APPLICATION FOR LOW VOLTAGE DIRECTIVE

On Behalf of

BLUETOUCH s.r.o.

Electric Scooter

Model: BTX250

Prepared For :	**BLUETOUCH s.r.o.** **street - U hranic 3221/18; city - Praha 10 - Strašnice; ZIP code 10000**
Prepared By :	**Beide (Shenzhen) Product Service Limited** **6F, Bldg E, Hourui 3rd Ind Zone, Xixiang, Bao'an Dist, Shenzhen, China**

Date of Test	**:**	**Sep. 25-Oct. 10, 2019**
Date of Report	**:**	**Oct. 10, 2019**
Report Number	**:**	**B-S191025942**

Beide
Compliance Laboratory

LVD Report EN 60204 Safety of machinery- electrical equipment of machines- Part 1: General requirement	
Testing laboratory .....:	Beide (Shenzhen) Product Service Limited
Address .....:	6F, Bldg E, Hourui 3rd Ind Zone, Xixiang, Bao'an Dist, Shenzhen, China
Report body .....:	Beide (Shenzhen) Product Service Limited
Address.....:	6F, Bldg E, Hourui 3rd Ind Zone, Xixiang, Bao'an Dist, Shenzhen, China
Applicant .....:	BLUETOUCH s.r.o.
Address .....:	street - U hranic 3221/18; city - Praha 10 - Strašnice; ZIP code 10000
Client No.....:	00429328
Standard .....:	EN 60204-1: 2018
Result .....:	Compliance with: EN 60204-1: 2018
Procedure deviation .....:	N.A.
Non-standard .....:	N.A.
Type of verdict object .....:	Electric Scooter
Rating.....:	Adapter: Input: 100-240V~, 50/60Hz, 2.5A Output: DC 42V, 2A, 250W Battery: DC 36V, 7.8Ah
Trademark .....:	N.A.
Model/type reference .....:	BTX250
Manufacturer .....:	BLUETOUCH s.r.o.
Address .....:	street - U hranic 3221/18; city - Praha 10 - Strašnice; ZIP code 10000

Possible case verdicts :	
Case does not apply to the verdict object …….. :	N (.A.)
Verdict object does meet the requirement ……:	P(ass)
Verdict object does not meet the requirement … :	F(ail)

Name and address of the testing laboratory: **Beide (Shenzhen) Product Service Limited**
6F, Bldg E, Hourui 3rd Ind Zone, Xixiang,
Bao'an Dist, Shenzhen, China

Reported by : Anna Deng — Oct. 10, 2019

Signature / Anna Deng / Engineer — Date

Checked by : Austin Zhong — Oct. 10, 2019

Signature / Austin Zhong / Engineer — Date

Approved by : Martin Wang — Oct. 11, 2019

Signature / Martin Wang / Manager — Date

General remarks:	
"(see remark #)" refers to a remark appended to the report. "(see appended 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. This report shall not be reproduced except in full without the written approval of the testing laboratory.	Attached with: One page photos

Artwork of Marking Label

Electric Scooter
Model No: BTX250
Rating: Adapter: Input: 100-240V~, 50/60Hz, 2.5A
Output: DC 42V, 2A, 250W
Battery: DC 36V, 7.8Ah
BLUETOUCH s.r.o.
street - U hranic 3221/18; city - Praha 10 - Strašnice; ZIP code 10000
2019/09

Enclosed on the outside surface of machine

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
4.	General requirements		P
4.1	General considerations		P
4.2	Selection of equipment	Comply with relevant EN 60439 series.	P
4.3	Electrical supply		P
4.3.1	General		P
4.3.2	AC supplies		N
4.3.3	DC supplies		P
4.3.4	On-board power supply		N
4.4	Physical environment and operating conditions		P
4.4.1	General		P
4.4.2	Electromagnetic compatibility (EMC)		P
4.4.3	Ambient air temperature		P
	The minimum requirement for all electrical equipment is correct operation between air temperatures of +5 °C and +40 °C.		P
4.4.4	Humidity		P
	The electrical equipment shall be capable of operating correctly when the relative humidity does not exceed 50 % at a maximum temperature of +40 °C. Higher relative humidities are permitted at lower temperatures (for example 90 % at 20 °C).		P
4.4.5	Altitude		P
	Electrical equipment shall be capable of operating correctly at altitudes up to 1 000 m above mean sea level.		P
4.4.6	Contaminants		P
4.4.7	Ionizing and non-ionizing radiation		N
4.4.8	Vibration, shock, and bump		P
4.5	Transportation and storage	Not exceed 50°C	P
4.6	Provisions for handing		N
4.7	Installation and operation	See supplier's instructions	P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
5.	Incoming supply conductor terminations and devices for disconnecting and switching off		P
5.1	Incoming supply conductor terminations	Such terminations used	P
5.2	Terminal for connection to the external protective earthing system		N
5.3	Supply disconnecting (isolating) device		P
5.3.1	General		-
5.3.2	Type		P
5.3.3	Requirements		P
5.3.4	Operating handle		N
	The operating means (for example, a handle) of the supply disconnecting device shall be easily accessible and located between 0,6 m and 1,9 m above the servicing level. An upper limit of 1,7 m is recommended.		N
5.3.5	Excepted circuits	No such circuits	N
5.4	Devices for switching off for prevention of unexpected start-up		N
5.5	Devices for disconnecting electrical equipment		P
5.6	Protection against unauthorized, inadvertent and/or mistaken connection		P
6.	Protection against electric shock		P
6.1	General	Direct contact and indirect contact	P
6.2	Protection against direct contact		P
6.2.1	General		P
6.2.2	Protection by enclosures		P
	Opening an enclosure shall be possible only under one of the following conditions:		--

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
	a) The use of a key or tool is necessary for access by skilled or instructed persons		P
	b) The disconnection of live parts inside the enclosure before the enclosure may be opened		P
	c) Opening without the use of a key or a tool and without disconnection of live parts shall be possible only when all live parts are protected against direct contact to at least IP2X or IPXXB	No opening	N
6.2.3	Protection by insulation of live parts	Insulation can withstanding the mechanical, chemical, electrical, and thermal stresses.	P
6.2.4	Protection against residual voltages		P
6.2.5	Protection by barriers		N
6.2.6	Protection by placing out of reach or protection by obstacles	Not protected by such devices.	N
6.3	Protection against indirect contact		P
6.3.1	General		-
6.3.2	Measures to prevent the occurrence of a hazardous touch voltage	Electrical separation	N
6.3.2.1	General		-
6.3.2.2	Protection by use of class II equipment or by equivalent insulation		N
6.3.2.3	Protection by electrical separation		P
6.3.3	Protection by automatic disconnection of supply		N
6.4	Protection by the use of PELV		N
6.4.1	General requirement		P
6.4.2	Sources for PELV		N
7.	Protection of equipment		P
7.1	General	See below	P
7.2	Overcurrent protection		N
7.2.1	General		N
7.2.2	Supply conductors		P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
7.2.3	Power circuits		N
7.2.4	Control circuits		P
7.2.5	Socket outlets and their associated conductors		N
7.2.6	Lighting circuits		N
7.2.7	Transformers		N
7.2.8	Location of overcurrent protective devices		N
7.2.9	Overcurrent protective devices		N
7.2.10	Rating and setting of overcurrent protective devices		N
7.3	Overload protection of motors		N
7.4	Abnormal temperature protection	Temperature rise is within range of limited value	P
7.5	Protection against supply interruption or voltage reduction and subsequent restoration		N
7.6	Motor overspeed protection		N
7.7	Earth fault/residual current protection		N
7.8	Phase sequence protection		N
7.9	Protection against overvoltages due to lightning and to switching surges		P
8.	Equipotential bonding		N
8.1	General	See below	-
8.2	Protective bonding circuit		N
8.2.1	General		-
8.2.2	Protective conductors		N
8.2.3	Continuity of the protective bonding circuit		N
8.2.4	Exclusion of switching devices from the protective bonding circuit		N
8.2.5	Parts that need not be connected to the protective bonding circuit		N
8.2.6	Interruption of the protective bonding circuit		N
8.2.7	Protective conductor connecting points		N
8.3	Bonding for operational purposes		N

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
8.3.1	General		-
8.3.2	Bonding to the protective circuit		N
8.3.3	Bonding to a common reference potential		N
9.	Control circuits and control functions		P
9.1	Control circuits		P
9.1.1	Control circuit supply		P
9.1.2	Control circuit voltages		P
9.1.3	Protection		P
9.1.4	Connection of control devices		P
9.2	Control functions		P
9.2.1	Start functions		P
9.2.2	Stop functions		P
9.2.3	Operating modes		P
9.2.4	Suspension of safeguarding		N
9.2.5	Operation		P
9.2.5.1	General		P
9.2.5.2	Start		P
9.2.5.3	Stop		P
9.2.5.4	Emergency operations (emergency stop, emergency switching off)		N
9.2.5.4.1	General		N
9.2.5.4.2	Emergency stop		N
9.2.5.4.3	Emergency switching off		N
9.2.5.5	Monitoring of command actions		P
9.2.5.6	Hold-to-run controls		P
9.2.5.7	Two-hand control		N
9.2.5.8	Enabling device		N
9.2.6	Combined start and stop controls	Alternately initiate and stop motion are only used for functions which cannot result in a hazardous condition	N

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
9.2.7	Cableless control	No cableless control	N
9.2.7.1	General		N
9.2.7.2	Control limitation		N
9.2.7.3	Stop		N
9.2.7.4	Serial data communication		N
9.2.7.5	Use of more than one operator control station		N
9.2.7.6	Battery-powered operator control stations		P
9.3	Protective interlocks		N
9.3.1	Reclosing or resetting of an interlocking safeguard		N
9.3.2	Overtravel limits		N
9.3.3	Operation of auxiliary functions		N
9.3.4	Interlocks between different operations and for contrary motion		N
9.3.5	Reverse current braking		N
9.4	Control functions in the event of failure		P
9.4.1	General requirements		P
9.4.2	Measures to minimize risk in the event of failure		P
9.4.2.1	Use of proven circuit techniques and components		P
9.4.2.2	Provisions for redundancy		P
9.4.2.3	Use of diversity		P
9.4.2.4	Functional tests		P
9.4.3	Protection against maloperation due to earth faults, voltage interruptions and loss of circuit continuity		N
9.4.3.1	Earth faults		N
9.4.3.2	Voltage interruptions		N
9.4.3.3	Loss of circuit continuity		N
10.	Operator interface and machine-mounted control devices		P
10.1	General		-
10.1.1	General device requirements		P
10.1.2	Location and mounting	Readily accessible for service and maintenance	P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
10.1.3	Protection		P
10.1.4	Position sensors		N
10.1.5	Portable and pendant control stations		N
10.2	Push-button		P
10.2.1	Colours		P
10.2.2	Markings		P
10.3	Indicator lights and displays		P
10.3.1	Modes of use		P
10.3.2	Colours		P
10.3.3	Flashing lights		N
10.4	Illuminated push-buttons		N
10.5	Rotary control devices		N
10.6	Start devices		P
10.7	Devices for emergency stop		N
10.7.1	Location		N
10.7.2	Types		N
10.7.3	Colour of actuators		N
10.7.4	Local operation of the supply disconnecting device to effect emergency stop		N
10.8	Emergency switching off devices		N
10.8.1	Location		N
10.8.2	Types		N
10.8.3	Restoration of normal function after emergency switching off		N
10.8.4	Actuators		N
10.8.5	Local operation of the supply disconnecting device to effect emergency switching off		N
10.9	Displays		N
11.	Electronic equipment		P
11.1	General		P
11.2	Basic requirements		P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
11.2.1	Inputs and outputs		P
11.2.2	Equipotential bonding		N
11.3	Programmable equipment		N
11.3.1	Programmable controllers		N
11.3.2	Memory retention and protection		N
11.3.3	Software verification		N
11.3.4	Use in safety-related functions		N
12.	Controlgear: location, mounting, and enclosures		P
12.1	General requirements	Refer to instruction	P
12.2	Location and mounting		P
12.2.1	Accessibility and maintenance		P
12.2.2	Physical separation or grouping		P
12.2.3	Heating effects		P
12.3	Degrees of protection		P
12.4	Enclosures, doors and openings		P
12.5	Access to controlgear		P
12.6	Flexible cables		P
12.7	Conductor wires, conductor bars		P
13.	Wiring practices		P
13.1	Connections and routing		P
13.1.1	General requirements		P
	All connections shall be secured against accidental loosening	No loosening	P
	Soldered connections shall only be permitted where terminals are provided that are suitable for soldering		P
	Terminal blocks shall be mounted and wired so that the internal and external wiring does not cross cover the terminals		P
13.1.2	Conductor and cable runs		P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
	Conductors and cables shall be run from terminal to terminal without splices or joints		P
	The terminations of cables shall be adequately supported to prevent mechanical stresses at the terminations of the conductors		P
13.1.3	Conductors of different circuits		P
	Conductors of different circuits may be laid side by side, may occupy the same duct, or may be in the same multiconductor cable provided that the arrangement does not impair the proper functioning of the respective circuit		P
13.1.4	Connection between pick-up and pick-up converter of an inductive power supply system		P
13.2	Identification of conductors		P
13.2.1	Each conductor shall be identification at each termination in the accordance with the technical documentation		P
13.2.2	Identification of the protective conductor		N
13.2.3	Identification of the neutral conductor		P
13.2.4	Identification by colour		P
13.3	Wiring inside enclosures		P
	Conductors inside enclosures shall be supported where necessary to keep them in place		P
	Conductors and cables that do not run in ducts shall be adequately supported		P
	Power cables and cables of measuring circuit may be directly connected to the terminals of the devices for which the connections were intended		P
13.4	Wiring outside enclosures		P
13.4.1	General requirements		P
13.4.2	External ducts		P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
	Flexible conduit or flexible multiconductor cable shall be used where it is necessary to employ flexible connections to pendant push-button stations		P
13.4.3	Connection to moving elements of the machine		P
	Flexible conduit shall not be used for connections subject to rapid or frequent movements except when specifically designed for the purpose		P
13.4.4	Interconnection of devices on machine		P
13.4.5	Plug/socket combinations		N
	Where plug/socket combinations are provided, they shall fulfil one or more of the following requirements as applicable		N
13.4.6	Dismantling for shipment		P
13.4.7	Additional conductors		P
	Consideration should be given to providing additional conductors for maintenance or repair		P
13.5	Ducts, connection boxes and other boxes		P
13.5.1	General requirements		P
	Ducts shall provide a degree of protection suitable for application		P
	Ducts and cable trays shall be rigidly support and positioned at a sufficient distance from moving parts and in such a manner so as to minimize the possibility of damage or wear		P
	Ducts shall be provided only for mechanical protection		P
13.5.2	Percentage fill of ducts		P
13.5.3	Rigid metal conduit and fittings	No Such conduit and fittings applied	N
	Conduits shall be securely held in place and supported at each end		N
13.5.4	Flexible metal conduit and fittings	No such conduit and fittings	N

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
	Fittings shall be compatible with the conduit and appropriate for the application		N
13.5.5	Flexible non-metallic conduit and fittings		P
	The conduit shall be suitable for use in the expected physical environment	Such non-metallic conduit and fittings used	P
	Fittings shall be compatible with the conduit and appropriate for the application		P
13.5.6	Cable trunking systems		P
	Cable trunking systems external to enclosures shall be rigidly supported and clear of all moving or contaminating portions of the machine		P
	Where the cable trunking system is furnished in sections, the joints between sections shall fit tightly but need not be gasketed		P
	The only openings permitted shall be those required for wiring or for drainage		P
13.5.7	Machine compartments and cable trunking systems		P
13.5.8	Connection boxes and other boxes		P
13.5.9	Motor connection boxes		P
14.	Electric motors and associated equipment		P
14.1	General requirements		P
14.2	Motor enclosures		P
14.3	Motor dimensions		P
14.4	Motor mounting and compartments		P
	Each motor and its associated couplings, belts and pulleys, or chains, shall be so mounted that they are adequately protected and are easily accessible for inspection, maintenance, adjustment and alignment, lubrication, and replacement		P
14.5	Criteria for motor selection		P
14.6	Protective devices for mechanical brakes		P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
15.	Accessories and lighting		N
15.1	Accessories		N
15.2	Local lighting of the machine and equipment		N
15.2.1	General		N
15.2.2	Supply		N
15.2.3	Protection		N
15.2.4	Fittings		N
16.	Marking, warning signs and reference designations		P
16.1	General		P
	Warning signs, nameplates, markings, and identification plates shall be of sufficient durability	See artwork of marking label and manufacturer's manual	P
16.2	Warning signs		P
16.3	Functional identification	See instruction	P
16.4	Marking of equipment	See marking label	P
16.5	Reference designations		P
17.	Technical documentation		P
17.1	General		P
17.2	Information to be provided	(See instruction)	P
	a) a clear, comprehensive description of the equipment, installation and mounting, and the connection to the electrical supply(ies);		P
	b) electrical supply(ies) requirements		P
	c) information on the physical environment		P
	d) overview (block) diagram(s)		P
	e) circuit diagram		P
	f) information (where appropriate) on:		-
	1) programming		P
	2) sequence of operation(s)		P
	3) frequency of inspection		P
	4) frequency and method of functional testing		P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**
	5) guidance on the adjustment, maintenance, and repair, particularly of the protective devices and circuits		P
	6) parts list and recommended spare parts list		P
	g) a description of the safeguards, interlocking functions, and interlocking of guards for potentially hazardous motions, particularly for machines operating in a co-ordinated manner		P
	h) a description of the safeguarding and of the means provided		P
17.3	Requirements applicable to all documentation	Comply with correlative standard	P
17.4	Installation diagram	(See instruction)	P
17.5	Block (system) diagrams and function diagrams	(See instruction)	P
17.6	Circuit diagrams		P
17.7	Operating manual	(See instruction)	P
17.8	Maintenance manual	(See instruction)	P
17.9	Parts list	(See instruction)	P
18.	Verification		P
18.1	General		P
18.2	Continuity of the protective bonding circuit		P
18.3	Insulation resistance tests	500V d.c. between the power circuit conductors and the protective bonding circuit and the insulation resistance more than 2 MΩ.	P
18.4	Voltage tests	1000V for 1 s, no disruptive discharge occurred.	P
18.5	Protection against residual voltages		P
18.6	Functional tests		P
18.7	Retesting		P

EN 60204-1			
Clause	**Requirement – Test**	**Result - Remark**	**Verdict**

Annex A	TABLE: list of critical components			P
Object/ part No.	Manufacturer/ trademark	Type	Technical data	Mark(s) of conformity
Internal wire	GREAT SHENG INDUSTRIAL CO LTD	1015	105℃; 600V; 12A/18AWG	UL
PCB	JIANGSU LIANXIN ADVANCED TECHNOLOGY CORP	JL-1	V-0; 130℃	UL
Adapter	Various	Various	Input: 100-240V~, 50/60Hz, 2.5A Output: DC 42V, 2A, 250W	TUV

Beide
Compliance Laboratory

APPENDIX A
Photo-documentation

Photo 1

View:
BTX250

Photo 2

View:
BTX250