

TEST REPORT

Report No.: S22091403004001

Product: Loona smart toy

Model No.: KY004LN01, KY004LN02, KY004LN03, KY004LN04,
KY004LN05

Applicant: Beijing Ke Yi Technology Co., Ltd.

Address: 8th Floor, Dimeng Building, Huayuan Road, Haidian
District, Beijing, China

Issued by: Shenzhen NTEK Testing Technology Co., Ltd.

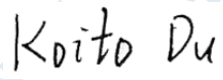
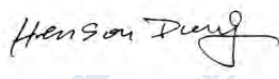
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**TEST REPORT
EN IEC 62115
Safety of electric toys**

Report reference No..... :	S22091403004001
Tested by (+signature)..... :	Koito Du 
Approved by (+ signature)..... :	Henson Dong 
Date of issue	2022-11-04
Testing laboratory	
Testing laboratory Name..... :	Shenzhen NTEK Testing Technology Co., Ltd.
Address	1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China
Test location	(Same as above)
Applicant's Name	
Applicant's Name	Beijing Ke Yi Technology Co., Ltd.
Address	8th Floor, Dimeng Building, Huayuan Road, Haidian District, Beijing, China
Test specification	
Standard..... :	EN IEC 62115:2020+A11:2020
Test procedure	CE
Non-standard test method..... :	N.A.
Test Report Form No. :	
Test Report Form No. :	IEC62115B
Test Report Form(s) Originator:	UL(US)
Master TRF	2021-08
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Test item Description	
Test item Description	Loona smart toy
Model No..... :	KY004LN01, KY004LN02, KY004LN03, KY004LN04, KY004LN05
Trademark..... :	Loona
Manufacturer	Beijing Ke Yi Technology Co., Ltd.
Address..... :	8th Floor, Dimeng Building, Huayuan Road, Haidian District, Beijing, China
Rating(s)..... :	DC5V, 2A

Particulars: test item vs. test requirements

Equipment mobility..... : Movable equipment
 Operating condition..... : Continuous
 Protection against ingress of water..... : IPX0

Test case verdicts

Test case does not apply to the test object : N/A
 Test item does meet the requirement : P(ass)
 Test item does not meet the requirement : F(ail)

Testing :

Date of receipt of test item : 2022-09-19
 Date (s) of performance of tests : 2022-10-13 to 2022-10-24

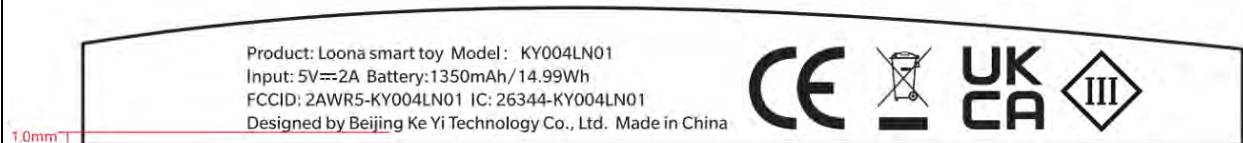
General remarks:

“(see appendix table)”refers to a table appended to the report.
 Throughout this report a comma is used as the decimal separator.
 The test results presented in this report relate only to the object tested.
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Brief description

1. The product is a toy supplied by a built-in Li-ion battery and shall be charged by Type-C port.
2. USB wire use for charge, no transformer or power supply provided.
3. Specified maximum ambient temperature is 40°C
4. The toy is suitable for children over 3 years old
5. All models are similar except the module type and quantity combination are different. All tests were made on model no. KY004LN01.

Copy of the marking plate:



EN IEC 62115			
Cl.	Requirement – Test	Result - Remark	Verdict
6	Criteria for reduced testing		P
6.1	For some electric toys it is not necessary to carry out all of the tests. Electric toys able to meet the following clauses are considered to comply with the clauses mentioned without further testing.		P
6.2	For electric toys that comply with the tests of Clause 9, except 9.6 and 9.8, with any insulation between parts of different polarity short-circuited in turn 13.3, 13.7 and Clauses 8, 9 except 9.6 and 9.8, 10, 11, 17 and 18 are not applicable. The short circuit may be applied by a flexible wire or any other suitable means.	13.3, 13.7 and Clauses 8, 9 except 9.6 and 9.8, 10, 11, 17 and 18 are not applicable	P
6.3	Electric toys that meet both of the following criteria are considered to comply with the requirements of Clauses 9, 10 and 18 if they		N/A
	a) are supplied by a power source supplying less than 15 W;	Battery >15W	N/A
	b) have an over temperature or over current protection where the clearance between conductive parts of different polarity is at least 3,8 mm for any part of the circuit between the power source and the protection.		N/A
	When a short-circuit is applied to any part of the circuit after the protection, the electric toy shall comply with 9.10.		N/A
6.4	Circuits where the only power source comprises three batteries or less that are of the following designations:	Li-ion battery	N/A
	- R44/LR44 - R41/LR41 - LR1130 - LR54		N/A
	are considered to comply with the requirements of Clause 9, 10, 11, 17 and 18.		N/A
7	Marking and instruction		P
7.1	Instructions and other text required by this standard shall be written in an official language of the country in which the appliance is to be sold.		P
	Additional markings other than those provided in this clause may be used provided they do not give rise to misunderstanding.		P
7.2.1	Electric toys shall be marked with the following:		P

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Cl.	Requirement – Test	Result - Remark	Verdict
	- name, trade mark or identification mark of the manufacturer or responsible vendor;	Trade mark	P
	- model or type reference.	model	P
	The markings shall be on the main part of the electric toy. However, where the size or nature of the electric toy does not allow it, the required information shall be provided on the packaging or in a document accompanying the electric toy.	Marking on main part	P
	If a symbol is used, its meaning shall be explained in the instructions.		P
7.2.2	Electric toys with replaceable batteries shall be marked with the nominal battery voltage, in or on the battery compartment or other suitable place on the electric toy, close to the batteries.	Battery not a replaceable	N/A
	Electric toys with a battery box shall be marked with the symbol for DC (symbol IEC 60417-5031 (2002-10)) shown in 7.2.6 at a suitable location close to the battery box connector unless connection to other battery boxes or power sources is prevented by design.		N/A
	The electric toy shall be marked with the shape of the batteries, together with the nominal voltage and polarity. The positive terminal shall be indicated by symbol IEC 60417-5005 (2002-10).		N/A
7.2.3	Electric toys supplied by a transformer or a power supply shall be marked with	Power supply or transformer not provided	N/A
	- their rated voltage, in volts;		N/A
	- the symbol for alternating current (AC) (symbol IEC 60417-5032 (2002-10)) or direct current (DC) (symbol IEC 60417-5031 (2002-10)), as applicable;		N/A
	- their rated power input, in watts or volt-amperes, if the power input is greater than 25 W or 25 VA when measured in accordance with Clause 8, using the recommended transformer;		N/A
	- the symbol for safety isolating transformer for toys (symbol IEC 60417-5219 (2006-12)). This symbol shall also be marked on the packaging.		N/A
	The marking of rated voltage and the symbol for AC or DC shall be placed adjacent to the power input connection of the electric toy so that it is visible.		N/A
	The marking for AC or DC is not required if the incorrect supply does not impair compliance with this standard.		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	Electric toys intended to be supplied from a power supply for the purposes of recharging the battery shall be marked with symbol IEC 60417-6181 (2016-01) and its type reference along with symbol ISO 7000-0790 or with the substance of the following:		N/A
	"Use only with <model designation> <supply>"		N/A
7.2.4	Electric toys that are supplied by both batteries and a transformer or a power supply shall be marked in accordance with both 7.2.2 and 7.2.3.	Only supplied by battery and USB	N/A
7.2.5	The identification for detachable lamps shall be marked with	No detachable lamps used	N/A
	- the rated voltage and type number, or		N/A
	- the maximum rated power input, or		N/A
	- the maximum rated current.		N/A
	The marking for rated wattage or current of detachable lamps shall be as follows: lamp max . . . W or lamp max ... A		N/A
	The word "lamp" may be replaced by symbol IEC 60417-5012 (2002-10).		N/A
	The marking shall be visible when replacing the lamp.		N/A
	This marking is not required if the temperature rises measured during the tests of Clause 9 do not exceed the limits when a lamp having the highest rated wattage is fitted.		N/A
7.2.6	The symbol for class II equipment shall be placed so that it will be obvious that it is a part of the technical information and is unlikely to be confused with any other marking.		N/A
	Additional symbols may be used but they shall not give rise to misunderstanding.	Class III maybe used	P
	Units of physical quantities and their symbols shall be those of the international standardized system (SI).		P
7.2.7	The markings on an electric toy shall be legible and durable.		P

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Cl.	Requirement – Test	Result - Remark	Verdict
	Compliance is checked by inspection and by rubbing the marking by hand for 15 s with a piece of cloth soaked with water and again for 15 s with a piece of cloth soaked with petroleum spirit. The petroleum spirit to be used for the test is aliphatic solvent hexane.		P
	After the tests of this standard, the marking shall be legible, it shall not be easily possible to remove marking plates and they shall show no curling.	Label keep legible after rubbing test	P
7.3.1	Instructions shall be provided that give details concerning cleaning and maintenance when necessary for the safe use and operation of the electric toy.	See user instructions	P
	Instructions for use shall be provided with the appliance so that the electric toy can be played with safely.		P
	Electric toys shall be provided with instructions for assembly if:	No need user assemble	--
	- they are intended to be assembled by a child;		N/A
	- these instructions are necessary for safe operation of the electric toy.		N/A
	If the electric toy is intended to be assembled by an adult, this shall be stated.		N/A
	The instructions may be on a leaflet, on the packaging or on the electric toy. If the instructions are marked on the electric toy, they shall be visible from the outside and if the electric toy consists of more than one part, only the main part needs to be marked.		N/A
	Instructions for electric toys intended to be used in water shall state that the electric toy is to be operated in water only when fully assembled in accordance with the instructions, if applicable.		N/A
	If markings or instructions stated in 7.2 are on the packaging only, they shall be accompanied by a statement indicating that packaging must be retained since it contains important information. If markings or instructions stated in 7.2 are on instruction sheet only, they shall be accompanied by a statement indicating that instruction sheet must be retained since it contains important information. If part of markings or instructions stated in 7.2 are on packaging and others are in instruction sheet, a statement indicates that instruction sheet and packaging must be retained since it contains important information.	Packaging must be retained since it contains important information.	P

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Cl.	Requirement – Test	Result - Remark	Verdict
	Service parts and accessories with no electrical function or play value on their own do not need to have the markings and instructions stated in 7.2.		N/A
7.3.2	The instructions for electric toys using a transformer or a power supply or a battery charger shall state that the transformer, power supply or battery charger used with the electric toy shall be regularly examined for damage to the supply cord, plug, enclosure or other parts, and in the event of damage, it shall not be used until the damage has been repaired.	No transformer or power supply	N/A
	For electric toys using a transformer or a power supply, the following age warning shall be visible to consumers at the time of purchase:		N/A
	WARNING: Not suitable for children under 3 years		N/A
	A brief indication of the specific hazard calling for this restriction (e.g. misuse of transformer can cause electrical shock) shall accompany the age warning or appear in the instructions which accompany the electric toy. The text “Not suitable for children under 3 years” may be replaced by the age warning symbol from ISO 8124-1. This requirement does not apply to electric toys which, on account of their function, dimensions, properties and similar characteristics, are clearly unsuitable for children under 3 years.		N/A
	The instructions for electric toys using a transformers or a power supply shall state that the toy is not to be connected to more than the recommended number of transformers or power supplies where such connection is possible without the aid of tool or breaking the toy.		N/A
	The instructions for electric toys using a transformers or a power supply shall contain the substance of the following, as applicable:		N/A
	- the toy shall only be used with a transformer for toys or a power supply for toys (as applicable);		N/A
	- the toy shall be used with the transformer or power supply supplied, if the transformer is supplied with the toy;		N/A
	- the model number or specification of a suitable transformer or power supply for use with the toy, if not supplied with the toy;		N/A
	- the transformer or power supply (as applicable) is not a toy;		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	- toys liable to be cleaned with liquids are to be disconnected from the transformer or power supply before cleaning.		N/A
7.3.3	Electric toys that are used with replaceable batteries	Li-ion battery not replaceable	N/A
7.3.3.1	The instructions for electric toys that are used with replaceable batteries shall contain the substance of the following, as applicable:		N/A
	- how to remove and insert the batteries;		N/A
	- non-rechargeable batteries are not to be recharged;		N/A
	- for electric toys using rechargeable batteries, the batteries should be charged under adult supervision. For batteries charged using a battery charger for use by children, this instruction may be replaced by: "Batteries are only to be charged by persons of at least 8 years old";		N/A
	- different types of batteries or new and used batteries are not to be mixed;		N/A
	- batteries are to be inserted with the correct polarity (+ and -);		N/A
	- exhausted batteries are to be removed from the toy;		N/A
	- the supply terminals are not to be short-circuited.		N/A
	The instructions for electric toys supplied by a battery box shall state that the toy is not to be connected to more than the recommended number of power supplies. The instruction need not be added if the connections cannot be made easily without the aid of a tool and using parts from two identical electric toys or constructional sets.		N/A
	The instructions for electric toys containing non-replaceable batteries shall state the substance of the following: This toy contains batteries that are non-replaceable.	Instruction: "This toy contains batteries that are non-replaceable."	P
	The instructions for electric toys intending to be supplied from a detachable power supply for the purposes of recharging the battery, the type reference of the detachable power supply shall be stated along with the substance of the following: WARNING: For the purposes of recharging the battery, only use the detachable supply unit provided with this toy.		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
7.3.3.2	Coin batteries		N/A
7.3.3.3	Button batteries		N/A
7.4	Instructions for electric toys that can be connected to class I equipment	class III equipment	N/A
7.5	The instructions for ride-on electric toys,		N/A
	shall carry the substance of the following warning: WARNING: Not to be used in traffic		N/A
	In addition, the instructions for ride-on electric toys, shall carry the substance of a warning, preceded by the word "WARNING", which draws attention to the potential hazards of using the ride-on electric toys in areas other than private grounds.		N/A
7.6	Temperature warnings		N/A
	The accessible parts of electric toys that are intended for children 3 years and over but less than 8 years which exceed the temperature rise limit for children less than 3 years according to Table 1 (see 9.10) shall carry the following warning that shall be visible to consumers at the time of purchase: WARNING: Not suitable for children under 3 years	The toy is 3+ years old	N/A
	This requirement does not apply to electric toys which, on account of their function, dimensions, properties and similar characteristics, are clearly unsuitable for children under 3 years.		N/A
	The text "Not suitable for children under 3 years" may be replaced by the age warning symbol from Figure B.1 of ISO 8124-1.		N/A
	A brief indication of the specific hazard calling for this restriction, such as a hot surface, shall accompany the age warning or appear in the instructions which accompany the electric toy.		N/A
	The accessible parts of electric toys that are intended for children 8 years and over, and which exceed the temperature rise limit for children 3 years to less than 8 years according to Table 1 (see 9.10) shall carry the following warning that shall be visible to consumers at the time of purchase: WARNING: Not suitable for children under 8 years	Not exceed the temperature rise limit of children 8 years and over	N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
8	Power input		N/A
	The power consumed by electric toys supplied by a transformer or a power supply shall not exceed the rated power input by more than 20%, where a power input is marked.	No transformer or power supply provided	N/A
	Compliance is checked by measurement when the power input has stabilized and the electric toy has attained normal operating temperature with		N/A
	- all circuits that can operate simultaneously being in operation;		N/A
	- the electric toy being supplied at rated voltage;		N/A
	- the electric toy being operated under normal operation;		N/A
	all accessories being added.		N/A
	The power input shall be measured to determine if the rated power input needs to be marked.		N/A
9	Heating and abnormal operation		P
9.1	Electric toys shall not attain excessive temperatures in use and shall not malfunction in such a way as to cause any unintended operation that may impair safety.	(see appended table 9.3)	P
	They shall be constructed so that the risk of fire, mechanical damage impairing safety or other hazards, as a result of careless use or failure of a component, is obviated as far as is practicable.		P
	Electric toys which have an electronic control shall be designed and manufactured in such a way that they operate safely even if the electronic control starts malfunctioning due to a failure of the electronic control or due to electromagnetic influence from an outside source.		N/A
	All electric toys are subjected to the tests of 9.3 to 9.5.		P
	Electric toys incorporating motors are also subjected to the test of 9.6.	See 9.6	P
	Electric toys using transformers, power supplies and electric toys using battery boxes are also subjected to the test of 9.7.	No power supply	N/A
	Electric toys supplied with power from a USB connection are also subjected to the tests of 9.8.	USB connection, see 9.8	P
	Electric toys incorporating electronic circuits are also subjected to the test of 9.9.		P
	All electric toys shall be tested under the conditions specified in 9.2.		P
	Unless otherwise specified, after the tests of 9.3 to 9.9 the electric toy shall comply with 9.10.		P

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Cl.	Requirement – Test	Result - Remark	Verdict
9.2.1	Electric toys are placed in the most unfavorable position which can occur during play	Running on the ground	P
	Hand-held electric toys are freely suspended		N/A
	Electric toys which can move around a room or space, either powered by themselves or by a user, shall be tested in whichever normal operation use condition will create the highest temperature rise.		N/A
	Other electric toys are placed on the floor of the test corner as near to the walls as possible or away from the walls, whichever is more unfavorable	Placed on the floor of the test corner, during charge	P
	-- toys having no dimension exceeding 500mm are covered completely by four layers of bleached cotton gauze having a specific mass of approximately 40 g/m ²	During toy charge, four layers cotton gauze covered	P
	--Toys having a dimension exceeding 500mm are test with four layers of the cotton gauze having dimensions of 500mm×500mm		N/A
9.2.2	Electric toys using transformers and power supplies are supplied at 0,94 times or 1,06 times rated voltage, whichever is more unfavourable.	DC 5V USB port	N/A
9.2.3	The temperature rises are determined by means of fine-wire thermocouples positioned so that they have minimum effect on the temperature of the part under test. Where thermocouples cannot successfully measure the maximum temperature during the test, thermal paper or other methods to measure temperature rise may be used.		P
	The tests are continued until steady conditions are established.		P
	When non-self-resetting thermal cut-outs operate during the tests, they are reset a maximum of three times.		N/A
	Electric toys that are used with rechargeable batteries and that can operate during recharging of the battery are also tested in the charging mode.	For battery, also tested in the charging mode.	P
	Only one short-circuit is applied at a time.		P
	For products that have to be kept switched on by hand, foot or physical means to complete the test, the switch is released after 30 s for the tests of 9.4 to 9.8.		N/A
9.3	The temperature rises of the various parts are determined when electric toys are operated under normal operation	(see appended table 9.3)	P
9.4	Normal operation with insulation short-circuited		N/A
9.4.1	The insulation between parts of different polarity which is accessible	Plastic enclosure	P
9.4.2	Steel pin test	No insulation can be short-circuited	P

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Cl.	Requirement – Test	Result - Remark	Verdict
9.4.3	Steel rod test	No insulation can be short-circuited	P
9.5	Repeat clause 9.3, any control which limits the temperature short-circuited.	No such controller.	N/A
9.6	The test of 9.3 is repeated with accessible moving parts locked.	Printer motor locked	P
9.7	The additional power source are connected for transformer toys and toys with battery boxes. Tested as in 9.3 and 9.4		N/A
9.8	Abnormal supply to electric toys via a USB connection		P
	For electric toys supplied with power from a USB connection, the test of 9.3 is repeated with the toy being supplied with a voltage of 42 V.	Test with 42 V at normal operation	P
9.9	Fault condition in electronic circuits		P
	Electric toys are subjected to the fault conditions a) to f) specified below.		P
	If a conductor of a printed-circuit board becomes open-circuited, the open circuit is bridged unless it is an intentionally weak part.		N/A
	The fault conditions a) to f) are not applied to circuits or parts of circuits where both of the following conditions are met:		N/A
	—the electronic circuit is a low-power circuit as described below;	Battery output power more than 15W	N/A
	—the protection against fire hazard or dangerous malfunction in other parts of the electric toy does not rely on the correct functioning of the electronic circuit.		N/A
	The following fault conditions are considered and, if necessary, applied one at a time	a)-f) Fault condition considered	P
	a) short-circuit of clearances and creepage distances between parts of different polarity, if these distances are less than the values specified in Clause 17, unless the relevant part is adequately encapsulated;		P
	b) open circuit at the terminals of any component;		P
	c) short-circuit of capacitor, unless they comply with IEC 60384-14;		N/A
	or they are ceramic capacitors used within the manufacturer's specification;		P
	d) short-circuit of any two terminals of an electronic component, other than integrated circuits		P
	e) failure of triacs in the diode mode		P
	f) failure of an integrated circuit		P

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Cl.	Requirement – Test	Result - Remark	Verdict
	For simulation of the fault conditions, the electric toy is operated under the conditions specified in 9.2 but supplied at rated voltage. For products that have to be kept switched on by hand, foot or physical means, if the applied fault-condition results in the product not functioning, the switch is released after 30 s.	No such keep on switch	N/A
	If the electric toy incorporates an electronic circuit that operates to ensure compliance with 9.5 to 9.7, the relevant test is repeated with a single fault simulated, as indicated in a) to f) above.	No such protective electronic circuit	N/A
	Fault condition f) is applied to encapsulated and similar components if the circuit cannot be assessed by other methods.		N/A
	PTC resistors are not short-circuited if they are used within the manufacturer's specification. However, PTC-S thermistors are short-circuited unless they comply with IEC 60738-1.	No PTC	N/A
9.10	Compliance criteria		P
	The temperature rise of accessible parts of the electric toy including handles and knobs shall not exceed the values specified in Table 1. However, during the test of 9.8, the temperature rise of accessible parts of the electric toy shall not exceed 1,5 times the values specified in Table 1.	Limit Refer table 1	P
	The temperature rise of parts behind detachable parts that require a tool for removal is not measured.	Inside components need tool to open, no measured	P
	The temperature rise of battery surfaces and other parts inside the battery compartment, where batteries are inside a battery compartment with a cover, which can only be opened by the use of a tool or by at least two independent movements applied simultaneously, shall not exceed 45 K.	Battery in the enclosure, need to access by tool	N/A
	During the tests: <ul style="list-style-type: none"> - sealing compound shall not flow out; - vapour shall not accumulate in the electric toy; - dangerous substances shall not be produced, such as poisonous or ignitable gas, in hazardous amounts; - enclosures shall not deform to such an extent that compliance with this International Standard is impaired; - batteries shall not leak fluids or erupt; - materials, including the cotton gauze, shall not char; - the electric toy shall not emit flames or molten metal. 		P
	After the tests, the electric toy shall not be damaged to such an extent that compliance with the standard is impaired.		P

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Cl.	Requirement – Test	Result - Remark	Verdict
	Electric toys having accessible parts with temperature rises exceeding the values in Table 1 for children less than 3 years or for children between 3 years and 8 years shall have a warning together with the appropriate age indication, 3 years or 8 years (see 7.6) .	No high temperature rise	N/A
10	Electric strength		N/A
10.1	Electric strength at operating temperature	Reduced testing of 6.2	N/A
10.2	Electric strength under humid conditions		N/A
11	. Electric toys used in water, electric toys used with liquid and electric toys cleaned with liquid		N/A
	Battery toys intended to be used in water and toys likely to be cleaned with liquid shall have and enclosure providing the appropriate protection	No liquid	N/A
	electric toys intended to be used with liquid and electric toys intended to filled from a tap		N/A
	electric toys intended to be cleaned with liquid		N/A
	electric toys intended to be used in water		N/A
	withstand the electric strength test of 10.1 after treatment		N/A
12	Mechanical strength		P
12.1	Enclosure shall have adequate mechanical strength		P
	The electric toy is rigidly supported and three blows, having an impact energy of 0,5 J, are applied to every point of the enclosure that is likely to be weak.	Spring hammer 0.5J 3 times	P
	After the test, the electric toy shall show no damage that could impair compliance with 9.3, 9.5, 9.7, 9.8, 13.4.1, 13.4.2, 13.4.3 and 13.6 and Clauses 10, 11, 14 and 17 shall not be impaired.	No damage	P
	After testing, cracks not visible to the naked eye and surface cracks in fibre-reinforced mouldings and similar materials are ignored.		N/A
12.2	Attachment strength		N/A
	Non-detachable parts that prevent contact with moving parts or hot surfaces, or access to locations where explosion or fire could be initiated, shall be fixed in a reliable manner and shall withstand the mechanical stress occurring during normal use.	Motor enclosure inspected	P

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Cl.	Requirement – Test	Result - Remark	Verdict
	Compliance is checked by applying the following pull force:		N/A
	- 50 N, if the longest accessible dimension of the part does not exceed 6 mm;		N/A
	- 90 N, for other parts.	90N	P
	The force is gradually applied during a period of 5 s and maintained for a further 10 s.		P
	The part shall not become detached.	Enclosure fixed by screw, not become detached	P
13	Construction		P
13.1	The nominal supply voltage of electric toys shall not exceed 24 V.	Less than 24V	P
	The working voltage between any two accessible parts of the electric toy shall not exceed 24 V when the electric toy is supplied at rated voltage.	working voltage 11.1V	P
13.2.1	Battery chargers, transformers, power supplies and other parts connected to mains voltage supply shall not be an integral part of the electric toy.	No transformer or power supply provided	N/A
	Controls for the electric toy shall not be incorporated in the transformer or power supply.		N/A
13.2.2	Electric toys for use in water and electric toys for use with liquid shall not require a connection to a transformer, power supply or battery charger in order to work in the water or with the liquid.		N/A
13.2.3	Electric toys using transformers and power supplies shall not be intended for use by children under 3 years.		N/A
13.3	Non-self-resetting thermal cut-outs, necessary for compliance with this standard, shall only be resettable with the aid of a tool .	No such part	N/A
13.4	Small battery		
13.4.1	Batteries that fit wholly within the small parts cylinder as specified in 5.2 of ISO 8124-1: 2014 shall not be removable without the aid of a tool.	no small battery	N/A
	For parts of electric toys that contain batteries if the part fits wholly within the small parts cylinder as specified in 5.2 of ISO 8124-1: 2014, the part shall not be removable without the aid of a tool .	No such small parts	N/A
	A force is applied to the part under consideration without jerks for 10 s in the most unfavourable direction. The force is as follows:		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	- push force, 50 N;		N/A
	- pull force:		N/A
	• if the shape of the part is such that the fingertips cannot easily slip off, 50 N;		N/A
	• if the projection of the part that is gripped is less than 10 mm in the direction of removal, 30 N.		N/A
	If the part is likely to be twisted, the following torque is applied at the same time as the pull or push force:		N/A
	- 2 Nm, for major dimensions up to 50 mm;		N/A
	- 4 Nm, for major dimensions over 50 mm.		N/A
13.4.2	Other batteries		P
	Batteries shall not be removable without the aid of a tool unless the security of the battery compartment cover is adequate.		P
	The electric toy is placed on a horizontal steel surface. A cylindrical metallic mass of 1 kg, having a diameter of 80 mm, is dropped from a height of 100 mm so that its flat face falls onto the electric toy. The test is carried out once with the cylindrical metallic mass striking the electric toy in the most unfavourable place.	Battery compartment didn't become open after impact test	P
13.4.3	Rechargeable batteries with liquid electrolyte shall not leak when the electric toy is placed in any position. The electrolyte shall not become accessible even if a tool has to be used to remove covers or similar parts.	li-ion battery, Not leak and not accessible	P
13.4.4	Electric toys placed above a child	playing on the ground	N/A
	Electric toys that are used with batteries where the intended fixed position of the battery compartment can be above a child shall have a battery compartment that prevents battery electrolyte leakage from the electric toy. The requirement does not apply to electric toys using batteries where the total volume of all batteries is less than 100 mm ³ .		N/A
13.4.5	Batteries shall not be connected in parallel unless	3.7V*3=11.1V, cells connected in series in the battery pack	P
	- the reverse insertion of batteries,		N/A
	- unbalanced discharging, or		N/A
	- unbalanced charging		N/A
	does not impair compliance with this standard		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
13.4.6	Battery compartment fasteners		P
	If screws or similar fasteners are used to secure a door or cover providing access to the battery compartment, the screw or similar fastener shall be captive to ensure that they remain with the door, cover or equipment.		P
13.5	Plugs and socket-outlets of electric toys shall not be interchangeable with plugs and socket outlets listed in IEC TR 60083. This requirement is not applicable to plugs which are too large to be introduced into the mains socket outlets or that are too small so they can only be loosely inserted and do not stay firmly in place in the socket outlet aperture while in contact with the supply mains.	No mains plug or socket-outlet	N/A
	Connectors such as jack types, USB types, RCA phono types with a diameter or diagonal measurement between 3,75 mm and 5,25 mm and length greater than 7 mm are considered to fail this requirement.	Type-C	P
	Electric toys shall not use wires without connectors.		P
13.6	Charging batteries		P
	It shall be possible to charge secondary batteries inside the electric toy only if the following conditions are met		P
	- connection to, or replacement with primary batteries shall not be possible;		P
	- charging of other batteries or electric toys from the electric toy shall not be possible;		P
	- connection of an incorrect polarity shall not be possible by constructions;		P
	- the battery charger shall comply with 15.4;	USB wire only	N/A
	- operation of the electric toy while charging shall not be possible unless the electric toy meets the requirements for electric toys using a transformer or a power supply and the transformer or power supply complies with 15.3;		P
	- electric toys for children under 3 years cannot operate while being charged.		N/A
	Mobile electric toys shall not move during charging.		N/A
13.7	Series motors		N/A
	Electric toys shall not incorporate series motors having a power input exceeding 20 W.	No series motor	N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	Compliance is checked by measurement, the electric toy being supplied at rated voltage and operated under normal operation.		N/A
13.8	Working voltage		N/A
	Internal parts of an electric toy having a working voltage exceeding 24 V shall not lead to any risk of harmful electric shock.	12.6Vmax	N/A
13.9	Electric toys connecting to other equipment		N/A
	Electric toys that can connect to class I equipment shall be safe when connected to that equipment in case of a fault in the equipment that the electric toy is connected to.		N/A
13.10	Speed limitation of ride-on electric toys		N/A
	The maximum speed of ride-on electric toys shall not exceed the limit specified in 4. 23 of ISO 8124-1: 2014.		N/A
14 Protection of cords and wires			
14	Protection of cords and wires		P
14.1	Wireways shall be smooth and free from sharp edges.		P
14.2	Bare wiring and heating elements shall be rigid and fixed so that, during play, creepage distances and clearances cannot be reduced below the values specified in clause 17	No bare wire and heating element	P
15 Components			
15	Components		P
15.1.1	Components shall comply with the safety requirements specified in the relevant harmonized standards as far as they reasonably apply		P
15.1.2	Switches and automatic controls carrying a current exceeding 3 A during the tests of 9.3 and 9.4 shall comply with annex C.	No such switch or control	N/A
	However, if they have been separately tested and found to comply with IEC 61058-1 or IEC 60730-1 respectively under the conditions occurring in the electric toy		N/A
15.1.3	If components are marked with their operating characteristics, the conditions under which they are in the toy shall be in accordance with these marking, unless otherwise specified.	Components are used suit for their ratings	P

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Cl.	Requirement – Test	Result - Remark	Verdict
15.2	Electric toys shall not be fitted with: -thermal cut-outs which can be reset by a soldering operation,	Not such part	N/A
	-mercury switches.	Not such part	N/A
15.3	Transformers and linear power supplies shall comply with IEC 61558-2-7.	No transformer	N/A
	Switch mode power supplies shall comply with IEC 61558-2-7 and IEC 61558-2-16.		N/A
15.4	Battery chargers supplied with an electric toy shall be battery chargers for use by children and shall comply with IEC 60335-2-29: 2016 and Annex AA of that standard.		N/A
15.5	Primary batteries supplied with electric toys shall comply with the relevant parts of the IEC 60086 series.		N/A
	Secondary batteries supplied with electric toys shall comply with IEC 62133.	Li-ion battery comply with IEC62133-2	P
16	Screws and connections		P
16.1	Fixings, the failure of which may impair compliance with this standard and electrical connections shall withstand the mechanical stresses occurring during play.	II, 0.4Nm	P
16.2	Electrical connections carrying a current exceeding 0.5A, shall be constructed so that contact pressure is not transmitted through insulating material which is liable to shrink or to distort unless there is sufficient resiliency in the metallic parts to compensate for any possible shrinkage or distortion of the insulating material	No such electrical connection screw	N/A
17	Clearances and creepage distances	Reduced testing of 6.2	N/A
	Clearances and creepage distances of functional insulation shall not be less than 0.5mm		N/A
	except when the electric toy meets the requirements of Clause 9 with this distance short circuited	short circuited, No hazard	N/A
	for functional insulation on printed circuit boards, except at their edges, this distance may be reduced to 0,2 mm at pollution degree 2		N/A
18	Resistance to heat and fire	Reduced testing of 6.2	N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
18.1	External parts of non-metallic material enclosing electric parts, and parts of insulating material supporting electric parts, shall be sufficiently resistant to heat if the electric toy has a working voltage exceeding 12 V and a current exceeding 3 A.		N/A
18.2.1	Parts of non-metallic material enclosing electric parts, and parts of insulating material supporting electric parts, shall be resistant to ignition and spread of fire		N/A
18.2.2	Non-metallic parts		N/A
	Parts of non-metallic material are subjected to the glow-wire test of IEC 60695-2-11, which is carried out at 550°C		N/A
	The glow-wire test is not carried out on parts of material classified at least HB40 according to IEC 60695-11-10, provided that the test sample was no thicker than the relevant parts	PCB rated V-0	N/A
	Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO9772 for category HBF material, the test sample being no thicker than the relevant parts		N/A
18.2.3	Insulating material		N/A
	Parts of insulation material supporting connections carrying a current exceeding 3A and a working voltage exceeding 12V, and parts of insulating material with a distance of 3mm of such connection, are subjected to the glow-wire test of IEC60695-2-11 at a temperature of 650°C	<12V, <3A	N/A
	However, the glow-wire test is not carried out on parts of material classified as have a glow-wire ignition temperature according to IEC 60695-2-13 of at least 675°C, provided that the test sample was no thicker than the relevant part.		N/A
	Parts that withstand the glow-wire test of IEC60695-2-11, but which, during the test, produce a flame that persists for longer than 2s, are further tested as follows.		N/A
	Part above the connection within the envelope of a vertical cylinder having a diameter of 20mm and a height of 50mm are subjected to the needle-flame tests of Annex B.	No such connection	N/A
	However, parts shielded by a barrier that meets the needle-flame test of Annex B are not tested		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	The needle-flame test is not carried out on parts of material classified as V-0 or V-1 according to IEC60695-11-10, provided that the test sample was no thicker than relevant part	PCB rated V-0	N/A
19	Toxicity and similar hazards		P
19.1	Electric toys shall not emit harmful optical radiation or harmful electromagnetic radiation due to their operation in normal use.		N/A
19.2	Electric toys incorporating lasers and or light emitting diodes (LED) or UV emitting lamps shall comply with Annex E.	LED is exempt group of IEC62471	P
19.3	Measurements methods for electric toys with an integrated field source that may produce harmful electromagnetic radiation are given in Annex I.		N/A
A	Annex A (normative) Experimental sets		—
	applicable to all components of experimental sets supplied together or separately	Not experimental sets, not applicable	N/A
5	General conditions for the tests		N/A
5.2	Not applicable		N/A
5.3	Addition: The tests are carried out with the experiments described in the instructions that result in the most unfavourable condition.		N/A
7	Marking and instructions		N/A
7.3.4	Addition: The following warning shall be indicated on the packaging: WARNING: This toy is only intended for use by children over the age of X years (where X must be a minimum of 8)		N/A
	The substance of the following shall be indicated on the packaging:		N/A
	- an indication of the reasons for the age restriction;		N/A
	- that instructions for parents or care givers are included and shall be followed.		N/A
	The instructions for parents or care givers shall state the minimum age of the child for whom the set is intended.		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	Detailed information shall be given in the instructions on how to set up and perform each experiment. The instructions shall point out possible hazards and give technical information concerning the electrical parts, their behaviour and how to handle them properly. All hazards that can be expected during an experiment, such as those resulting from the short-circuiting of batteries or the wrong connection of capacitors, shall be described in detail.		N/A
	Instructions for children and for parents may be given separately. If the instructions are given in one leaflet, the section addressed to parents shall be given first.		N/A
	The instructions shall include a warning against manipulation of protective devices such as current-limiting devices. They shall describe the consequential dangers, such as overheating of cords, eruption of batteries and excessive heating		N/A
8	Power input		N/A
	Not applicable		N/A
9	Heating and abnormal operation		N/A
9.4	Not applicable		N/A
9.6	Not applicable		N/A
9.10	Addition: The temperature rise of surfaces, other than those of handles, knobs, buttons and similar parts, can exceed the limits if an appropriate warning is given in the instructions.		N/A
10	Electric strength		N/A
10.1	Not applicable		N/A
11	Electric toys used in water, electric toys used with liquid and electric toys cleaned with liquid		N/A
	Not applicable		N/A
12	Mechanical strength		N/A
	Not applicable		N/A
13	Construction		N/A
13.1	Addition: The current shall not exceed 5 A and the power input shall not exceed 50 VA. However these values may be exceeded during a period not exceeding 10 s.		N/A
14	Protection of cords and wires		N/A
	Not applicable		N/A
B	Annex B(normative) Needle-flame test		—

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Cl.	Requirement – Test	Result - Remark	Verdict
	The needle-flame test is carried out in accordance with IEC 60695-11 -5 with the following modifications.		N/A
7	Severities		N/A
	The duration of application of the test flame is 30 s ± 1 s.		N/A
9	Test procedure		N/A
9.1	The specimen is arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of Figure 1.		N/A
9.2	Modification: The first paragraph does not apply.		N/A
	Addition: If possible, the flame is applied at least 10 mm from a corner.		N/A
9.3	The test is carried out on one specimen. If the specimen does not withstand the test, the test may be repeated on two additional specimens, both of which shall then withstand the test.		N/A
11	Evaluation of test results The duration of burning (tb) shall not exceed 30 s. However, for printed-circuit boards, it shall not exceed 15 s.		N/A
C	Annex C(normative) Automatic controls and switches		—
C.1	Automatic controls that are tested with the electric toy shall comply with this standard and with 11.3.5 to 11.3.8 and Clause 17 of IEC 60730-1:2013 as type 1 controls.		N/A
	The tests according to IEC 60730-1 are carried out under the conditions occurring in the electric toy.		N/A
	For the tests of Clause 17 of IEC 60730-1:2013, the number of cycles of operation are		N/A
	thermostats	3000	N/A
	Self-resetting thermal cut-outs	300	N/A
	Non-self-resetting thermal cut-outs	10	N/A
C.2	Mechanical switches that are tested with the electric toy shall comply with this standard and with the following clauses of IEC 61058-1-1, as modified below.		N/A
	Electronic switches that are tested with the electric toy shall comply with this standard and with the following clauses of IEC 61058-1-2, as modified below		N/A
	The tests of IEC 61058-1-1 and IEC 61058-1-2 are carried out under the conditions occurring in the electric toy.		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict
	Before being tested, switches are operated 20 times without load		N/A
12	Switches are not required to be marked. However, a switch that can be tested separately from the appliance shall be marked with the manufacturers name or trade mark and the type reference.		N/A
13	Mechanism		N/A
	The tests may be carried out on a separate sample.		N/A
15	Insulation resistance and dielectric strength		N/A
	Subclause 15.1 is not applicable		N/A
	Subclause 15.2 is not applicable		N/A
	Subclause 15.3 is applicable for full disconnection and micro-disconnection.		N/A
17	Endurance		N/A
	Compliance is checked on three separate appliances or switches.		N/A
	For 17.5.4, the number of cycles of actuation declared according to 7.1.4 is 3 000.		N/A
	Subclause 17.2.5.2 is not applicable.		N/A
	At the end of the tests, the temperature rise of the terminals shall not have increased by more than 30 K above the temperature rise measured in Clause 9 of this standard.		N/A
20	Clearances, creepage distances, solid insulation and coatings of rigid printed board assemblies		N/A
	This clause is applicable to clearances and creepage distances for functional insulation, across full disconnection and micro-disconnection, as stated in Table 14.		N/A
D	Annex D (informative) Electric toys with protective electronic circuits		N/A
E	Annex E (normative) Safety of electric toys incorporating optical radiation sources		P
	The following modifications to this standard are applicable for electric toys incorporating optical radiation sources, emitting in the wavelength range 200 nm to 3 000 nm.		P
F	Annex F (informative) Flowcharts showing the assessment of optical radiation safety of LEDs in electric toys		P
	Figures F.1 to F.5 present a series of flowcharts to assist in the assessment of optical radiation safety of LEDs in electric toys.		P

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Cl.	Requirement – Test	Result - Remark	Verdict
G	Annex G (informative) Examples of calculations on LEDs		P
H	Annex H (informative) Explanation of the principles used for the requirements of Annex E		N/A
I	Annex I (informative) Electric toys generating electromagnetic fields (EMF)		N/A
	Measurements are not necessary for electric toys - without a motor or inductor - which only include passive electronic components; or; - having an input current not exceeding 3 A	DC motor but <3A	N/A
J	Annex J (normative) Safety of remote-controls for electric ride-on toys		N/A
	The following modifications to this standard are applicable for remote-control functions integrated in or provided via a separate add-on product for the electric ride-on toy.		N/A
K	Annex K (informative) Flow charts showing the application of Clause 9		P
Annex ZB	Toys with protective electronic circuit		--
9.ZB	The toy shall not malfunction in such a way as to cause an unintended operation that may impair safety or present a dangerous malfunction due to influence from electromagnetic phenomena (EMP).	No protective electronic circuit	N/A
9.ZB.1	The toy is subjected to electrostatic discharges in accordance with EN 61000-4-2, test level 4 being applicable. Ten discharges having a positive polarity and ten discharges having a negative polarity are applied at each preselected point.		N/A
9.ZB.2	The toy is subjected to radiated fields in accordance with EN 61000-4-3, test level 3 being applicable.		N/A
9.ZB.3	The toy is subjected to fast transient bursts in accordance with EN 61000-4-4. Test level 3 is applicable for signal and control lines. Test level 4 is applicable for the power supply lines. The bursts are applied for 2 min with a positive polarity and for 2 min with a negative polarity.		N/A

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Cl.	Requirement – Test	Result - Remark	Verdict															
9.ZB.4	The power supply terminals of the toy are subjected to voltage surges in accordance with EN 61000-4-5, five positive impulses and five negative impulses being applied at the selected points. Test level 3 is applicable for the line-to-line coupling mode, a generator having a source impedance of 2 Ω being used. Test level 4 is applicable for the line-to-earth coupling mode, a generator having a source impedance of 12 Ω being used.		N/A															
9.ZB.5	The toy is subjected to injected currents in accordance with EN 61000-4-6, test level 3 being applicable. During the test, all frequencies between 0,15 MHz to 80 MHz are covered.		N/A															
9.ZB.6	The toy is subjected to voltage dips and interruptions in accordance with EN 61000-4-11. The durations specified in EN 61000-4-11:2004, Table 1, are applied to each test level, the dips and interruptions being applied at zero crossing of the supply voltage.		N/A															
9.ZB.7	The toy is subjected to mains signals in accordance with EN 61000-4-13, test level class 2 being applicable.		N/A															
Annex ZC	Toys generating Electromagnetic Fields (EMF)		--															
	In EN 62233:2008, A.2.3 "Measuring distances and sensor location", add the following to Table A.1, before the row for "Tumble dryers": <table border="1" data-bbox="335 1344 933 1467"> <tbody> <tr> <td>Toys or parts of toys, intended to be used close to the body</td> <td>0</td> <td>All surfaces</td> <td>Continuously</td> <td>0,18</td> </tr> <tr> <td>Toys or parts of toys, hand-held</td> <td>15</td> <td>All surfaces</td> <td>Continuously</td> <td>0,18</td> </tr> <tr> <td>Toys or parts of toys, other</td> <td>30</td> <td>All surfaces</td> <td>Continuously</td> <td>0,18</td> </tr> </tbody> </table>	Toys or parts of toys, intended to be used close to the body	0	All surfaces	Continuously	0,18	Toys or parts of toys, hand-held	15	All surfaces	Continuously	0,18	Toys or parts of toys, other	30	All surfaces	Continuously	0,18		N/A
Toys or parts of toys, intended to be used close to the body	0	All surfaces	Continuously	0,18														
Toys or parts of toys, hand-held	15	All surfaces	Continuously	0,18														
Toys or parts of toys, other	30	All surfaces	Continuously	0,18														
	Measuring distances and sensor location		N/A															
A.1	General		--															
	Toys without a motor, inductor or which only include passive electronic circuits are considered to comply with this requirement without measurement.		N/A															
A.2.3	Measuring distances and sensor location		N/A															
Annex ZD	Sequence of tests for the evaluation of electronic circuits		--															
Annex ZZA	Coverage of Essential Requirements of the EC Directives		N/A															
	This European Standard does not confer any presumption of conformity on those particular requirements not listed in Table ZZA.1.		N/A															

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Cl.	Requirement – Test	Result - Remark	Verdict
Annex ZZB	Background and justification for this European Standard		P
ZZB.4	Criteria for reduced testing (see Clause 6)		P
	A short circuit is considered unlikely to take place behind the cover to the battery compartment if the cover can only be removed with the aid of a tool or by two simultaneous movements applied simultaneously. An example of acceptable independent simultaneously movements is a push and a twist movement.		P
ZZB.16	Moisture resistance – Toys intended to be used in water or cleaned with liquid (see 11.1)		N/A
	Text deleted: The second part of this subclause deals with toys intended to be used in water, such as a motorized bath toy.		N/A
ZZB.47	Toys generating electromagnetic fields (see Annex ZC)		N/A
	Annex ZC addresses hazards posed by toys emitting electromagnetic fields.		N/A
	Toys should not emit EMF that pose a hazard to the user or that unduly affect other products. The risk is reduced by compliance with the limit values.		N/A
	Toys that are electromagnetically benign such as those without motors, inductors or which only comprise passive electronic components are considered to comply with the requirement without testing. Furthermore, toys that operate at low currents (less than 3 A) are considered incapable of generating EMF at levels that could pose a hazard.		N/A
	The requirements in the addition to Table A.1 (see Annex ZC) were selected from EN 62233:2008, Table A.1, by comparing the values and conditions for similar equipment.		N/A

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Cl.	Requirement – Test			Result - Remark	Verdict
8	Power input				N/A
Power input at:	Prated (W)	P (W)	dP	required dP	Remark
--	--	--	--	+20%	--

Clause 9.3	TABLE: temperature rise measurements (Normal operation)			P
	t ₁ (°C) (Ambient temperature at the beginning of the testing).....:	24.5		—
	t ₂ (°C) (Ambient temperature at the end of the testing).....:	24.6		—
	Test voltage (V)	See below		—
Temperature rise Dt of part/at:		Dt (K)		Required Dt (K)
		5V charge	Full battery discharge	
Enclosure outside near PCB		22.1	13.9	50
Enclosure outside near motor		--	17.2	50
Touch screen		5.3	7.8	50
Type-C jack		15.8	--	50

Clause 9.6	TABLE: temperature rise measurements (locked motor)			P
	t ₁ (°C) (Ambient temperature at the beginning of the testing).....:	24.6		---
	t ₂ (°C) (Ambient temperature at the end of the testing).....:	24.7		---
	Test voltage (V)	Full battery		---
Temperature rise Dt of part/at:		Dt (K)	Required Dt (K)	
Enclosure outside near PCB		16.7	50	
Enclosure outside near motor		22.6	50	
Touch screen		5.5	50	
motor		46.3	--	

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Cl.	Requirement – Test	Result - Remark	Verdict
Clause 9.8	TABLE: temperature rise measurements (USB at 42V)		P
	t ₁ (°C) (Ambient temperature at the beginning of the testing).....:	24.5	—
	t ₂ (°C) (Ambient temperature at the end of the testing).....:	24.8	—
	Test voltage (V)	42V	—
Temperature rise Dt of part/at:		Dt (K)	Required Dt (K)
Enclosure outside near PCB		18.3	50 (x1.5)
Enclosure outside near motor		8.9	50 (x1.5)
Touch screen		6.2	50 (x1.5)
Type-C jack		13.7	50 (x1.5)

Clause 9.9	TABLE: temperature rise measurements (Fault condition)		P
	t ₁ (°C) (Ambient temperature at the beginning of the testing).....:	See below	—
	t ₂ (°C) (Ambient temperature at the end of the testing).....:	See below	—
	Test voltage (V)	Full battery	—
Components	Fault condition	Temperature rise Dt (K)	Result
U1003 pin1-2	s-c	Enclosure: 15.2K, Screen:6.8K Ambient: 24.3°C	Normal working , recoverable
C1004	s-c	/	Unit shut down immediately
C1007	s-c	/	Unit shut down immediately
D1015	s-c	/	Unit shut down immediately
R1023	s-c	Enclosure: 14.5K, Screen:3.6K Ambient: 24.6°C	Normal working , recoverable
C1023	s-c		Unit shut down immediately
C1020	s-c		Unit shut down immediately
U1020 pin1-2	s-c	Enclosure: 13.7K, Screen:5.4K Ambient: 24.2°C	Normal working , recoverable
Comment:			
1) Temperature limit: battery 45K, accessible parts made of plastic 50K, see following table 1.			
2) Internal enclosure temperature limit refer to 18.2.2 ball pressure test.			

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Cl.	Requirement – Test	Result - Remark	Verdict

TABLE 1

Temperature rise of handles, knobs and similar parts which are likely to be touched by hand shall not exceed the following values:			
--	Children < 3 years	Children 3 years to < 8 years	Children 8 years and above
Metal (uncoated) surface	29K	33	36
Metal with coating thickness greater than 50 μm	29K	36	43
Metal with coating thickness greater than 100 μm	29K	39	48
Metal with coating thickness greater than 150 μm	30K	41	53
Ceramics, glass and stone surfaces	39K	46	50
Plastic, wood and other surfaces	44K	50	55

Attachment 1-Critical Component List

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity ¹
Enclosure	SINOPLAST GROUP LTD	FR450	V-0, 85°C, 1.5min thickness	UL 94	UL E335478
PCB	interchangeable	interchangeable	V-0,130°C	UL 796 UL 94	UL
Li-ion Battery	Shenzhen BYD Lithium Battery Company Limited	853242	11.1V 1350mAh 14.99Wh	IEC 62133-2: 2017	NTEK Report no.: P2210180180 1
Speaker	SHENZHEN ZHONGTIANXUN COMMUNICATIO N TECHNOLOGY Co., LTD	MSFD1134A59 6	4ohms±15% 2W	/	Test with appliance
LCD display	Shenzhen JinChaoHui Technology Co., Ltd.	JZH24BS919G1 -24A	2.4" TFT LCD	/	Test with appliance
Motor used for ear	GUANGDONG KINGLY GEAR Co., LTD	JL-10PM20-9.5- 052000	DC 5V, Rated 1817RPM	/	Test with appliance
(Alternative)	SHENZHEN MENG HAO MOTOR CO.,LTD.	MFF-1015PA- 185J-A1	DC 5V, Rated 1900RPM	/	Test with appliance
Motor used for side	SHENZHEN MENG HAO MOTOR CO.,LTD.	MG12F1220I09 1C	DC 12V, Rated 200RPM	/	Test with appliance
Motor used for wheel	Kpower Technology Co.,Ltd.	BL401255PRB	DC 12V, Rated 400RPM	/	Test with appliance
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. 2) Description line content is optional. Main line description needs to clearly detail the component used for testing					

Attachment1 – Photo Documentation

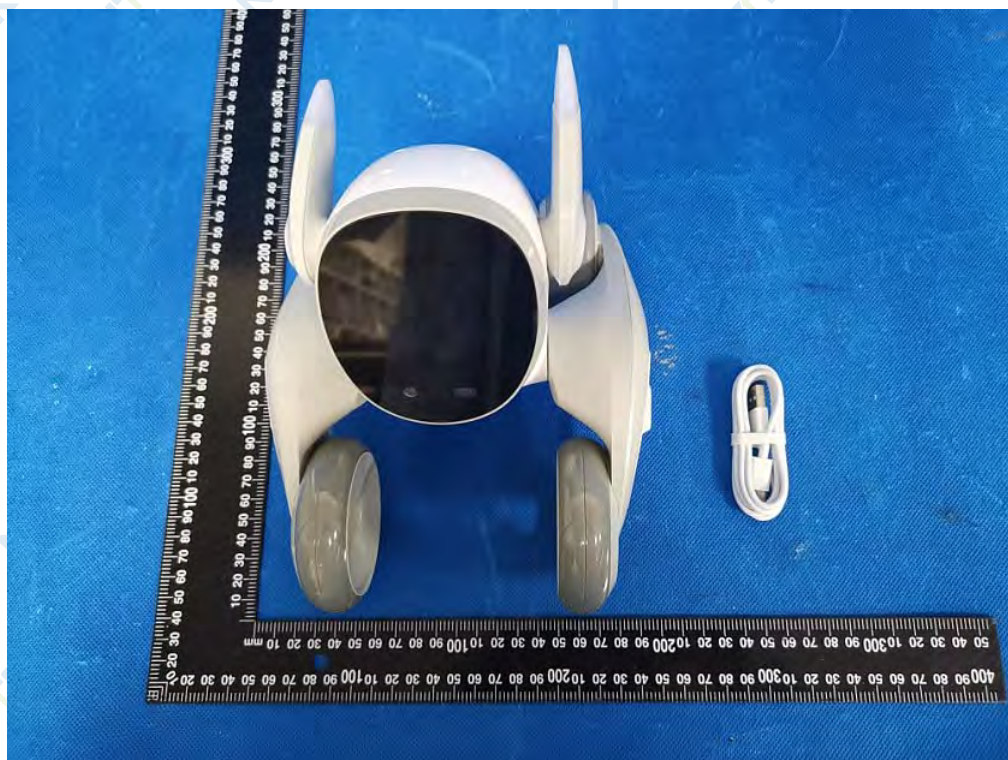


Fig.1



Fig.2

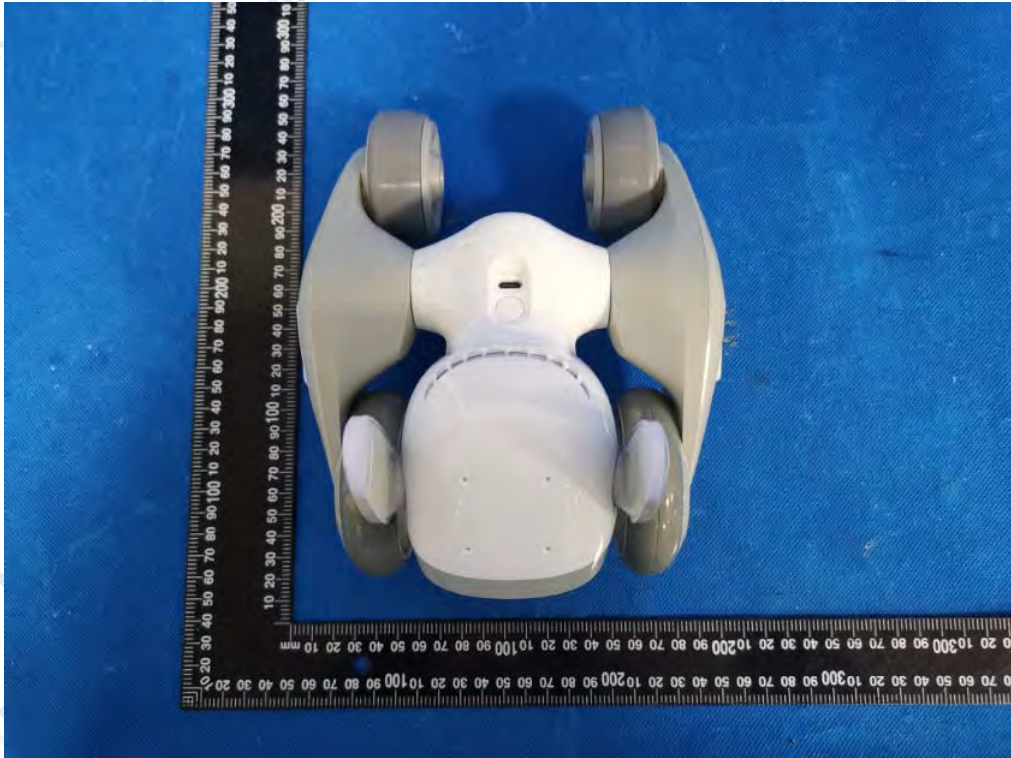


Fig.3

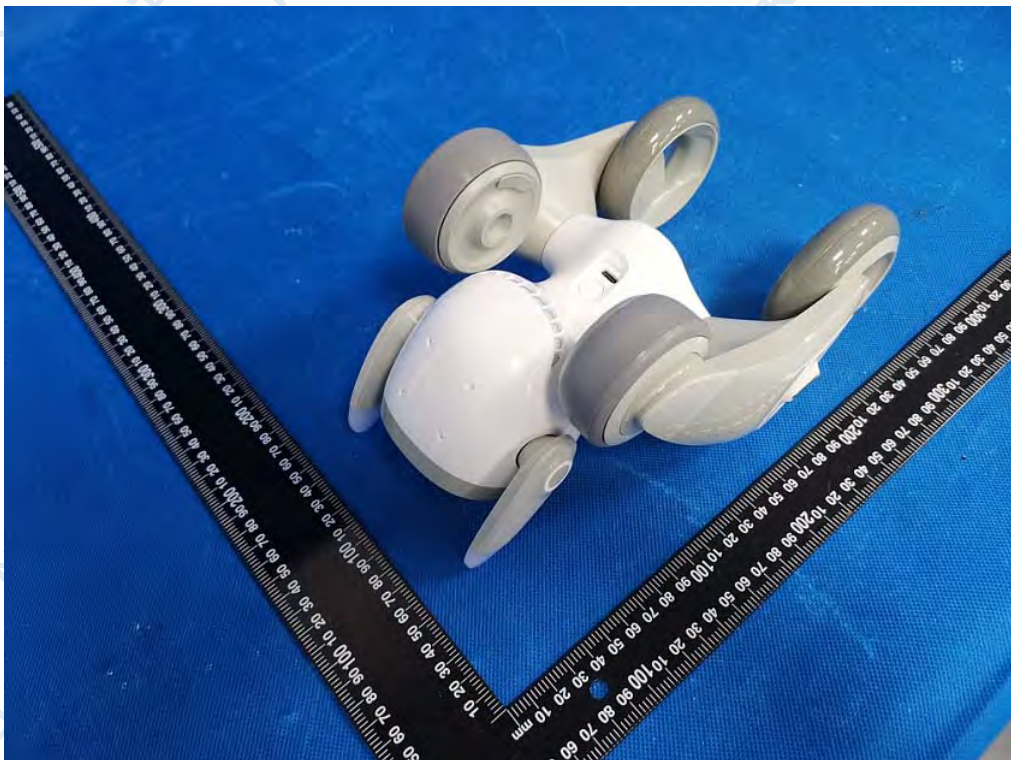


Fig.4

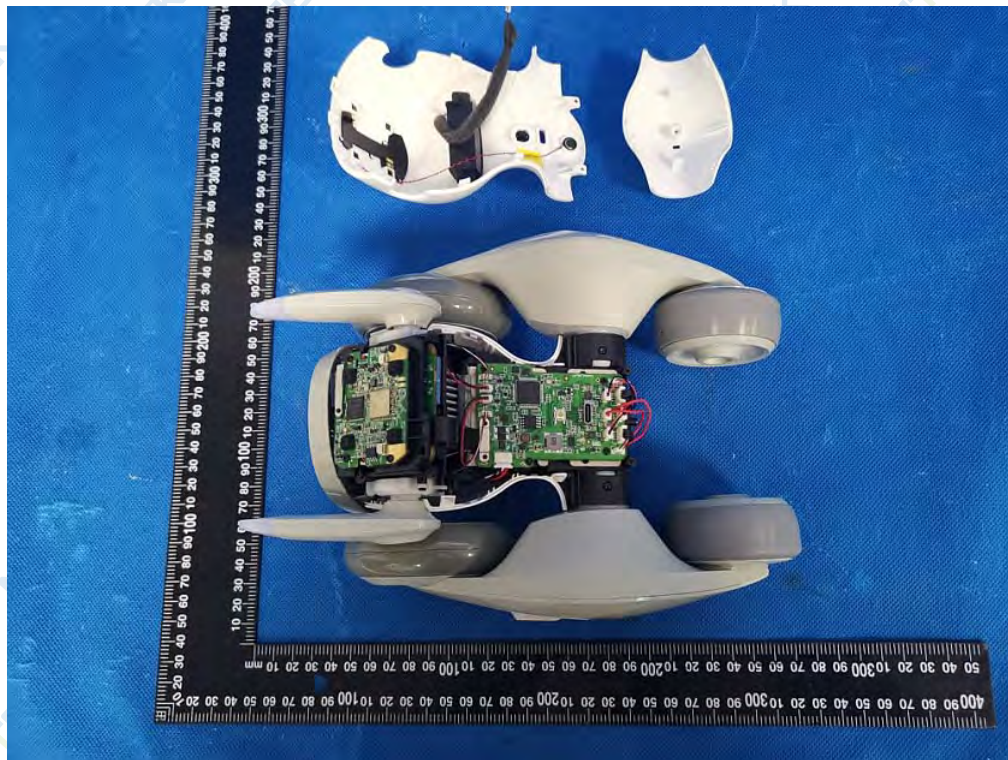


Fig.5

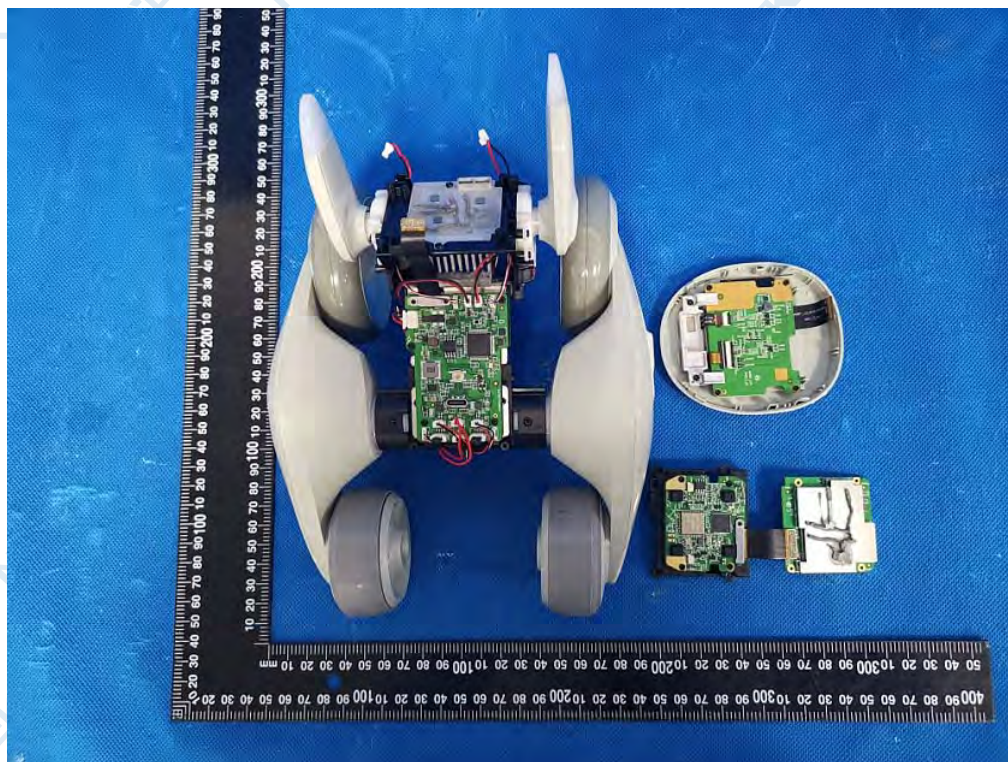


Fig.6

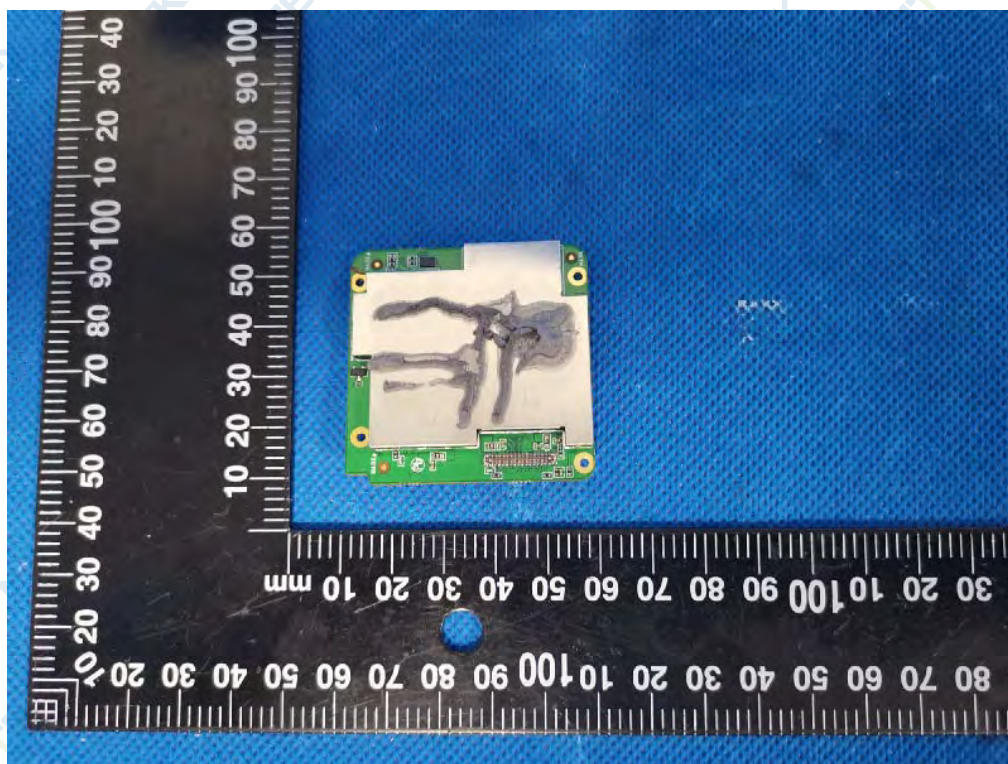


Fig.7 main board

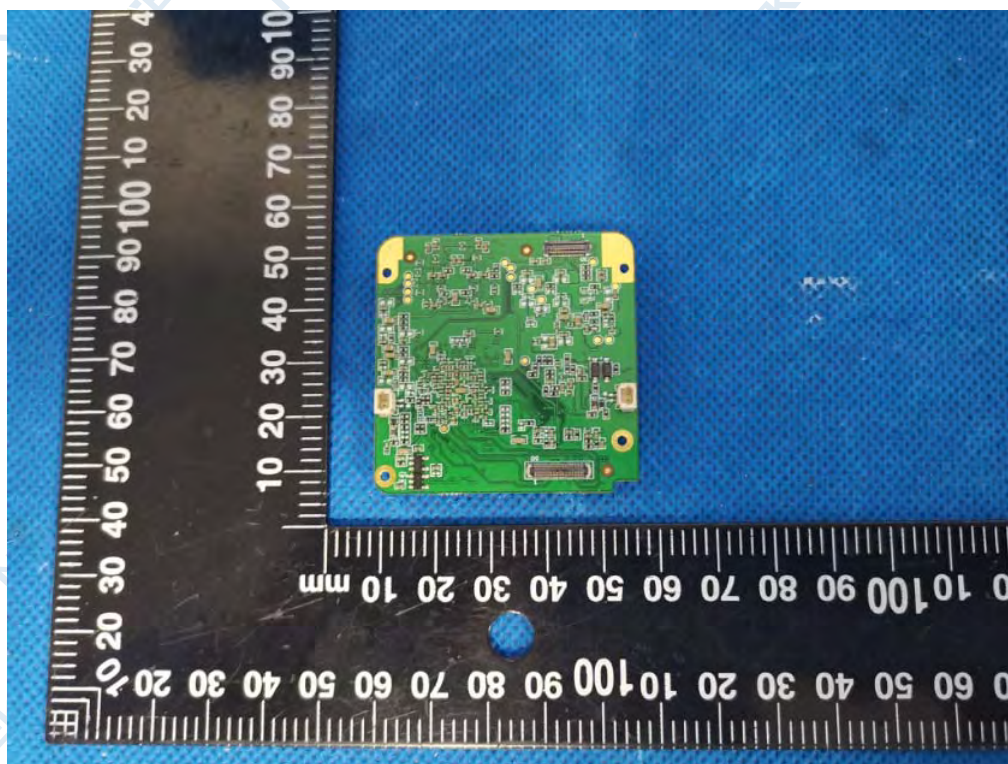


Fig.8 main board

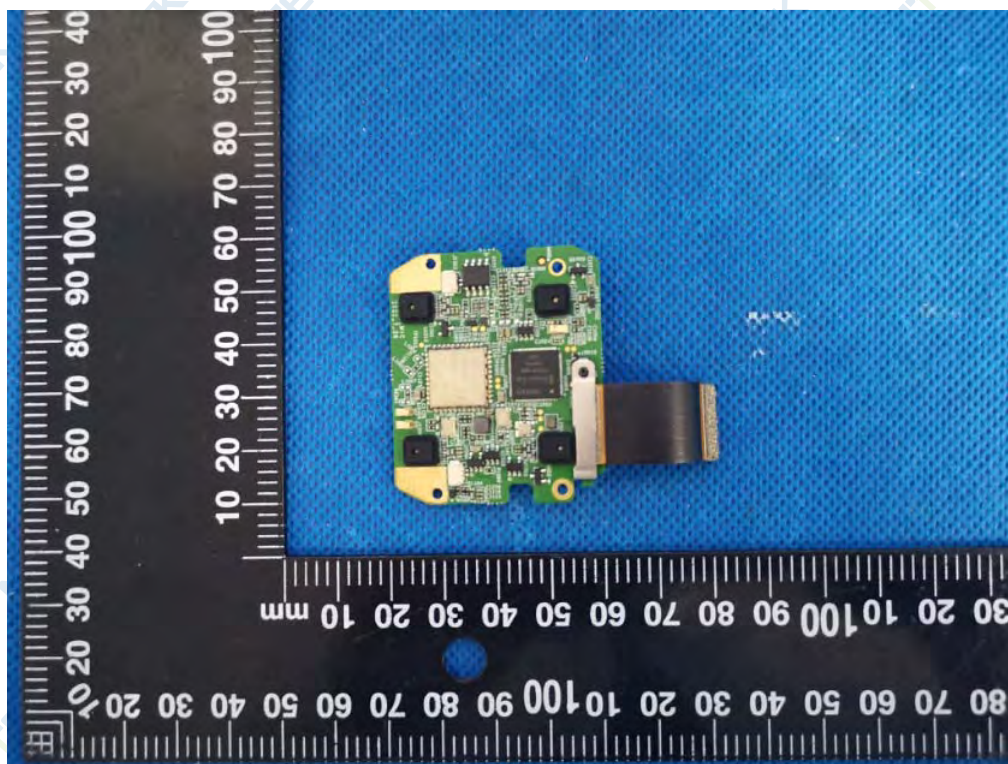


Fig.9 MIC PCBA

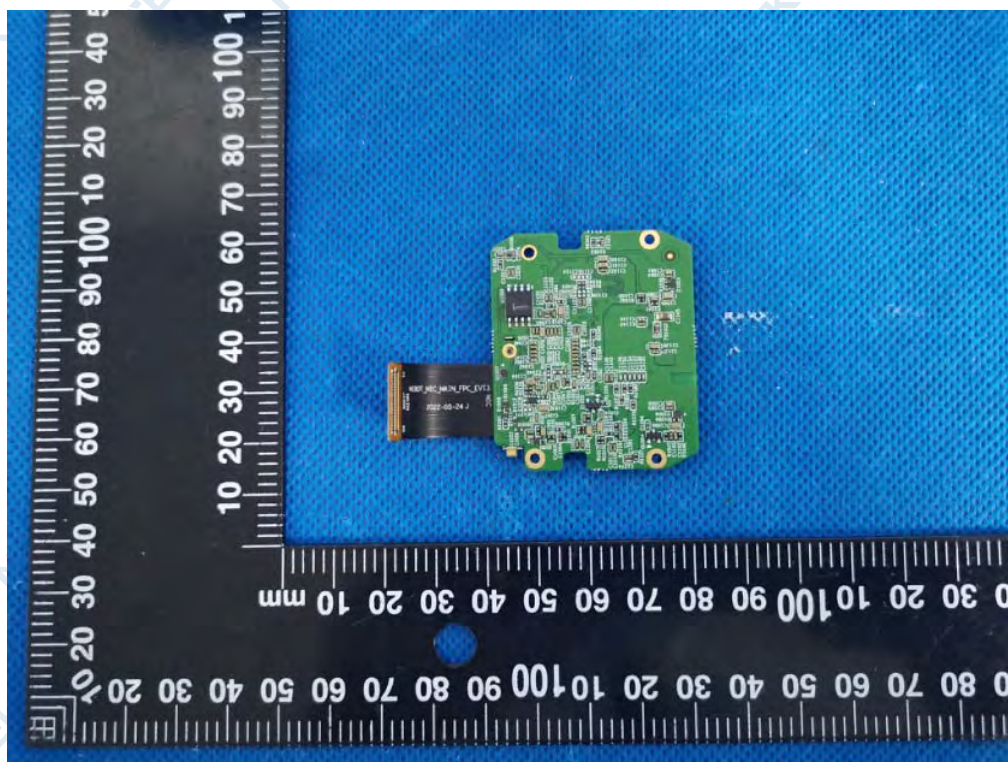


Fig.10 MIC PCBA

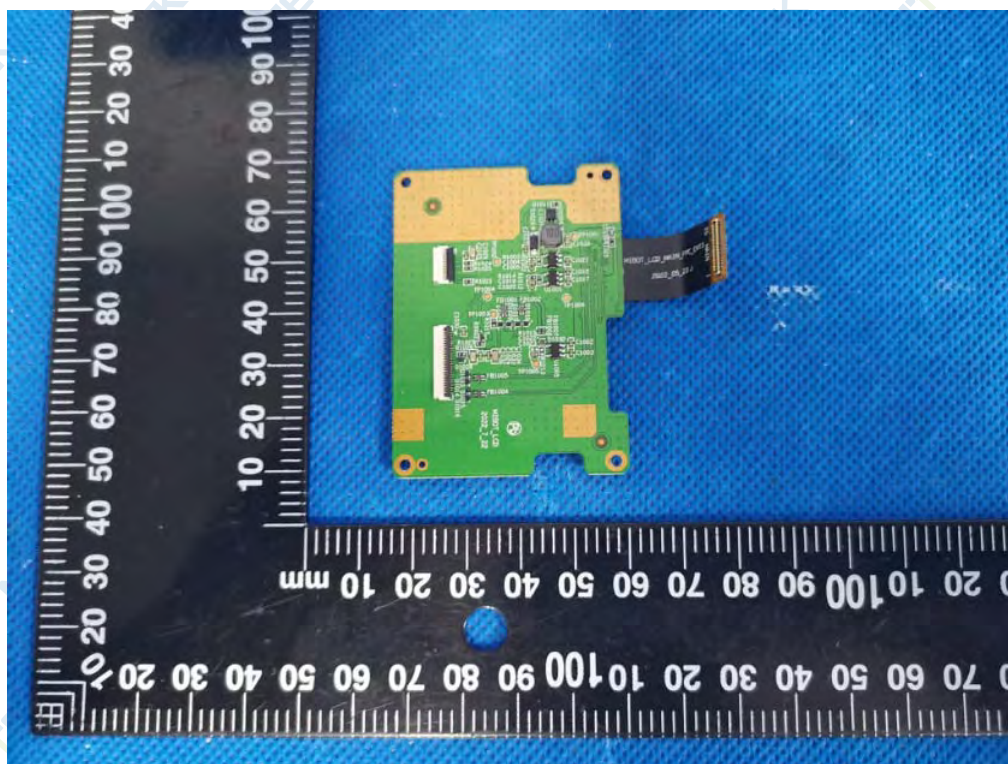


Fig.11 LCD board

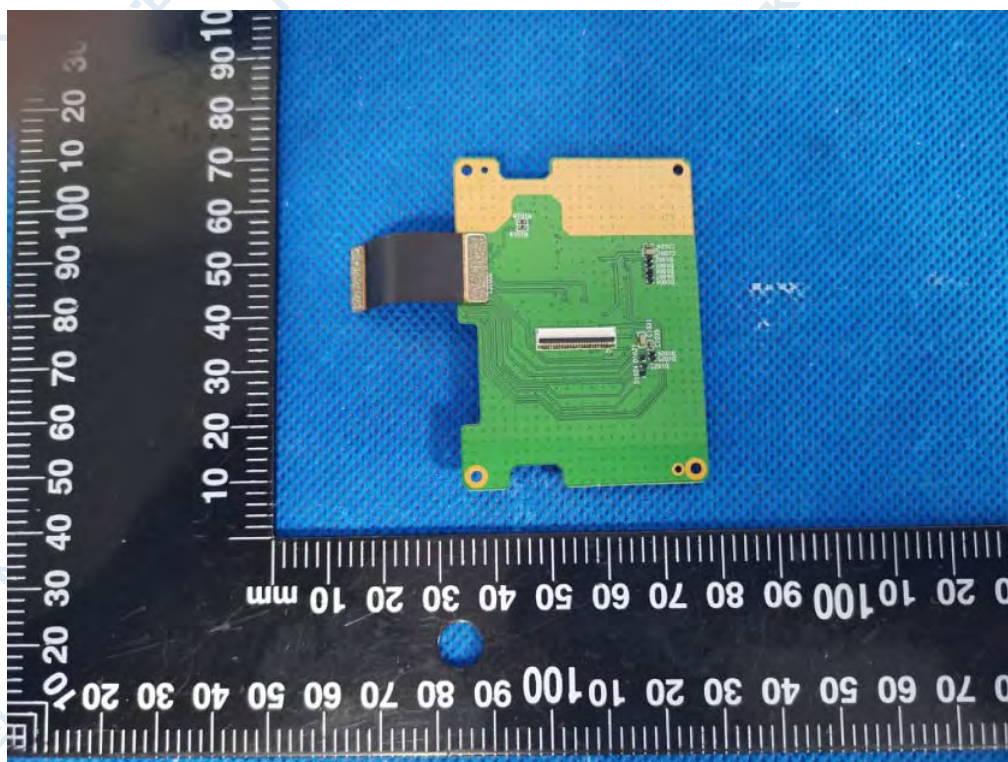


Fig.12 LCD board

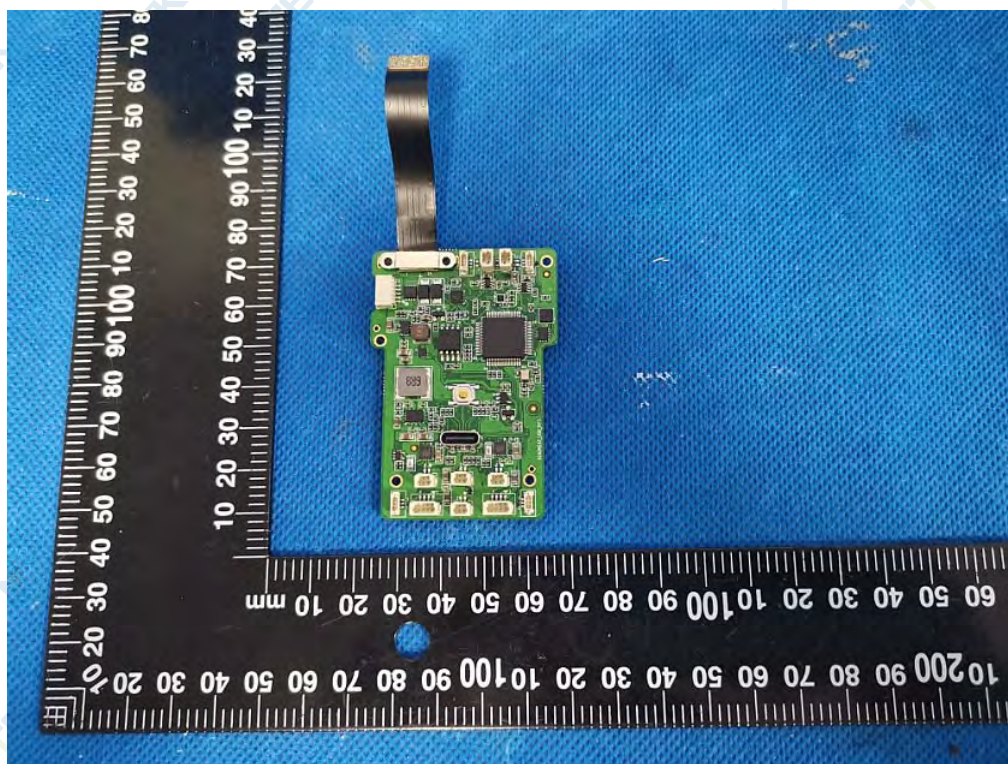


Fig.13 USB board

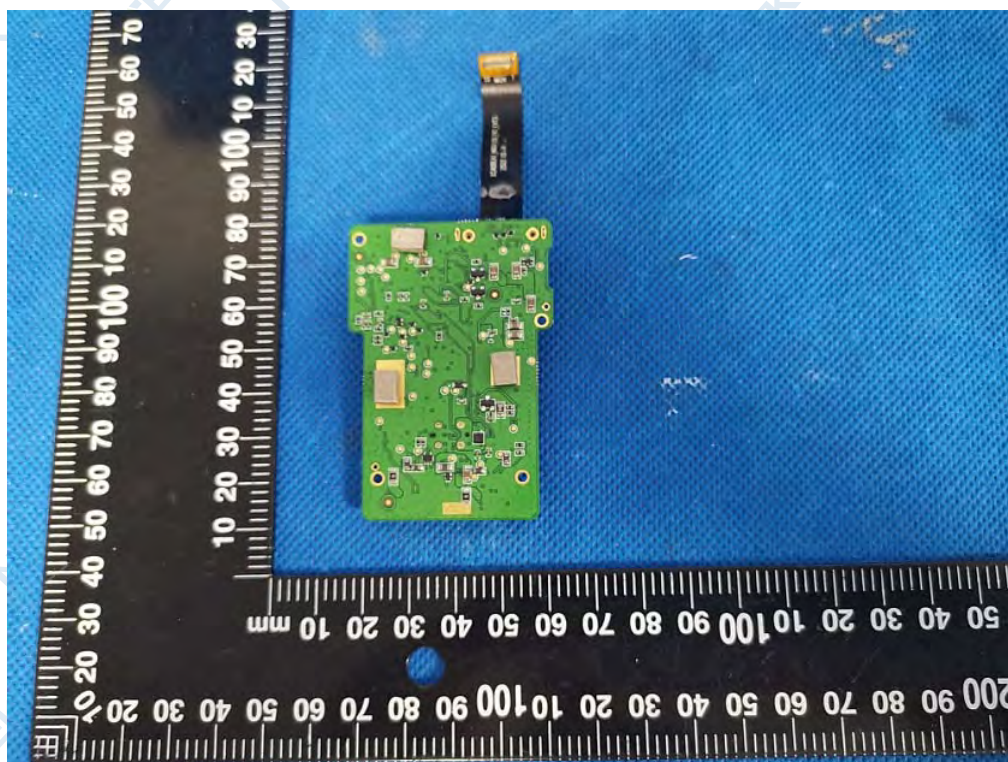


Fig.14 USB board



Fig.15 motor

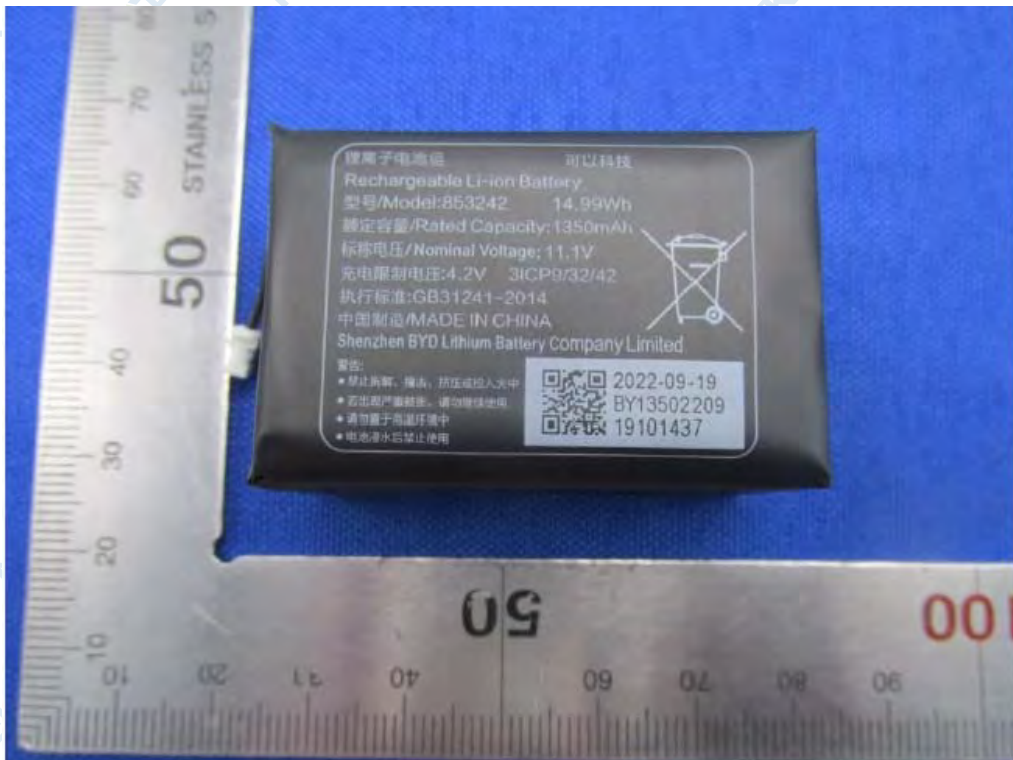


Fig.16

END OF REPORT