A11							
Clause	Requirement + Test	Result - Remark			Verdict		
PCB1	37.0	50.3	--	--	105		
PCB2	40.6	53.9	--	--	105		
PCB3	44.9	58.2	--	--	105		
Input wire	40.6	53.9	--	--	105		
Internal enclosure	37.1	50.4	--	--	85		
<b>Measured Enclosure only</b>							
External Enclosure (>1s~<10s)	33.9	--	--	--	77		
Metal enclosure(>1s~<10s)	34.5	--	--	--	60		
Supplementary information: -Tma is 40°C							
Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							
Temperature T of winding:	t1 (°C)	R1 (Ω)	t2 (°C)	R2 (Ω)	T (°C)	Allowed Tmax (°C)	Insulation class
Supplementary information: Note 1: Tma should be considered as directed by applicable requirement							
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)							

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Penetration (mm) .....				—
Object/ Part No./Material	Manufacturer/t rademark	T softening (°C)		
supplementary information:				

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			N/A
Allowed impression diameter (mm) .....				—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						N/A
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)

EN 62368-1+A11							
Clause	Requirement + Test	Result - Remark				Verdict	
Function							
--	--	--	--	--	--	--	--
Basic							
--	--	--	--	--	--	--	--
Reinforced:							
Supplementary information:							

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage	N/A	
	<b>Overvoltage Category (OV):</b>		
	<b>Pollution Degree:</b>		
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)
Supplementary information:			

5.4.2.4	TABLE: Clearances based on electric strength test	N/A	
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No
Supplementary information:			

5.4.4.2, 5.4.4.5 c) 5.4.4.9	TABLE: Distance through insulation measurements					N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:			

<b>5.4.9</b>	<b>TABLE: Electric strength tests</b>			N/A
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Functional:				
--		--	--	--
Basic/supplementary:				
Reinforced:				
Routine Tests:				
--		--	--	--
Supplementary information:				

<b>5.5.2.2</b>	<b>TABLE: Stored discharge on capacitors</b>				N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:  
 X-capacitors installed for testing are:  
 bleeding resistor rating:  
 ICX:  
 Notes:  
 A. Test Location:  
 Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth  
 B. Operating condition abbreviations:  
 N – Normal operating condition (e.g., normal operation, or open fuse); S –Single fault condition

<b>5.6.6.2</b>	<b>TABLE: Resistance of protective conductors and terminations</b>			N/A
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (mΩ)
Supplementary information:				

<b>5.7.</b>	<b>TABLE: Touch current measurement</b>			N/A
Measured between:	Measured (mV)	Measured (mA)	Limit (mA)	Comments/conditions
Supplementary information:				

<b>5.7.2.2, 5.7.4</b>	<b>TABLE: Earthed accessible conductive part</b>		N/A
Supply voltage .....			—
Location	Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7		Touch current (mA)
Earthed accessible conductive part and earth	1		
	2*		
	3		
	4		
	5		

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict

	6	
	8	

Supplementary Information:

Notes:

- [1] Supply voltage is the anticipated maximum Touch Voltage
- [2] Earthed neutral conductor [Voltage differences less than 1% or more]
- [3] Specify method used for measurement as described in IEC 60990 sub-clause 4.3
- [4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
- [5] (\*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

<b>6.2.2</b>	<b>Table: Electrical power sources (PS) measurements for classification</b>				<b>P</b>
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s <sup>(*)</sup>	PS Classification
Adapter 12Vd.c. input	Normal Operation	Power (W) :	--	--	PS2
		V <sub>A</sub> (V) :	--	--	
		I <sub>A</sub> (A) :	--	--	
Power over ethernet input	Normal Operation	Power (W) :	--	--	PS3
		V <sub>A</sub> (V) :	--	--	
		I <sub>A</sub> (A) :	--	--	
Supplementary Information:					

<b>6.2.3.1</b>	<b>Table: Determination of Potential Ignition Sources (Arcing PIS)</b>				<b>N/A</b>
Location	Open circuit voltage After 3 s (V <sub>p</sub> )	Measured r.m.s current (I <sub>rms</sub> )	Calculated value (V <sub>p</sub> x I <sub>rms</sub> )	Arcing PIS? Yes / No	
Supplementary information: An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage (V <sub>p</sub> ) and normal operating condition rms current (I <sub>rms</sub> ) is greater than 15.					

<b>6.2.3.2</b>	<b>Table: Determination of Potential Ignition Sources (Resistive PIS)</b>				<b>P</b>
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No
All internal wire	--	--	--	--	Yes

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary Information:  
 A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter.  
 If a separate voltmeter and ammeter are used, the product of (VA x IA) is used to determine Resistive PIS classification.  
 A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.

<b>8.5.5</b>	<b>TABLE: High Pressure Lamp</b>					N/A
Description	Values			Energy Source Classification		
Lamp type .....				—		
Manufacturer.....				—		
Cat no.....				—		
Pressure (cold) (MPa) .....				MS_		
Pressure (operating) (MPa).....				MS_		
Operating time (minutes).....				—		
Explosion method .....				—		
Max particle length escaping enclosure (mm) .:				MS_		
Max particle length beyond 1 m (mm) .....				MS_		
Overall result .....						
Supplementary information:						

<b>B.2.5</b>	<b>TABLE: Input test</b>						N/A
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
9.0	0.365	0.56	3.29	--	--	--	Max. normal condition
24.0	0.292	0.56	7.01	--	--	--	Max. normal condition
48.0	0.172	0.5	8.26	--	--	--	Max. normal condition
Supplementary information:							
Equipment may be have rated current or rated power or both. Both should be measured							

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict

<b>B.3 and B.4</b>	<b>TABLE: Abnormal operating and fault condition tests</b>							P
Ambient temperature (°C) .....						26.8°C		—
Power source for EUT: Manufacturer, model/type, output rating .						---		—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (min)	Fuse no.	Fuse current (mA)	T-couple	Temp. (°C)	Observation
R42	S-C	12Vdc	10mins	--	--	--	--	Input current is 0.128A NCD, NFG, NHT. Recoverable
R43	S-C	12Vdc	2h	--	--	--	PCB1:30.9 PCB2:36.0 PCB3:37.4 External enclosure:31.9 Ambient: 26.8	Input current is 0.15A NCD, NFG, NHT. Recoverable
<p>Supplementary information:</p> <p>1. 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> <p>2. NHT: No High Temperature; NCD: No Component Damage; NFG: no flammability gas; S-C: Short circuit</p>								

<b>Annex M</b>	<b>TABLE: Batteries</b>							N/A		
The tests of Annex M are applicable only when appropriate battery data is not available									N/A	
Is it possible to install the battery in a reverse polarity position? .....									N/A	
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. Current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition	---	---	---						---	---
Max. current during fault condition									---	---
Test results:									Verdict	
- Chemical leaks									N/A	
- Explosion of the battery									N/A	
- Emission of flame or expulsion of molten metal									N/A	

EN 62368-1+A11			
Clause	Requirement + Test	Result - Remark	Verdict

- Electric strength tests of equipment after completion of tests		N/A
Supplementary information: Button cell temperature not exceed temperature limit of manufacture specification		

<b>Annex M.4</b>	<b>Table: Additional safeguards for equipment containing secondary lithium batteries</b>			N/A	
Battery/Cell No.	Test conditions	Measurements			Observation
		U	I (A)	Temp (C)	
	Normal				
	Abnormal				
	Single fault –SC/OC				
	Normal				
	Abnormal				
	Single fault – SC/OC				

Supplementary Information:

Battery identification	Charging at T <sub>lowest</sub> (°C)	Observation	Charging at T <sub>highest</sub> (°C)	Observation

Supplementary Information:

<b>Annex Q.1</b>	<b>TABLE: Circuits intended for interconnection with building wiring (LPS)</b>			N/A
------------------	--	--	--	-----

Note: Measured UOC (V) with all load circuits disconnected:

Output Circuit	Components	U <sub>oc</sub> (V)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit

Supplementary Information:  
SC=Short circuit, OC=Open circuit

<b>T.2, T.3, T.4, T.5</b>	<b>TABLE: Steady force test</b>					P
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation	

EN 62368-1+A11					
Clause	Requirement + Test			Result - Remark	Verdict
External enclosure	Metal	Min.2.0	250	5	No hazard as a result of the test. Enclosure remained intact.
External enclosure (Top)	Plastic	Min.1.1	100	5	No hazard as a result of the test. Enclosure remained intact.
External enclosure (Bottom)	Plastic	Min.1.1	100	5	No hazard as a result of the test. Enclosure remained intact.
External enclosure (Side)	Plastic	Min.1.1	100	5	No hazard as a result of the test. Enclosure remained intact.
Supplementary information:					

T.6, T.9	TABLE: Impact tests				P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
External enclosure	Metal	M in 2.0	1300	No hazard as a result of the test.	
Supplementary information:					

T.7	TABLE: Drop tests				N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Supplementary information: Handset unit					

T.8	TABLE: Stress relief test					P
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
External enclosure	Plastic	Min.2.0	90.4	7	No shrinkage or distortion on enclosure	
Supplementary information:						

**Appendix A EUT PHOTOS**  
**A.1 EUT- Whole view**



**A.2 EUT- Top view**



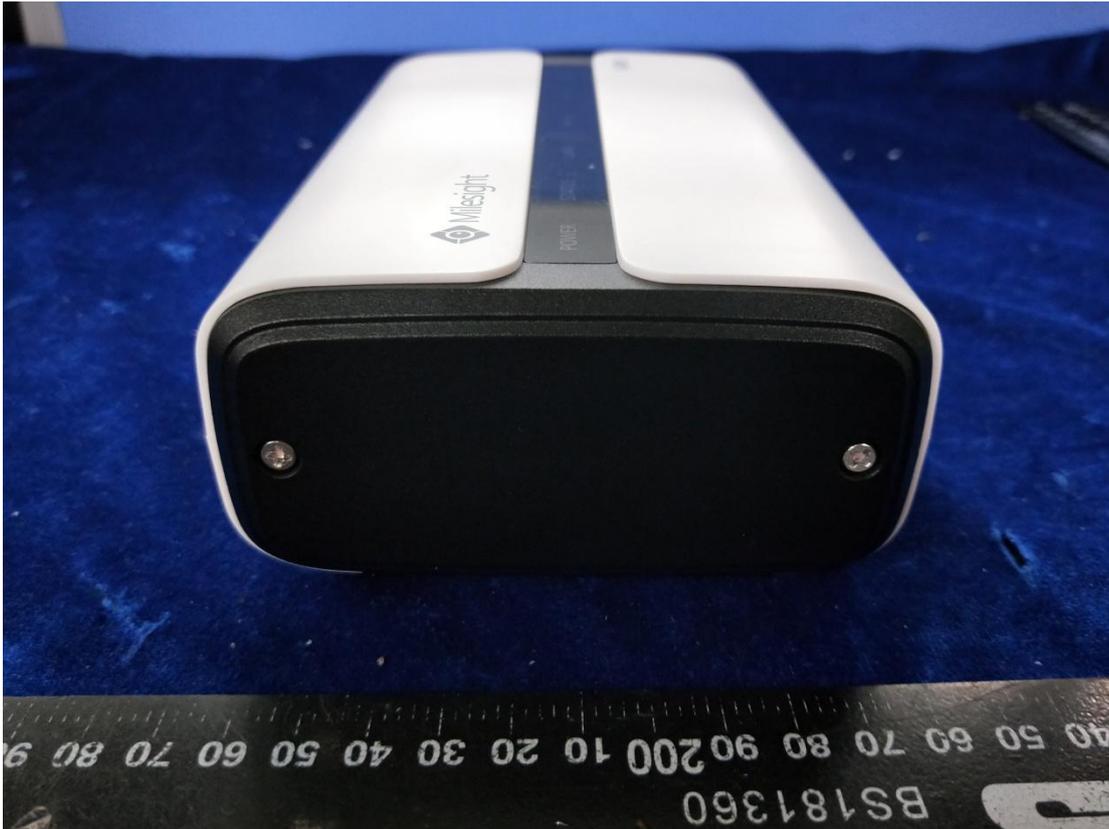
A.3 EUT- Bottom view



A.4 EUT- Front view



**A.5 EUT- Back view**



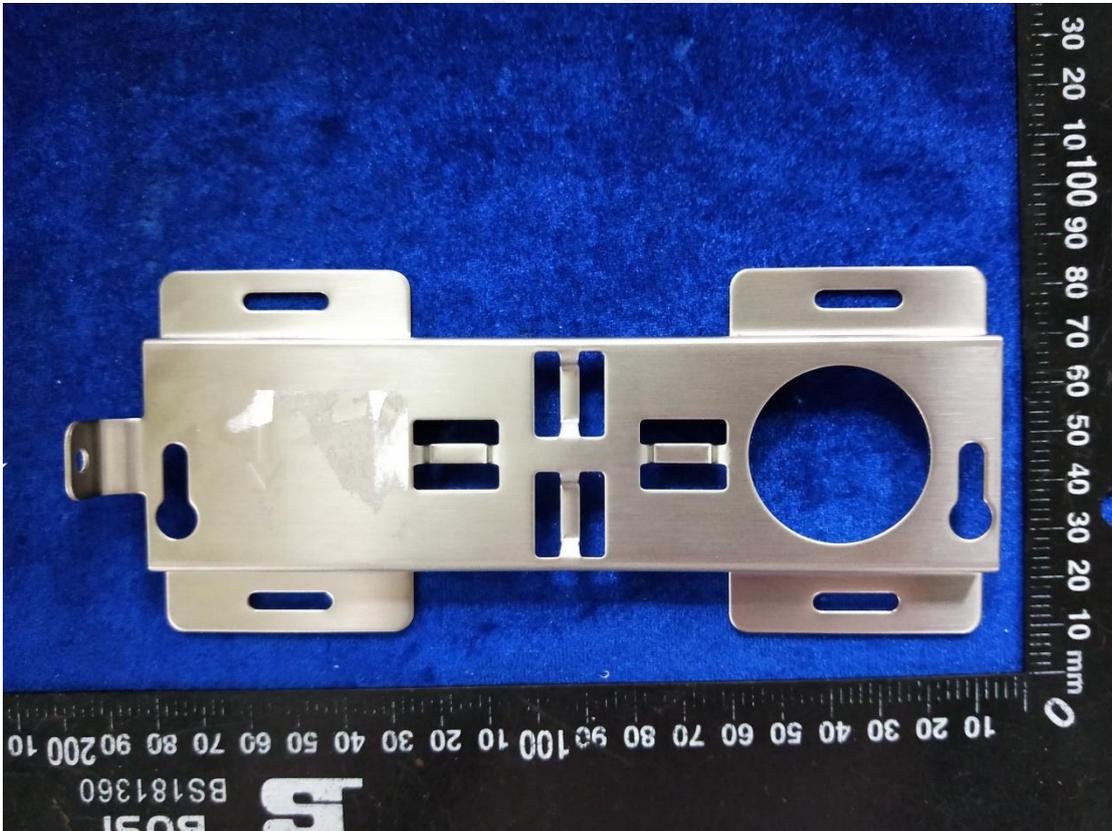
**A.6 EUT- Adapter view**



A.7 EUT- Accessories view



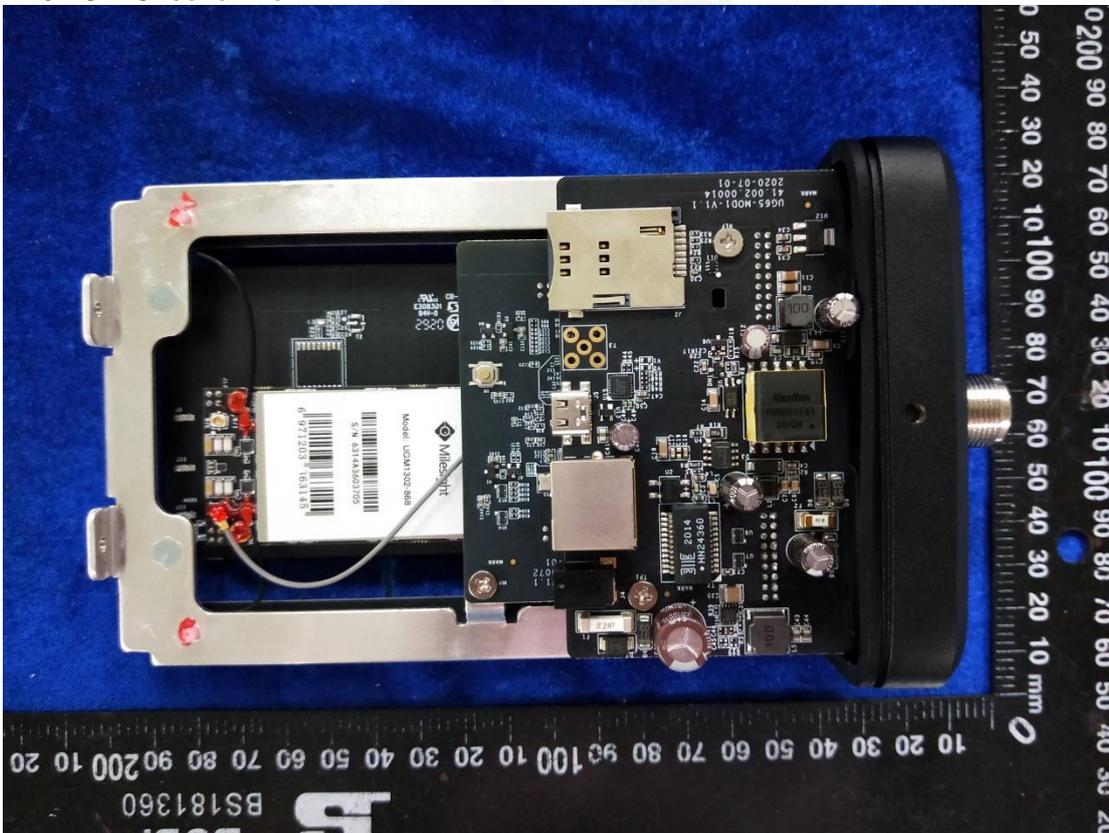
A.8 EUT- Accessories view



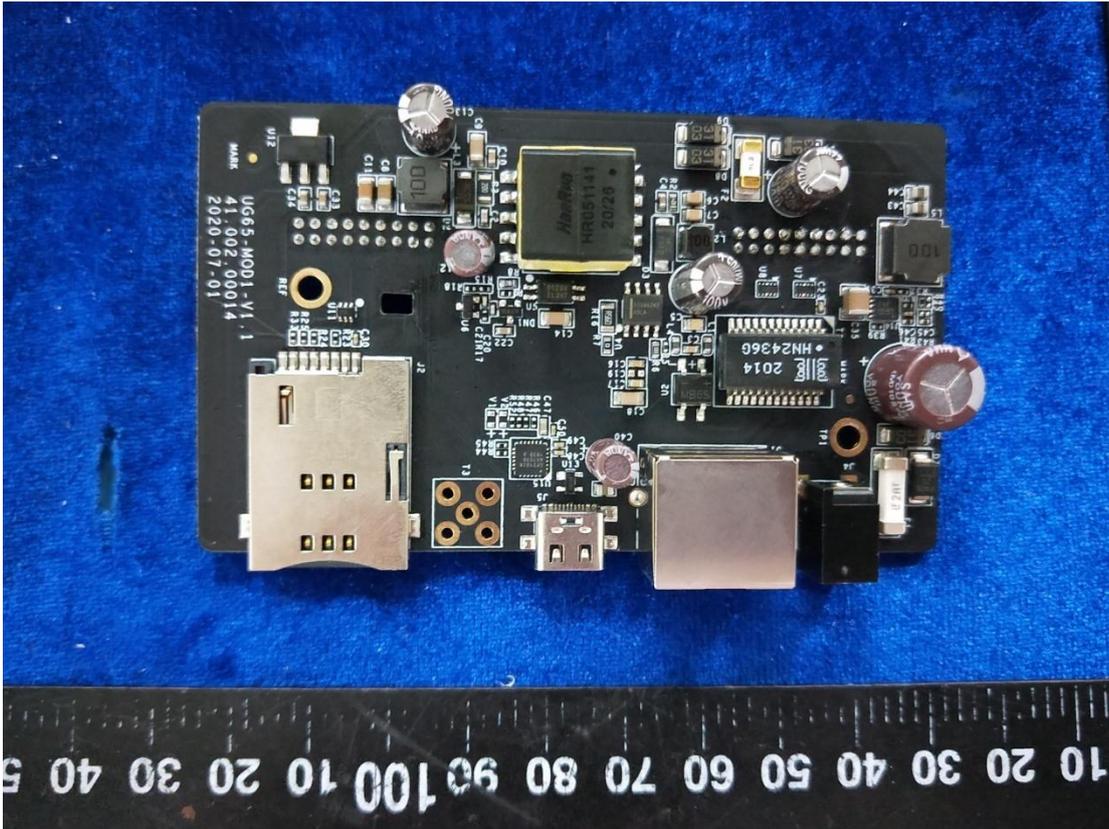
**A.9 EUT- Uncover view**



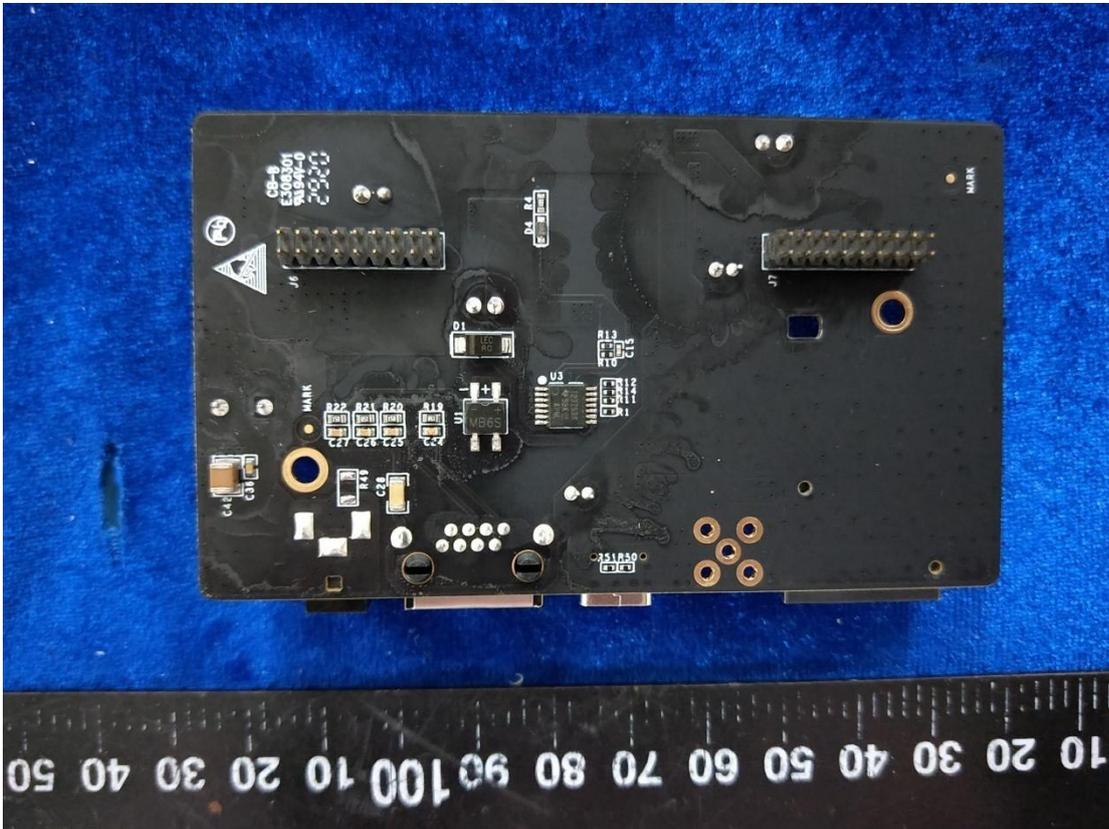
**A.10 EUT- Uncover view**



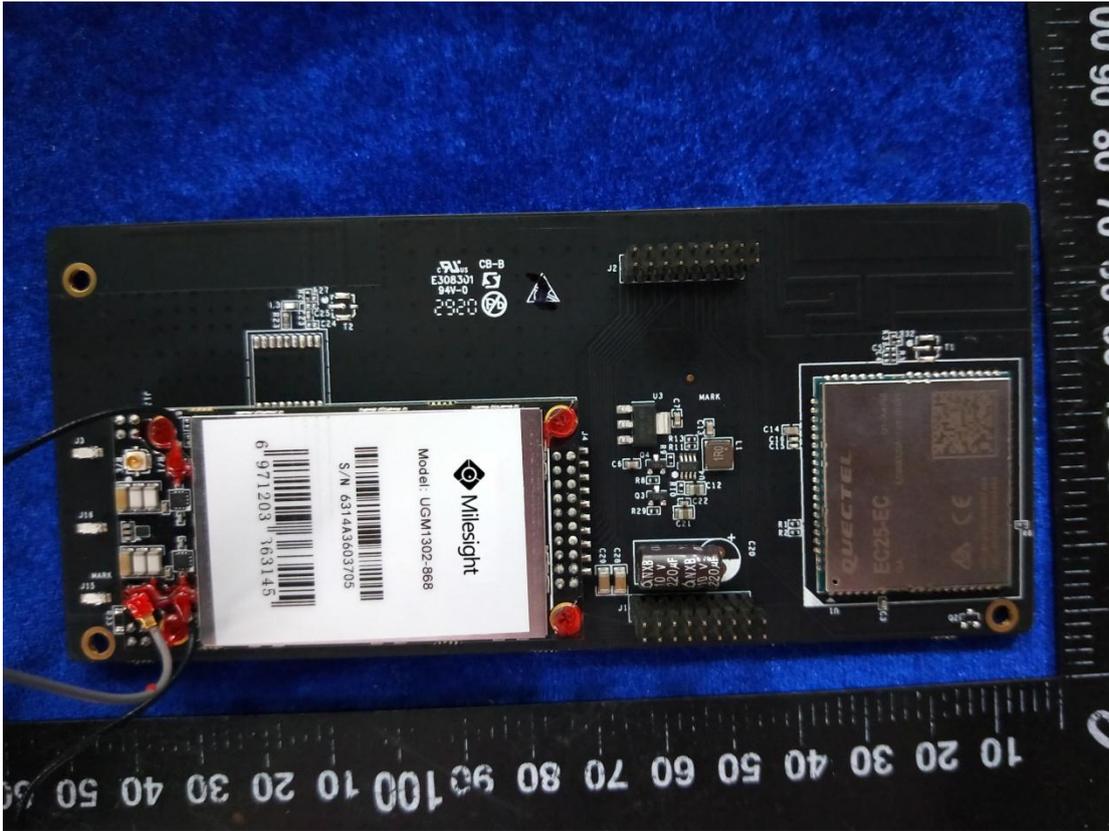
A.11 EUT- PCB view



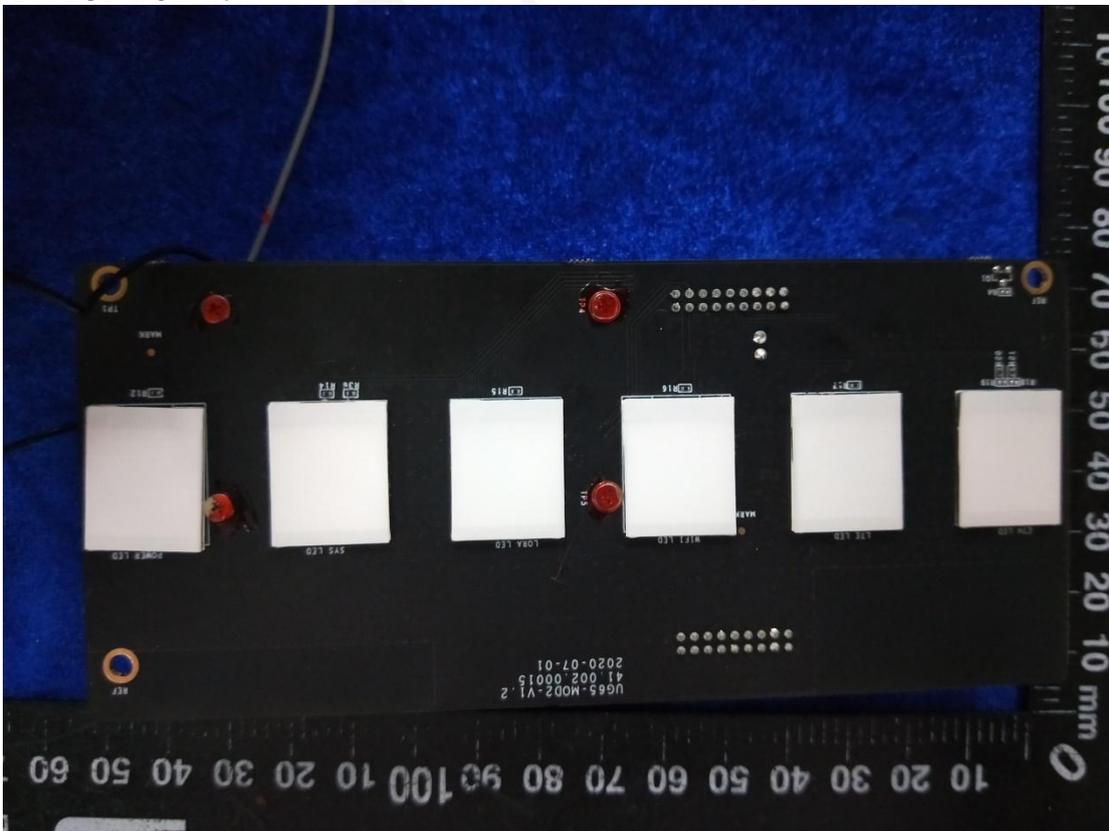
A.12 EUT- PCB view



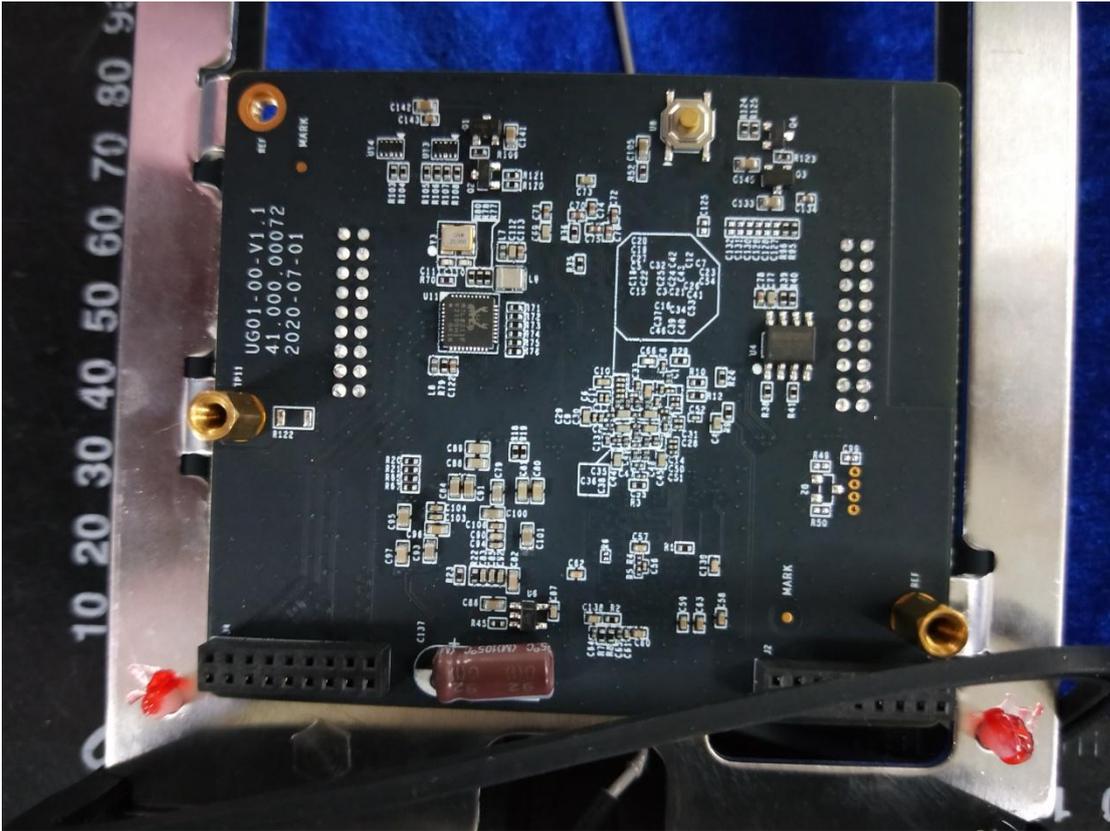
A.13 EUT- PCB view



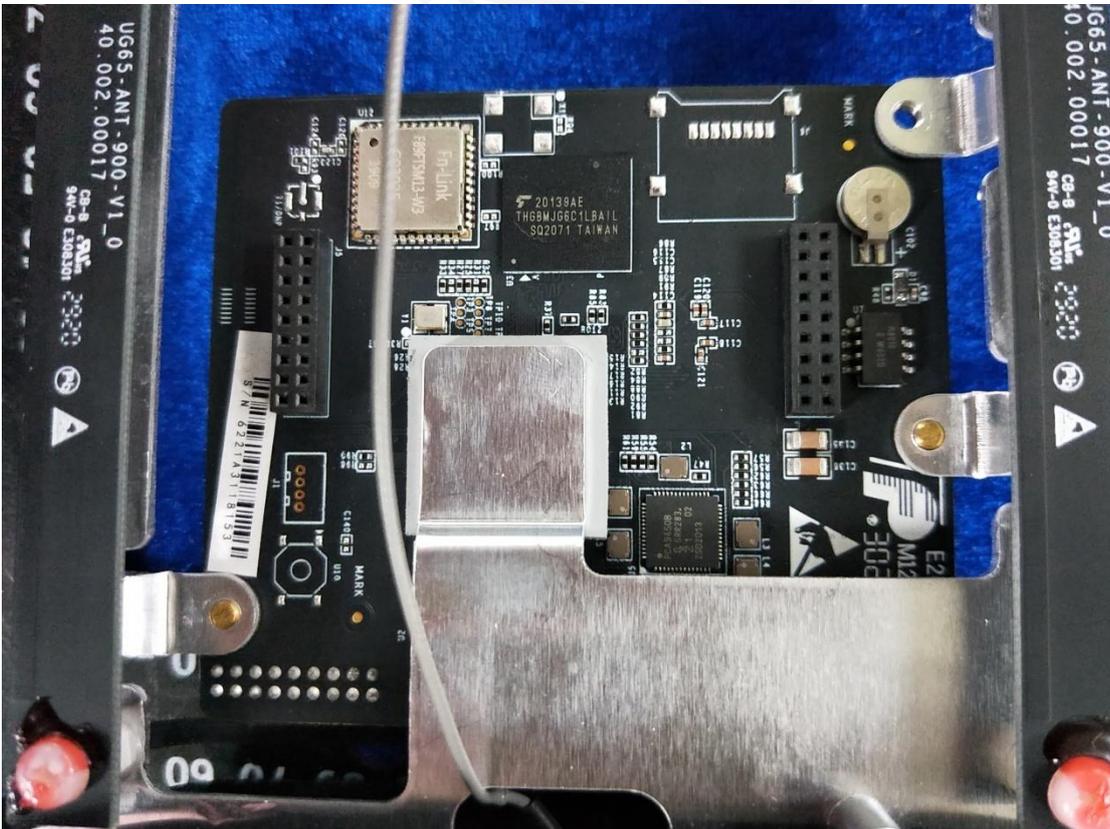
A.14 EUT- PCB view



A.15 EUT- PCB view



A.16 EUT- PCB view



**Appendix B – Instruction Manual(representative)**

***Important Safety Instructions***

1. Recycle your device.



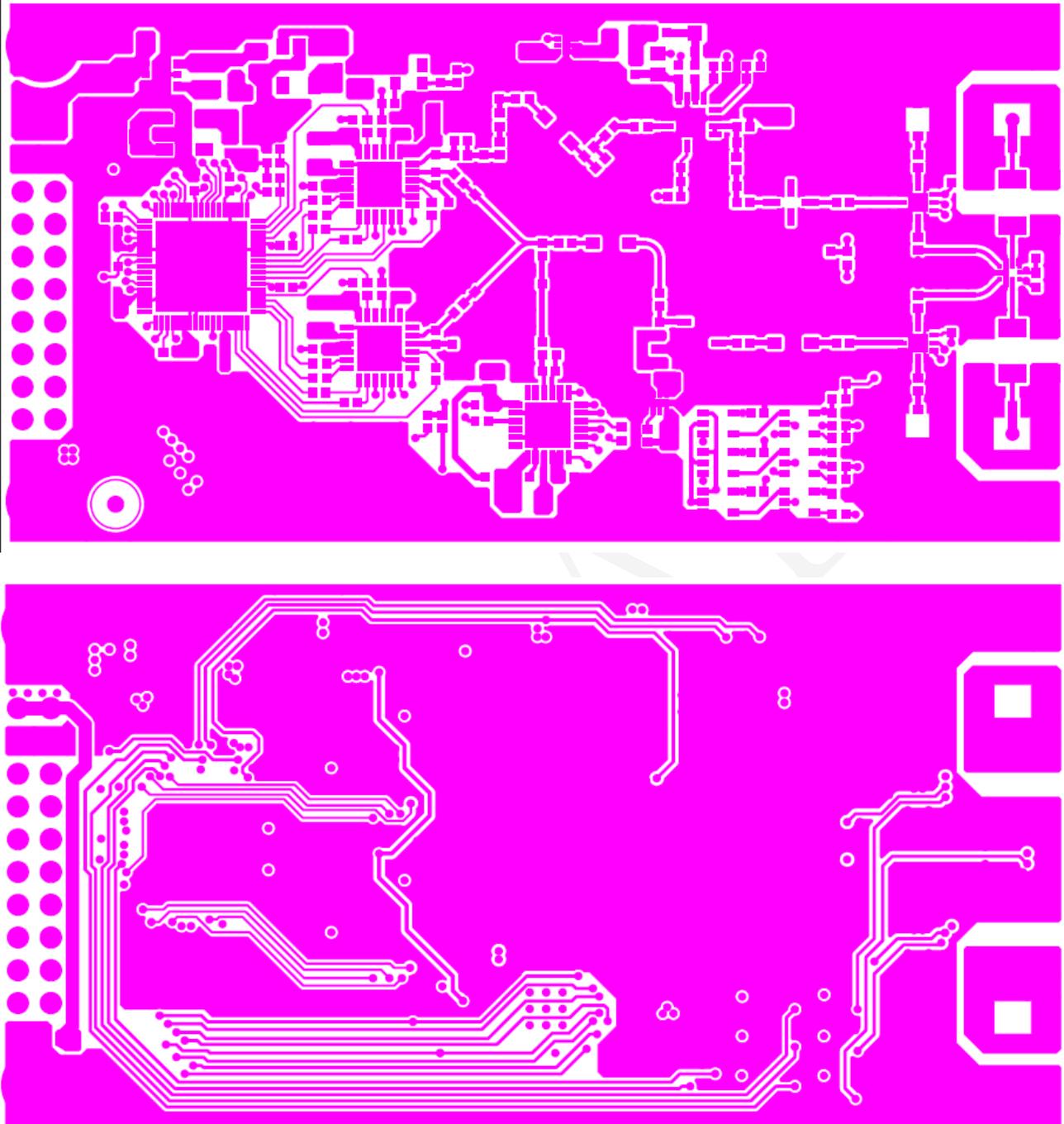
The WEEE logo (shown at the left) appears on the product to indicate that this product must not be disposed off or dumped with your other household wastes. You are liable to dispose of all your electronic or electrical waste equipment by relocating over to the specified collection point for recycling. of such hazardous waste.

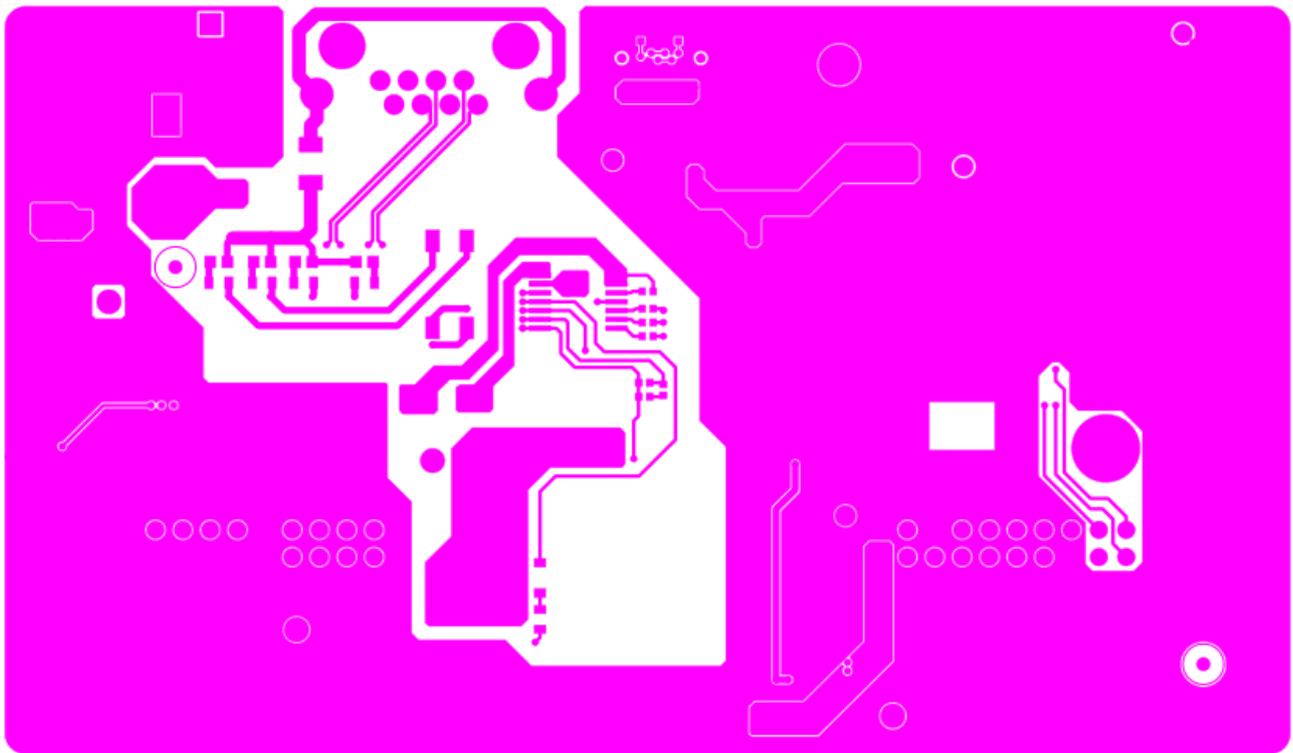
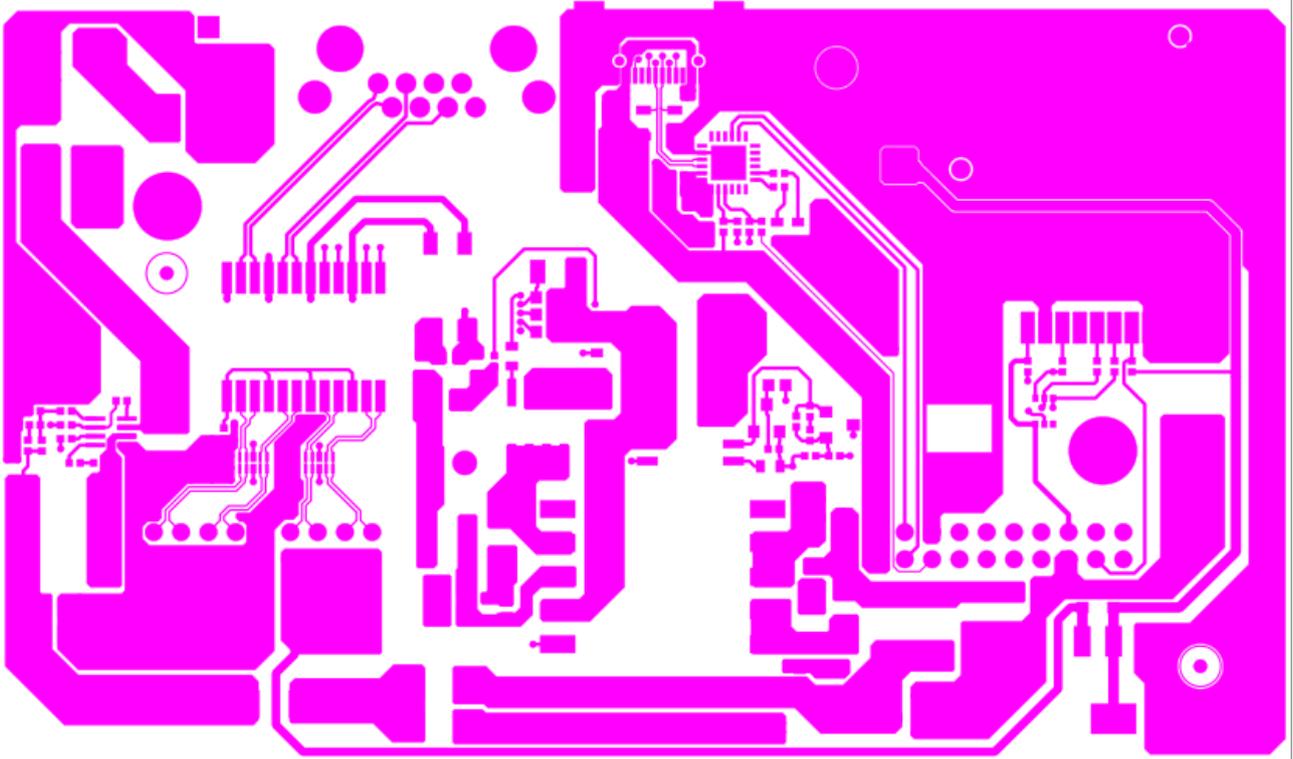


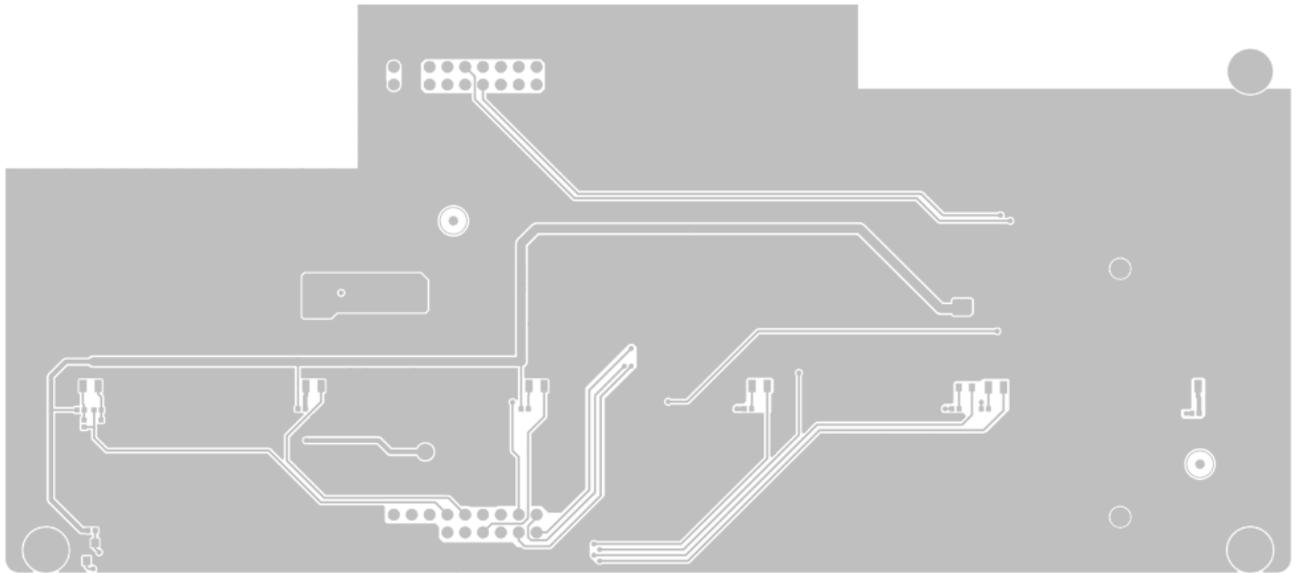
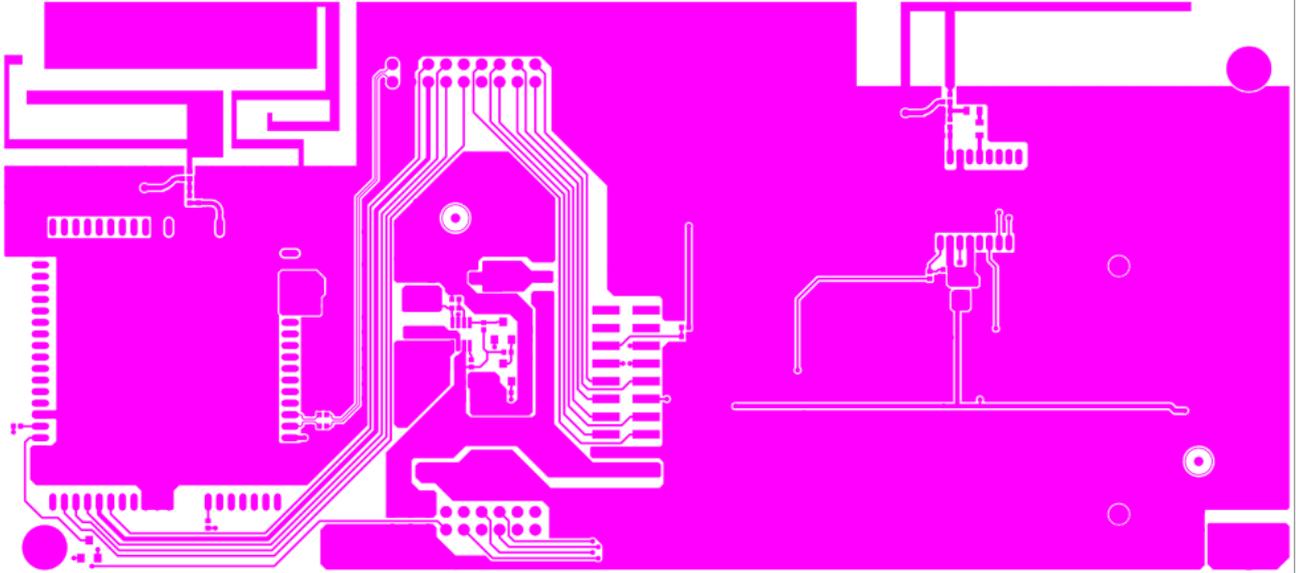
***SAVE THESE INSTRUCTIONS***

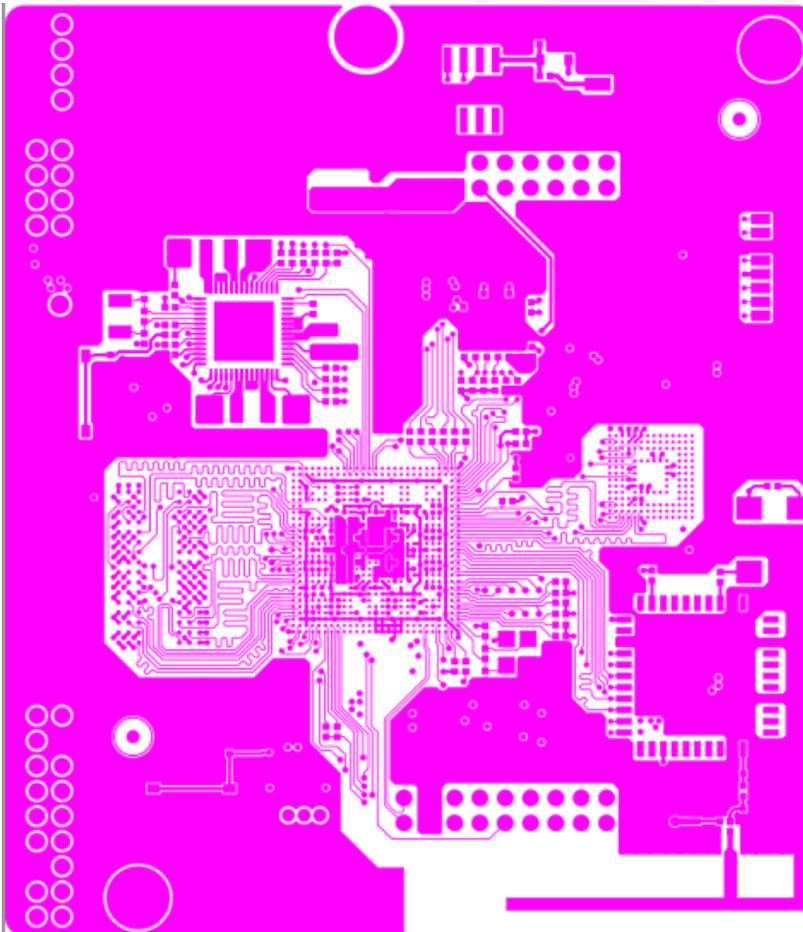
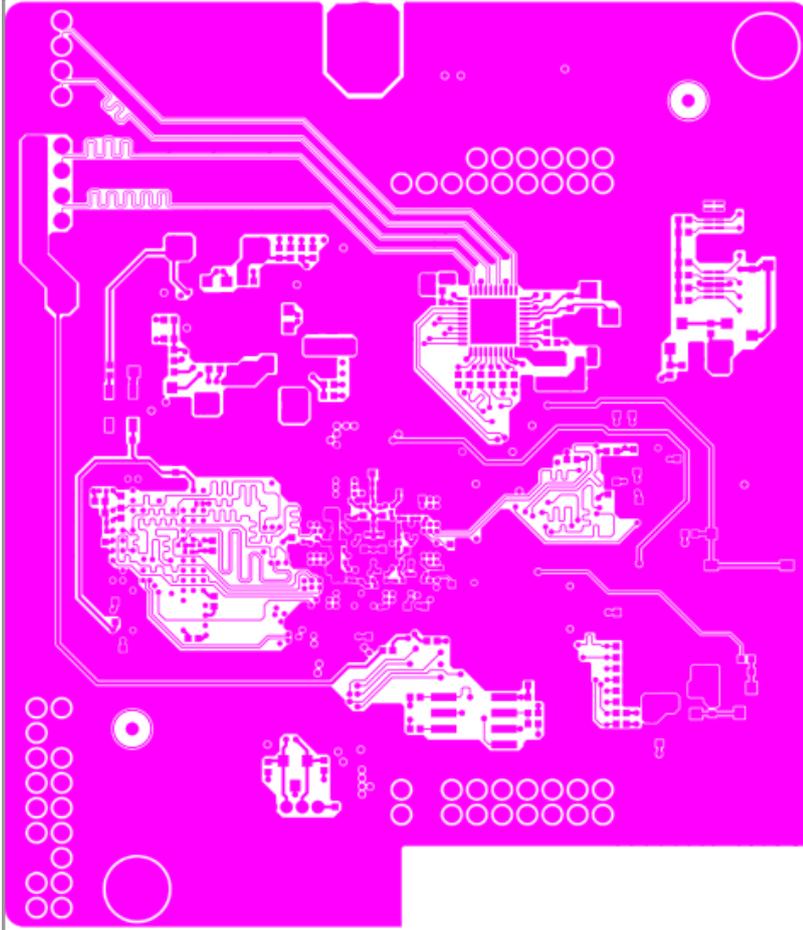
FUNNIAL

**Appendix C –PCB Inode Bitmap**









**Appendix D-Test Equipments**

NO.	The Name of Equipment	Model	S/N	Calibration Date	Due Date	Capability Range	Manufacturer	Equipment Status
T-03-SF371	hygrothermograph	NA	S0099	2019-10-14	2020-10-13	N/A	KTJ	<input checked="" type="checkbox"/> OK
T-03-SF210	Digital Multimeter	17B	16284529	2020-03-26	2021-03-25	0-1000VAC/DC, 0-10A AC/DC, 0-40Mohm	Fluke	<input checked="" type="checkbox"/> OK
T-03-CH136	Electronic analytical balance	JM-B30002	272	2019-11-15	2020-11-14	N/A	Chaozhen gqi	<input checked="" type="checkbox"/> OK
T-03-SF021	Push & Pull Tester	SN-500	2601050032	2020-03-24	2021-03-23	500N	SUNDOO	<input checked="" type="checkbox"/> OK
T-03-SF183	Stop Watch	PC396	S238	2020-03-26	2021-03-25	0-3600s/3.0s/d	Tian Fu	<input checked="" type="checkbox"/> OK
T-03-SF221	Full Draught Oven	DP1000	201105083-2	2020-03-26	2021-03-25	50-200°C	Guang Zhou dong zhi xu	<input checked="" type="checkbox"/> OK
F-03-SF028	EU Drop Test Board	EU TYPE	L:40XW:40 XH:(13+19+19)	N/A	N/A	N/A	SHENZHEN HUAWEI MUYE CO.,LTD.	<input checked="" type="checkbox"/> OK
T-03-SF207	Steel Tape	5m	S0089	2017-12-25	2020-12-24	5m	HANYANG	<input checked="" type="checkbox"/> OK
T-03-SF286	Steel ball	SFT S1-2017	S235	2018/4/9	2021/4/8	N/A	SAIFUTE	<input checked="" type="checkbox"/> OK
T-03-SF208	Data Acquisition Switch Unit	34970A	MY11060049	2020-03-26	2021-03-25	0-200°C	Agilent	<input checked="" type="checkbox"/> OK
T-03-SF416	T thermocouples	TT-T-30-SLE	IHCH13515P/16P	2019-02-28	2024-02-27	NA	HANYANG	<input checked="" type="checkbox"/> OK
T-03-SF375	DC Source	ATP-12015	S0067	2020-07-05	2021-07-04	N/A	HANYANG	<input checked="" type="checkbox"/> OK
T-03-SF443	Digital calipers	111N-101-40	K20D070633	2020/5/26	2021/5/25	0-150mm	Guilin GuangLu	<input checked="" type="checkbox"/> OK
T-03-SF336	Electronic Load	M9712B	09012096 01211200 14	2020/6/4	2021/6/3	0-15A, 0-500V, 0-300W	Maynuo	<input checked="" type="checkbox"/> OK

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