

Prüfbericht-Nr.: <i>Test report no.:</i>	CN22NSOV 001	Auftrags-Nr.: <i>Order no.:</i>	168392899	Seite 1 von 14 Page 1 of 14
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2022-09-27	
Auftraggeber: <i>Client:</i>	SY Electronic Technical Co., Ltd 5th Floor, 4th Bldg. Antongda Industrial Park, 1 Liuxian 3rd Rd, Baoan Dist., Shenzhen, China. 518101			
Prüfgegenstand: <i>Test item:</i>	Trail Camera			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	T100CS, T100, T101CS, T102CS, T100CS-Pro, T101CS-Pro, T102CS-Pro			
Auftrags-Inhalt: <i>Order content:</i>	Verification of Compliance and Test report for conformity to IP66 degree			
Prüfgrundlage: <i>Test specification:</i>	IP66 test according to IEC 60529:1989+A1:1999+ A2:2013			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2022-12-20			
Prüfmuster-Nr.: <i>Test sample no.:</i>	KA220927003AS-05 KA220927003AS-06			
Prüfzeitraum: <i>Testing period:</i>	2022-12-20			
Ort der Prüfung: <i>Place of testing:</i>	See page 12			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: tested by: Mihawk Li Datum: <i>Date:</i> 2023-05-23 Stellung / Position:	 Sachverständige(r)/Expert	genehmigt von: authorized by: Jonas Xu Ausstellungsdatum: <i>Issue Date:</i> 2023-05-23 Stellung / Position:	 Sachverständige(r)/Expert	
Sonstiges / Other This report contains 14 pages includes this cover page. See the details of test result on page 2.				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

V05

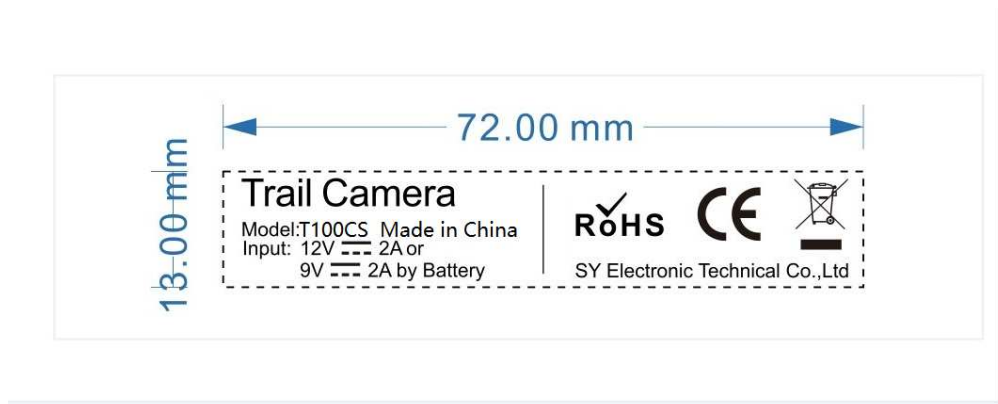
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Test result summary

Test item description..... : Trail camera
Trade Mark..... : N/A
Manufacturer : Same as applicant
Rating(s)..... : Input: 12V DC, 2A (Via external adapter) or
9V DC, 2A(Via 6 x 1.5V non-rechargeable AA type battery in series)

Rating label:



Material of critical components

Component	Location	Manufacturer	Model	Parameter
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Observation:

- After IP6X and IPX6 test, there is no dust or water inside the unit. Normal functions of product are not affected after tests. Refer to the photos on pages 13-14 for details.
- All models are identical except for model number, the tested conducted on model T100CS.

Conclusion:

The product fulfils the requirement of IP66 degree.

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IEC 60529:1989+A1:1999+ A2:2013					
3	TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL				—
13.1	Test means				—
	Test means and the main test conditions are given in Tab. VII.				P
	Tab. VII-7 Test means for the tests for protection against solid foreign objects				—
	First characteristic numeral	Test means	Test force	Test conditions	—
	0	No test required	—	—	N/A
	1	Rigid sphere without handle or guard 50 mm diameter	50 N ±10%	13.2	N/A
	2	Rigid sphere without handle or guard 12,5 mm diameter	30 N ±10%	13.2	N/A
	3	Rigid steel rod 2,5 mm diameter with edges free from burrs	3 N ±10%	13.2	N/A
	4	Rigid steel wire 1 mm diameter with edges free from burrs	1 N ±10%	13.2	N/A
	5	Dust chamber Fig. 2, with or without underpressure	—	13.4 and 13.5	N/A
	6	Dust chamber Fig. 2, with underpressure	—	13.4 and 13.6	P
13.2	Test conditions for first characteristic numerals 1, 2, 3, 4				—
	The object probe is pushed against any openings of the enclosure with the force specified in Tab. VII.				N/A
13.3	Acceptance conditions for first characteristic numerals 1, 2, 3, 4				—
	The protection is satisfactory if the full diameter of the probe specified in Table VII does not pass through any opening.				N/A
13.4	Dust test for first characteristic numerals 5 and 6				—

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	The test is made using a dust chamber incorporating the basic principles shown in Fig. 2 whereby the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber. The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is 50 mm and the nominal width of a gap between wires 75 mm. The amount of talcum powder to be used is 2 kg per cubic metre of the test chamber volume. It shall not have been used for more than 20 tests.		P
	Enclosures are of necessity in one of two categories:		—
	Category 1: Enclosures where the normal working cycle of the equipment causes reductions in air pressure within the enclosure below that of the surrounding air, e.g., due to thermal cycling effects.	Category 1 enclosure considered	P
	Category 2: Enclosures where no pressure difference relative to the surrounding air is present		N/A
	<i>Category 1 enclosures:</i>		—
	The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump.		P
	The suction connection shall be made to a hole specially provided for this test.		P
	If not otherwise specified in the relevant product standard, this hole shall be in the vicinity of the vulnerable parts.		P
	If it is impracticable to make a special hole, the suction connection shall be made to the cable inlet hole.		N/A
	If there are other holes (e.g., more cable inlet holes or drain-holes) these shall be treated as intended for normal use on site.		N/A
	The object of the test is to draw into the enclosure, by means of depression, a volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour.		P
	In no event shall the depression exceed 2 kPa (20 mbar) on the manometer shown in Fig. 2.		P
	If an extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2 h.		N/A

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	If, with a maximum depression of 2 kPa (20mbar), the extraction rate is less than 40 volumes per hour, the test is continued until 80 volumes have been drawn through		N/A
	or a period of 8 h has elapsed.		P
	<i>Category 2 enclosures:</i>		—
	The enclosure under test is supported in its normal operating position inside the test chamber, but is not connected to a vacuum pump.		N/A
	Any drain-hole normally open shall be left open for the duration of the test.		N/A
	The test shall be continued for a period of 8		N/A
	<i>Category 1 and category 2 enclosures:</i>		—
	If it is impracticable to test the complete enclosure in the test chamber, one of the following procedures shall be applied:		N/A
	testing of individually enclosed sections of the enclosure;.		N/A
	testing of representative parts of the enclosure, comprising components such as doors, ventilation openings, joints, shaft seals, etc., in position during test;		N/A
	testing of a smaller enclosure having the same full-scale design details.		N/A
	In the last two cases, the volume of air to be drawn through the enclosure under test shall be the same as for the whole enclosure in full scale		N/A
13.5	Special conditions for first characteristic numeral 5		—
13.5.1	Test conditions for first characteristic numeral 5		—
	The enclosure shall be deemed category 1 unless the relevant product standard for the equipment specifies that the enclosure is category 2.		N/A
13.5.2	Acceptance conditions for first characteristic numeral 5		—
	The protection is satisfactory if, on inspection, talcum powder has not accumulated in a quantity or location such that, as with any other kind of dust, it could interfere with the correct operation of the equipment or impair safety.		N/A
	Except for special cases to be clearly specified in the relevant product standard, no dust shall deposit where it could lead to tracking along the creepage distances.		N/A
13.6	Special conditions for first characteristic numeral 6		—
13.6.1	Test conditions for first characteristic numeral 6		—

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	The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not.	Category 1 enclosure considered	P
13.6.2	Acceptance conditions for first characteristic numeral 6		—
	The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.	No deposit of dust is observable inside the enclosure.	P

14	TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL					—
14.1	Test means					
	The test means and the main test conditions are given in Tab. VIII.					P
	Tab. VIII-8 Test means and main test conditions for the tests for protection against water					—
	Second charact. numeral	Test means	Water flow rate	Duration of test	Test conditions	
	0	No test required	—	—	—	N/A
	1	Drip box Fig.3 Enclosure on turntable	1 mm/min	10 min	14.2.1	N/A
	2	Drip box Fig.3 Enclosure in 4 fixed positions of 15° tilt	3 mm/min	2,5 min for each position of tilt	14.2.2	N/A
	3	Oscillating tube Fig. 4 Spray ± 60° from vertical, distance max. 200 mm or Spray nozzle Fig. 5 Spray ± 60° from vertical	0,07 l /min ± 5% per hole, multiplied by number of holes 10 l /min ± 5%	10 min 1 min/m² at least 5 min	14.2.3 a) 14.2.3 b)	N/A
	4	As for numeral 3 Spray ± 180° from vertical	As for numeral 3		14.2.4	N/A
	5	Water jet hose nozzle Fig. 6 Nozzle 6,3 mm diameter, distance 2,5 m to 3 m	12,5 l /min ± 5%	1 min/m² at least 3 min	14.2.5	N/A
	6	Water jet hose nozzle Fig. 6 Nozzle 12,5 mm diameter, distance 2,5 m to 3 m	100 l /min ± 5%	1 min/m² at least 3 min	14.2.6	P
	7	Immersion tank Water-level on enclosure: 0,15 m above top 1 m above bottom	—	30 min	14.2.7	N/A

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	8	Immersion tank Water-level: by agreement	—	by agreement	14.2.8	N/A
	9	Fan jet nozzle Figure 7 Test of small enclosure on turntable Figure 12 Turntable speed (5 ± 1) r/min Spray at 0°, 30°, 60°, 90° Or Test of large enclosures as per intended use Spray from all practical directions Distance (175 ± 25) mm	(15 ± 1) l/min	30 s per position 1 min/m2 at least 3 min	14.2.9 a) 14.2.9 b)	N/A
14.2	Test conditions					—
	Test means and main test conditions are given in Tab. VIII.					P
	The tests are conducted with fresh water.			Fresh water used.		P
	During the tests for IPX1 to IPX6 the water temperature should not differ by more than 5 K from the temperature of the specimen under test.					P
	If the water temperature is more than 5 K below the temperature of the specimen a pressure balance shall be provided for the enclosure.					N/A
	For IPX7 and IPX9 details of the water temperature are given in 14.2.7 and 14.2.9 respectively.					N/A
	During the test, the moisture contained inside the enclosure may partly condense. The dew which may thus deposit shall not be mistaken for ingress of water.			No moisture condensed inside the enclosure.		N/A
	For the purpose of the tests, the surface area of the enclosure is calculated with a tolerance of 10%.					N/A
	Adequate safety precautions should be taken when testing the equipment in the energized condition					P
14.2.1	Test for second characteristic numeral 1 with the drip box					—
	The test is made with a device which produces a uniform flow of water drops over the whole area of the enclosure.					N/A
	The turntable on which the enclosure is placed has a rotation speed of 1 r/min and the eccentricity(distance between turntable axis and specimen axis) is approximately 100 mm.					N/A
	The enclosure under test is placed in its normal operating position under the drip box, the base of which is larger than that of the enclosure.					N/A

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	Except for enclosures designed for wall or ceiling mounting, the support for the enclosure under test should be smaller than the base of the enclosure.		N/A
	An enclosure normally fixed to a wall or ceiling is fixed in its normal position of use to a wooden board having dimensions which are equal to those of that surface of the enclosure which is in contact with the wall or ceiling when the enclosure is mounted as in normal use.		N/A
	The duration of test is 10 min.		N/A
14.2.2	Test for second characteristic numeral 2 with the drip box		—
	The dripping device is the same as specified in 14.2.1 adjusted to provide the water flow rate specified in Tab. VIII.		N/A
	The table on which the enclosure is placed does not turn as in the case of the test for the second characteristic numeral 1.		N/A
	The enclosure is tested for 2,5 min in each of four fixed positions of tilt. These positions are 15° on either side of the vertical in two mutually perpendicular planes (see Fig. 3b)).		N/A
	The total duration of the test is 10 min.		N/A
14.2.3	Test for second characteristic numeral 3 with oscillating tube or spray nozzle		—
	The test is made using one of the two test devices described in Fig. 4 and in Fig. 5 in accordance with the relevant product standard.		N/A
	a) Conditions when using the test device as in Fig. 4 (oscillating tube)		N/A
	b) Conditions when using the test device as in Fig. 5 (spray nozzle)		N/A
14.2.4	Test for second characteristic numeral 4 with oscillating tube or spray nozzle		—
	The test is made using one of the two test devices described in Fig. 4 and in Fig. 5 in accordance with the relevant product standard.		N/A
	a) Conditions when using the test device as in Fig. 4 (oscillating tube):		N/A
	b) Conditions when using the test device as in Fig. 5 (spray nozzle):		N/A
	Tab. IX-9 Total water rate q_v under IPX3 and IPX4 test conditions Mean flow rate per hole $q_{v1} = 0,07$ l/min		—
	200	8 0,56	12 0,84
	400	16 1,1	25 1,8
			N/A

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	600	25	1,8	37	2,6	N/A
	800	33	2,3	50	3,5	N/A
	1000	41	2,9	62	4,3	N/A
	1200	50	3,5	75	5,3	N/A
	1400	58	4,1	87	6,1	N/A
	1600	67	4,7	100	7,0	N/A
	(1)Depending on the actual arrangement of the hole centres at the specified distance, the number of open holes N may be increased by 1.					
14.2.5	Test for second characteristic numeral 5 with the 6,3 mm nozzle					—
	The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in Fig. 6.					N/A
	The conditions to be observed are as follows:					—
	internal diameter of the nozzle: 6,3 mm;					N/A
	delivery rate: 12,5 l/min ± 5%;					N/A
	water pressure: to be adjusted to achieve the specified delivery rate;					N/A
	core of the substantial stream: circle of approximately 40 mm diameter at 2,5 m distance from nozzle;					N/A
	test duration per square metre of enclosure surface area likely to be sprayed: 1 min;					N/A
	minimum test duration: 3 min;					N/A
	distance from nozzle to enclosure surface: between 2,5 and 3 m					N/A
14.2.6	Test for second characteristic numeral 6 with the 12,5 mm nozzle					—
	The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in Fig. 6.					P
	The conditions to be observed are as follows:					—
	internal diameter of the nozzle: 12,5 mm;					P
	delivery rate: 100 l/min ± 5%;.					P
	water pressure: to be adjusted to achieve the specified delivery rate;					P
	core of the substantial stream: circle of approximately 120 mm diameter at 2,5 m distance from nozzle;					P
	test duration per square metre of enclosure surface area likely to be sprayed: 1 min;					P
	minimum test duration: 3 min;			3mins		P

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	distance from nozzle to enclosure surface: between 2,5 and 3 m.		P
14.2.7	Test for second characteristic numeral 7: temporary immersion between 0,15 and 1 m		—
	The test is made by completely immersing the enclosure in water in its service position as specified by the manufacturer so that the following conditions are satisfied:		—
	a) the lowest point of enclosures with a height less than 850 mm is located 1000 mm below the surface of the water;		N/A
	b) the highest point of enclosures with a height equal to or greater than 850 mm is located 150 mm below the surface of the water;		N/A
	c) the duration of the test is 30 min;		N/A
	d) the water temperature does not differ from that of the equipment by more than 5 K.		N/A
	However, a modified requirement may be specified in the relevant product standard if the tests are to be made when the equipment is energized and/or its parts in motion		N/A
14.2.8	Test for second characteristic numeral 8: continuous immersion subject to agreement		—
	Unless there is a relevant product standard, the test conditions are subject to agreement between manufacturer and user,		N/A
	but they shall be more severe than those prescribed in 14.2.7		N/A
	And they shall take account of the condition that the enclosure will be continuously immersed in actual use.		N/A
14.2.9	Test for second characteristic numeral 9 by high pressure and temperature water jetting		—
	The test is made by spraying the enclosure with a stream of water from a standard test nozzle as shown in Figures 7, 8 and 9. The set-up for measuring the impact force of the water jet is given in Figure 10. The distribution force shall be verified at upper and lower limits of distance tolerance range (see Figure 11). During the test a) or b) of the enclosure, the water temperature shall be $(80 \pm 5) ^\circ\text{C}$.		—
	a) For small enclosures (largest dimension less than 250 mm), the enclosure shall be mounted on the test device shown in Figure 12.		N/A
	– turntable speed: 5 r/min $\pm$ 1 r/min		N/A

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	– spray positions: 0°, 30°, 60°, 90°		N/A
	The test duration is 30 s per position.		N/A
	b) For large enclosures (largest dimension greater than or equal to 250 mm), the enclosure shall be mounted as per intended use. The entire exposed surface area of the enclosure shall be subjected to the spray at some point during the test procedure.		N/A
	– spray positions: the enclosure shall be sprayed from all practical directions covering the entire surface area and the spray shall be, as far as possible, perpendicular to the sprayed surface.		N/A
	– distance between nozzle and sample under test shall be 175 ± 25 mm.		N/A
	The test duration is 1 min/m ² of the calculated surface area of the enclosure (excluding any mounting surface), with a minimum duration of 3 min.		N/A
14.3	Acceptance conditions		—
	After testing in accordance with the appropriate requirements of 14.2.1 to 14.2.9 the enclosure shall be inspected for ingress of water.		P
	It is the responsibility of the relevant Technical Committee to specify the amount of water which may be allowed to enter the enclosure and the details of a dielectric strength test, if any.	There is no water entered into the product and product worked as normal.	P
	In general, if any water has entered, it shall not:		—
	be sufficient to interfere with the correct operation of the equipment or impair safety;	No water entered.	P
	deposit on insulation parts where it could lead to tracking along the creepage distances;	No water entered.	P
	reach live parts or windings not designed to operate when wet;		N/A
	accumulate near the cable end or enter the cable if any.		N/A
	If the enclosure is provided with drain-holes, it should be proved by inspection that any water which enters does not accumulate and that it drains away without doing any harm to the equipment.		N/A
	For enclosures without drain-holes, the relevant product standard shall specify the acceptance conditions if water can accumulate to reach live parts		N/A

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Test Equipment List

Test location:

Shenzhen BANTEK Testing Co., Ltd.

A5&A6, Building B1&B2, No.45 Gangtuo Road, Bogang Community, Shajing Street, Bao'an District,
Shenzhen, Guangdong, China 518104

NO.	Instrument Code	Instrument Type	Manufacturer	Model	Cal. Date	Due Date
1	BS-136	Dust test chamber	OJN	OJN-9608	2022-06-15	2023-06-14
2	BS-133	Waterproofing test equipment	OJN	OJN -IPX5-6	2022-06-15	2023-06-14
3	BS-075	Test probe D	GR	GR-SJD	2022-06-21	2023-06-20

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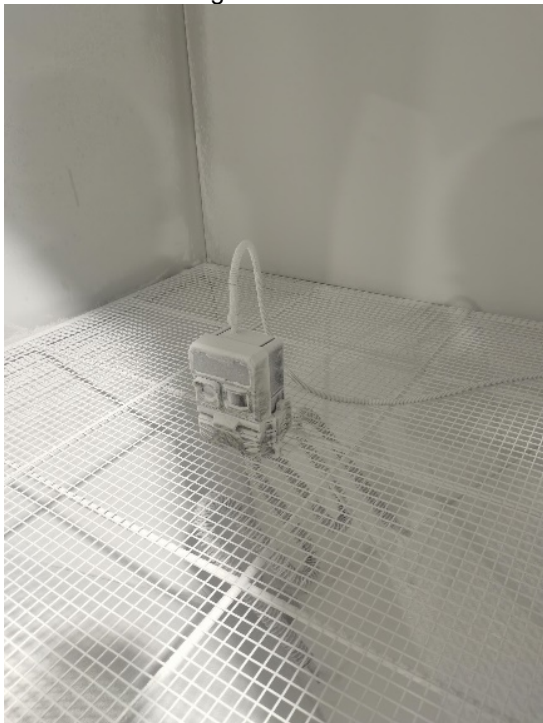
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Photos

External view before IP66 test



During IP6X test



During IPX6 test

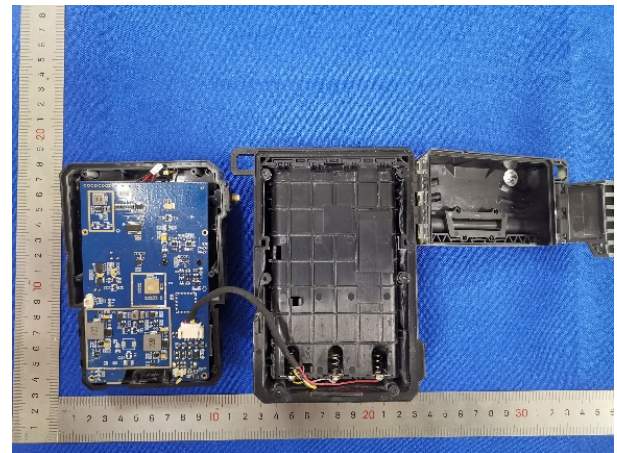


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Photos

After IP6X test



After IPX6 test

