



Scan code for report

Test Report

Report No. CCTI-2023112807R

Date: Dec. 08, 2023

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Applicant : Anhui Aerospace & PMA Health Tech. Co., Ltd.

Address : No.1201 Huguang East Rd. Shushan District, Hefei City, Anhui Province

The submitted sample and sample information was/were submitted and identified by/on the behalf of the client

Sample name : Gravity MiHigh Back Wrap V2

Testing type /model : MHBW008

Additional type /model : N/A

Trademark : GRAVITY

Manufacturer name : Dezhou Aerospace&PMA Graphene Technology Co., Ltd.

Address : No.6596 Dongfanghong East Rd. Yuanqiao Town, Economic Development Zone, Dezhou City, Shandong Province

Sample received date : Nov. 27, 2023

Testing period : Nov. 27, 2023 to Dec. 08, 2023

Test requested : As specified by client, to test the Lead(Pb), Cadmium(Cd), Mercury(Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyl(PBBs), Polybrominated Diphenyl Ethers (PBDEs), Diisobutyl phthalate (DIBP), Dibutyl phthalate(DBP), Benzyl butyl phthalate(BBP), Di-2-ethylhexyl phthalate(DEHP) in the submitted sample in accordance with the RoHS Directive 2011/65/EU and amendment Commission Delegated Directive (EU) 2015/863 with effective from 22 July 2019.

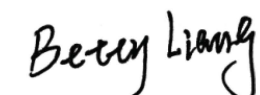
Test Method : Please refer to the following page(s)

Test Result(s) : Please refer to the following page(s)

Conclusion : The test results comply with the limits of RoHS 2.0 Directive (EU) 2015/863 and (EU)2017/2102 amending Annex II to Directive 2011/65/EU.

*****FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S)*****

Producer By :



(Betty Liang / Engineer)

Date: Dec. 08, 2023

Authorized Signer :



Date: Dec. 08, 2023

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Test Method:

A. Screening test by XRF spectroscopy

XRF screening limits in mg/kg for regulated elements according to IEC 62321-3-1:2013.

Element	Limit of IEC 62321-3-1:2013. Unit (mg/kg)		MDL	
	Polymers and Metals	Composite Material	Polymers	Other material
Pb	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma)$ $\leq OL$	$LOD \leq (50-3\sigma) < X < (150+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Hg	$BL \leq (700-3\sigma) < X < (1300+3\sigma)$ $\leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma)$ $\leq OL$	10 mg/kg	50 mg/kg
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$	10 mg/kg	50 mg/kg
Br	$BL \leq (300-3\sigma) < X$	$BL \leq (250-3\sigma) < X$	10 mg/kg	50 mg/kg

Note:

-BL = Under the XRF screening limit

-OL = Further chemical test will be conducted while result is above the screening limit

-X= The symbol "X" marks the region where further investigation is necessary

-3σ= The reproducibility of analytical instruments

-LOD= Detection limit

B. Chemical Test

Test Item	Test Method	Test Equipment	MDL	Limit
Lead (Pb)	IEC 62321-5:2013	ICP-OES	2 mg/kg	1000 mg/kg
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	2 mg/kg	100 mg/kg
Mercury (Hg)	IEC 62321-4:2013+AMD1:2017	ICP-OES	2 mg/kg	1000 mg/kg
Hexavalent Chromium Cr (VI) (Metal)	IEC 62321-7-1:2015	UV-VIS	0.1 µg/cm ²	0.13 µg/cm ²
Hexavalent Chromium Cr (VI) (Nonmetal)	IEC 62321-7-2:2017	UV-VIS	8 mg/kg	1000 mg/kg
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	5 mg/kg	1000 mg/kg
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS	5 mg/kg	1000 mg/kg
Phthalates (DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS	50mg/kg	1000 mg/kg

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Test Result(s):

Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
1	Velcro	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
2	white cloth	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
3	Black cotton fabric	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
4	Black mesh fabric	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
5	Black plastic elastic band	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
6	Black cotton	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
7	Black silicone	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	

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Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
8	PCB	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
9	Tin	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
10	Chip resistor	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
11	IC	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
12	Chip capacitors	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
13	USB Interface	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	/	/	
14	Silicon Keypad	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	

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Sample No.	Sample Description	Tested Items	XRF Screening Test Unit (mg/kg)	Chemical Test Unit (mg/kg)	Conclusion
15	Thin white line	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
16	Black line	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
17	White line	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
18	Red line	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
19	Black plastic material	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	
20	Black shrink adhesive	Pb	BL	/	PASS
		Cd	BL	/	
		Hg	BL	/	
		Cr(Cr(VI))	BL	/	
		Br(PBBs&PBDEs)	BL	/	

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Tested Item(s)	Result Unit (mg/kg)					Acceptable Limit Unit (mg/kg)
	1	2	3	4	5	
Di-isobutyl phthalate(DIBP) CAS #:84-69-5	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Dibutyl phthalate(DBP) CAS #:84-74-2	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Benzylbutyl phthalate(BBP) CAS #:85-68-7	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Di-2-ethylhexyl phthalate(DEHP) CAS #:117-81-7	N.D.	N.D.	N.D.	N.D.	N.D.	1000

Tested Item(s)	Result Unit (mg/kg)					Acceptable Limit Unit (mg/kg)
	6	7	8	9	10	
Di-isobutyl phthalate(DIBP) CAS #:84-69-5	N.D.	N.D.	N.D.	/	N.D.	1000
Dibutyl phthalate(DBP) CAS #:84-74-2	N.D.	N.D.	N.D.	/	N.D.	1000
Benzylbutyl phthalate(BBP) CAS #:85-68-7	N.D.	N.D.	N.D.	/	N.D.	1000
Di-2-ethylhexyl phthalate(DEHP) CAS #:117-81-7	N.D.	N.D.	N.D.	/	N.D.	1000

Tested Item(s)	Result Unit (mg/kg)					Acceptable Limit Unit (mg/kg)
	11	12	13	14	15	
Di-isobutyl phthalate(DIBP) CAS #:84-69-5	N.D.	N.D.	/	N.D.	N.D.	1000
Dibutyl phthalate(DBP) CAS #:84-74-2	N.D.	N.D.	/	N.D.	N.D.	1000
Benzylbutyl phthalate(BBP) CAS #:85-68-7	N.D.	N.D.	/	N.D.	N.D.	1000
Di-2-ethylhexyl phthalate(DEHP) CAS #:117-81-7	N.D.	N.D.	/	N.D.	N.D.	1000

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Tested Item(s)	Result Unit (mg/kg)					Acceptable Limit Unit (mg/kg)
	16	17	18	19	20	
Di-isobutyl phthalate(DIBP) CAS #:84-69-5	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Dibutyl phthalate(DBP) CAS #:84-74-2	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Benzylbutyl phthalate(BBP) CAS #:85-68-7	N.D.	N.D.	N.D.	N.D.	N.D.	1000
Di-2-ethylhexyl phthalate(DEHP) CAS #:117-81-7	N.D.	N.D.	N.D.	N.D.	N.D.	1000

Note:

-MDL = Method Detection Limit

-N.D. = Not Detected (<MDL)

-mg/kg = ppm = parts per million

-Negative = Absence of Cr(VI) , the detected Cr(VI) concentration in the boiling water extraction solution is less than 0.02 mg/kg with 50cm² sample surface area used.

-Positive = Presence of Cr(VI), the detected Cr(VI) concentration in the boiling water extraction solution is equal to or greater than 0.02 mg/kg with 50cm² sample surface area used.

-#=According to the directive (2011/65/ EU), Lead is exempted as copper alloy containing up to 4% lead by weight.

Remark:

- The screening results are only used for reference.

- When conducting the test for PBBs & PBDEs, XRF was introduced to screen Br Exclusively;

- When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.

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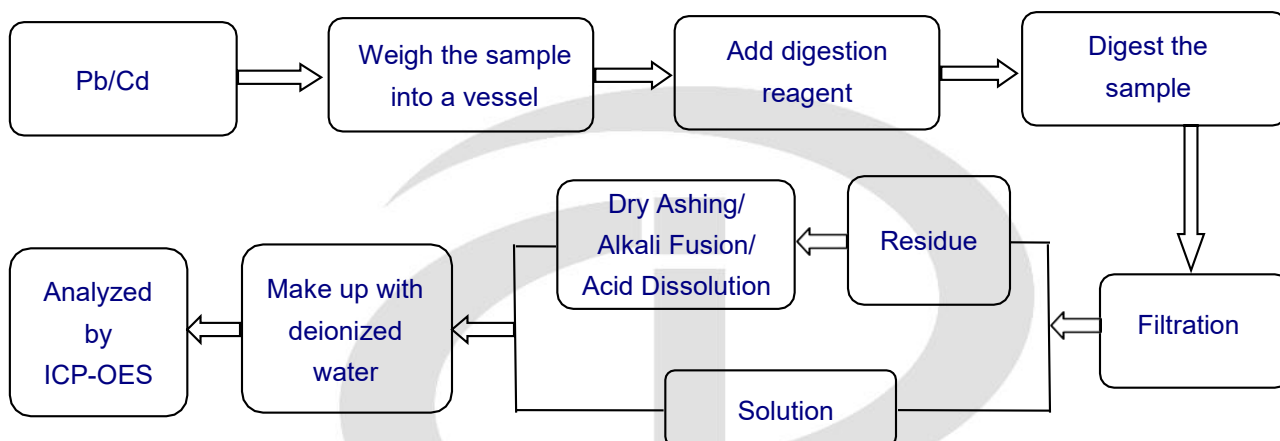
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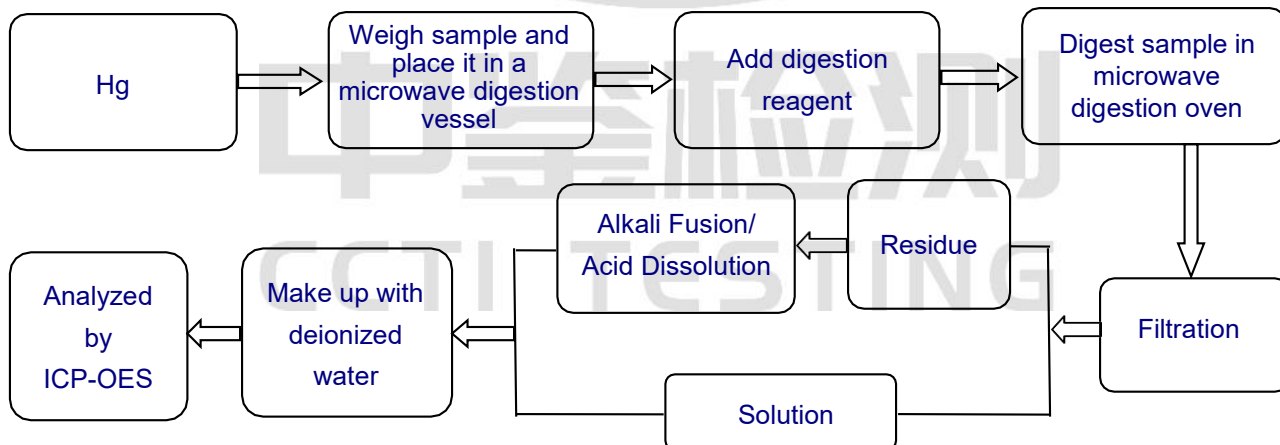
Test Process:

The sample(s) had been dissolved totally tested for Lead, Cadmium, Mercury.

◆ IEC 62321-5:2013 Ed.1.0



◆ IEC 62321-4:2013+AMD1:2017 Ed.1.0



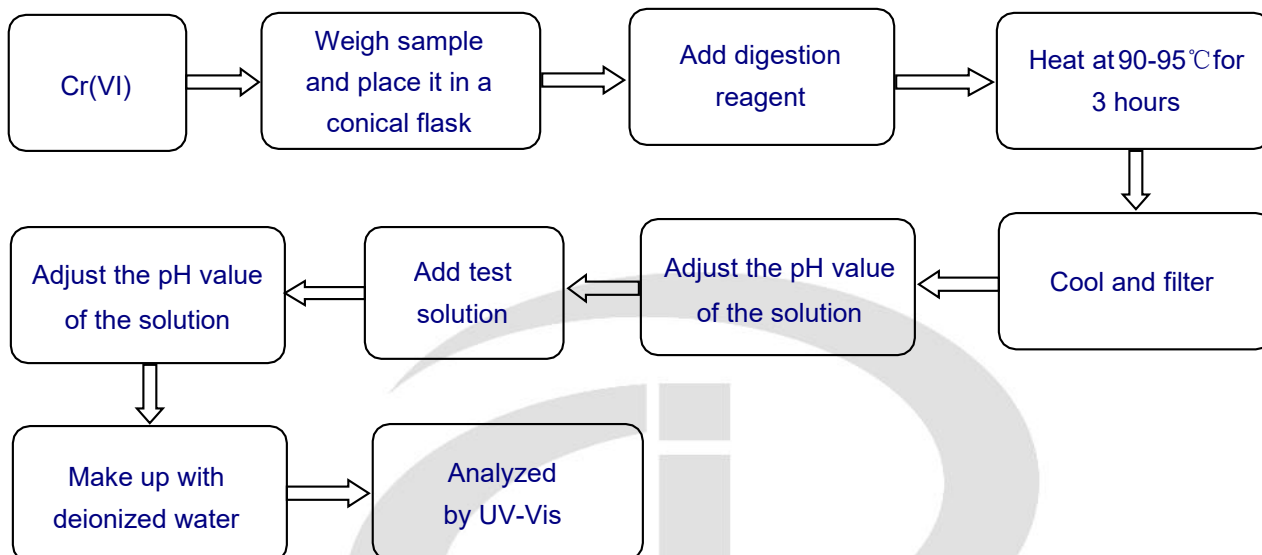
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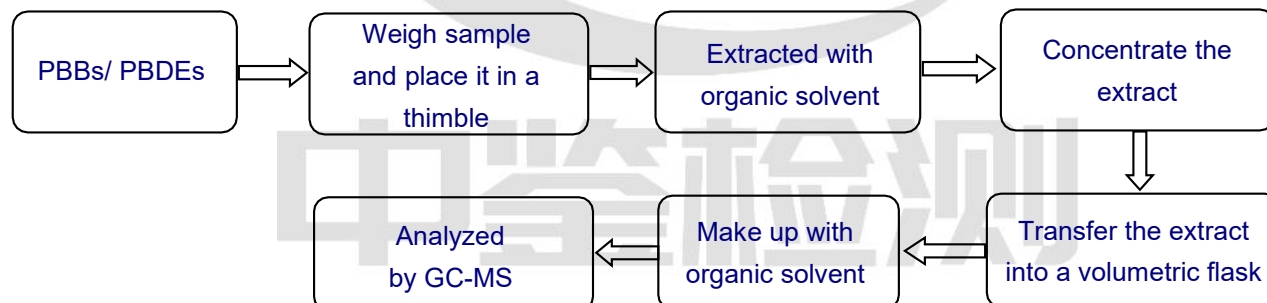
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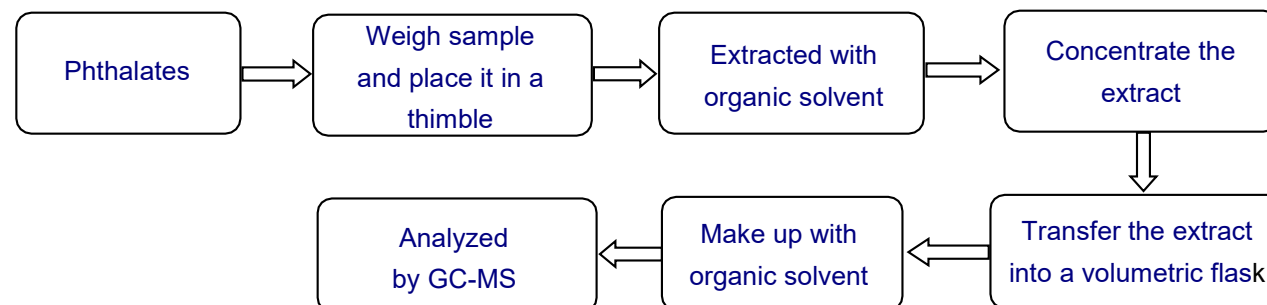
◆ IEC 62321-7-2:2017 Ed.1.0



◆ IEC 62321-6:2015 Ed.1.0



◆ IEC 62321-8:2017 Ed.1.0



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Photograph of Sample



Figure 1



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Figure 3



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Figure 5

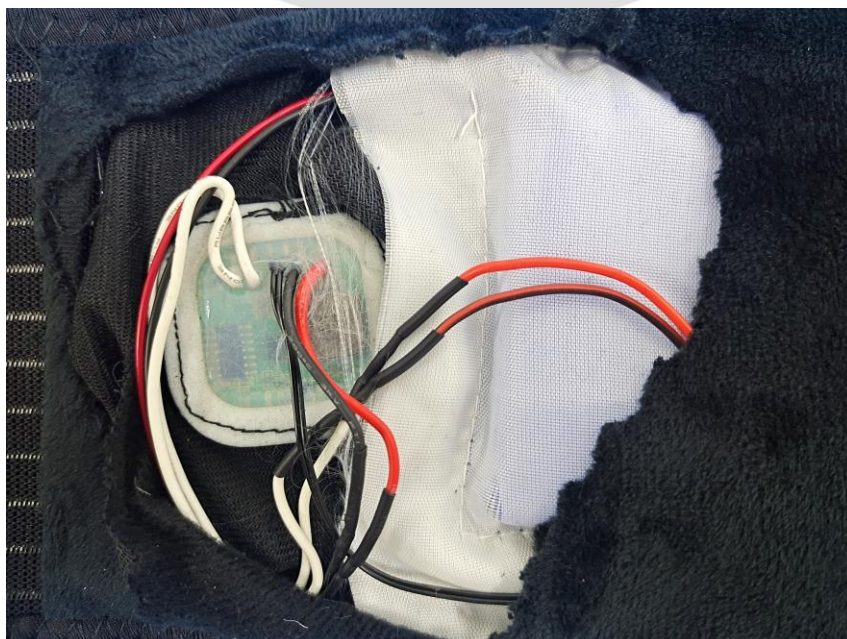


Figure 6

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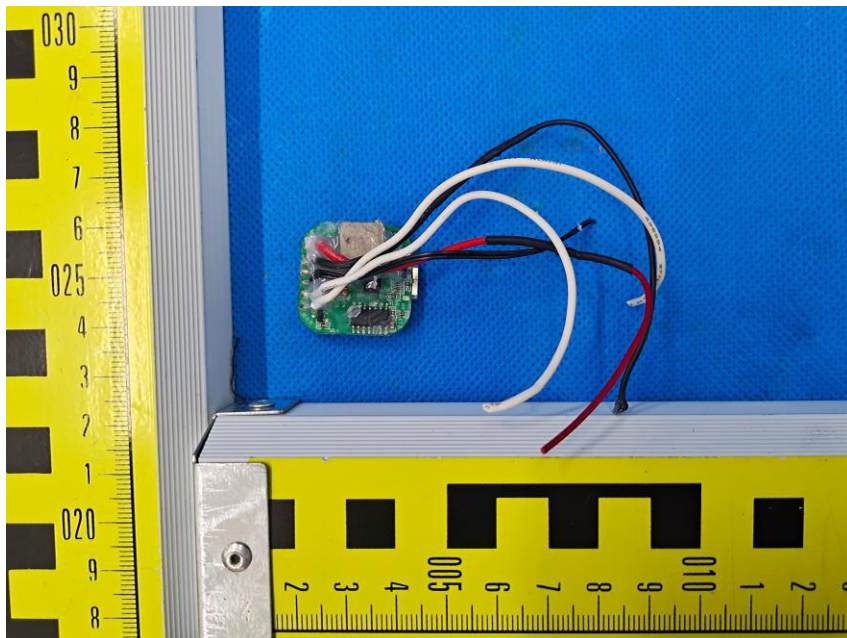


Figure 7

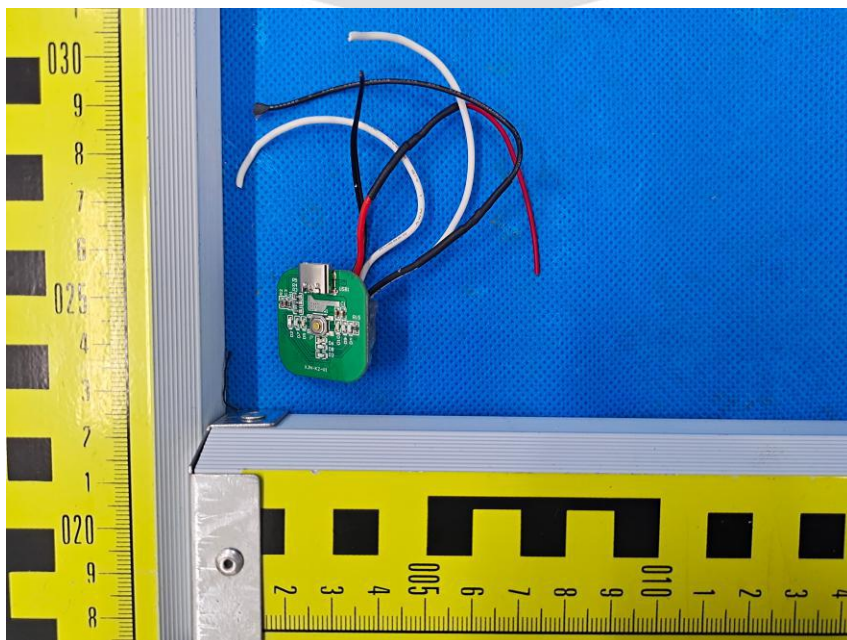


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Figure 9

***** End of Report *****

中鉴检测
CCTI TESTING

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