TEST REPORT

IEC 60529
Degrees of protection provided by enclosures (IP code)

Report No. ..... :	**206/67-029**
Equipment Test (EUT) No... ..... :	**ST-67-0211**
Testing Laboratory Name .....:	**Electrical and Electronic Products Testing Center**
Address .....:	141 Thailand Science Park Innovation Cluster 2 Phahonyothin Rd. Khlong Nueng, Khlong Luang, Pathum Thani 12120, Thailand.
Applicant's Name.....:	**Srisawad Home Company Limited**
Address .....:	594/7 Patio Ratchayothin, Sena Nikhom 1, Soi 12, Chankasem, Chatuchak, Bangkok 10900
Manufacturer's Name.....:	**Hilock Digital Door Lock**
Address .....:	Guangzhou, Guangdong, China
Test specification	
Standard .....:	IEC 60529: 2013 (Ed.2.2)
Non-standard test method .....:	N/A
Test item description .....:	**Digital Door Lock**
Trademark .....:	HILOCK
Model and/or type reference .....:	HL-492P
Serial number .....:	-
Date of receipt of test item .....:	21 February 2024
Date(s) of performance of test .....:	20-21 March 2024
Date of report issue .....:	25 March 2024

Tested by

T. Eakkachai

(Mr.Eakkachai Taesanoo)
Engineer

Approved by

N. Ruengrit

(Mr.Ruengrit Ninae)
Operation manager

Summary of test results

The EUT was tested and complies with IP65 the referent standard IEC 60529:2013

Copy of marking:

Test case verdicts

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

General remarks

Test marked (*) in this Report are not included in the TISI Accreditation Schedule for our Laboratory.
This test report is test results from the EUT only, not the product's quality certificate. It shall not be reproduced except in full without the written approval by PTEC.
The test results presented in this report relate only to the item(s) tested.
"(see remark #)" refers to a remark appended to the report.
"(see Annex #)" refers to an annex appended to the report.

IEC 60529			
Clause	Requirement + Test	Result - Remark	Verdict
5	**DEGREE OF PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS AND AGAINST SOLID FOREIGN OBJECTS**		
	Test condition see Clause 12+13		
6	**DEGREE OF PROTECTION AGAINST INGRESS OF WATER**		
	Test condition see Clause 14		
10	**MARKING**		
	The requirements for marking shall be specified in the relevant product standard.		
	Where appropriate, such a standard should also specify the method of marking which is to be used when:		
	- one part of an enclosure has a different degree of protection to that of another part of the same enclosure;		N/A
	- the mounting position has an influence on the degree of protection;		N/A
	- the maximum immersion depth and time are indicated.		N/A
12	**TEST FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL**		
12.2	Test condition:		
12.2	IP 0X: non protection: no test request		
12.2	Acceptance conditions for first characteristic numerals		
	Sample no.	1	
	IP 1X: Against solid foreign objects of 50mm diameter and greater. The sphere of 50mm diameter shall not fully penetrate and adequate clearance shall be kept. Force 50N	not checked	--
	IP 2X: The jointed test finger of 12mm diameter, 80mm length, shall have adequate clearance from hazardous parts. Force 10N	not checked	--
	IP 3X: Against solid foreign objects of 2.5mm diameter and greater. The test rode of 2.5mm diameter shall not penetrate. Force 3N	not checked	--
	IP 4X: Against solid foreign objects of 1mm diameter and greater. The object probe of 1.0mm diameter shall not penetrate. Force 1N	not checked	--
	IP 5X: Against solid foreign objects of 1mm diameter and greater. The object probe of 1.0mm diameter shall not penetrate. Force 1N	not checked	--

IEC 60529			
Clause	Requirement + Test	Result - Remark	Verdict
	IP 6X: Against solid foreign objects of 1mm diameter and greater. The object probe of 1.0mm diameter shall not penetrate. Force 1N	The access probe is not penetrate.	P
13	**TEST FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL**		
13.1	Test condition:		
13.2	IP 0X: non protection: no test request		
13.3	Acceptance conditions for first characteristic numerals.		
	IP 1X: Against solid foreign objects of 50mm diameter and greater. The sphere of 50mm diameter shall not fully penetrate. Force 50N	not checked	--
	IP2X: Against solid foreign objects of 12.5mm diameter The sphere of 12.5mm diameter shall not fully penetrate. Force 30N	not checked	--
	IP 3X: Against solid foreign objects of 2.5mm diameter and greater. The test rode of 2.5mm diameter shall not penetrate at all. Force 3N	not checked	--
	IP 4X: Against solid foreign objects of 1mm diameter and greater. The object probe of 1.0mm diameter shall not penetrate at all. Force 1N	not checked	--
13.5.2	IP 5X: Dust protected. Ingress of dust is not totally prevented, but dust shall not penetrate in a quantity to interfere with satisfactory operation of the apparatus or to impair safety.	not checked	--
	- with or without depression.	not checked	--
	- depression max.: (max. 20mbar)	not checked	--
	- test time : (time: <8h, when 80x volume)	not checked	--
13.6.2	IP 6X: Against ingress of solid foreign object: dust-tight	See Annex B	P
	- depression max.: (max. 20mbar)	20mbar	--
	- test time : (time: <8h, when 80x volume)	8h	--
14	**TEST FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL**		
14.1	IP 0X: non protection: no test request		
14.2	Test condition:	--	
	Ambient temperature:	--	
	Water temperature:	--	
14.2.1	IP X1: Vertically falling drops shall have no harmful effects.	not checked	--
14.2.2	IP X2: Vertically falling drops shall have no harmful effects. Enclosure ist tested of four fixed positions of tilt. These positions are 15° on either side of the vertical in two mutually perpendicular planes	not checked	--

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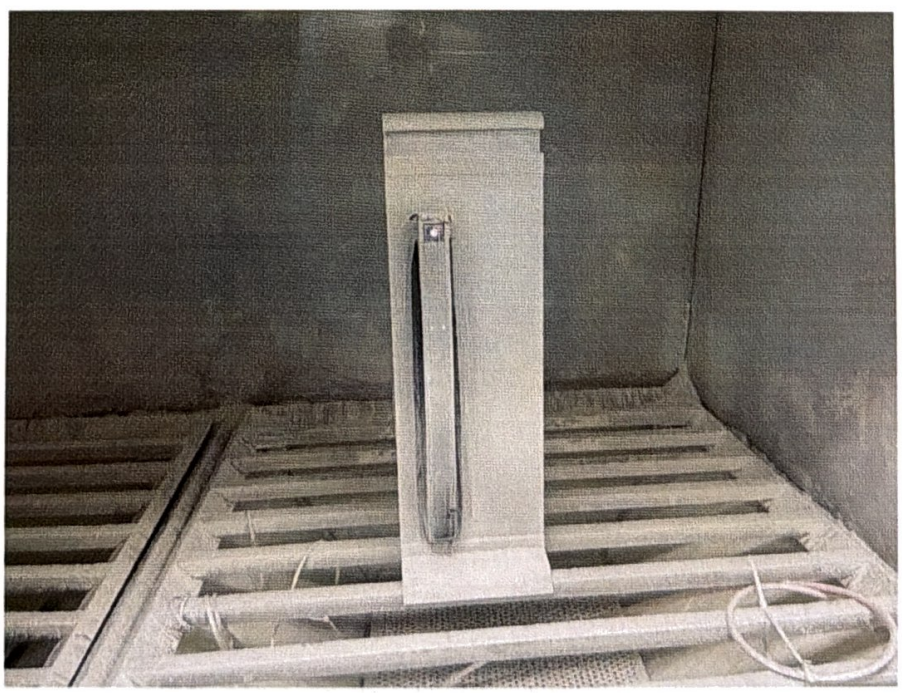
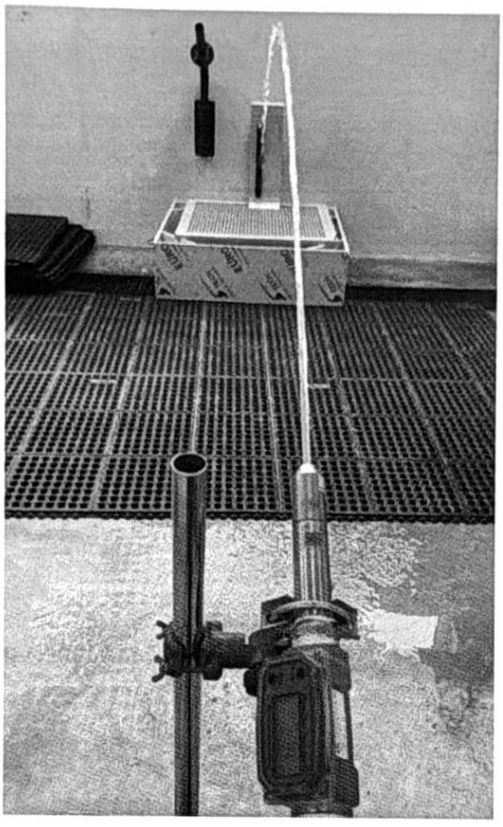
Clause	Requirement + Test	Result - Remark	Verdict
14.2.3	IP X3: Water sprayed at an angle of 60° on either side of the vertical shall have no harmful effect.	not checked	--
14.2.4	IP X4: Water splashed against the enclosure from any direction shall have no harmful effect.	not checked	--
14.2.5	IP X5: Water projected in jets against the enclosure from any direction shall have no harmful effect.	See Clause 14.3	P
14.2.6	IP X6: Water projected in powerful jets against the enclosure from any direction shall have no harmful effect.	not checked	--
14.2.7	IP X7: Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed in water under standardized conditions of pressure and time:	not checked	--
14.2.8	IP X8: Ingress of water in quantities causing harmful effects shall not be possible when the enclosure is temporarily immersed in water under conditions of which shall be agreed between manufacturer and user but which are more severe than for numeral 7	not checked	--
14.2.9	IP X9: Water of 80 °C ± 5 °C projected in high pressure jets against the enclosure shall have no harmful effect.	not checked	--
14.3	Acceptance conditions:		P
	Acceptance conditions:for IP second characteristic numeral (IPX5)	See Annex B	P
	dielectric strength test		N/A
	In general, if any water has entered, it shall not:	See Annex B	P
	- be sufficient to interfere with correct operation of the equipment or impair safety	See Annex B	P
	- deposit on insulation parts where it could lead to tracking along the creepage distances	See Annex B	P
	- reach live parts or windings not designed to operate when wet	See Annex B	P
	- accumulate near the cable end or enter the cable if any		P

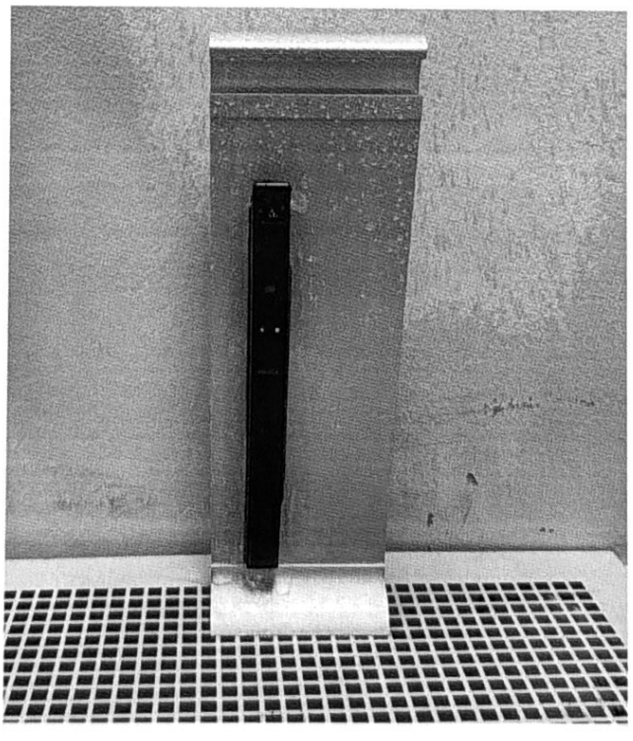
15	**TEST FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS INDICATED BY THE OPTIONAL LETTERS (acc. to clauses 7,8)**		N/A
15.3	IP XXA: Against access to hazardous parts with: the back of the hand		N/A
	IP XXB: Against access to hazardous parts with: a finger		N/A
	IP XXC: Against access to hazardous parts with: a tool		N/A
	IP XXD: Against access to hazardous parts with: a wire		N/A
	IP XXXH: Supplementary information specific to: High-voltage apparatus		N/A
	IP XXXM: Supplementary information specific to: Motion during water test		N/A
	IP XXXS: Supplementary information specific to: Stationary during water test		N/A
	IP XXXW: Supplementary information specific to: Weather conditions		N/A

Annex A
Test picture IP6X

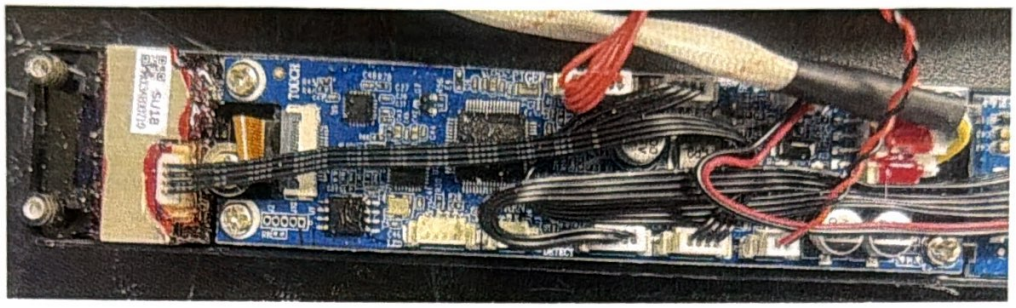


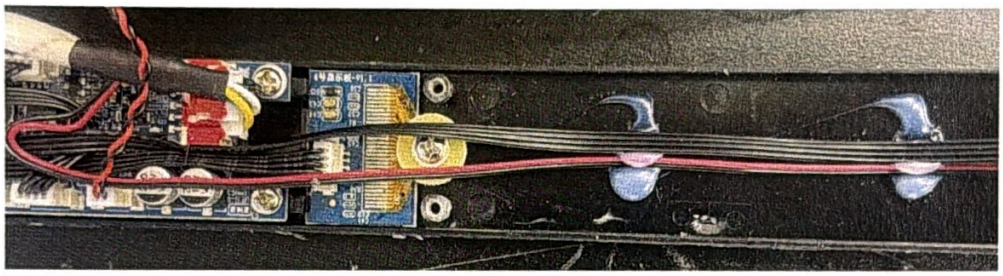
Annex A
Test Picture IPX5

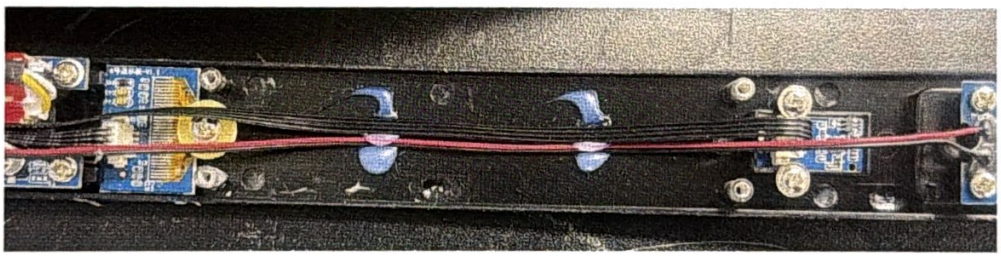


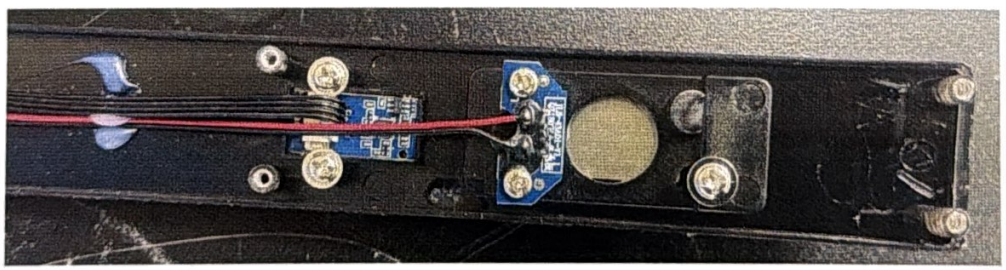


Annex B
Test result IP6X

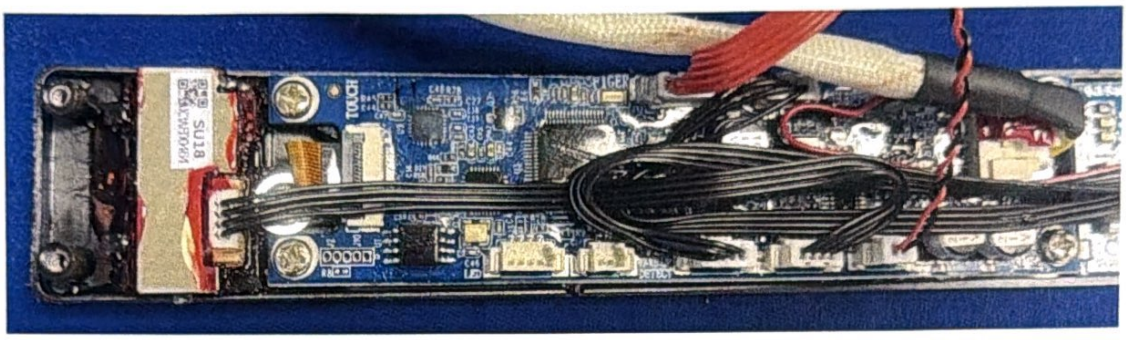


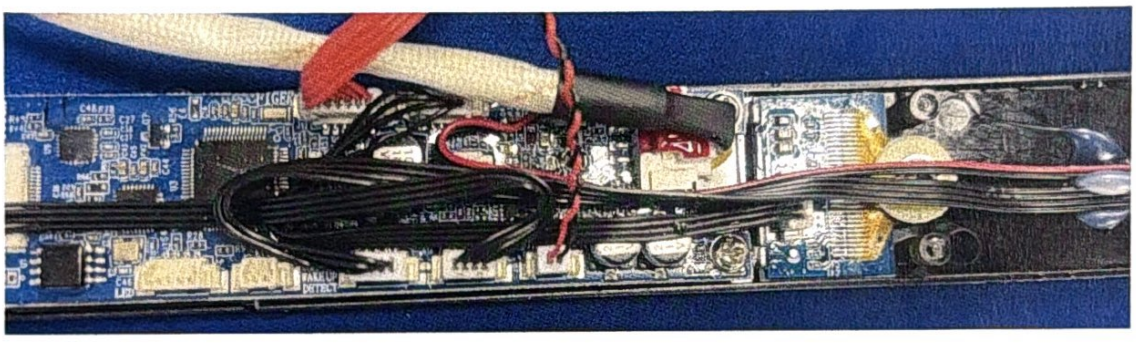


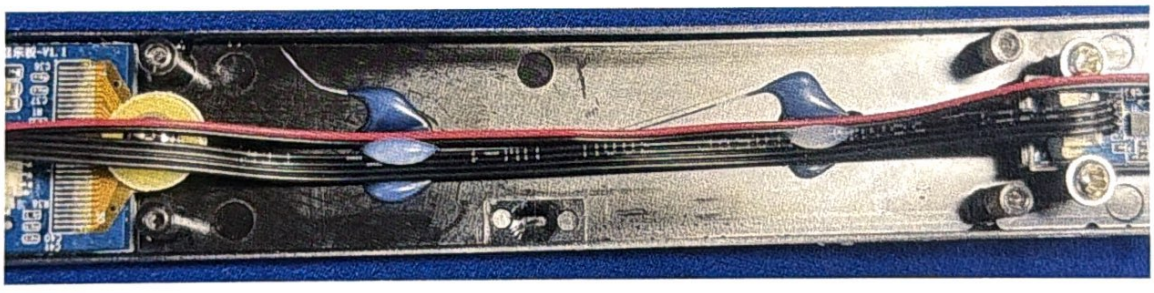


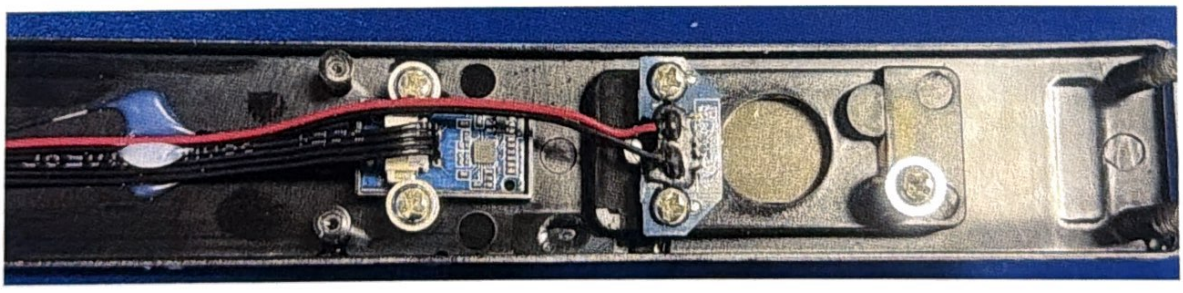


Annex B
Test result IPX5

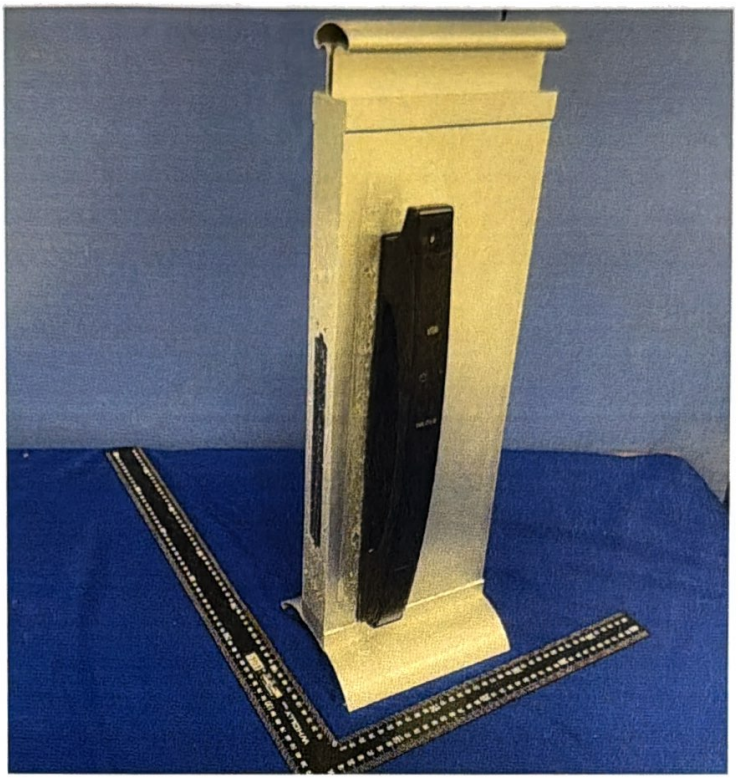


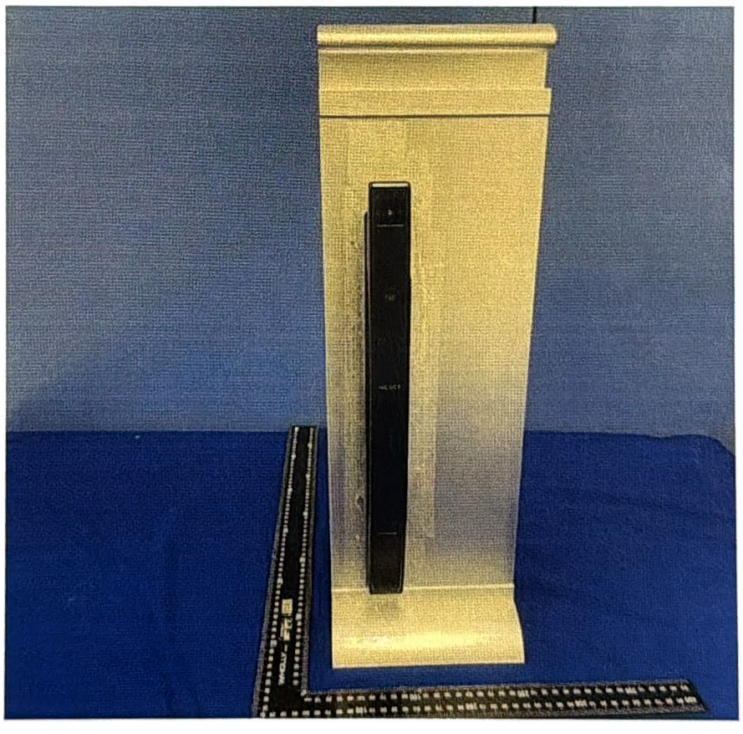






Annex C
EUT Test picture





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