

TEST REPORT

Test Report No. : 3178341A.50QS
Project no. : 3178341

Client : Nanjing TOMS weighing Instrument CO. Ltd
No.77 Baoshan road at Qilin town in Nanjing, Jiangsu Province, China

Date sample received : 2015.12.01 / 2015.12.22

Product : Electronic Balance

Product description : Please refer to next page(s).

Model : TM-EX series, TM-ST series

Test Requested : Test of RoHS conformity (2011/65/EU)

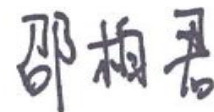
Test Method : Please refer to next page(s).

Result : Please refer to next page(s).

Conclusion : Requirement passed

Testing Period : 2015.12.01—2015.12.31

Signed for and on behalf of
DEKRA Testing and Certification (Shanghai) Ltd



Yu Feixiong (郁飞雄)
Project Manager

Shao Baijun (邵柏君)
Test Engineer

Picture of the product:



Main test



Different part

DRAFT

* TEST RESULTS

sample no.	sample designation	Cd (%)	Pb (%)	Cr VI (%)	Hg (%)	PBB (%)	PBDE (%)
- 001	White plastic shell	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 002	Silvery metal holder	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 003	Silvery metal wrench	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 004	Transparent glass plate	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 005	White plastic holder	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 006	White plastic frame	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 007	Silvery metal tray	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 008	Silvery metal screw	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 009	Silvery metal gasket	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 010	Silvery metal washer	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 011	Black rubber gasket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c	< 0.1(c
- 012	Black foam gasket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 013	Purple plastic washer	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 014	Transparent plastic display	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 015	Black IC	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c	< 0.1(c
- 016	Silvery metal stator	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 017	Grey metal sheet	< 0.01	< 0.1	< 0.1(b	< 0.1	NA	NA
- 018	Glass display	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 019	Yellow plastic sheath	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c	< 0.1(c
- 020	Grey wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 021	White plastic slot	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 022	Black electrolytic capacitor	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 023	Black triode	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c	< 0.1(c
- 024	Blue color ring resistor	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 025	Yellow electronic component	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 026	Black IC	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 027	Black plastic holder	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c	< 0.1(c
- 028	Solder	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 029	Green PCB	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 030	Milky glue	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 031	Yellow component	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 032	White plastic label with black words	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 033	Yellow wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 034	White wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

sample -no.	sample designation	Cd (%)	Pb (%)	Cr VI (%)	Hg (%)	PBB (%)	PBDE (%)
- 035	Green wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 036	Black wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 037	Red wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 038	Silvery metal wire	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 039	Black IC	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 040	Whiter wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 041	Black wind machine	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 042	Green PCB	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 043	Silvery metal contact sheet	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 044	Black plastic battery shell	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 045	Silvery crystals	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 046	Black diode	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 047	Solder	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 048	Green PCB	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 049	Silvery metal screw	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 050	Silvery metal slot	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 051	Black plastic shell	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 052	Solder	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 053	Green PCB	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 054	Black plastic sheath	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 055	Red wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 056	Yellow wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 057	Black wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 058	Black plastic slot casing	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 059	Silvery metal shaft	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 060	Silvery metal contact sheet	< 0.01	< 0.1(a)	< 0.1	< 0.1	NA	NA
- 061	Brown base plate	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 062	Black wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 063	Red wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 064	Black wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 065	Coppery metal wire	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 066	Black plastic label	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 067	Silvery metal plug	< 0.01	2.2 [ⓐ]	< 0.1	< 0.1	NA	NA
- 068	Black PCB frame	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 069	White plastic sheet	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 070	Red wire jacket	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 071	Green electrolytic capacitor	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 072	Silvery ,metal plate	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA

sample -no.	sample designation	Cd (%)	Pb (%)	Cr VI (%)	Hg (%)	PBB (%)	PBDE (%)
- 073	Blue resistor	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 074	Black diode	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 075	Solder	< 0.01	< 0.1	< 0.1	< 0.1	NA	NA
- 076	Green PCB	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1(c)	< 0.1(c)
- 077	Grey color ring resistor	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 078	Black plastic sheath	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 079	Coppery metal coil	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 080	Yellow adhesive tape	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 081	Black magnet core	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 082	Black plastic frame	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 083	White foam sheet	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 084	Transparent plastic sheath	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 085	Transparent plastic sheet	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 086	Transparent plastic sheath	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
- 087	Orange plastic washer	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

(a) The analysis by X-ray fluorescence spectrometry showed a detection for Pb. The verification and quantification of Pb was performed by ICP-OES.

(b) The analysis by X-ray fluorescence spectrometry showed a detection for Cr. The verification and quantification of Cr VI was performed by photometric analysis.

(c) The analysis by X-ray fluorescence spectrometry showed a detection for Br. The verification and quantification of PBB/PBDE was performed by GC-MS.

① Copper alloy containing up to 4 % lead by weight(RoHS Exemption 6(c)).

* Test result was carried out in lab accredited by Dekra.

Description of the analysis procedure (brief version):

Test of RoHS conformity

The measurements are performed according to DIN EN 62321, “Electrotechnical products - Determination of levels of six regulated substances”.

The product is divided in single material samples. The materials are analysed on different parameters of the RoHS-directive to assure that the complete product is RoHS-conform or not. At first a XRF (X-ray fluorescence spectrometry) screening is performed. For every sample following statements can be made.

Table: Screening limits in mg/kg for regulated elements in various matrices

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

Below limit (**BL**): the tested material complies to the RoHS directive.

Inconclusive (**X**): If the level of the measurement is around the maximum allowed, or if the level for Chrome or Bromine is too high, other more accurate methods are needed to determine the exact level or the composition of Chrome and Bromine.

Over limit (**OL**): If the level of lead, mercury or cadmium is well above the maximum allowed levels (the XRF uncertainty is taken into account), the tested material does not comply with the RoHS directive.

In case of **inconclusive** XRF results, following analysis procedures are applied:

In order to examine the material samples for the heavy metals cadmium, lead and mercury they are digested in acid and the solutions are used to carry out the analysis for the heavy metals by ICP-OES or atomic-absorption spectroscopy.

Hexavalent chromium is checked by extracting the sample with water at 100 °C (determination of Cr VI in colorless and colored chromate coating on metals) respectively with alkaline extraction at 90-95 °C (determination of Cr VI in polymers and electronic components) followed by photometric analysis.

In the case of metallic components with a surface coating containing hexavalent Chromium (passivation) the concentration is expressed in mg of Chromium VI per component. In order to obtain further information about the concentration on the surface coating it is necessary to know the weight per unit area of the coating and the surface area of the component. Information about surface coatings is to be provided by the client.

The examination for bromine-based flame retardant products is carried out by gas chromatography-mass spectrometry after extraction by solvents; this involves the individual analysis and quantification of the substances specified in the RoHS. The current valid regulations relating to exceptions in respect of the analysed substances are to be taken into account by the client.

The following Polybrominated Biphenyls (PBBs) and Polybrominated Diphenyl Ethers (PBDEs) are analyzed:

2-Bromobiphenyl PBB2, Dibromobiphenyl PBB15, Tribromobiphenyl PBB30, Tetrabromobiphenyl PBB52, Pentabromobiphenyl PBB103, Hexabromobiphenyl PBB153, Heptabromobiphenyl PBB250, Octabromobiphenyl PBB250, Nonabromobiphenyl PBB250, Decabromobiphenyl PBB209, Bromodiphenylether BDE2, Dibromodiphenylether BDE15, Tribromodiphenylether BDE30, Tetrabromodiphenylether BDE62, Pentabromodiphenylether BDE99, Hexabromodiphenylether BDE153, Heptabromodiphenylether BDE183, Octabromodiphenylether BDE203, Nonabromodiphenylether BDE206, Decabromodiphenylether BDE209.

Limits according to RoHS (2011/65/EU) / Test methods (additional chemical analysis):

Parameter	Limits according to RoHS	Test method
Cadmium	0,01 % (100 mg/kg or 0,1 g/kg)	IEC62321-5:2013
Lead	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-5:2013
Hexavalent Chromium	0,1 % (1000 mg/kg or 1 g/kg)	Metal: IEC62321-7-1:2015 Non-metal: IEC62321:2008
Mercury	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-4:2013
PBB and PBDE	0,1 % (1000 mg/kg or 1 g/kg)	IEC62321-6:2015

Sample Photos



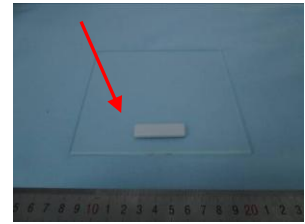
Test Item 1



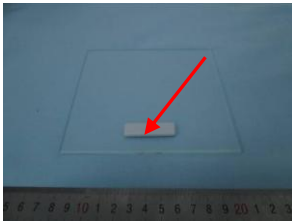
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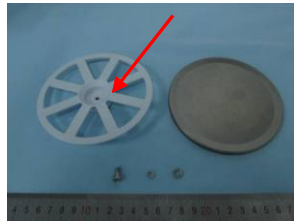
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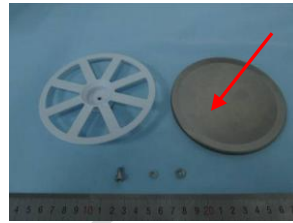
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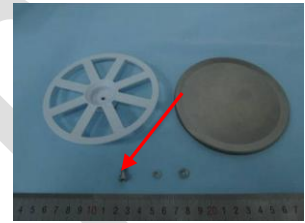
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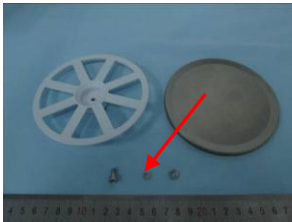
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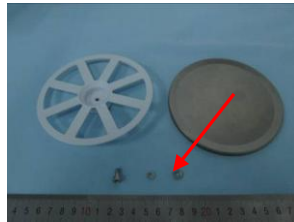
Test Item 7



Test Item 8



Test Item 9



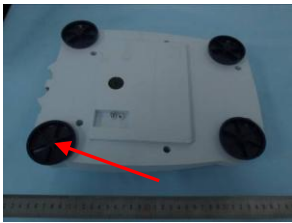
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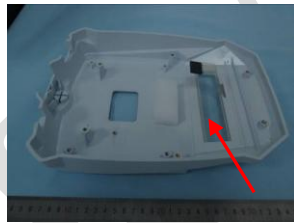
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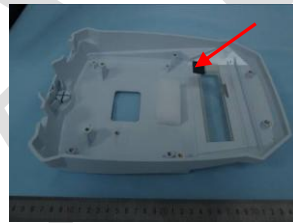
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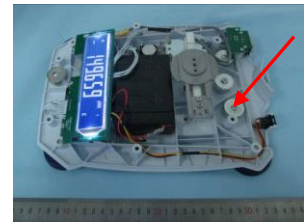
Test Item 13



Test Item 14



Test Item 15



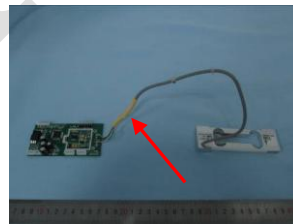
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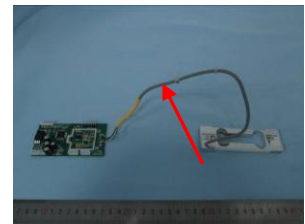
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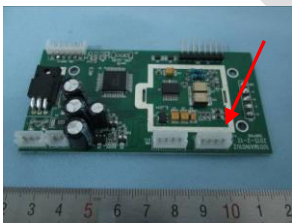
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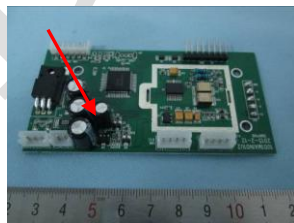
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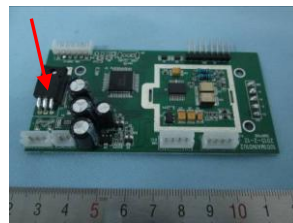
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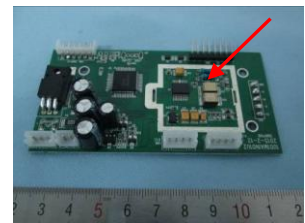
Test Item 21



Test Item 22



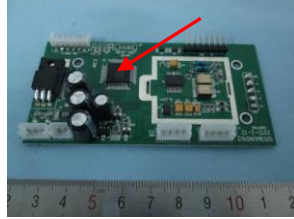
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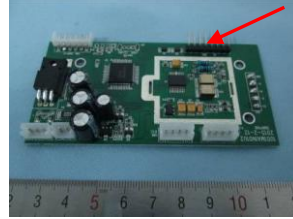
Test Item 24



Test Item 25



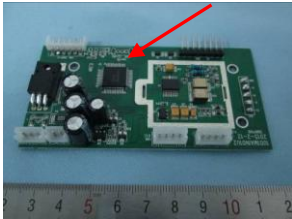
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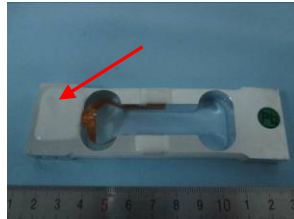
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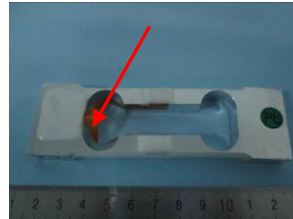
Test Item 28



Test Item 29



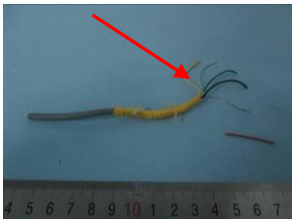
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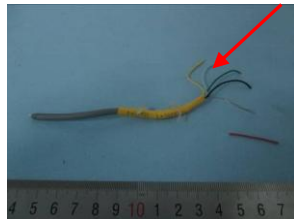
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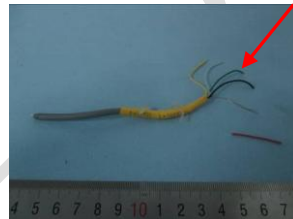
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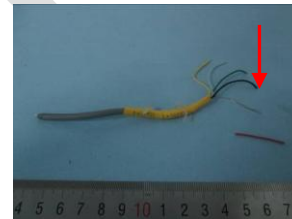
Test Item 33



Test Item 34



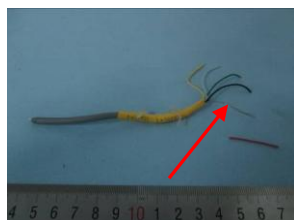
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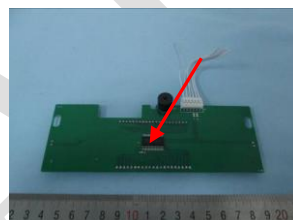
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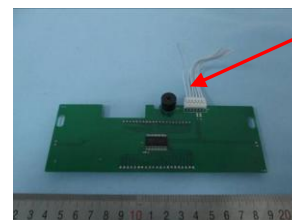
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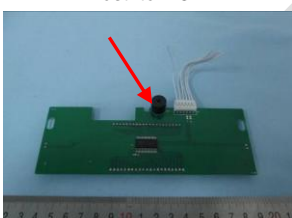
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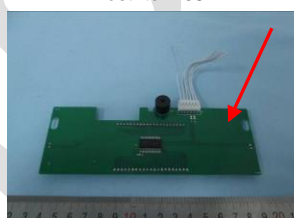
Test Item 39



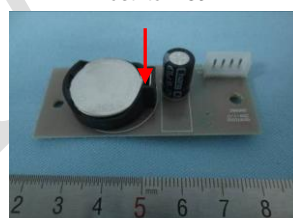
Test Item 40



Test Item 41



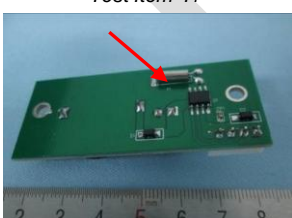
Test Item 42



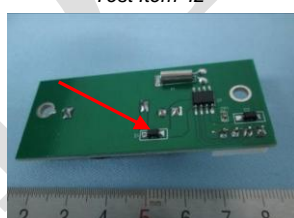
Test Item 43



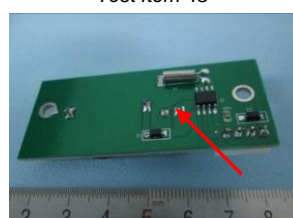
Test Item 44



Test Item 45



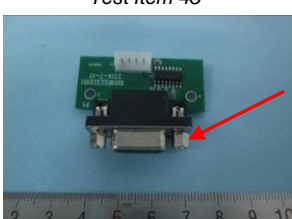
Test Item 46



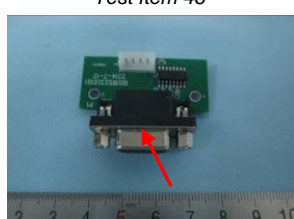
Test Item 47



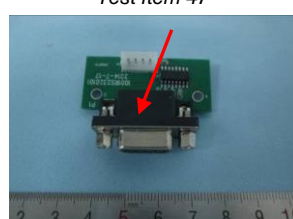
Test Item 48



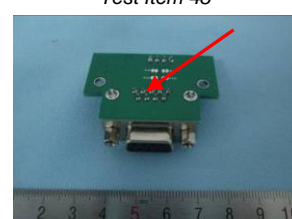
Test Item 49



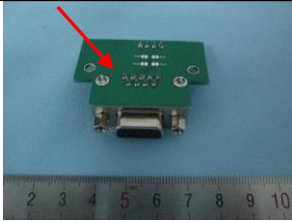
Test Item 50



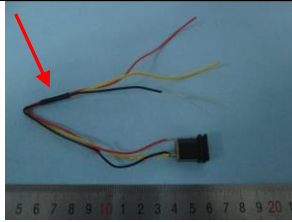
Test Item 51



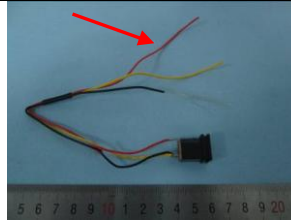
Test Item 52



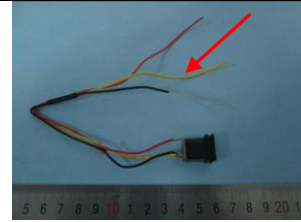
Test Item 53



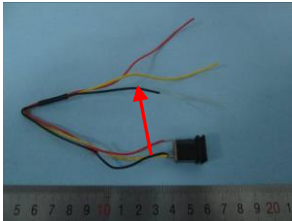
Test Item 54



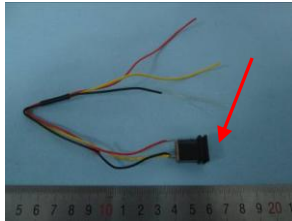
Test Item 55



Test Item 56



Test Item 57



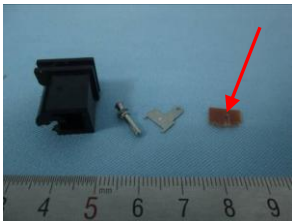
Test Item 58



Test Item 59



Test Item 60



Test Item 61



Test Item 62



Test Item 63



Test Item 64



Test Item 65



Test Item 66



Test Item 67



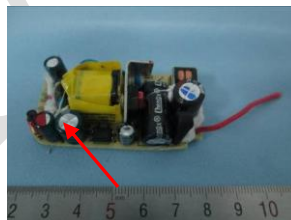
Test Item 68



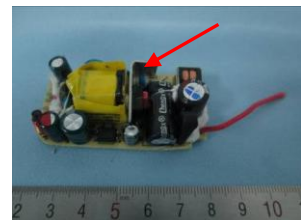
Test Item 69



Test Item 70



Test Item 71



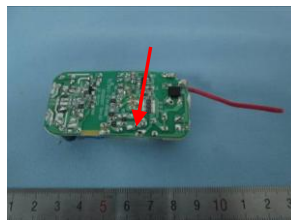
Test Item 72



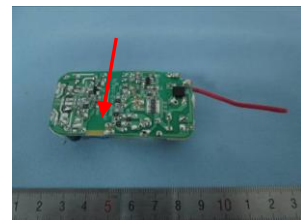
Test Item 73



Test Item 74



Test Item 75



Test Item 76



Test Item 77



Test Item 78



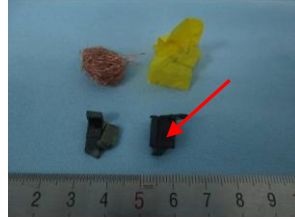
Test Item 79



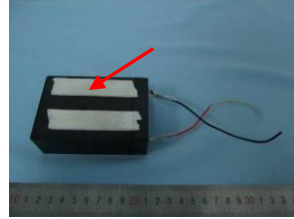
Test Item 80



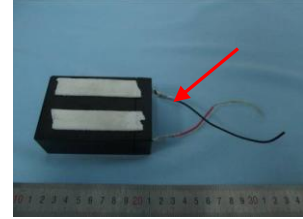
Test Item 81



Test Item 82



Test Item 83



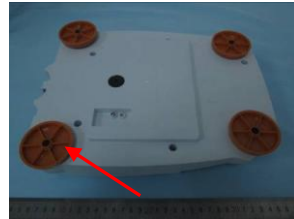
Test Item 84



Test Item 85



Test Item 86



Test Item 87

---End of Report---

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