

TEST REPORT



Report No.: A2102076-C01-R06

Date: March 17, 2021

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Applicant:

Sunivision Technology Development Company Limited

Address:

**Floor 3, Building B, TaoYuan Industrial Park, Huangpu
East Development Zone, Guangzhou, China**

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client:

Sample Name

Wifi camera

Model No.

AP-107W1Y-2MP-TY

Reference Information

AP-107W1-1MP-TY, AP-TY688ZD-1MP, AP-TY688ZD-2MP,
AP-9826-10-TY-2MP, AP-TYB151-1MP, AP-TYB151-2MP,
AP-TYB149-1MP, AP-VR-P1-130, AP-TYB150-1MP,
AP-TYB150-2MP, AP-308ZD-1MP-TY, AP-308ZY-2MP-TY,
AP-9826-10-TY-1MP, AP-228ZD-1MP-TY,
AP-228ZDH-2MP-TY, AP-618ZD-1MP-TY, AP-K2-10TY,
AP-K2-20TY, AP-P11-12-2MP-3.6-6, AP-P09-12-2MP,
AP-P10-15-2MP, AP-B166-2MP-XM, AP-B166-1MP-TY,
AP-B166-2MP-TY, AP-B166-1MP-AJ, AP-B166-2MP-AJ,
AP-618ZDH-2MP-TY

Sample Received Date

March 02, 2021

Testing Period

March 11 - 17, 2021

Test Method & Test Result

Please refer to following pages.

Test Requested

As specified by client, according to RoHS Directive 2011/65/EU with amendment (EU) 2015/863, to test Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium(Cr(VI)), Polybrominated Biphenyls(PBBs), Polybrominated Diphenyl Ethers(PBDEs), Phthalates(DBP, BBP, DEHP, DIBP) in the tested materials of the submitted sample(s).

Result

Pass

Tested by:

Shayan Zhang

Approved by:

[Signature]

Reviewed by:

Tony Gmy

Date of issue:

March 17, 2021





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Test Method

(1) XRF screening limits for regulated elements according to IEC 62321-3-1:2013 (Unit: mg/kg)

Element	Polymers	Metals	Composite material
Pb	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$ $< (1500+3\sigma) \leq OL$
Cd	$BL \leq (70-3\sigma) < X$ $< (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X$ $< (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Hg	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X$ $< (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X$ $< (1500+3\sigma) \leq OL$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$
Br	$BL \leq (300-3\sigma) < X$	N/A	$BL \leq (250-3\sigma) < X$

(2) Chemical screening limits for PBBs, PBDEs

Test Item(s)	Screening limits(Unit: mg/kg)
Polybrominated Biphenyls (PBBs)	$BL \leq 200 < IN$
Polybrominated Diphenyl Ethers (PBDEs)	$BL \leq 200 < IN$

(3) Chemical screening limits for Phthalates

Test Item(s)	Screening limits(Unit: mg/kg)
Dibutyl phthalate(DBP)	$BL \leq 600 < IN$
Benzylbutyl phthalate(BBP)	$BL \leq 600 < IN$
Di-2-ethylhexyl phthalate(DEHP)	$BL \leq 600 < IN$
Diisobutyl phthalate(DIBP)	$BL \leq 600 < IN$

(4) Chemical Test

Test Item	Test Method	Test Instrument	MDL (mg/kg)	EU RoHS Limit (mg/kg)
Lead (Pb)	IEC 62321-5:2013	ICP-OES	2	1000
Cadmium (Cd)	IEC 62321-5:2013	ICP-OES	2	100
Mercury (Hg)	IEC 62321-4:2013 +AMD1:2017	ICP-OES	2	1000
Hexavalent Chromium (Cr(VI))	IEC 62321-7-2:2017 (non-metal)	UV-Vis	8	1000
	IEC 62321-7-1:2015 (metal)	UV-Vis	0.1($\mu\text{g}/\text{cm}^2$)	/
Polybrominated Biphenyls (PBBs)	IEC 62321-6:2015	GC-MS	5	1000
Polybrominated Diphenyl Ethers (PBDEs)	IEC 62321-6:2015	GC-MS	5	1000
Phthalates(DBP, BBP, DEHP, DIBP)	IEC 62321-8:2017	GC-MS	50	1000



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Tested Material Description

No.	Description	No.	Description
1	Black translucent plastic ring	20	White plastic rotating block
2	White plastic case	21	Silvery metal shell of motor
3	Red thin wire sheath of microphone connection wire	22	White plastic cover of motor shell
4	Black thin wire sheath of microphone connection wire	23	Red thin wire sheath of motor connection wire
5	Photodiode	24	Black thin wire sheath of motor connection wire
6	Chip LED lamp beads	25	Yellow thin wire sheath of motor connection wire
7	Black PCB board of LED light	26	Dark blue thin wire sheath of motor connection wire
8	Black plastic ring of camera	27	Brown thin wire sheath of motor connection wire
9	Black foam washer of camera	28	White plastic terminal of connection wire
10	Black plastic lens barrel of camera	29	Yellow thin wire sheath of PCB board connection wire
11	Camera lens barrel transparent lens	30	Black thin wire sheath of PCB board connection wire
12	CMOS image sensor	31	Silvery gray label sticker of base shell
13	Beige plastic terminal block of PCB board	32	White plastic base shell
14	Silvery metal card cover of memory card holder	33	Black plastic block on the bottom cover
15	IC	34	White plastic
16	IC	35	Silvery metal pin
17	Black main PCB board	36	White plastic
18	Red thin wire sheath of speaker cable	37	White wire sheath
19	Black thin wire sheath of speaker cable		

Remark:

1. The tested materials were specified and confirmed by the client.
2. According to the same material declaration provided by the customer, some material test results in the report are copied from other reports, as shown in the following table.

Test material No.	Quto Material No.	Quto Report No.
34 ~ 37	6 ~ 9	A2012051-C01-R01



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Tested Result

(1) Screening Result

Tested Item(s)	Screening Result									
	1	2	3	4	5	6	7	8	9	10
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Cadmium (Cd)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Mercury (Hg)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Chromium (Cr(VI))	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Bromine (PBBs & PBDEs)	BL	BL	BL	BL	BL*	BL	BL*	BL	BL	BL
Dibutyl phthalate(DBP)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Benzylbutyl phthalate(BBP)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Di-2-ethylhexyl phthalate(DEHP)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Diisobutyl phthalate(DIBP)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL

Tested Item(s)	Screening Result									
	11	12	13	14	15	16	17	18	19	20
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Cadmium (Cd)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Mercury (Hg)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Chromium (Cr(VI))	BL	BL	BL	X	BL	BL	BL	BL	BL	BL
Total Bromine (PBBs & PBDEs)	BL	BL	BL	N/A	BL	BL	BL*	BL	BL	BL
Dibutyl phthalate(DBP)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	BL
Benzylbutyl phthalate(BBP)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	BL
Di-2-ethylhexyl phthalate(DEHP)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	BL
Diisobutyl phthalate(DIBP)	BL	BL	BL	N/A	BL	BL	BL	BL	BL	BL

Tested Item(s)	Screening Result									
	21	22	23	24	25	26	27	28	29	30
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Cadmium (Cd)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Mercury (Hg)	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Chromium (Cr(VI))	BL	BL	BL	BL	BL	BL	BL	BL	BL	BL
Total Bromine (PBBs & PBDEs)	N/A	BL	BL	BL	BL	BL	BL	BL	BL	BL
Dibutyl phthalate(DBP)	N/A	BL	BL	BL	BL	BL	BL	BL	BL	BL
Benzylbutyl phthalate(BBP)	N/A	BL	BL	BL	BL	BL	BL	BL	BL	BL
Di-2-ethylhexyl phthalate(DEHP)	N/A	BL	BL	BL	BL	BL	BL	BL	BL	BL
Diisobutyl phthalate(DIBP)	N/A	BL	BL	BL	BL	BL	BL	BL	BL	BL

Shenzhen Alpha Product Testing Co., Ltd.

Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103, Shenzhen, Guangdong, China



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(1) Screening Result

Tested Item(s)	Screening Result						
	31	32	33	34	35	36	37
Lead (Pb)	BL	BL	BL	BL	BL	BL	BL
Cadmium (Cd)	BL	BL	BL	BL	BL	BL	BL
Mercury (Hg)	BL	BL	BL	BL	BL	BL	BL
Total Chromium (Cr(VI))	BL	BL	BL	BL	BL	BL	BL
Total Bromine (PBBs & PBDEs)	BL	BL	BL	BL	N/A	BL	BL
Dibutyl phthalate(DBP)	BL	BL	BL	BL	N/A	BL	BL
Benzylbutyl phthalate(BBP)	BL	BL	BL	BL	N/A	BL	BL
Di-2-ethylhexyl phthalate(DEHP)	BL	BL	BL	BL	N/A	BL	BL
Diisobutyl phthalate(DIBP)	BL	BL	BL	BL	N/A	BL	BL

(2) Test result for Chemical Confirmation

(a) The test result of Hexavalent Chromium (Cr(VI)):

Testing item	Result (mg/kg)
	15
Hexavalent Chromium (Cr(VI))	N.D

Remark: N.D = Not Detected (< MDL or LOQ), MDL = Method Detection Limit
IN= Inconclusive, Further chemical test, X = The range of needing to do further testing
BL = Below the screening limit, OL = Over the screening limit.
N/A= Not applicable
3σ= The reproducibility of analytical instruments
* = The screened result was found and further chemical test
When conducting the test for PBBs&PBDEs, XRF was introduced to screen Br exclusively, and then chemical screening was conducted if the XRF result is X.
When conducting the test for Hexavalent Chromium, XRF was introduced to screen Chromium exclusively.
LOQ = Limit of Quantification, The LOQ of Hexavalent chromium is 0.10 µg/cm²
LOD= Detection limit
mg/kg = ppm = parts per million, 1000 mg/kg = 0.1%



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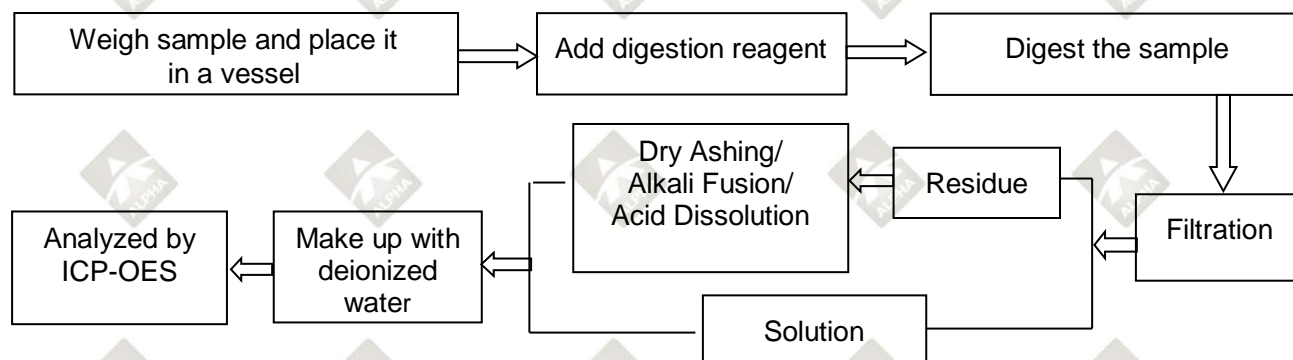
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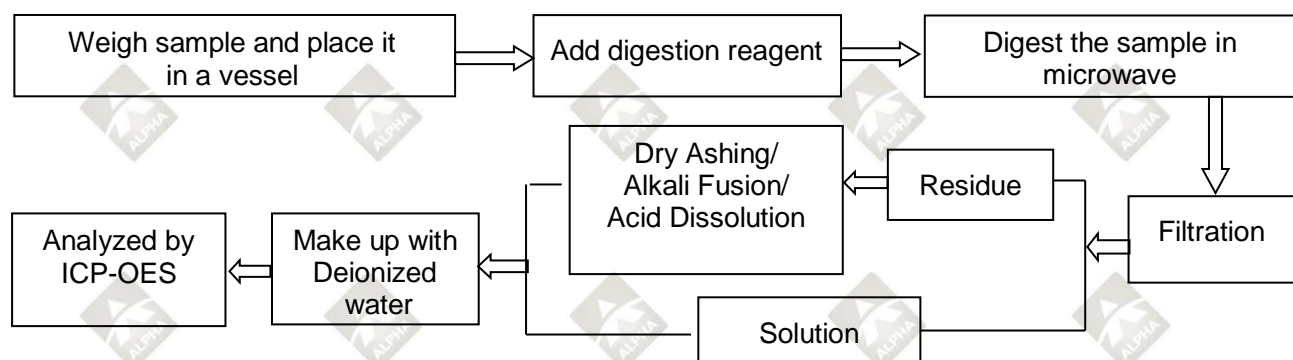
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Test Process

1. Lead(Pb), Cadmium(Cd), Chromium(Cr)

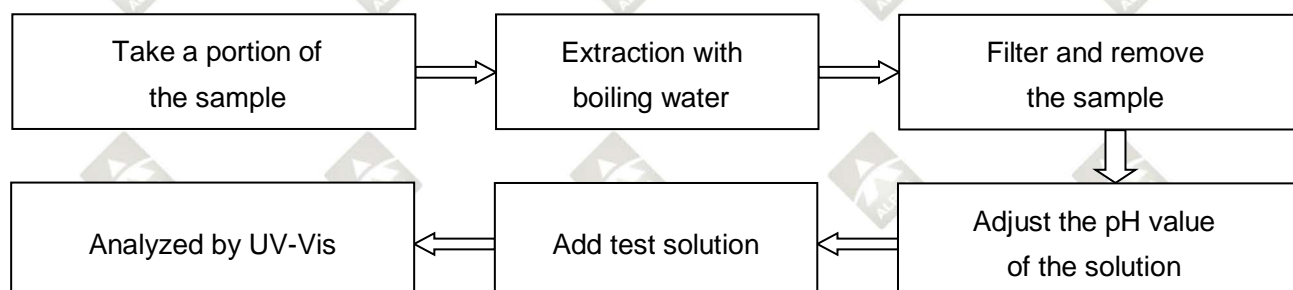


2. Mercury(Hg)



3. Hexavalent Chromium (Cr (VI))

(1) IEC 62321-7-1:2015 Plating/Metal sample(s)





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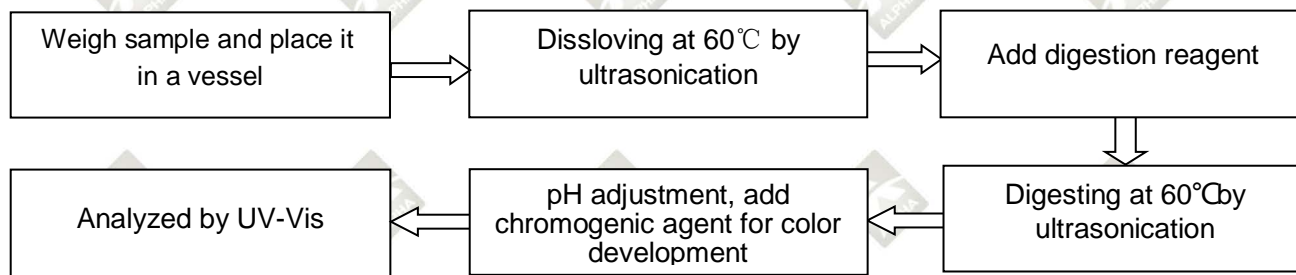
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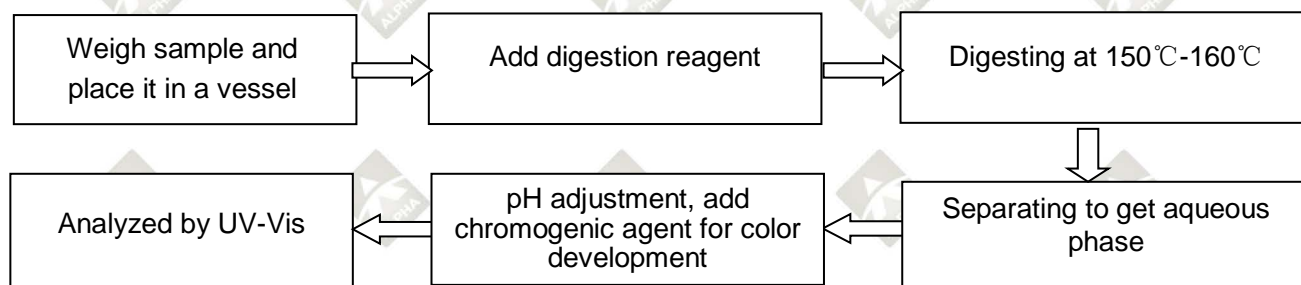
(2) IEC 62321-7-2:2017

Non-metal sample(s) (Material ABS/PC/PVC)

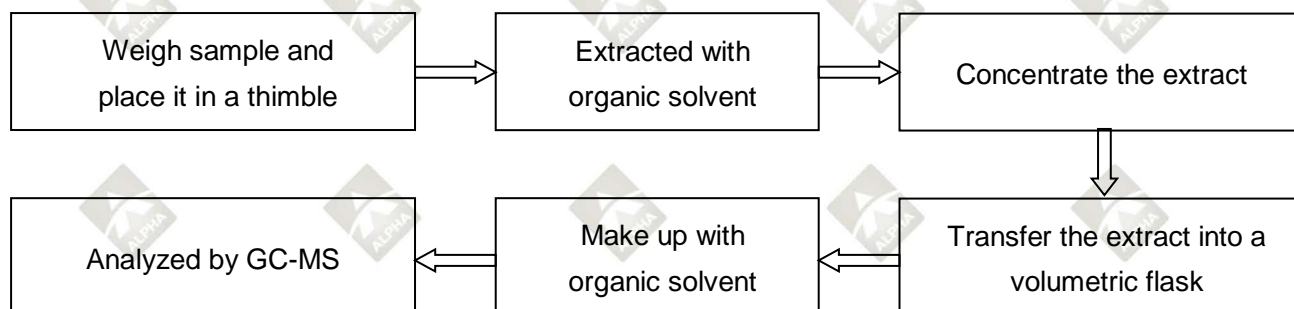


(3) IEC 62321-7-2:2017

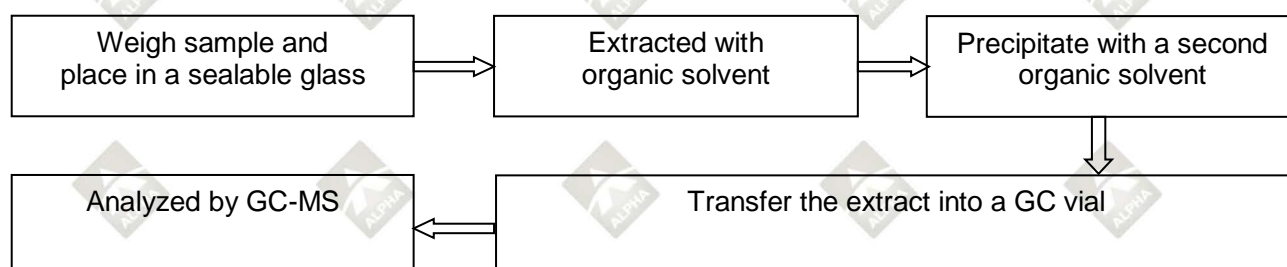
Non-metal sample(s) (Others)



4. Polybrominated Biphenyls (PBBs), Polybrominated Diphenyl Ethers (PBDEs)



5. Phthalates(DBP/BBP/DEHP/DIBP)



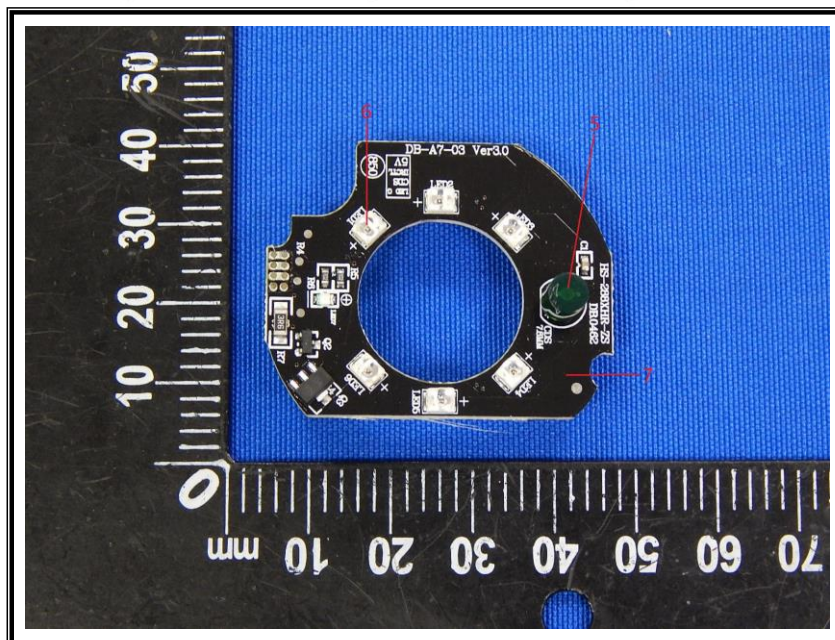
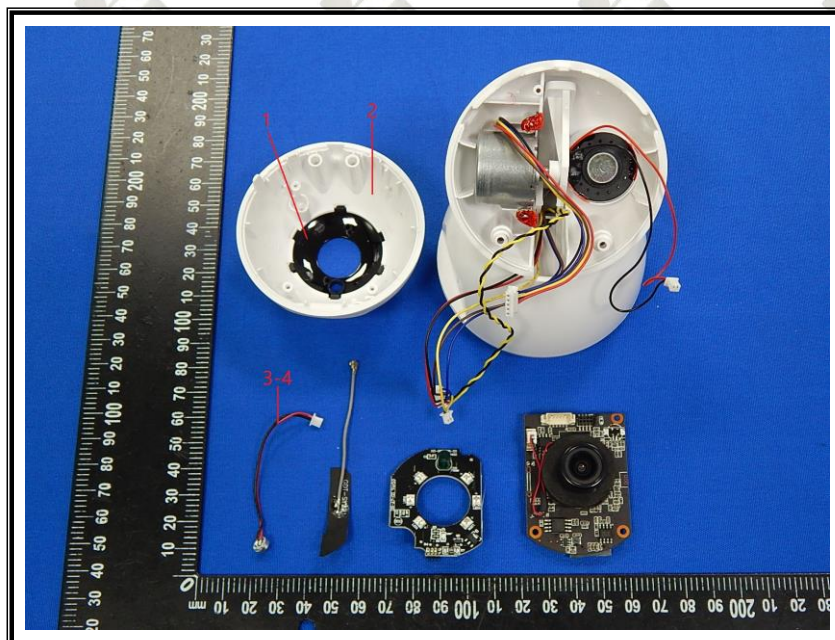
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Tested sample photo(s)



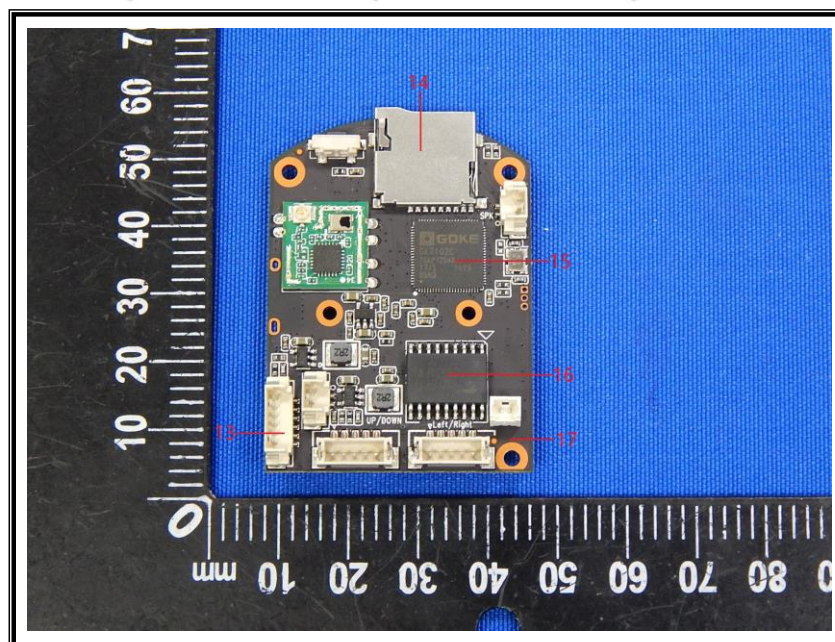
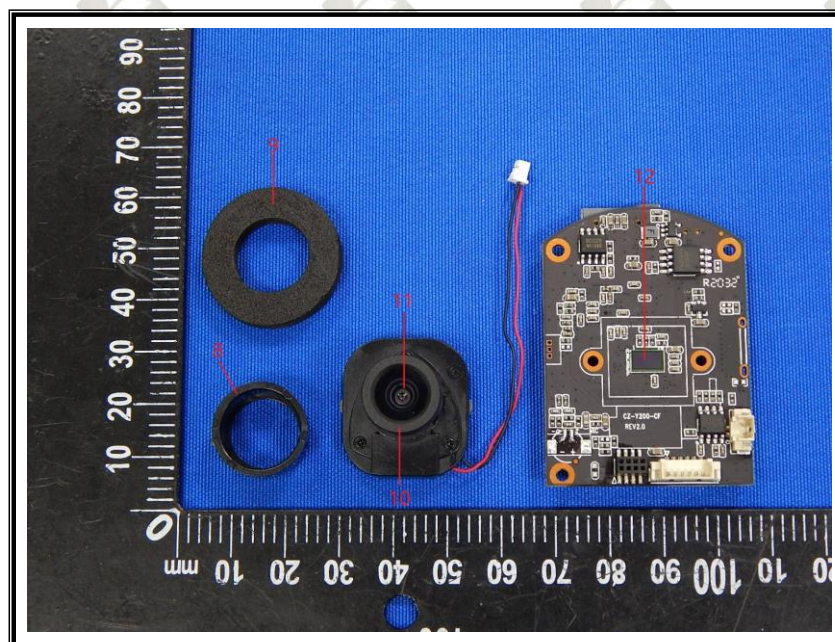
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Tested sample photo(s)



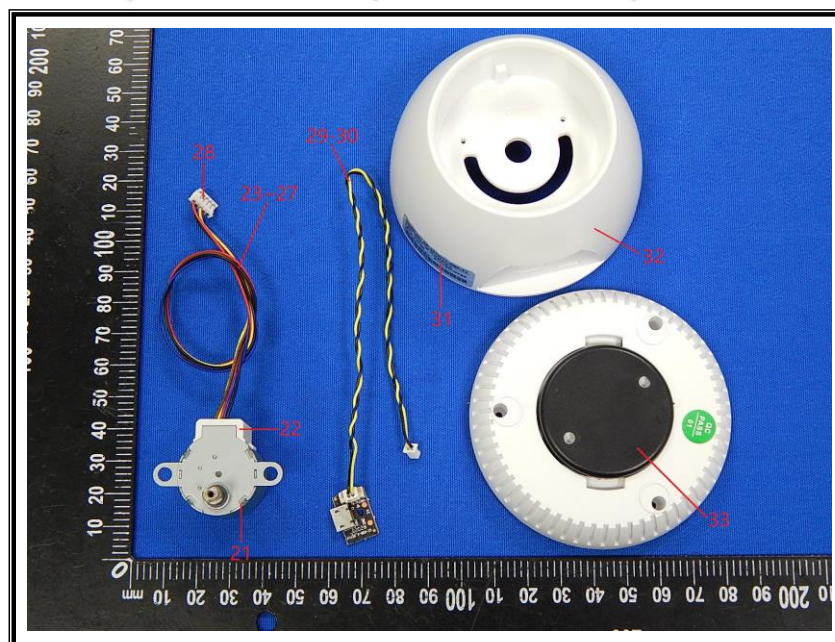
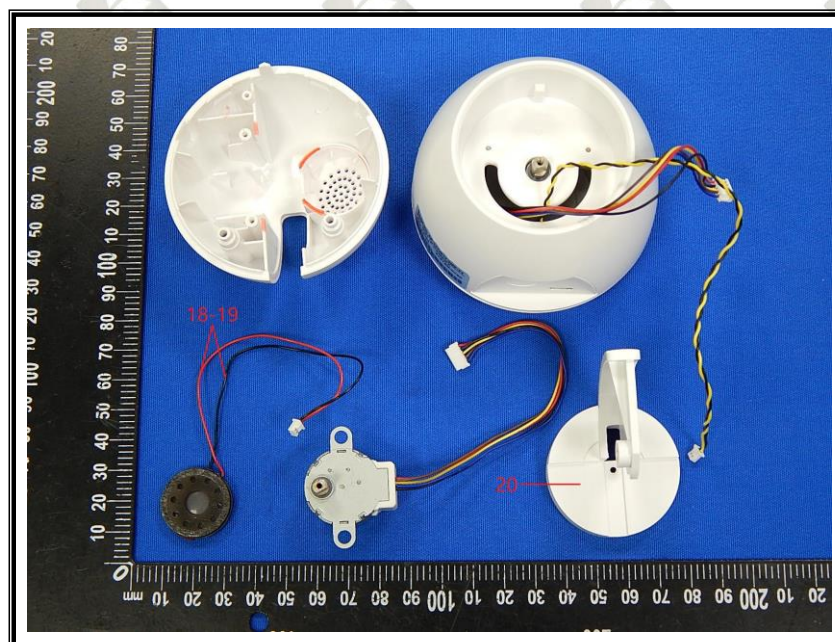
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Tested sample photo(s)



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Tested sample photo(s)



--- End of report ---

Statement:

1. The sample(s) and sample Information was/were provided by the client who should be responsible for the authenticity which ALPHA hasn't verified.
2. The result(s) shown in this report refer(s) only to the sample(s) tested.
3. According to the applicant's requirement, we only test the specified material of submit sample(s)
4. Without written approval of ALPHA, this report can't be reproduced except in full.