



## Test Report

Report No.: WSCT-CHEM200300026A

Date: 25 March 2020

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Applicant : [REDACTED]

Address : [REDACTED]

Report on the submitted sample said to be:

Sample Name : Cablecard Multi-Functional Wireless Charger

Model No : [REDACTED]

Sample Received Date : 12 March 2020

Testing Period : 12 March 2020 to 21 March 2020

Test Requested	Result
1 As specified by the client, to determine Pb, Cd, Hg, Cr(VI), PBBs, PBDEs, DBP, BBP, DEHP & DIBP content in the submitted sample in accordance with EU Directive 2011/65/EU (ROHS 2.0) & (EU)2015/863.	Pass

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

Prepared by: Chen HongTested by: Zhou ShengmingDate : 25 March 2020Date : 25 March 2020

Chen Hong

Zhou Shengming

Report Clerk

Test Engineer

Reviewed by: Hong ShunApproved by: Liu SisiDate : 25 March 2020Date : 25 March 2020

Hong Shun

Liu Sisi

Project Leader

Authorized Signatory



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## Test Result:

### 1.1 RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU-XRF

Method: With reference to IEC 62321-3-1:2013

Analysis was performed by X-ray Fluorescence Spectrometry (XRF)

No.	Specimen Description	Result(s)				
		Br	Pb	Hg	Cd	Cr
1	Black metal screw	NC	BL	BL	BL	IN
2	Black plastic	BL	BL	BL	BL	BL
3	Silvery metal	NC	BL	BL	BL	BL
4	Black metal screw	NC	BL	BL	BL	IN
5	Black plastic	BL	BL	BL	BL	BL
6	Green PCB	IN	BL	BL	BL	BL
7	Black IC	BL	BL	BL	BL	BL
8	White plastic	BL	BL	BL	BL	BL
9	Silvery metal	NC	BL	BL	BL	BL
10	Silvery metal	NC	BL	BL	BL	IN
11	Black plastic	BL	BL	BL	BL	BL
12	Silvery metal	NC	BL	BL	BL	IN
13	White plastic	BL	BL	BL	BL	BL
14	Silvery metal	NC	BL	BL	BL	IN
15	Silvery metal	NC	BL	BL	BL	BL
16	Black plastic	BL	BL	BL	BL	BL
17	Silvery metal	NC	BL	BL	BL	BL
18	White plastic	IN	BL	BL	BL	BL
19	Yellow metal	NC	BL	BL	BL	BL
20	Black plastic	BL	BL	BL	BL	BL
21	Black plastic jacket	BL	BL	BL	BL	BL
22	White plastic	BL	BL	BL	BL	BL
23	Green plastic jacket	BL	BL	BL	BL	BL
24	Copper wire	NC	BL	BL	BL	BL
25	White plastic jacket	BL	BL	BL	BL	IN
26	Black plastic jacket	BL	BL	BL	BL	BL
27	Red plastic jacket	BL	BL	BL	BL	BL





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No.	Specimen Description	Result(s)				
		Br	Pb	Hg	Cd	Cr
28	Silvery metal	NC	BL	BL	BL	IN
29	Black plastic	BL	BL	BL	BL	BL
30	Silvery metal	NC	OL	BL	BL	IN
31	Silvery metal	NC	BL	BL	BL	BL
32	Silvery metal	NC	BL	BL	BL	BL
33	Black plastic	BL	BL	BL	BL	BL
34	Silvery metal	NC	BL	BL	BL	IN
35	Silvery metal	NC	BL	BL	BL	IN
36	Yellow enameled wire	BL	BL	BL	BL	BL
37	Black core	BL	BL	BL	BL	BL
38	Black IC	BL	BL	BL	BL	BL
39	Black IC	BL	BL	BL	BL	BL
40	Black IC	BL	BL	BL	BL	BL
41	Brown capacitor	BL	BL	BL	BL	BL
42	Black plastic	BL	BL	BL	BL	BL
43	Solder	NC	BL	BL	BL	BL
44	Green PCB	IN	BL	BL	BL	BL

- Note:
- BL = Below Limit by XRF analysis
  - OL = Over Limit by XRF analysis
  - IN = Inconclusive (questionable, need further chemical analysis)
  - NC = Not Conducted
  - 1% = 10000 mg/kg = 10000 ppm

Element	Unit	Polymer	Metal	Composite Material
Cd	mg/kg	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (150+3\sigma) \leq OL$
Pb	mg/kg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$







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Hg	mg/kg	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (700-3\sigma) < X < (1300+3\sigma) \leq OL$	$BL \leq (500-3\sigma) < X < (1500+3\sigma) \leq OL$
Br	mg/kg	$BL \leq (300-3\sigma) < X$	--	$BL \leq (250-3\sigma) < X$
Cr	mg/kg	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Remark: (1) Results were obtained by XRF for primary screening, and further chemical testing by ICP (for Cd, Pb, Hg), UV-VIS (for CrVI) and GC/MS (for PBBs/PBDEs) are recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321: 2013.

BL = Below Limit by XRF analysis

OL = Over Limit by XRF analysis

X = Inconclusive

LOD = Limit of Detection

(2) The XRF screening test for RoHS elements – The reading may be different to the actual content in the sample be of non-uniformity composition.

(3) The maximum permissible limit is quoted from the RoHS Directive( EU )2015/863 amending Annex II to Directive 2011/65/EU

RoHS Restricted Substances	Maximum Concentration Value (by weight in homogenous materials)
Lead (Pb)	0.1%
Cadmium (Cd)	0.01%
Mercury (Hg)	0.1%
Hexavalent Chromium (Cr VI)	0.1%
Polybrominated biphenyls (PBBs)	0.1%
Polybrominated diphenylethers (PBDEs)	0.1%





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### 1.2 RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Wet Chemical Pb Content

Method: With reference to IEC 62321-5: 2013

Analysis was performed by Inductively Coupled Plasma Optical Emission Spectrometer (ICP-OES)

Test Item(s)	30	MDL	Permissible Limit
Lead (Pb)	ND	0.0002%	0.1%

#### Specimen Description:

No. 30 Silvery metal

- Note:
- % = percentage by weight
  - MDL = Method Detection Limit
  - ND = Not Detected (lower than MDL)
  - 1% = 10000 mg/kg = 10000 ppm
  - The maximum permissible limit is quoted from the RoHS Directive ( EU )2015/863 amending Annex II to Directive 2011/65/EU







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## 1.3 RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Wet Chemical Hexavalent Chromium Content

Method: With reference to IEC 62321-7-1:2015/ IEC 62321-7-2:2017

Analysis was performed by Ultraviolet Visible Spectrophotometer (UV-Vis)

Test Item(s)	No.1	No.4	No.10	No.12	Permissible Limit
Hexavalent Chromium (CrVI) by boiling water extraction	Negative	Negative	Negative	Negative	0.1 µg/cm <sup>2</sup>

Test Item(s)	No.14	No.28	No.30	No.34	Permissible Limit
Hexavalent Chromium (CrVI) by boiling water extraction	Negative	Negative	Negative	Negative	0.1 µg/cm <sup>2</sup>

Test Item(s)	No.35	Permissible Limit
Hexavalent Chromium (CrVI) by boiling water extraction	Negative	0.1 µg/cm <sup>2</sup>

Test Item(s)	No.25	MDL	Permissible Limit
Hexavalent Chromium (CrVI) by alkaline extraction	ND	8mg/kg	0.1%

### Specimen Description:

No.1 Black metal screw

No.4 Black metal screw

No.10 Silvery metal

No.12 Silvery metal

No.14 Silvery metal





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No.25 White plastic jacket

No.28 Silvery metal

No.30 Silvery metal

No.34 Silvery metal

No.35 Silvery metal

- Note:
- mg/kg = milligram per kilogram
  - 1% = 10000 mg/kg = 10000 ppm
  - Negative = Absence of Cr(VI) coating  
(The detected concentration in boiling-water-extraction solution is less than  $0.1\mu\text{g}/\text{cm}^2$  with  $50\text{ cm}^2$  specimen surface area)
  - Positive = Presence of Cr(VI) coating  
(The detected concentration in boiling-water-extraction solution is equal or greater than  $0.13\mu\text{g}/\text{cm}^2$  with  $50\text{ cm}^2$  specimen surface area)
  - Storage conditions and production date of the tested sample are unavailable and thus results of Cr(VI) represent status of the sample at the time of testing
  - # Positive indicates the presence of Cr(VI) on the tested areas and result be regarded as conflict with RoHS requirement  
Negative indicates the absence of Cr(VI) on the tested areas and result be regarded as no conflict with RoHS requirement
  - The maximum permissible limit is quoted from the RoHS Directive( EU )2015/863 amending Annex II to Directive 2011/65/EU







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## 1.4 RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU - Wet Chemical PBBs & PBDEs

### Content

Method: With reference to IEC 62321-6:2015

Analysis was performed by Gas Chromatography Mass Spectrometer (GC-MS)

Test Item(s)	No.6 (%)	No.18 (%)	No.44 (%)	MDL (%)	Permissible Limit (%)
<b>Sum of PBBs</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>--</b>	<b>0.1</b>
Monobromobiphenyl	ND	ND	ND	0.0005	--
Dibromobiphenyl	ND	ND	ND	0.0005	--
Tribromobiphenyl	ND	ND	ND	0.0005	--
Tetrabromobiphenyl	ND	ND	ND	0.0005	--
Pentabromobiphenyl	ND	ND	ND	0.0005	--
Hexabromobiphenyl	ND	ND	ND	0.0005	--
Heptabromobiphenyl	ND	ND	ND	0.0005	--
Octabromobiphenyl	ND	ND	ND	0.0005	--
Nonabromobiphenyl	ND	ND	ND	0.0005	--
Decabromobiphenyl	ND	ND	ND	0.0005	--
<b>Sum of PBDEs</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>--</b>	<b>0.1</b>
Monobromodiphenyl ether	ND	ND	ND	0.0005	--
Dibromodiphenyl ether	ND	ND	ND	0.0005	--
Tribromodiphenyl ether	ND	ND	ND	0.0005	--
Tetrabromodiphenyl ether	ND	ND	ND	0.0005	--
Pentabromodiphenyl ether	ND	ND	ND	0.0005	--
Hexabromodiphenyl ether	ND	ND	ND	0.0005	--
Heptabromodiphenyl ether	ND	ND	ND	0.0005	--
Octabromodiphenyl ether	ND	ND	ND	0.0005	--
Nonabromodiphenyl ether	ND	ND	ND	0.0005	--
Decabromodiphenyl ether	ND	ND	ND	0.0005	--







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### Specimen Description:

No.6 Green PCB

No.18 White plastic

No.44 Green PCB

Note: - % = percentage by weight

- MDL = Method Detection Limit

- ND = Not Detected (lower than MDL)

- 1% = 10000 mg/kg = 10000 ppm

- The maximum permissible limit is quoted from the RoHS Directive( EU )2015/863 amending Annex II to Directive 2011/65/EU





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## 1.5 RoHS Directive (EU) 2015/863 amending Annex II to Directive 2011/65/EU – Phthalates

Method: With reference to IEC 62321-8: 2017

Analysis was performed by Gas Chromatography Mass Spectrometer (GC-MS)

No.	DBP	DIBP	BBP	DEHP
	Result	Result	Result	Result
2+5+11	ND	ND	ND	0.002%
6	ND	0.005%	ND	ND
8+13+22	ND	ND	ND	ND
16+20+29	ND	ND	ND	ND
18	ND	0.003%	ND	0.006%
21+23+25	0.027%	ND	0.005%	0.006%
26+27	0.024%	0.002%	ND	0.003%
33+42	ND	ND	ND	0.007%
44	ND	0.005%	ND	0.009%
MDL	0.001%	0.001%	0.001%	0.001%
Permissible Limit	0.1%	0.1%	0.1%	0.1%

### Specimen Description:

No.2 Black plastic

No.5 Black plastic

No.6 Green PCB

No.8 White plastic

No.11 Black plastic

No.13 White plastic

No.16 Black plastic

No.18 White plastic

No.20 Black plastic

No.21 Black plastic jacket







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No.22 White plastic

No.23 Green plastic jacket

No.25 White plastic jacket

No.26 Black plastic jacket

No.27 Red plastic jacket

No.29 Black plastic

No.33 Black plastic

No.42 Black plastic

No.44 Green PCB

Note: - % = percentage by weight

- MDL = Method Detection Limit

- ND = Not Detected (lower than MDL)

- 1% = 10000 mg/kg = 10000 ppm

- The maximum permissible limit is quoted from the RoHS Directive ( EU ) 2015/863 amending Annex II to Directive 2011/65/EU.





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Photo of the sample



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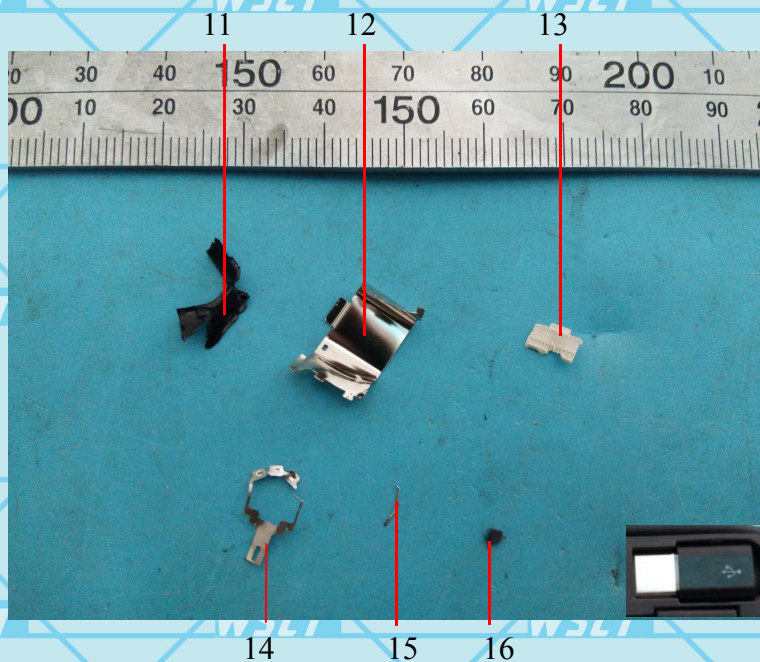
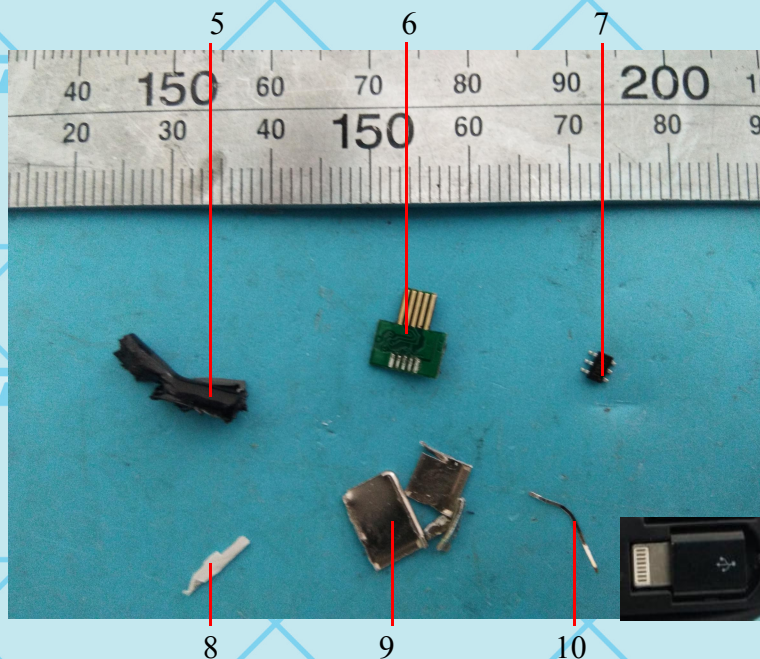


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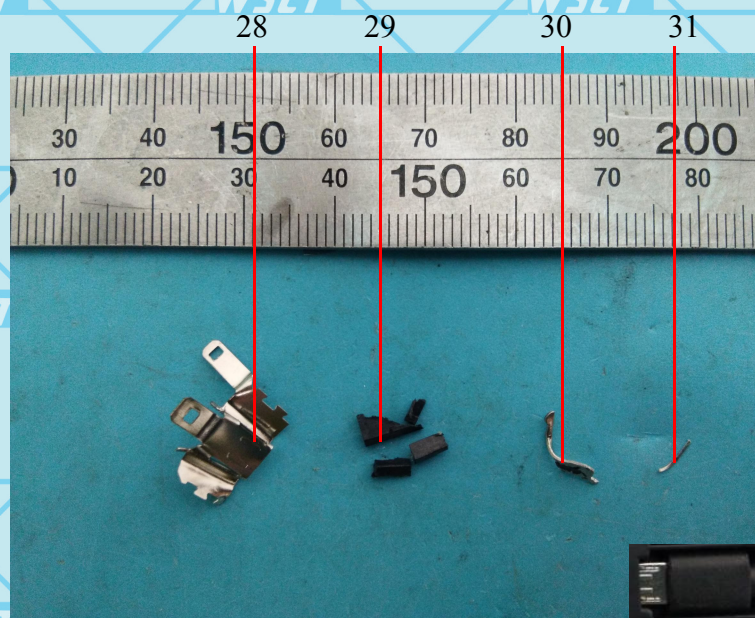
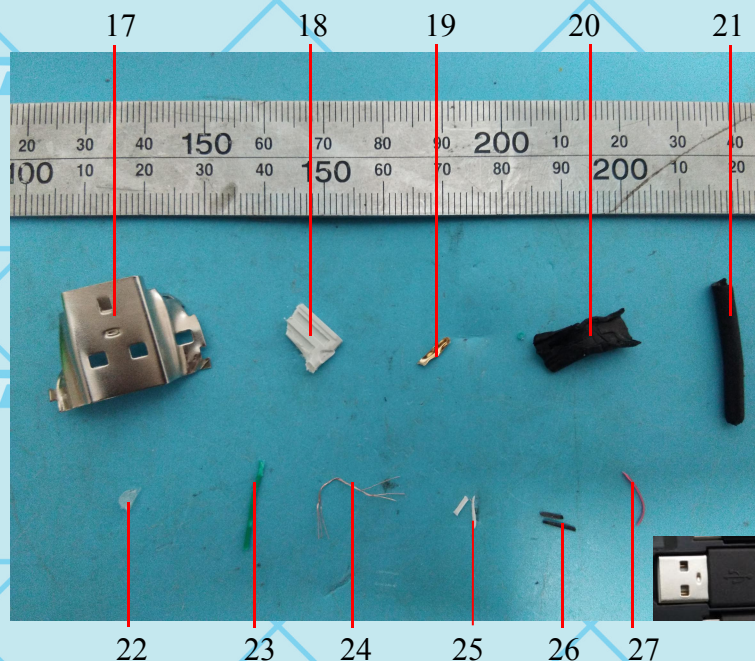
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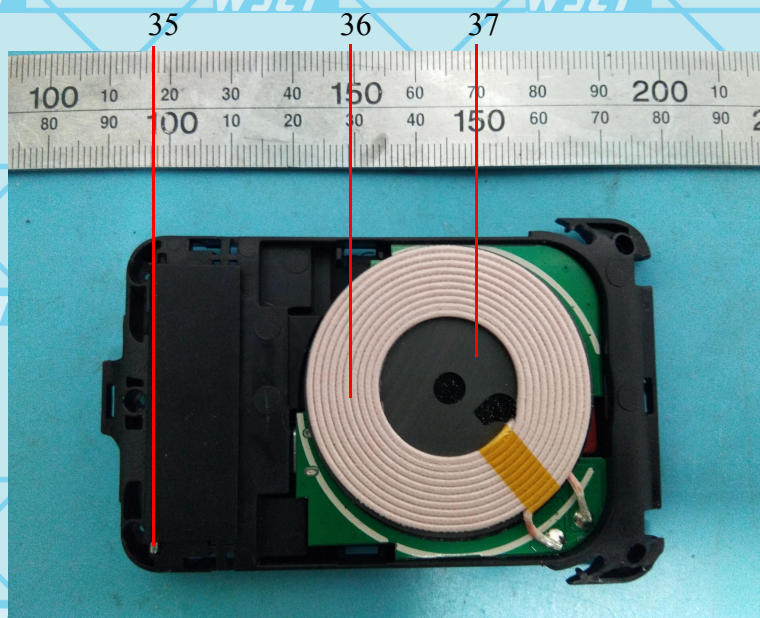
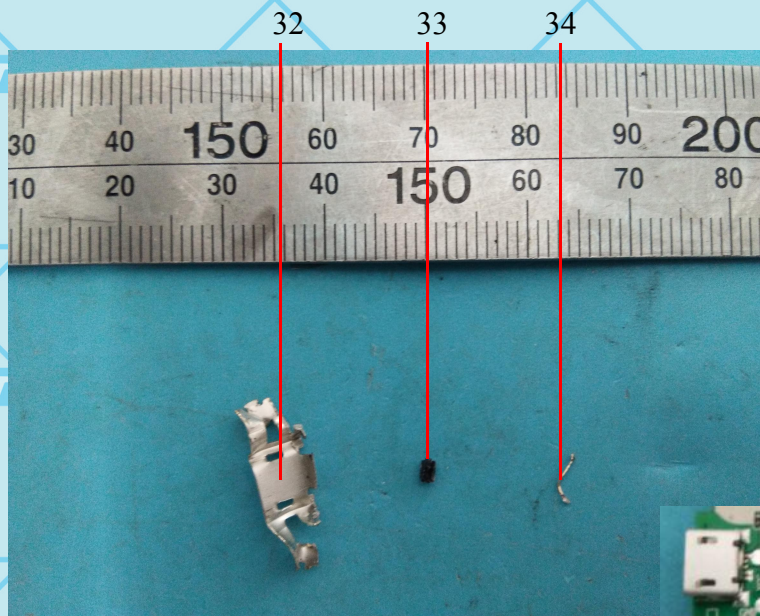
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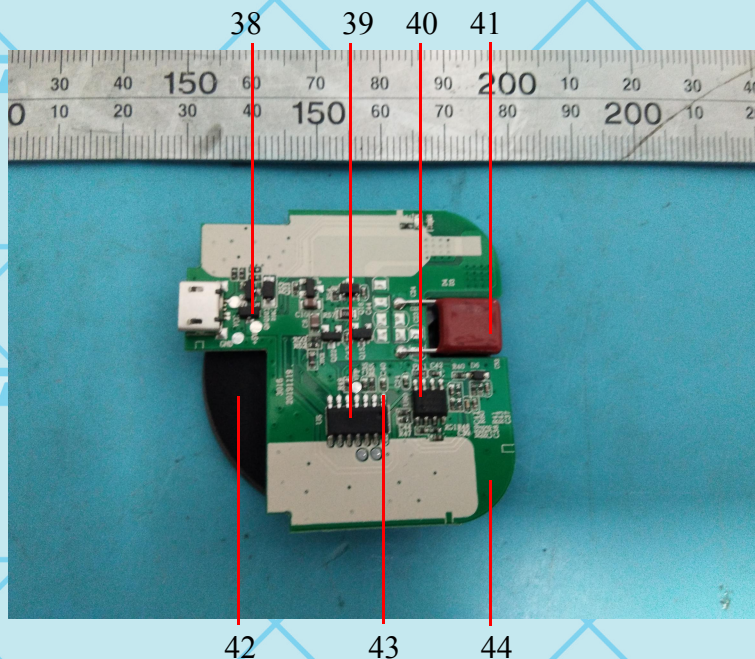
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