LTA

Ref. No. : LR500172207X

Responsibility Test Report

1. Applicant.....:	SJI Co., Ltd
2. Address.....:	54-33, Dongtanhana 1-gil, Hwaseong-si, Gyeonggi-do, Republic of Korea
3. Date of receipt of test....:	2018-10-05
4. Use of the report.....:	Product performance evaluation
5. Test item.....:	Asset Tracker
6. Model.....:	IET10RC1
7. Series mode name.....:	-
8. Difference(basic model and series model).....:	-
9. Test Standard.....:	IEC 60529:1989/A2:2013 / IP66
10. Test Periods.....:	2018-10-12 to 2018-10-15
11. Test Environmental.....:	Temperature : (24 ± 5) °C, Humidity: (45 ± 5) % R.H. Atmospheric pressure : (96 – 106) kPa
12. Test Result .....:	See test results

※ This test result only responds to the tested sample

※ It is not allowed to copy this report even partly without the allowance of the test laboratory.

※ This report must not be used by the applicant to claim product endorsement by any agency.

※ This report is amendment report because of merger (ieThings Co.,Ltd. -> SJI Co., Ltd) and report form revision (Basic report : LR500171810V)

Confirm	Writer Position : Engineer Name : ChangJun Hwang (Signature)	Approver Position : Technical Manager Name : ByungSeok Kim (Signature)

2022. 07. 25

LTA Co., Ltd.

1. Laboratory details

1.1 General status

Company name	LTA Co., Ltd.
Address	4, Songju-ro 236beon-gil Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, 17159 Korea, Republic of
Telephone No.	+82-31-323-6008
Facsimile No.	+82-31-323-6010
Homepage	www.ltalab.com

1.2 Test Location

Address	4, Songju-ro 236beon-gil Yangji-myeon, Cheoin-gu, Yongin-si, Gyeonggi-do, 17159 Korea, Republic of
Telephone No.	+82-31-323-6008
Facsimile No.	+82-31-323-6010

2. Test list

Degrees of protection against solid foreign objects indicated by the first characteristic numeral		
contents	explanation	apply
IP0X	Non-protected	☐
IP1X	Protected against solid foreign objects of 50 mm ⌀ and greater	☐
IP2X	Protected against solid foreign objects of 12,5 mm ⌀ and greater Test finger of 12 mm ⌀, 80 mm length shall have adequate clearance from hazardous parts	☐
IP3X	Protected against solid foreign objects of 2,5 mm ⌀ and greater	☐
IP4X	Protected against solid foreign objects of 1,0 mm ⌀ and greater	☐
IP5X	Dust- protected	☐
IP6X	Dust-tight	☒

Degrees of protection against water indicated by the second characteristic numeral		
contents	explanation	apply
IPX0	Non-protected	☐
IPX1	Protected against vertically falling water drops	☐
IPX2	Protected against vertically falling water drops when enclosure tilted up to 15°	☐
IPX3	Protected against spraying water	☐
IPX4	Protected against splashing water	☐
IPX5	Protected against water jets	☐
IPX6	Protected against powerful water jets	☐
IPX7	Protected against the effects of temporary immersion in water	☐
IPX8	Protected against the effects of continuous immersion in water	☒

3. Test contents and method

3.1 Dustproof test

3.1.1 Test conditions

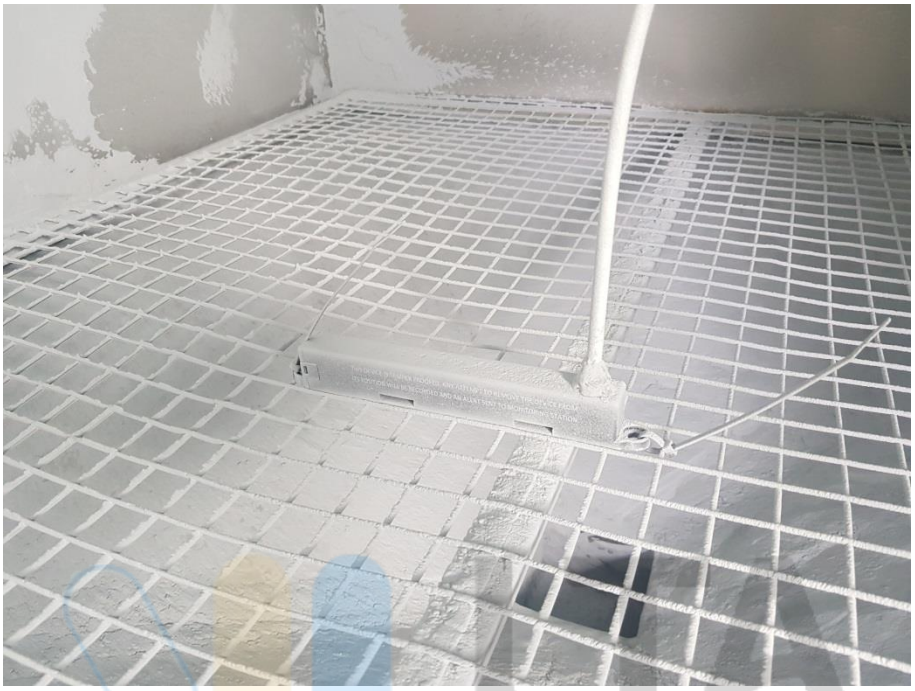
First characteristic numeral	explanation	apply
0	Non-protected	☐
1	**Protected against solid foreign objects of 50 mm and greater** **Test conditions** The object probe shall not fully penetrate through the gap in the outer side with a force of 50 N ± 10 %	☐
2	**Protected against solid foreign objects of 12.5 mm and greater** **Test conditions** The object probe shall not fully penetrate through the gap in the outer side with a force of 30 N ± 10 % **Protected against access with finger of 12 mm ⌀,80 mm length** Test finger of 12 mm ⌀, 80 mm length shall have adequate clearance from hazardous parts with a force of 10 N ± 10 %	☐
3	**Protected against solid foreign objects of 2.5 mm and greater** **Test conditions** The object probe shall not fully penetrate through the gap in the outer side with a force of 3 N ± 10 %	☐
4	**Protected against solid foreign objects of 1.0 mm and greater** **Test conditions** The object probe shall not fully penetrate through the gap in the outer side with a force of 1 N ± 10 %	☐
5	**Dust-Protected** **Test conditions** 1. Standard wire for test talc dust nominal diameter: 50 μm 2. Standard wire interval for test talc dust nominal: 75 μm 3. Amount of talc dust per unit volume: 2 kg/m^3 4. No ingress of dust	☐
6	**Dust-tight** **Test conditions** 1. Standard wire for test talc dust nominal diameter: 50 μm 2. Standard wire interval for test talc dust nominal: 75 μm 3. Amount of talc dust per unit volume: 2 kg/m^3 4. Not shall exceed 2 kPa (20 mbar) on the manometer 5. No ingress of dust	☒

Category enclosures	**Category 1 enclosures:** 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. The suction connection shall be made to a hole specially provided for this test. If not otherwise specified in the relevant product standard, th is hole shall be in the vicinity of the vulnerable parts. If it is impracticable to make a special hole, the suction connection shall be made to the cable inlet hole. If there are other holes (for example, more cable inlet holes or drain-holes) these shall be treated as intended for normal use on site. 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. In no event shall the depression exceed 2 kPa (20 mbar) on the manometer shown in figure 2. If an extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2 h. If, with a maximum depression of 2 kPa (20 mbar), the extraction rate is less than 40 volumes per hour, the test is continued until 80 volumes have been drawn through, or a period of 8 h has elapsed.	☒
	Category 2 enclosures: The enclosure under test is suppor1ed in its normal operating position inside the test chamber, but is not connected to a vacuum pump. Any drain-hole normally open shall be left open for the duration of the test. The test shall be continued for a period of 8 h.	☐

3.1.2 Test photo

3.1.3 Test result

IP code	Test Results
IP6X	No dust penetration inside the product



< After test >

< Decomposition after test >

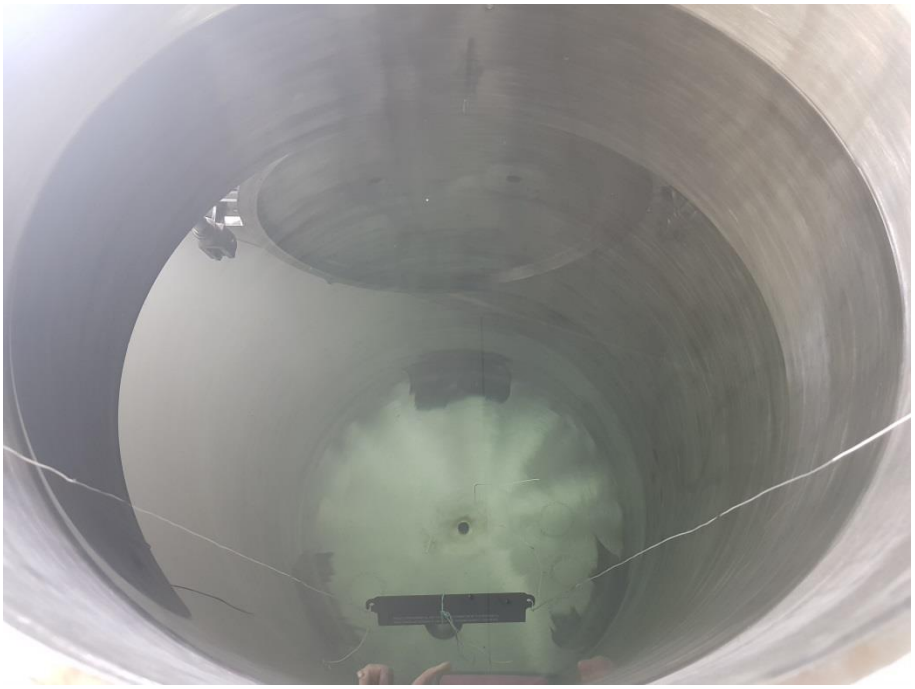
3.2 Waterproof test

3.2.1 Test conditions

Second characteristic numeral	explanation	apply
0	No test required	☐
1	**Protected against vertically falling water drops** **Test conditions** Flow rate : 1 mm/min Rotation speed: 1 r/min eccentricity (distance between turntable axis and specimen axis): Approximately 100 mm Duration of test: 10 min	☐
2	**Protected against vertically falling water drops when enclosure tilted up to 15°** **Test conditions** Flow rate : 3 mm/min Duration of test: (2.5 min in each of four fixed positions of tilt) 10 min	☐
3 (Oscillating tube)	**Protected against spraying water (± 60° from vertical)** **Test conditions** The tube is caused to oscillate through an angle of 120°, 60° on either side of the vertical, the time for one complete oscillation (2 × 120°) being about 4 s and the test duration being 5 min. The enclosure is then turned through an horizontal angle of 90° and the test is continued for a further 5 min. (Duration of test : Total 10 min)	☐
4 (Oscillating tube)	**Protected against splashing water (± 180° from vertical)** **Test conditions** The tube is caused to oscillate through an angle of almost 360°, 180° on either side of the vertical, the time for one complete oscillation (2 × 360°) being about 12 s. Duration of test : 10 min.	☐
5	**Protected against water jets** **Test conditions** Diameter of the nozzle：6.3 mm / delivery rate：12.5 L/min ± 5 % Core of the substantial stream: Circle of approximately 40 mm diameter at 2.5 m distance from nozzle Distance from nozzle to enclosure surface: between 2.5 m and 3 m. Duration of test : Enclosure surface area shall be 1 min per 1 m^2, at least 3 min (Duration of test : 5 min)	☐

6	**Protected against powerful water jets** **Test conditions** Internal diameter of the nozzle: 12.5 mm / Delivery rate: 100 L/min ± 5 % Core of the substantial stream: Circle of approximately 120 mm diameter at 2.5 m distance from nozzle distance from nozzle to enclosure surface: between 2.5 m and 3 m Duration of test : Enclosure surface area shall be 1 min per 1 m^2, at least 3 min (Duration of test : 5 min)	☐
7	**Protected against the effects of temporary immersion in water** **Test conditions** The lowest point of enclosures with a height less than 850 mm is located 1 000 mm below the surface of the water 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 Duration of test : 30 min	☐
8	**Protected against the effects of continuous immersion in water** **Test conditions** The test conditions are subject to agreement between manufacturer and user, but they shall be more severe than those prescribed in numeral 7 and they shall take account of the condition that the enclosure will be continuously immersed in actual use. Distance from the upper end of the enclosure surface to the surface of the water : 1 000 mm Duration of test: 2 h	☒

3.2.2 Test photo



3.2.3 Test result

IP code	Test Results
IPX8	No water penetration inside the product

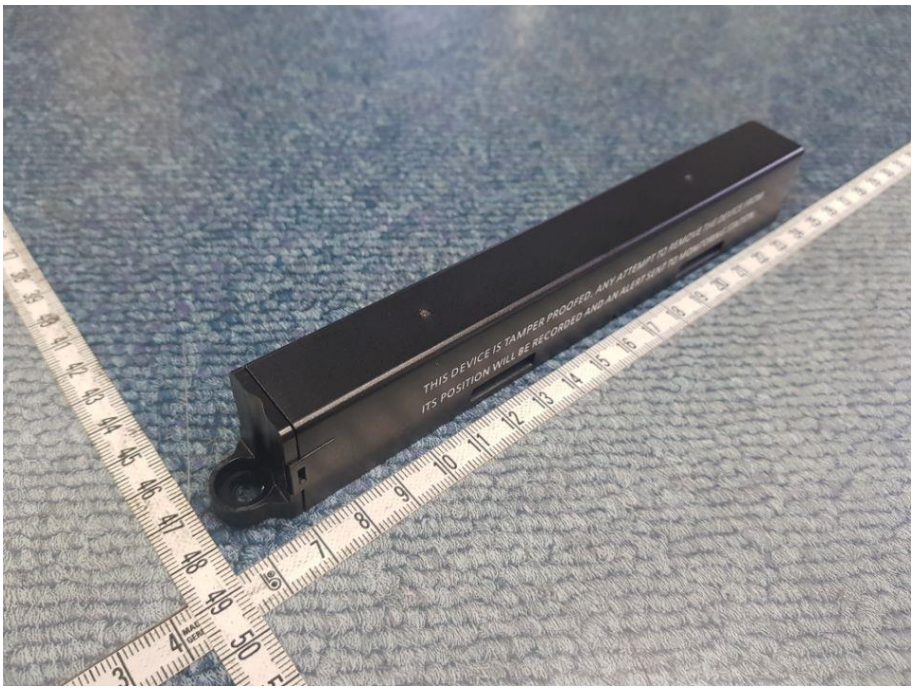
< After test >

< Decomposition after test >

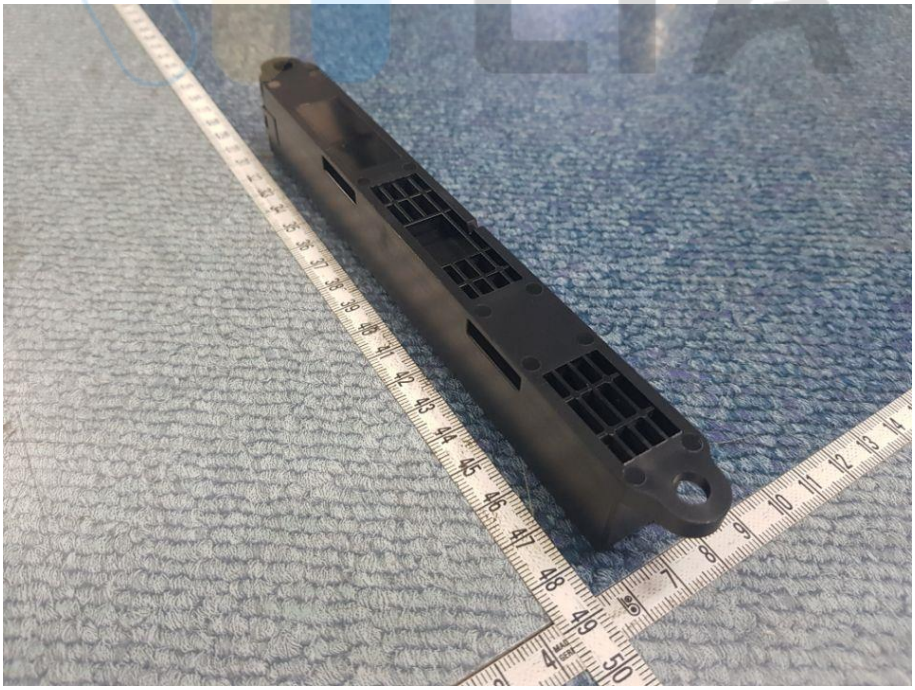
4. Test equipment

Control number	Product	Model	Manufacturer	Date of next calibration	Remarks
LS18134	Dust chamber	AUTO-SC010	SHENZHEN AUTOSTRONG	-	-
LS18134-1	Dust chamber (Vaccum gauge)	(0.005,-0.1~0)Mpa	HONGQI	2019-07-26	(-0.09 - 0.00) Mpa
LS06010	Digital timer (Stop Watch)	HS-3	CASIO	2019-03-21	0.01 s
LS17110	Straight Rule	KMC-25CV	Komelon	2019-03-21	5.5 m
LS18137	IPX7/8 Defense Immersion Test Device	AUTO-IPX7/8	SHENZHEN AUTOSTRONG	-	-
LS06028	Temp.Humidity Data Logger	SK-L200TH II A	SATO	2019-09-11	(-15-65) °C, (10-99.9) % R.H.
LS06029	Barometer	-	BARIGO	2019-03-21	(960-1060) hPa

5. Product photos



< Product front >



< Product rear >

6. Product drawing