



WTH23H04092132C



Verification Report

Report No...... : WTH23H04092132C

Applicant..... : Shenzhen King-Serry Electronics Co.,Ltd

Address..... : 502 Room, T Block, Nanlian Hengyu Science Park, NO.1 Ruiji Road, Longgang District, Shenzhen,CN

Sample Name..... : SW-K1

Sample Model..... : SW-K2.SW-K3.SW-K1G.SW-K2GSW-K3GSW-NK1.SW-NK2.SW-NK3 SW-NK1G.SW-NK2G.SW-NK3G
SW-A2SW-A2GSW-NA2.SW-NA2G
SW-SK1.SW-SK1G.SW-AK1.SW-AK1GSW-CK1.SW-CK1G.SW-CA2 SW-CA2GSW-CK2.SW-CK2GKS-DB03TxKS-DB04 Tx

Test Requested..... : As specified by client,to verify the Pb, Cd, Hg, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP, DIBP content in the sample with reference to EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863.

Test Conclusion..... : PASS

Date of Receipt sample..... : 2023-5-11

Testing period..... : 2023-5-11 ~ 2023-5-18

Date of Issue..... : 2023-7-6

Test Result..... : Refer to next page (s)

Prepared By:

Shenzhen Hongcai Testing Technology Co., Ltd.

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Signed for and on behalf of
Shenzhen Hongcai Testing Technology Co., Ltd.



Shenzhen Hongcai Testing Technology Co., Ltd.

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Test Result(s):

No.	Sample Description	Test Item(s)	ED-XRF Result(s) (1)	Chemical Result(s) (2)	Received Sample(s) Date	Note
4-1	White double-sided adhesive	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-2	White plastic button	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	IN	ND		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-3	Transparent blue plastic lampshade	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-4	Black printed white plastic bottom cover	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	IN	ND		
		DBP	NA	ND		
		BBP	NA	ND		



No.	Sample Description	Test Item(s)	ED-XRF Result(s) (1)	Chemical Result(s) (2)	Received Sample(s) Date	Note
		DEHP	NA	ND		
		DIBP	NA	ND		
4-5	Silver metal rod	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	IN	ND		
		Br(PBBs&PBDEs)	NA	---		
		DBP	NA	---		
		BBP	NA	---		
		DEHP	NA	---		
		DIBP	NA	---		
4-6	White dry adhesive	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-7	Translucent soft adhesive	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-8	Black soft adhesive	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		



No.	Sample Description	Test Item(s)	ED-XRF Result(s) (1)	Chemical Result(s) (2)	Received Sample(s) Date	Note
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-9	Silver metal spring	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	IN	ND		
		Br(PBBs&PBDEs)	NA	---		
		DBP	NA	---		
		BBP	NA	---		
		DEHP	NA	---		
		DIBP	NA	---		
4-10	Brown chip capacitor	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-11	Grey chip inductance	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-12	Black printed white chip resistor	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	IN	ND		
		Br(PBBs&PBDEs)	BL	---		



No.	Sample Description	Test Item(s)	ED-XRF Result(s) (1)	Chemical Result(s) (2)	Received Sample(s) Date	Note
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-13	Translucent chip LED	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-14	Black chip diode	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-15	Black chip transistor	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-16	Grey inductance	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	IN	ND		



No.	Sample Description	Test Item(s)	ED-XRF Result(s) (1)	Chemical Result(s) (2)	Received Sample(s) Date	Note
		Br(PBBs&PBDEs)	IN	ND		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-17	Light gold chip crystal oscillator	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	IN	ND		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-18	Five legged black body	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-19	Hexapod black body	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-20	Long black IC	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		



No.	Sample Description	Test Item(s)	ED-XRF Result(s) (1)	Chemical Result(s) (2)	Received Sample(s) Date	Note
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	BL	---		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		
4-21	Silver metal solder	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	NA	---		
		DBP	NA	---		
		BBP	NA	---		
		DEHP	NA	---		
		DIBP	NA	---		
4-22	Beige copper clad laminate with white and green coating	Pb	BL	---	2023-5-11	●
		Cd	BL	---		
		Hg	BL	---		
		Cr(Cr(VI))	BL	---		
		Br(PBBs&PBDEs)	IN	ND		
		DBP	NA	ND		
		BBP	NA	ND		
		DEHP	NA	ND		
		DIBP	NA	ND		

Note:

●=Actual tested sample

As specified by client, only test the designated sample.



Remark:

(1): ED-XRF test

(a) For the restricted substances PBBs/PBDEs, the ED-XRF results show the total Br content; for the restricted substance Cr(VI), the ED-XRF results show the total Cr content.

(b) Results were obtained by ED-XRF for primary screening, and further chemical testing are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1:2013.

Unit: mg/kg

Elements	Polymers	Metals	Composite material
Pb	$BL \leq 100 < X < 1200 \leq OL$	$BL \leq 100 < X < 1200 \leq OL$	$BL \leq 80 < X < 1300 \leq OL$
Cd	$BL \leq 30 < X < 120 \leq OL$	$BL \leq 30 < X < 120 \leq OL$	$BL \leq 30 < X < 120 \leq OL$
Hg	$BL \leq 100 < X < 1200 \leq OL$	$BL \leq 100 < X < 1200 \leq OL$	$BL \leq 80 < X < 1300 \leq OL$
Cr	$BL \leq 200 < X$	$BL \leq 200 < X$	$BL \leq 150 < X$
Br	$BL \leq 200 < X$	---	$BL \leq 200 < X$

(c) BL=Below Limit by ED-XRF analysis, OL=Over Limit by ED-XRF analysis, IN=Inconclusive, NA=Not Applicable, --- = Not regulated, X=need further chemical analysis

(d) For composite material, the ED-XRF results may be different to the actual content in the sample.

(2): Chemical test and regulatory limits

Test Items		Test Method	Test Equipment	MDL	Limit(by weight in homogeneous materials)
Pb		IEC 62321-5:2013	ICP-OES/AAS	2mg/kg	1000mg/kg
Cd		IEC 62321-5:2013	ICP-OES/AAS	2mg/kg	100mg/kg
Hg		IEC 62321-4:2013+AMD1:2017	ICP-OES	2mg/kg	1000mg/kg
Cr(VI)	Metal	IEC 62321-7-1:2015	UV-VIS	0.10 μ g/cm ²	1000mg/kg
	Others	IEC 62321-7-2:2017	UV-VIS	8mg/kg	
PBBs		IEC 62321-6:2015	GC-MS	5mg/kg(Each)	1000mg/kg(Sum)
PBDEs		IEC 62321-6:2015	GC-MS	5mg/kg(Each)	1000mg/kg(Sum)
DBP		IEC 62321-8:2017	GC-MS	30mg/kg	1000mg/kg
BBP		IEC 62321-8:2017	GC-MS	30mg/kg	1000mg/kg
DEHP		IEC 62321-8:2017	GC-MS	30mg/kg	1000mg/kg
DIBP		IEC 62321-8:2017	GC-MS	30mg/kg	1000mg/kg

(a) Unit of Chemical test result: Cr(VI) of metal: μ g/cm², Other:mg/kg;

μ g/cm² (microgram per square centimeter)

1mg/kg=1ppm=0.0001%, mg/kg (milligram per kilogram) = ppm (parts per million)

ND=not detected (less than method detection limit),

MDL=Method Detection Limit, --- =Not Conducted

(b) For corrosion-protected coatings on metals

a. The sample is positive for Cr(VI) if the Cr(VI) concentration is greater than 0.13 μ g/cm². The sample coating is considered to contain Cr(VI);

b. The sample is negative for Cr(VI) if Cr(VI) is ND (concentration less than 0.10 μ g/cm²). The coating is



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considered a non-Cr(VI) based coating;

c. The result between $0.10\mu\text{g}/\text{cm}^2$ and $0.13\mu\text{g}/\text{cm}^2$ is considered to be inconclusive -unavoidable coating variations may influence the determination;

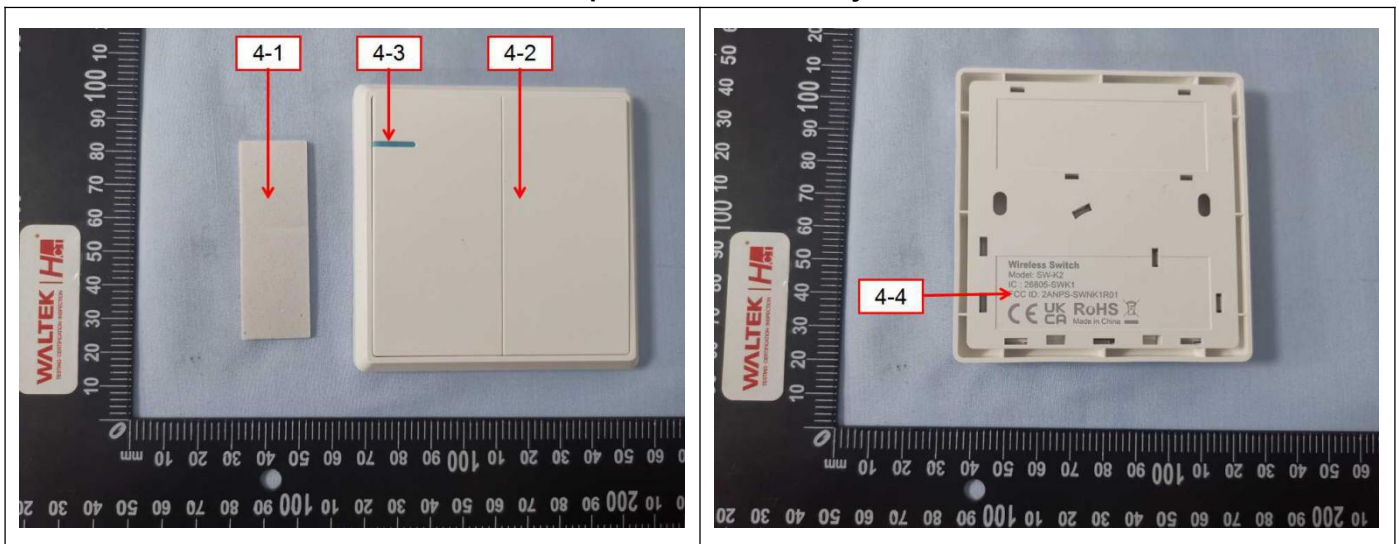
Information on storage conditions and production date of the tested sample is unavailable and thus Cr(VI) results represent status of the sample at the time of testing.

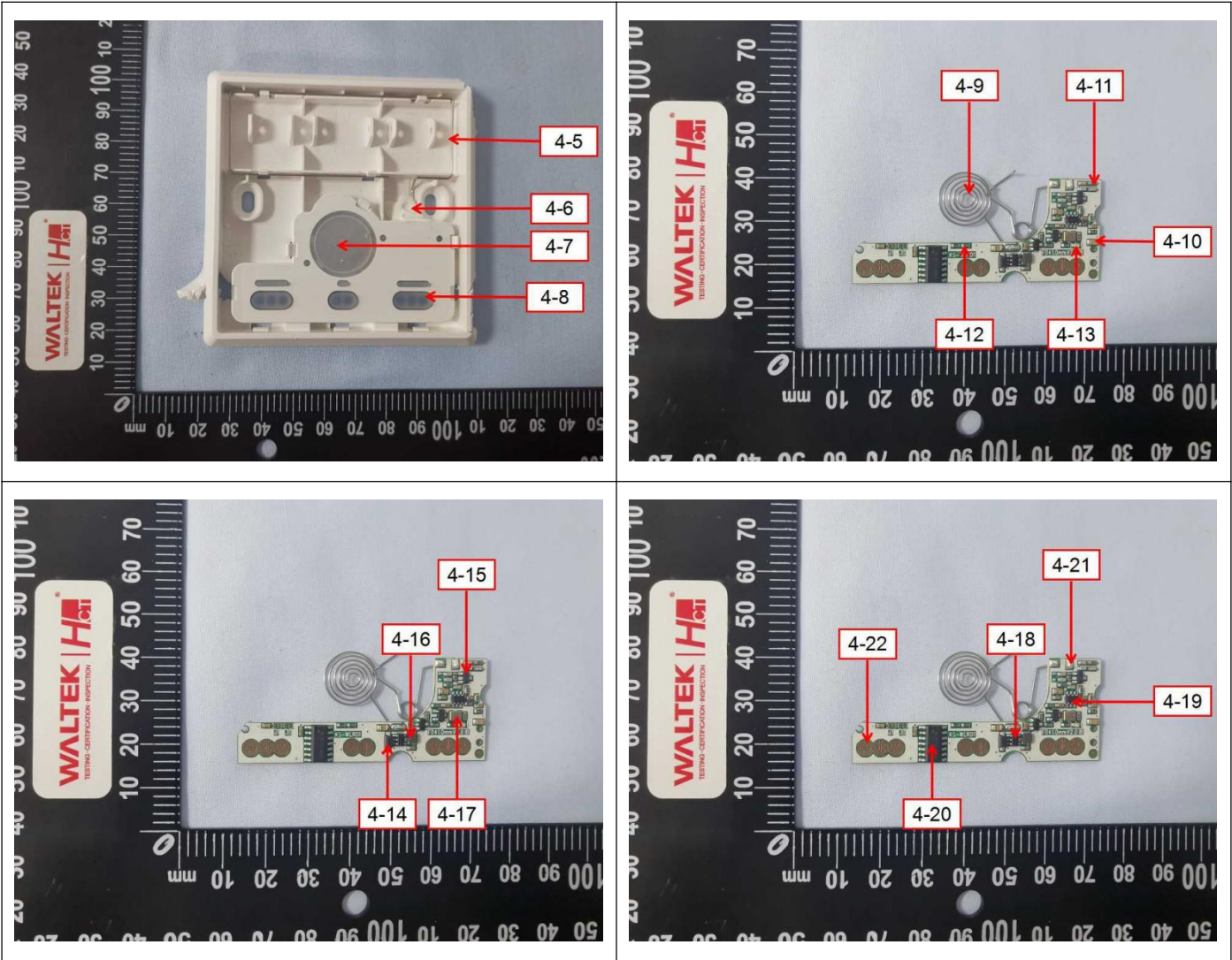
(3): Screening and chemical tests were performed for the samples indicated by the photo in this report.

The photo of the sample

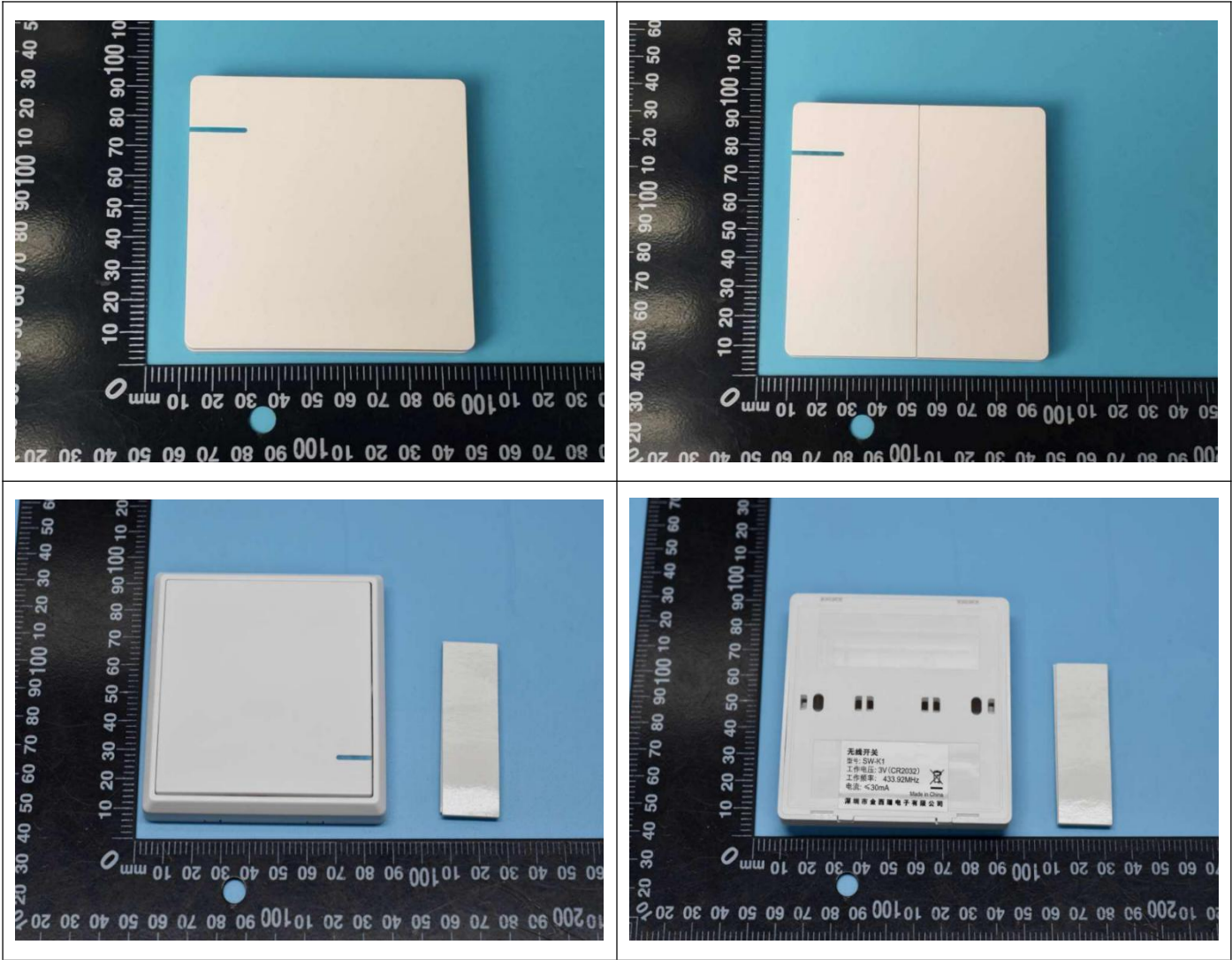


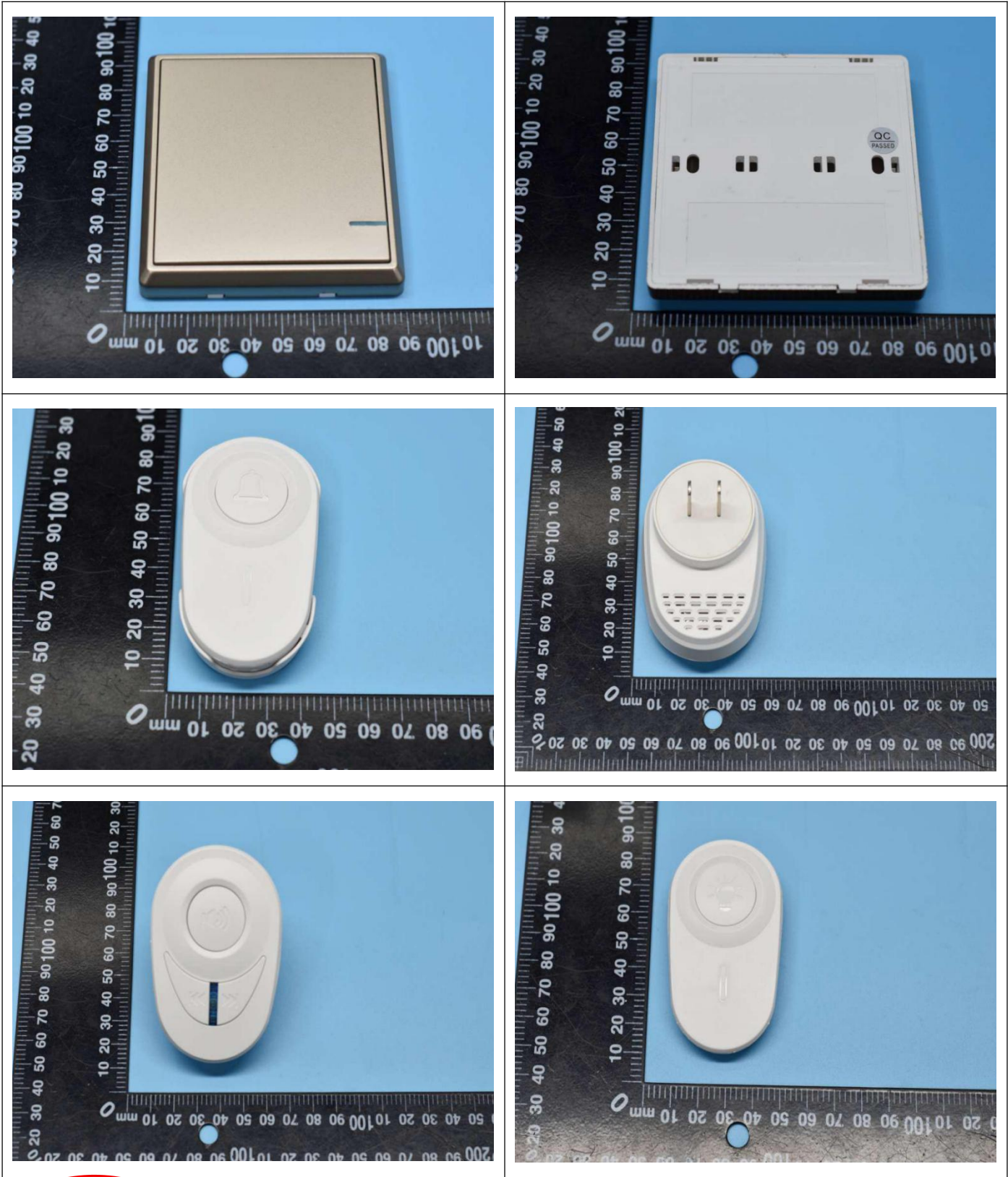
The photo of Disassembly

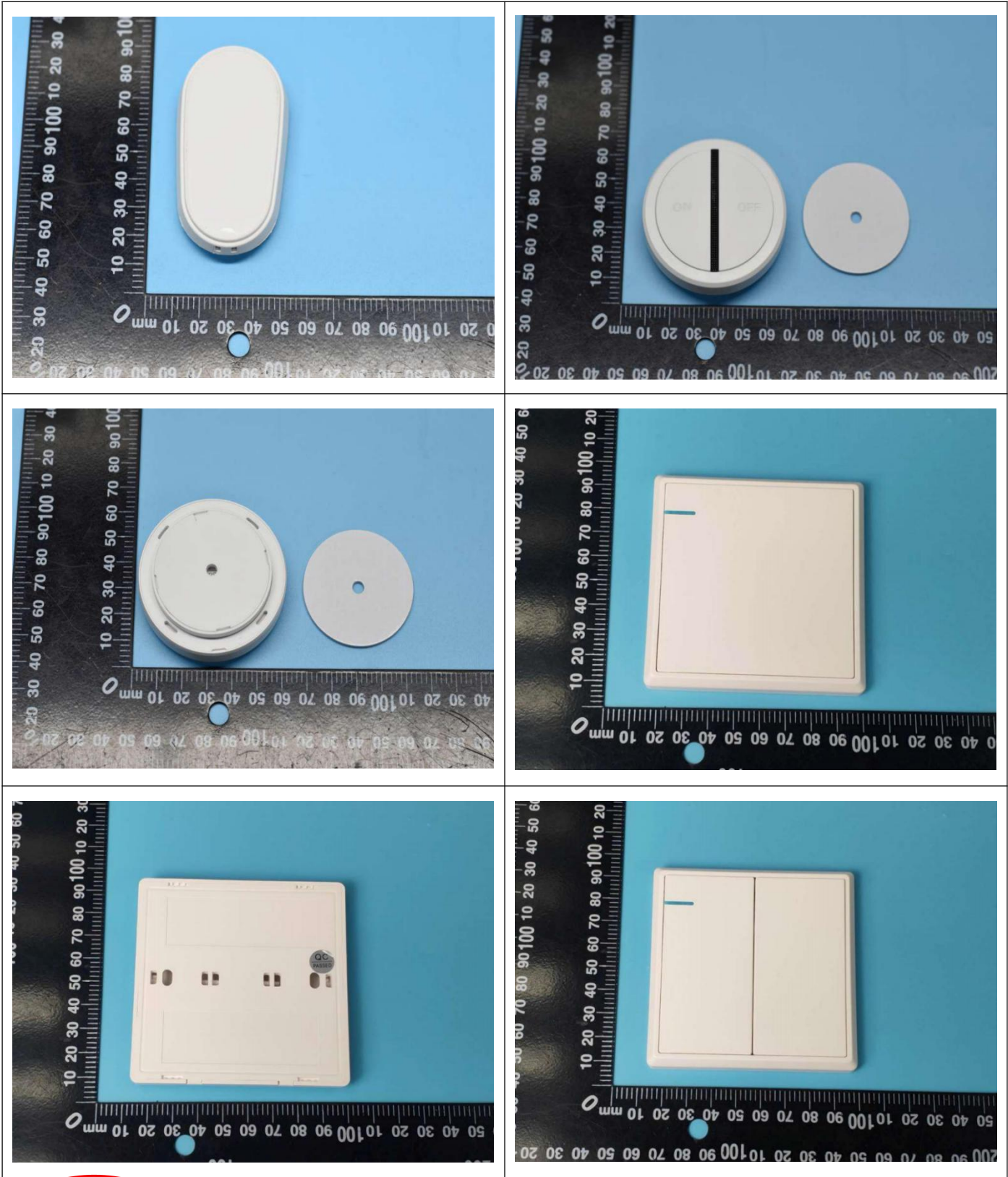


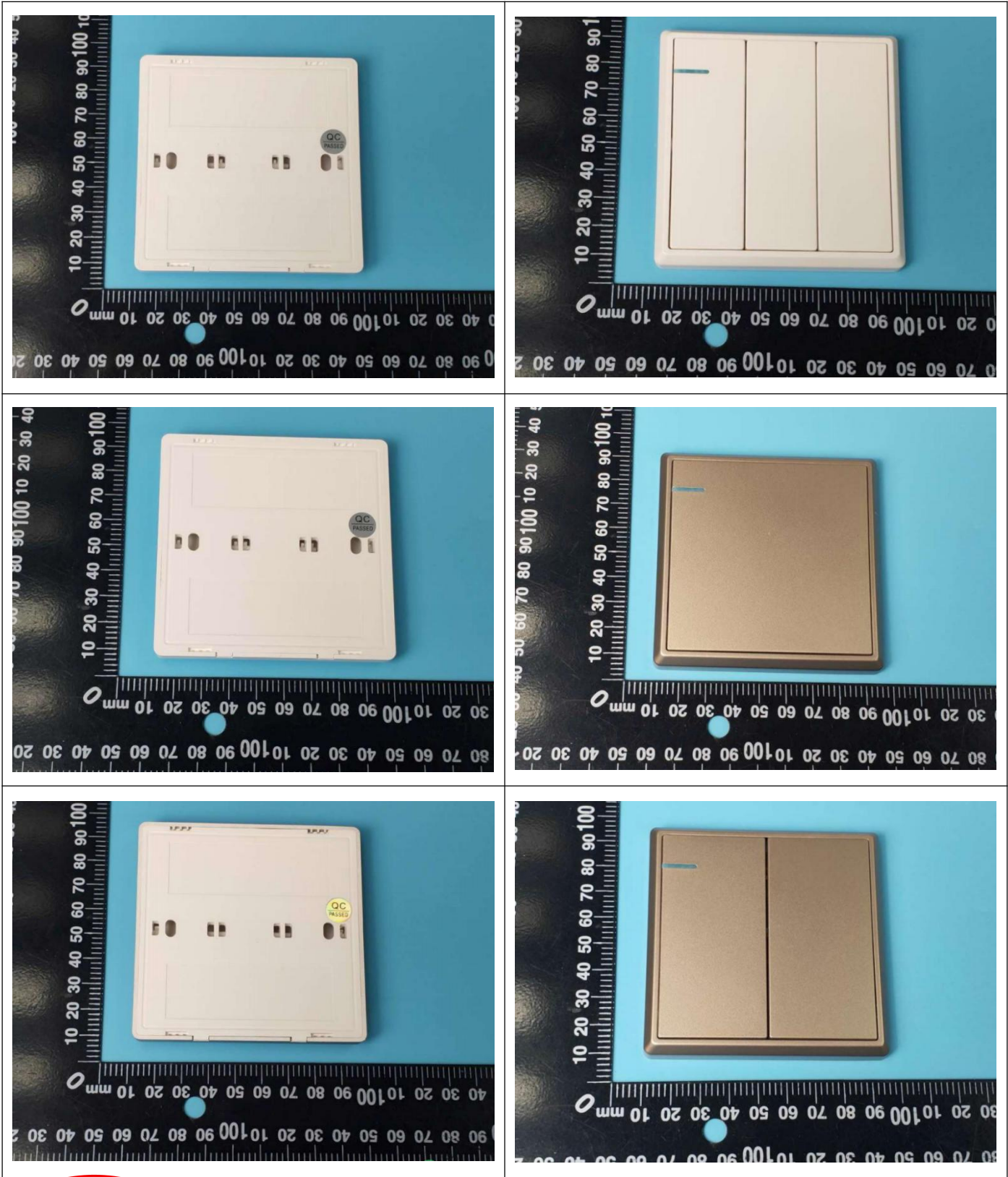


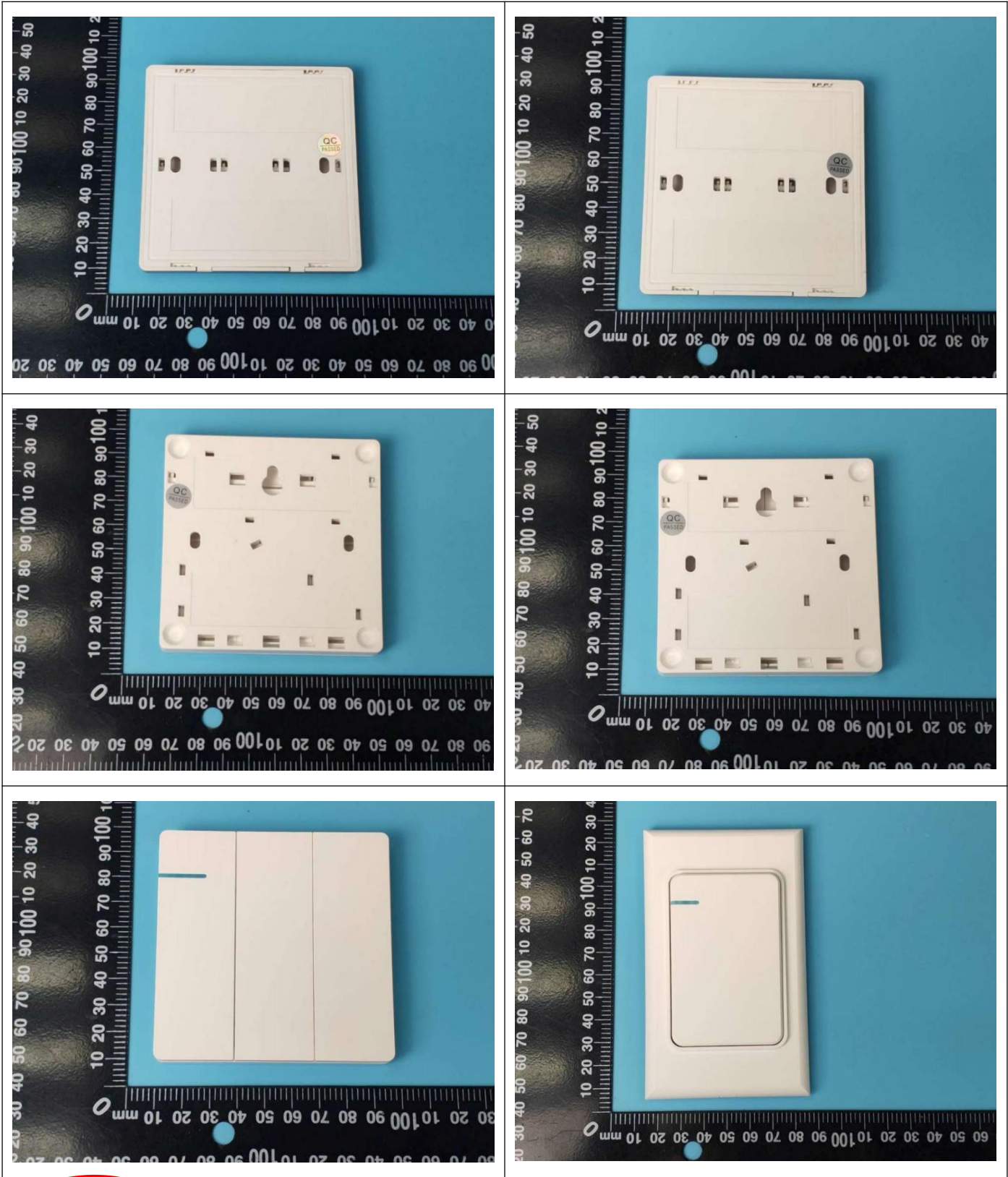
Client’s reference photo(Non-tested sample

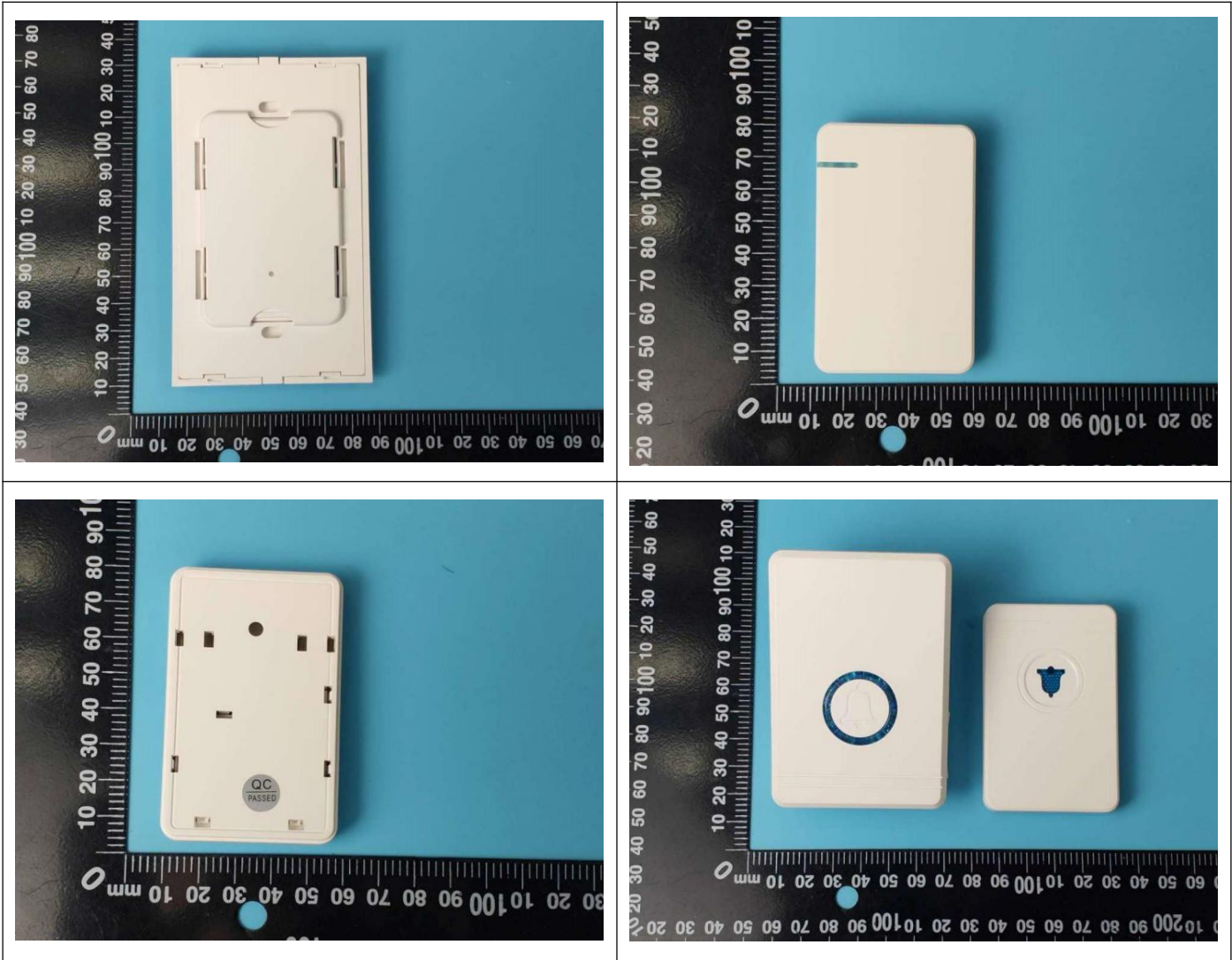














Note:The above picture was(were) provided by client.

Statement:

1. This report is considered invalid without approved signature and special seal.
2. The Applicant name and Address, the sample(s) and sample information was/were provided by the applicant who should be responsible for the authenticity which HCT hasn't verified.
3. The result(s)(conclusion) shown in this report refer(s) only to the sample(s) tested.
4. Without written approval of HCT, this report can't be reproduced except in full.
5. The result(s) in no CMA logo report shall only be used for client's scientific research, teaching, internal quality control, product research and development, etc..and just for internal reference.
6. The "n" in CNAS logo report means that the test item(s) was (were) currently not applying for CNAS accreditation.
7. Decision rules used in this report:
(1)According to the Decision rules in the regulations/standards listed in the Test Requested;
(2)If there is no Decision rules specified in the regulations listed in the Test Requested, then according to CNAS-GL015 Guidelines on Decision Rules and Statements of Conformity, 6.2.1, Simple Acceptance ($w=0$) of The binary Decision rule:
PASS (Accepted) - The measured value is within the tolerance interval.
FAIL (Rejected) - The measured value is outside the tolerance interval.

===== End of Report =====

