

TEST REPORT

KOTITI NO. : 1614030531
APPLICANT : SUPREMA HQ
DATE IN : August 18, 2016
DATE OUT : September 20, 2016

Product Name	BioMini Slim S, BioMini S3
Model Name	BMSS-LFD
Part Name	N/S
Testing Period	August 26, 2016 ~ September 12, 2016
Test Result	For further details, please refer to the following page(s).

* N/S : Not Submitted

AUTHORIZED by :

Young R. Kim

DR. YOUNG RYUL KIM / PRESIDENT

REMARK: SEE ENCLOSED WORKSHEET(S) RESULT

Contact information for technical questions and general inquiries.

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■ SCREENING

1) XRF screening

- i) X-Ray Fluorescence Spectrometer (XRF)
- ii) Maker : SHIMADZU
- iii) Model : EDX-7000

2) Cr⁶⁺ Spot test

■ PRECISION ANALYSIS(ICP-OES, GC/MS, UV/VIS)

- Test Method:

Reference to IEC 62321-5:2013 by acid digestion and determined by ICP-OES (Pb, Cd)

Reference to IEC 62321-4:2013 by acid digestion and determined by ICP-OES (Hg)

Reference to IEC 62321:2008 (Annex C) by alkaline digestion and determined by UV-VIS (Cr⁶⁺)

Reference to IEC 62321-7-1:2015 by boiling water extraction and determined by UV-VIS (Cr⁶⁺)

Reference to IEC 62321:2008 (Annex A) by solvent extraction and determined by GC-MS (PBBs, PBDEs)

■ SCREENING (ED-XRF, Spot Test)

Restriction of Hazardous Substances Directive (RoHS/2011/65/EU), mg/kg							
Test Item	# 1	# 2	# 3	# 4	# 5	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	143	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	N.D.	N.D.	N.D.	N.D.	197 903	30	50
Spot Test (Cr ⁶⁺)	N.A.	N.A.	N.A.	N.A.	Negative	-	-
Total Br	N.D.	N.D.	N.D.	N.D.	N.A.	50	-
Test Item	# 6	# 7	# 8	# 9-1	# 9-2	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	375	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	972	N.D.	N.D.	503	N.D.	30	50
Spot Test (Cr ⁶⁺)	Positive	N.A.	N.A.	Negative	N.A.	-	-
Total Br	N.A.	N.D.	N.D.	N.A.	N.D.	50	-
Test Item	# 9-3	# 9-4	# 9-5	# 9-6	# 9-7	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	121	N.D.	N.D.	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	Negative	N.A.	N.A.	N.A.	Negative	-	-
Total Br	N.A.	N.D.	N.D.	N.D.	N.A.	50	-

Remark

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- N.D. = not detected (concentration of analyte lower than the laboratory reporting limit)
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- RL = Reporting Limit
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- Positive = A positive test result indicated the presence of Cr⁶⁺

■ SCREENING (ED-XRF, Spot Test)

<u>Restriction of Hazardous Substances Directive (RoHS/2011/65/EU), mg/kg</u>							
Test Item	# 9-8	# 9-9	# 9-10	# 9-11	# 9-12	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	N.D.	55	N.D.	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	N.A.	Negative	N.A.	N.A.	N.A.	-	-
Total Br	N.D.	N.A.	N.D.	N.D.	N.D.	50	-
Test Item	# 9-13	# 9-14	# 9-15	# 9-16	# 9-17	RL	
						Polymer	Metal
Lead	50	N.D.	176	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	N.D.	N.D.	670	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	N.A.	Negative	Negative	N.A.	Negative	-	-
Total Br	53 166	N.A.	N.A.	N.D.	N.A.	50	-
Test Item	# 9-18	# 9-19	# 9-20	# 10	# 11-1	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	188	N.D.	N.D.	N.D.	50	100
Total Cr	N.D.	158	N.D.	6 850	N.D.	30	50
Spot Test (Cr ⁶⁺)	N.A.	Negative	N.A.	Negative	N.A.	-	-
Total Br	N.D.	N.A.	N.D.	N.A.	N.D.	50	-

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■ SCREENING (ED-XRF, Spot Test)

<u>Restriction of Hazardous Substances Directive (RoHS/2011/65/EU), mg/kg</u>							
Test Item	# 11-2	# 11-3	# 11-4	# 12	# 13-1	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	72	707	N.D.	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	Negative	Negative	N.A.	N.A.	N.A.	-	-
Total Br	N.A.	N.A.	N.D.	N.D.	N.D.	50	-
Test Item	# 13-2	# 13-3	# 14-1	# 14-2	# 15	RL	
						Polymer	Metal
Lead	N.D.	143	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	183	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	109	N.D.	N.D.	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	Negative	Negative	N.A.	Negative	N.A.	-	-
Total Br	N.A.	N.A.	66	N.A.	N.D.	50	-
Test Item	# 16	# 17	# 18-1	# 18-2	# 18-3	RL	
						Polymer	Metal
Lead	291	N.D.	134	N.D.	248	50	100
Cadmium	189	N.D.	N.D.	85	443	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	664	N.D.	N.D.	N.D.	242	30	50
Spot Test (Cr ⁶⁺)	Negative	N.A.	N.A.	Negative	Negative	-	-
Total Br	N.A.	1 523	27 777	N.A.	N.A.	50	-

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■ SCREENING (ED-XRF, Spot Test)

<u>Restriction of Hazardous Substances Directive (RoHS/2011/65/EU), mg/kg</u>							
Test Item	# 19-1	# 19-2	# 19-3	# 20	# 21-1	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	N.D.	N.D.	N.D.	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	N.A.	N.A.	N.A.	N.A.	N.A.	-	-
Total Br	98	12 605	11 053	N.D.	N.D.	50	-
Test Item	# 21-2	# 21-3	# 22	# 23-1	# 23-2	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	N.D.	61	1 542	1 424	N.D.	30	50
Spot Test (Cr ⁶⁺)	N.A.	N.A.	Negative	Negative	N.A.	-	-
Total Br	N.D.	N.D.	N.A.	N.A.	N.D.	50	-
Test Item	# 23-3	# 23-4	# 23-5	# 23-6	# 23-7	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	N.D.	N.D.	188 882	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	N.A.	N.A.	Negative	N.A.	N.A.	-	-
Total Br	N.D.	N.D.	N.A.	N.D.	N.D.	50	-

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■ SCREENING (ED-XRF, Spot Test)

<u>Restriction of Hazardous Substances Directive (RoHS/2011/65/EU), mg/kg</u>							
Test Item	# 23-8	# 23-9	# 24	# 25-1	# 25-2	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	62	N.D.	N.D.	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	N.A.	N.A.	N.A.	N.A.	N.A.	-	-
Total Br	N.D.	N.D.	N.D.	N.D.	N.D.	50	-
Test Item	# 25-3	# 26	# 27	# 28	# 29	RL	
						Polymer	Metal
Lead	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Cadmium	N.D.	N.D.	N.D.	N.D.	N.D.	20	50
Mercury	N.D.	N.D.	N.D.	N.D.	N.D.	50	100
Total Cr	N.D.	N.D.	N.D.	N.D.	N.D.	30	50
Spot Test (Cr ⁶⁺)	N.A.	N.A.	N.A.	N.A.	N.A.	-	-
Total Br	N.D.	N.D.	N.D.	N.D.	N.D.	50	-
Test Item	# 30	# 31	-	-	-	RL	
						Polymer	Metal
Lead	N.D.	N.D.	-	-	-	50	100
Cadmium	N.D.	N.D.	-	-	-	20	50
Mercury	N.D.	N.D.	-	-	-	50	100
Total Cr	N.D.	N.D.	-	-	-	30	50
Spot Test (Cr ⁶⁺)	N.A.	N.A.	-	-	-	-	-
Total Br	N.D.	N.D.	-	-	-	50	-

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PRECISION ANALYSIS

<u>Restriction of Hazardous Substances Directive (RoHS/2011/65/EU), mg/kg</u>							
Test Item	# 6	# 9-13	# 14-2	# 16	# 17	RL	REQUIREMENTS
Lead	N.A.	N.A.	N.A.	N.A.	N.A.	< 5	1 000
Cadmium	N.A.	N.A.	N.D.	N.D.	N.A.	< 2	100
Mercury	N.A.	N.A.	N.A.	N.A.	N.A.	< 2	1 000
Hexavalent Chromium	Negative	N.A.	N.A.	N.A.	N.A.	< 1	1 000
PBBs	N.A.	N.D.	N.A.	N.A.	N.D.	< 5	1 000
PBDEs	N.A.	N.D.	N.A.	N.A.	N.D.	< 5	1 000
Test Item	# 18-1	# 18-2	# 18-3	# 19-2	# 19-3	RL	REQUIREMENTS
Lead	N.A.	N.A.	N.A.	N.A.	N.A.	< 5	1 000
Cadmium	N.A.	N.D.	N.D.	N.A.	N.A.	< 2	100
Mercury	N.A.	N.A.	N.A.	N.A.	N.A.	< 2	1 000
Hexavalent Chromium	N.A.	N.A.	N.A.	N.A.	N.A.	< 1	1 000
PBBs	N.D.	N.A.	N.A.	N.D.	N.D.	< 5	1 000
PBDEs	N.D.	N.A.	N.A.	N.D.	N.D.	< 5	1 000

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SAMPLE PICTURE

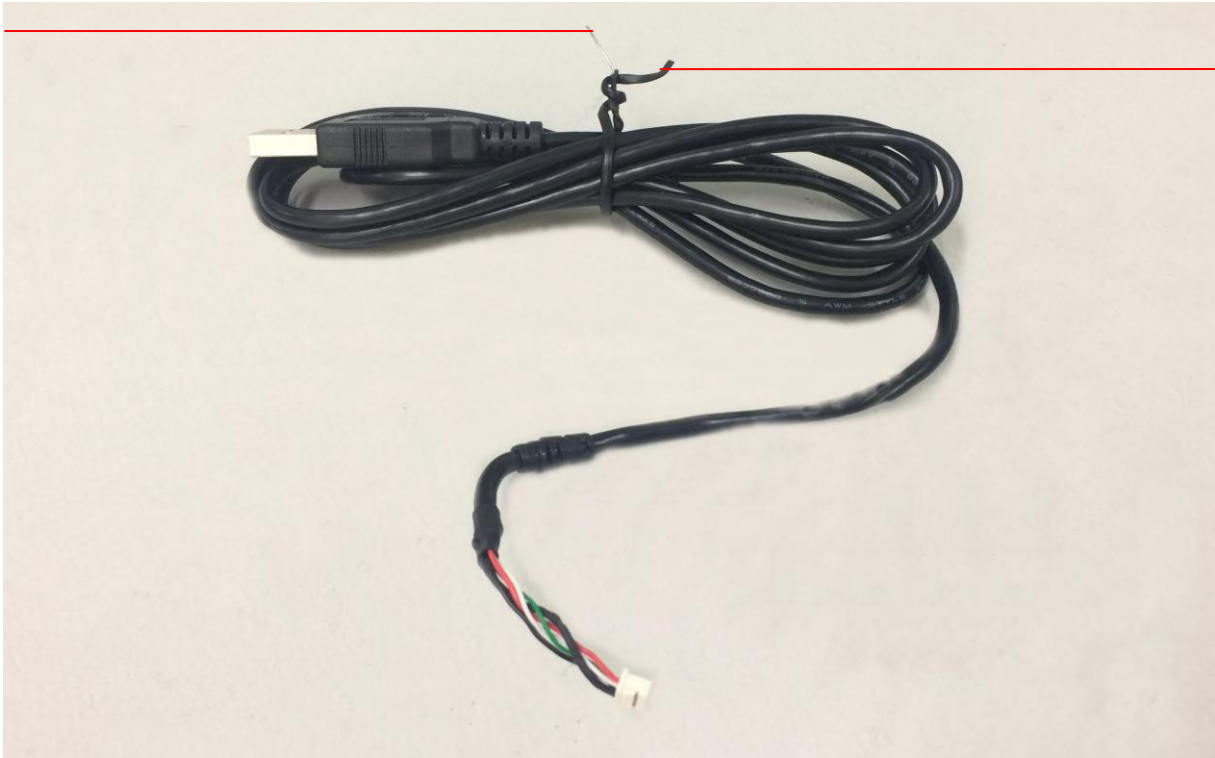
Remark

- S = SOLDER
- P = PAINT
- M = METAL





9-1



9-2

9-3

9-4

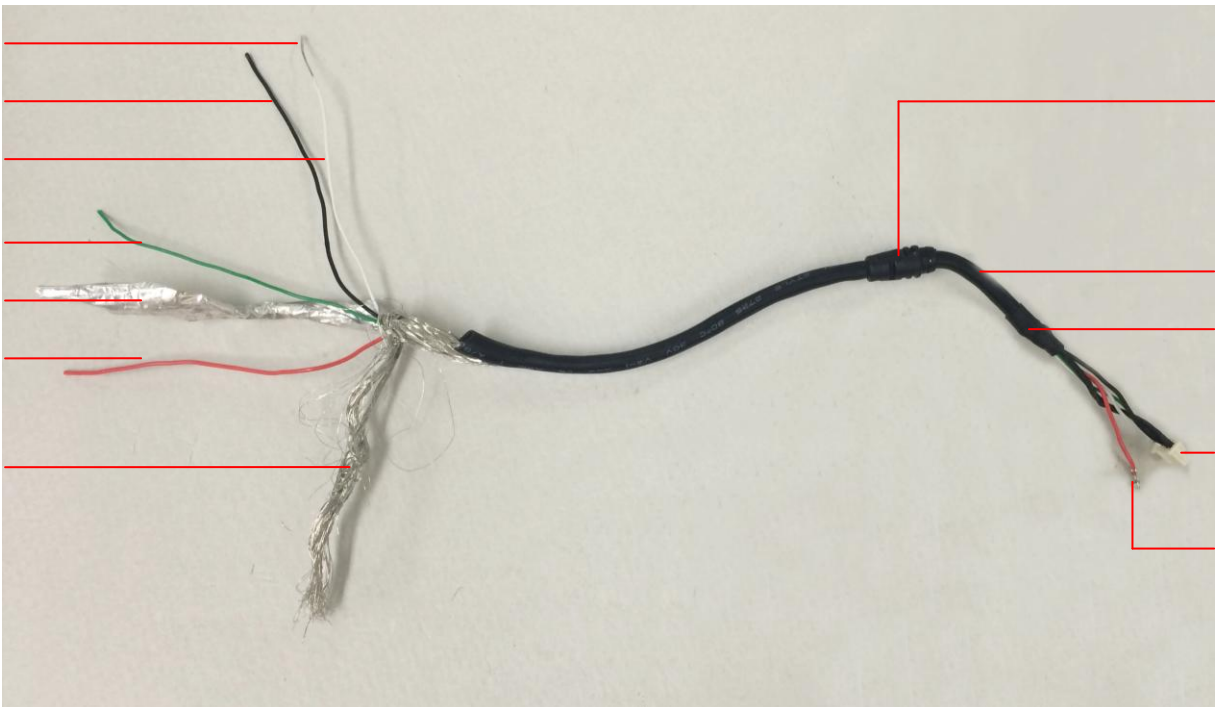
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9-9



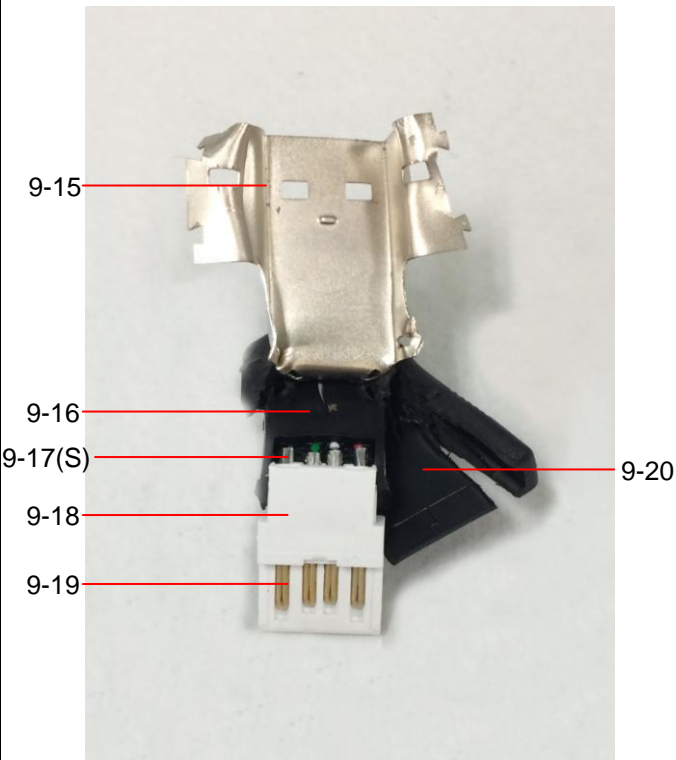
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9-11

9-12

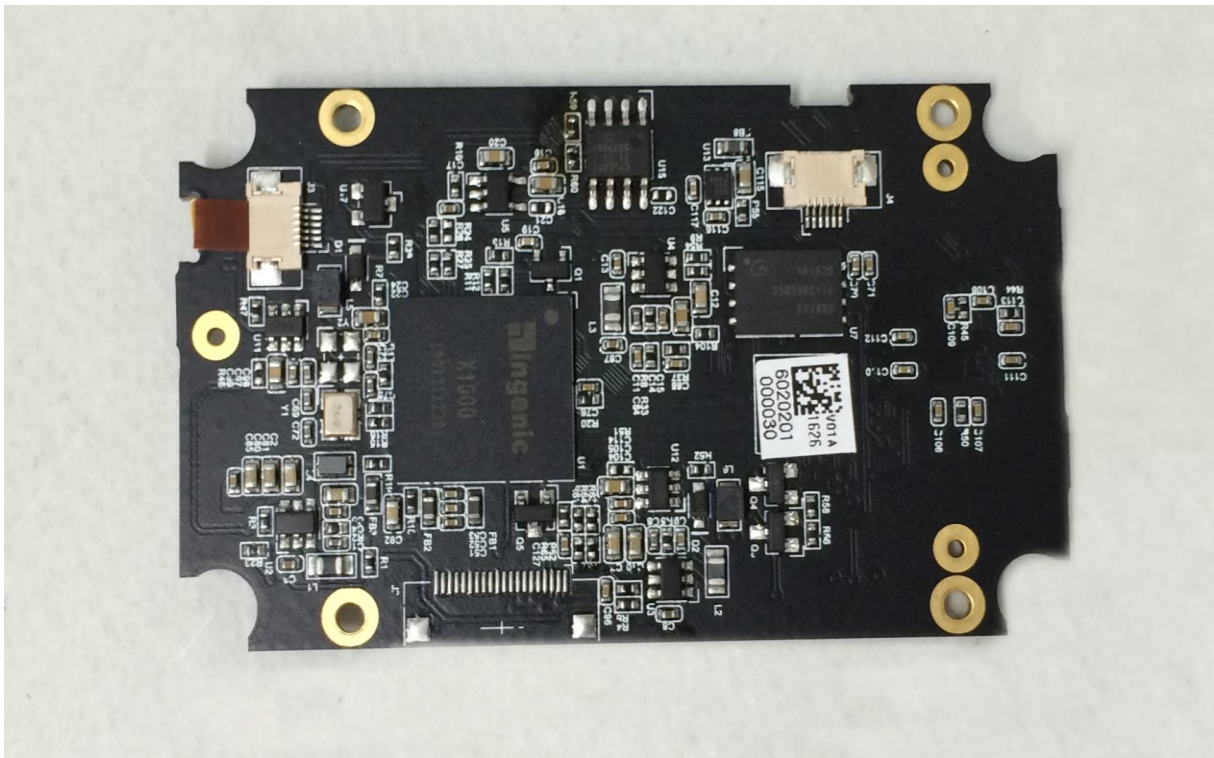
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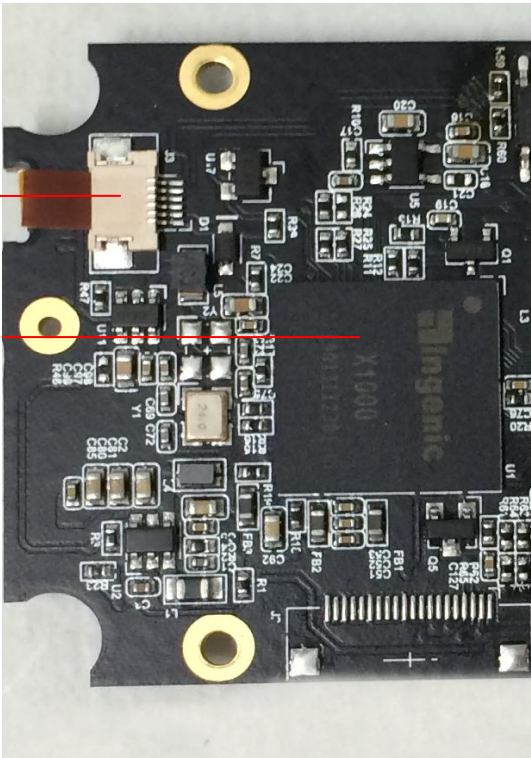
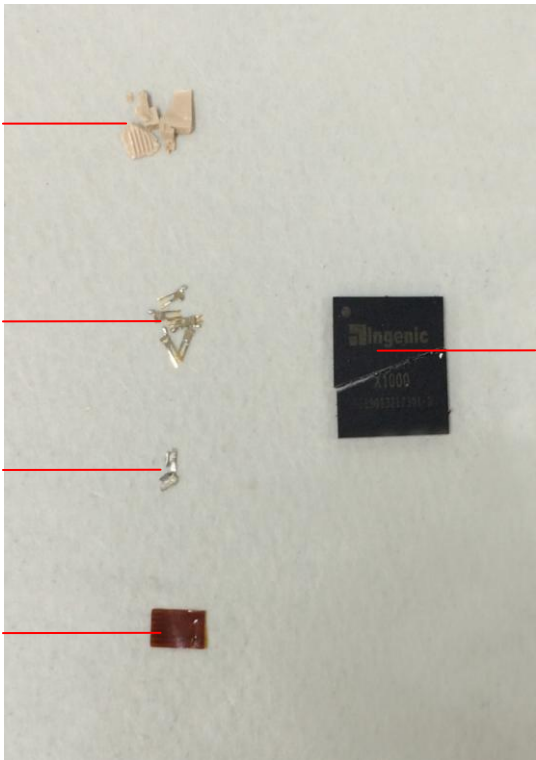
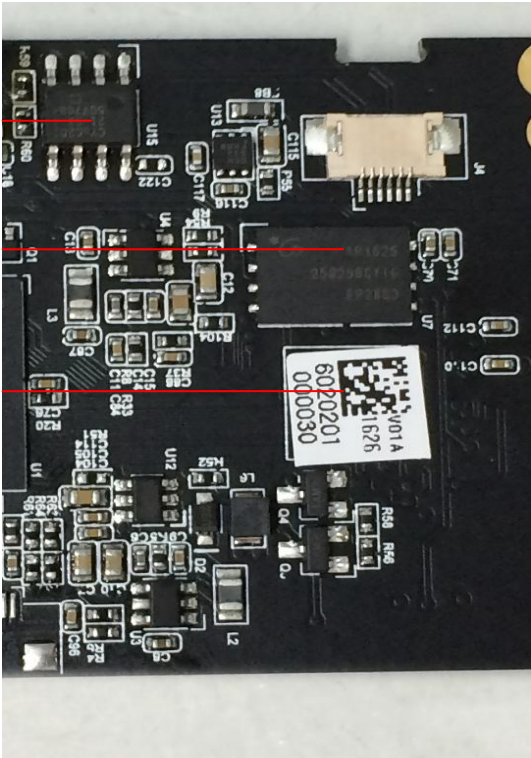
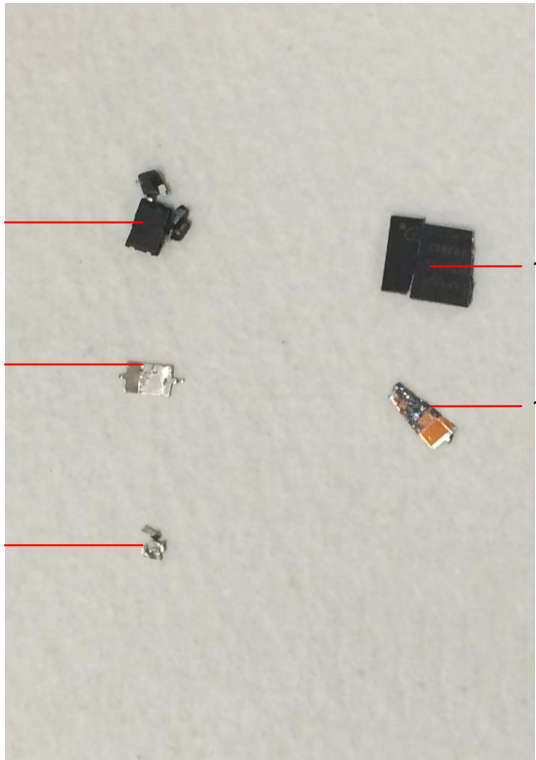
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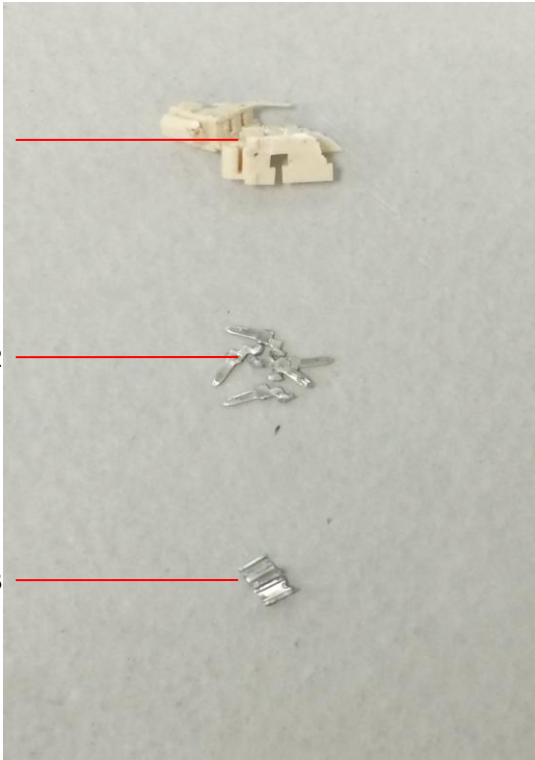
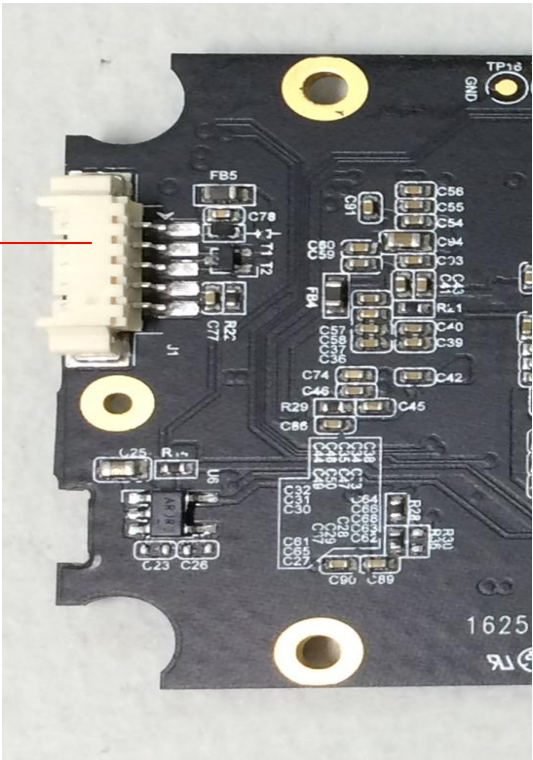
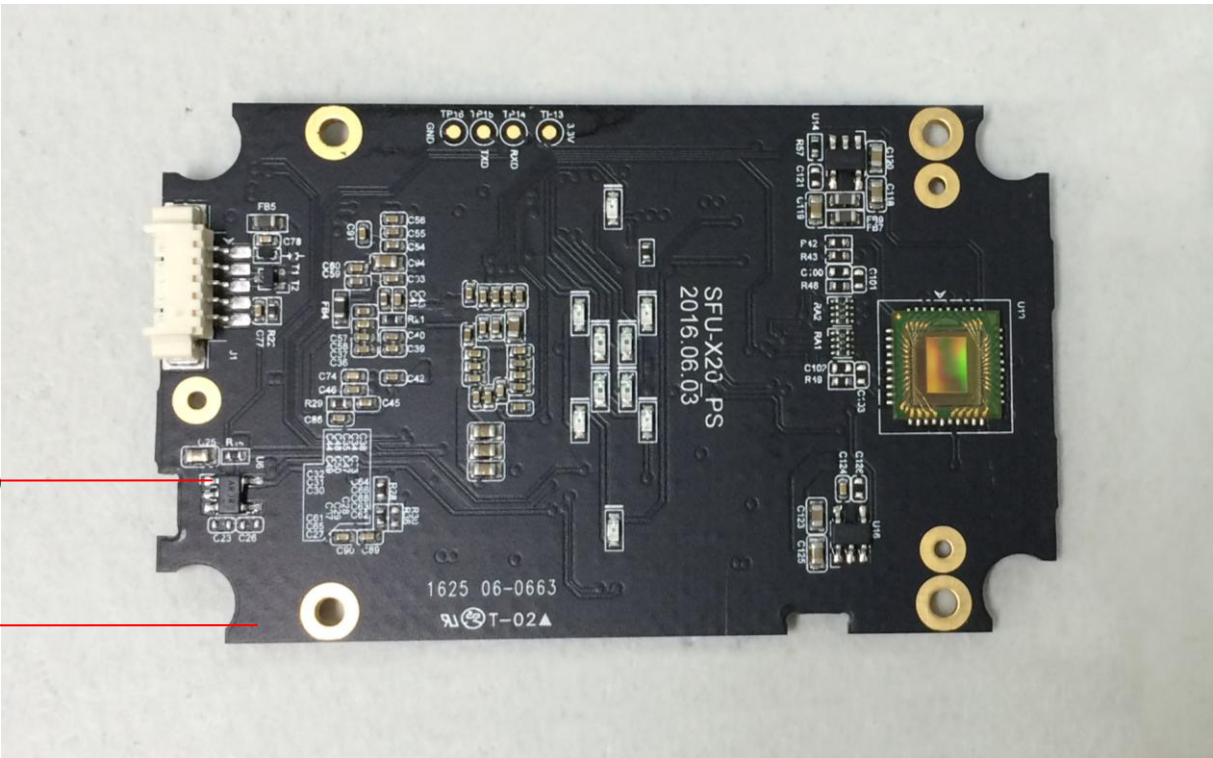


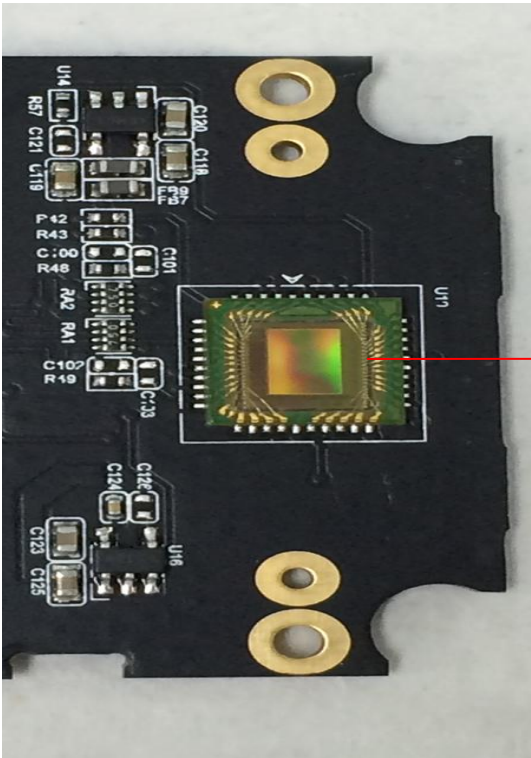
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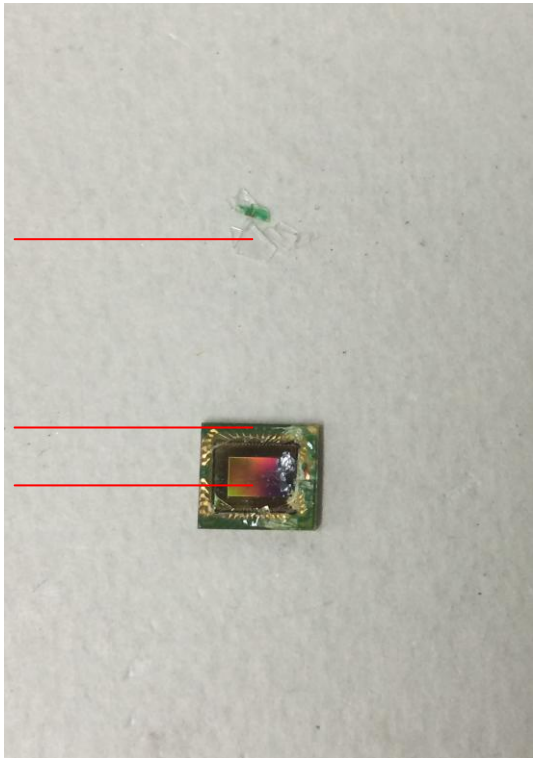


 <p>Photograph of a circuit board. Callout 11 points to a component on the left side. Callout 12 points to a yellow circular feature on the left side.</p>	 <p>Photograph showing components 11-1, 11-2, 11-3, 11-4, and 12. Callout 11-1 points to a small component. Callout 11-2 points to a small component. Callout 11-3 points to a small component. Callout 11-4 points to a small component. Callout 12 points to a component labeled 'X1000'.</p>
 <p>Photograph of a circuit board. Callout 13 points to a component on the left side. Callout 14 points to a component on the left side. Callout 15 points to a component on the left side. A QR code is visible on the board with the text '6020201 000030'.</p>	 <p>Photograph showing components 13-1, 13-2, 13-3, 14-1, and 14-2(S). Callout 13-1 points to a component. Callout 13-2 points to a component. Callout 13-3 points to a component. Callout 14-1 points to a component. Callout 14-2(S) points to a component.</p>





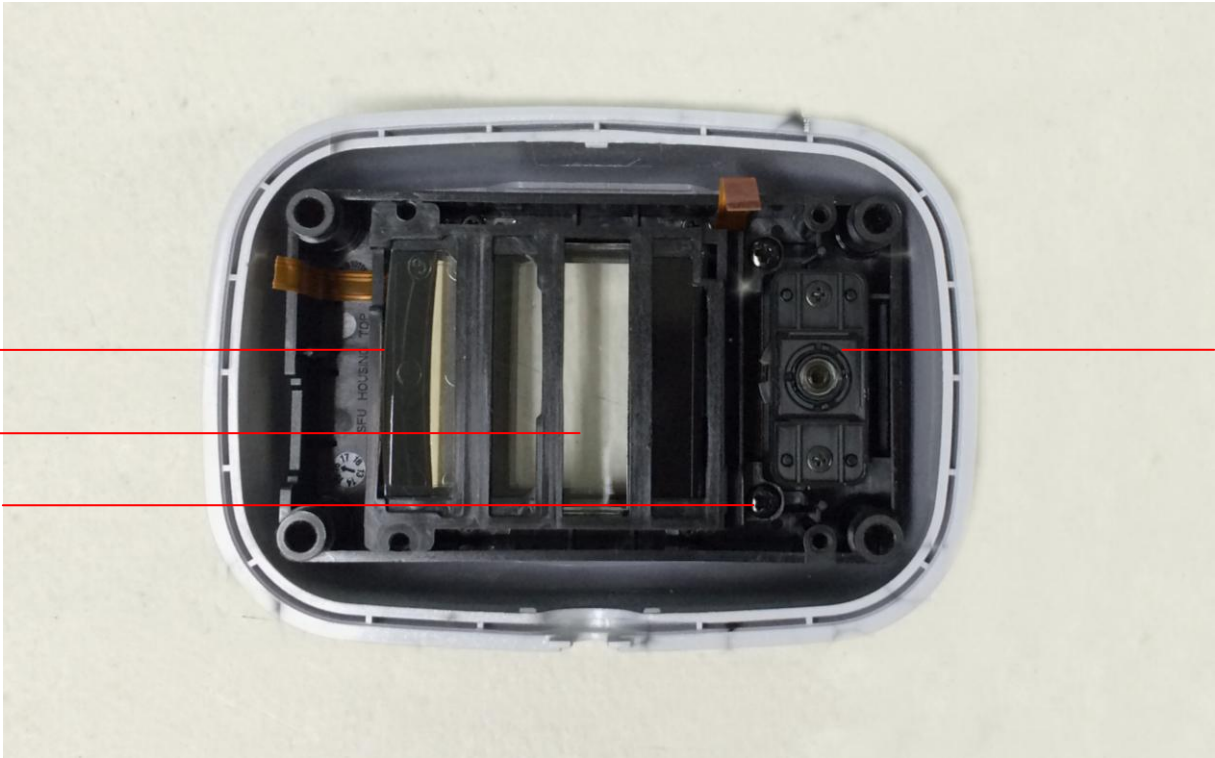
19



19-1

19-1

19-1



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21

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23

