

Test Report

Report No.: G150728Z01EN

Date: 2015-08-05

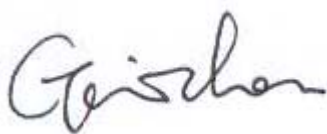
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Applicant :
Address :

Sample Name : Tire gauge
Tested Model : 86801
Model/Type reference : 86804, 86805, 86806
Sample Receiving date : 2015-07-28
Test period : 2015-07-28 – 2015-08-03
Test Requirement : The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment, 2011/65/EU.
Test Method : Please refer to next page(s).
Test result : Please refer to next page(s).
Conclusion : Based on the verification results of the submitted sample(s), the results of Lead, Cadmium, Mercury, Hexavalent chromium, Polybrominated biphenyls (PBBs) and Polybrominated diphenyl ethers (PBDEs) comply with the limits as set by RoHS Directive 2011/65/EU—The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.

ORIGINAL

Authorized signature



Lab Manager: Gavin Zhou



2015-08-05

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Result Summary:

Part No.	Part Description	Results of EDXRF					Chemical confirmation results (mg/kg)	Conclusion
		Pb	Cd	Hg	Cr	Br		
1	Black plastic shell	BL	BL	BL	BL	BL	---	Pass
2	Silvery metal	BL	BL	BL	BL	---	---	Pass
3-1	Transparent plastic	BL	BL	BL	BL	BL	---	Pass
3-2	White plastic with silvery plating	BL	BL	BL	BL	BL	---	Pass
3-3	White plastic with silvery plating	BL	BL	BL	BL	BL	---	Pass
4	Yellow plastic button	BL	BL	BL	BL	BL	---	Pass
5	Red plastic button	BL	BL	BL	BL	BL	---	Pass
6	Green plastic button	BL	BL	BL	BL	BL	---	Pass
7	Silvery metal (blade)	BL	BL	BL	IN	---	Cr(VI): Negative	Pass
8-1	Silvery coating	BL	BL	BL	BL	BL	---	Pass
8-2	Black plastic base	BL	BL	BL	BL	BL	---	Pass
9	Black plastic button	BL	BL	BL	BL	BL	---	Pass
10	Black plastic	BL	BL	BL	BL	BL	---	Pass
11	Display screen	BL	BL	BL	BL	BL	---	Pass
12	Metal (screw)	BL	BL	BL	IN	---	Cr(VI): Negative	Pass
13	Touch switch	BL	BL	BL	BL	BL	---	Pass
14-1	Red wire sheath	BL	BL	BL	BL	BL	---	Pass
14-2	Copper wire	BL	BL	BL	BL	---	---	Pass
15	Blue wire sheath	BL	BL	BL	BL	BL	---	Pass
16-1	Metal (spring)	BL	BL	BL	BL	---	---	Pass
16-2	Metal (contact sheet)	BL	BL	BL	BL	---	---	Pass
16-3	Soldering tin	BL	BL	BL	BL	---	Pb: 227	Pass
17	Blue plastic casing	BL	BL	BL	BL	BL	---	Pass
18	Black plastic casing	BL	BL	BL	BL	BL	---	Pass
19-1	Transparent plastic (LED holder)	BL	BL	BL	BL	BL	---	Pass
19-2	LED light	BL	BL	BL	BL	BL	---	Pass
20	SMD capacitor	BL	BL	BL	BL	BL	---	Pass
21	SMD resister	BL	BL	BL	BL	BL	---	Pass
22	SMD audion	BL	BL	BL	BL	BL	---	Pass
23	Epoxy dependend glue	BL	BL	BL	BL	BL	---	Pass
24	LED light	BL	BL	BL	BL	BL	---	Pass

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Part No.	Part Description	Results of EDXRF					Chemical confirmation results (mg/kg)	Conclusion
		Pb	Cd	Hg	Cr	Br		
25	PCB	BL	BL	BL	BL	IN	PBBs: N.D. PBDEs: N.D.	Pass
26	Soldering tin	BL	BL	BL	BL	---	Pb: 112	Pass
27	LED light	BL	BL	BL	BL	BL	---	Pass
28	White plastic	BL	BL	BL	BL	BL	---	Pass
29	Yellow plastic	BL	BL	BL	BL	BL	---	Pass
30	PCB	BL	BL	BL	BL	IN	PBBs: N.D. PBDEs: N.D.	Pass
31	Soldering tin	BL	BL	BL	BL	---	Pb: 327	Pass
32	Black plastic shell	BL	BL	BL	BL	BL	---	Pass

Remark:

(^1) "—"= Not Applicable;

(^2) (a) It is the result on total Br while test item on restricted substances is PBBs/PBDEs. It is the result on total Cr while test item on restricted substances is Cr(VI).

(b) Results are obtained by EDXRF for primary screening, and further chemical testing by ICP-OES (for Pb、Cd、Hg), UV-VIS (for Cr(VI)) and GC/MSD (for PBBs, PBDEs) is recommended to be performed, if the concentration exceeds the below warning value according to IEC 62321-3-1: 2013.

Attached table 1, XRF screening limits in mg/kg for regulated elements in various matrices:

Element	Polymer Materials	Metallic Materials	Electronics
Cd	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$BL \leq (70-3\sigma) < X < (130+3\sigma) \leq OL$	$LOD < X < (250+3\sigma) \leq OL$
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	$BL \leq (300-3\sigma) < X$	Not applicable	$BL \leq (250-3\sigma) < X$
Cr	$BL \leq (700-3\sigma) < X$	$BL \leq (700-3\sigma) < X$	$BL \leq (500-3\sigma) < X$

Note:

- ① BL "below limit" = the result less than the limit.
- ② OL "over limit" = the result greater than the limit.
- ③ IN = inconclusive, the region where need further chemical testing by ICP-OES (for Pb, Cd, Hg), UV-VIS (for Cr(VI)) and GC/MSD (for PBBs, PBDEs).
- ④ 3σ = Repeability of the analyser at the action level.
- ⑤ LOD = Limit of detection.

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

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(^3) (a) mg/kg = ppm = 0.0001%;

(b) N.D. = Not detected, less than MDL;

(c) Method Detection Limit (MDL) in wet chemical test and Limit of Directive 2011/65/EU.

Parameter	Unit	Limit	Method Detection Limit (MDL)
Lead (Pb)	mg/kg	1000	2
Cadmium (Cd)	mg/kg	100	2
Mercury (Hg)	mg/kg	1000	2
Chromium VI (Cr VI)	mg/kg	1000	2
Group PBBs	mg/kg	1000	5
Group PBDEs	mg/kg	1000	5

Important: The limit values apply to each individual homogenous material.

(d) According to IEC 62321, result on Cr(VI) for metal sample is shown as Negative/Positive:

Negative = Absence of Cr(VI), Positive = Presence of Cr(VI).

(^4) Main test instruments used and test method:

Parameter	Test Method	Instrument	Manufactory
Pb, Cd, Hg, Cr & Br	IEC 62321-3-1: 2013	EDX	Skyray Instrument
Pb, Cd & Cr	IEC 62321-5: 2013	ICP-OES	PerkinElmer
Hg	IEC 62321-4: 2013	ICP-OES	PerkinElmer
Cr(VI)	IEC 62321: 2008 Annex B and C	UV-Vis	Beijing Purkinje
PBBs & PBDEs	IEC 62321: 2008 Annex A	GC-MSD	Agilent Technologies

YONGJIA HUIHONG ELECTRONIC CO., LTD. declare that:

Model 86804, 86805, 86806 and model 86801 are the same serials, all the components were made by the same raw material but different in shapes and sizes.

Ningbo GIG Testing Technology Service Co., Ltd. will not be responsible for this statement.

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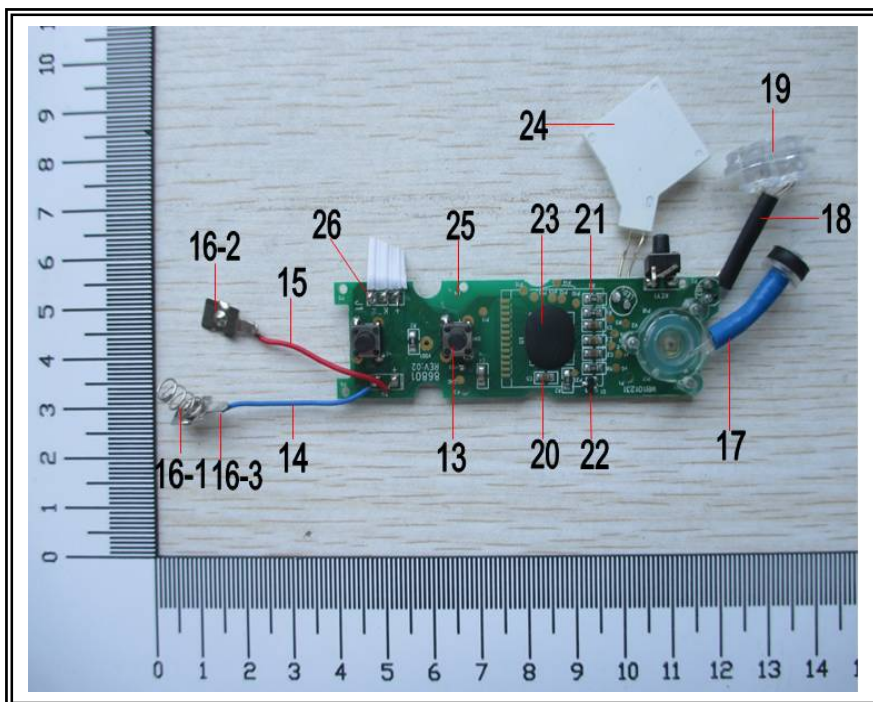
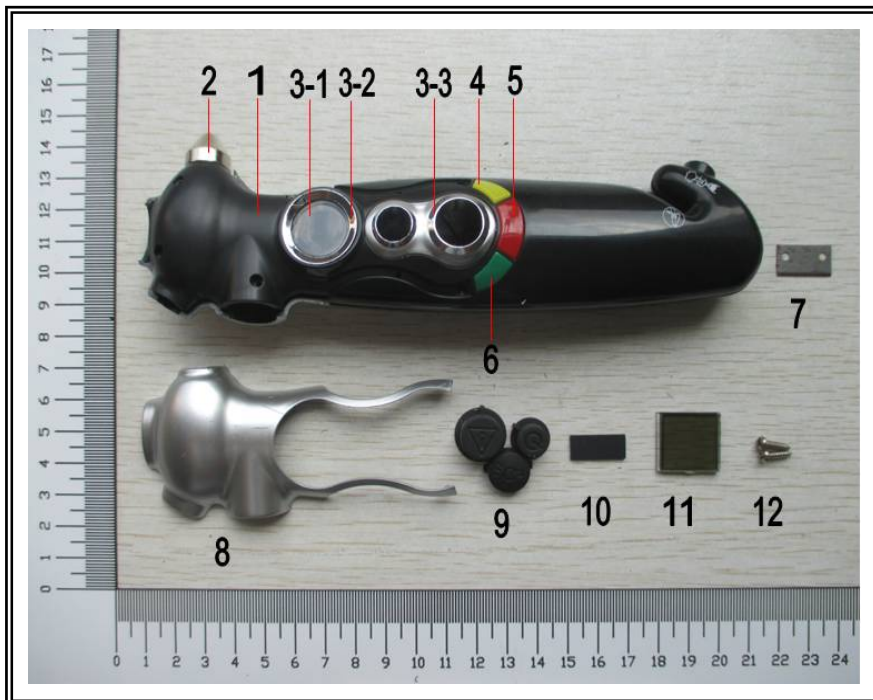
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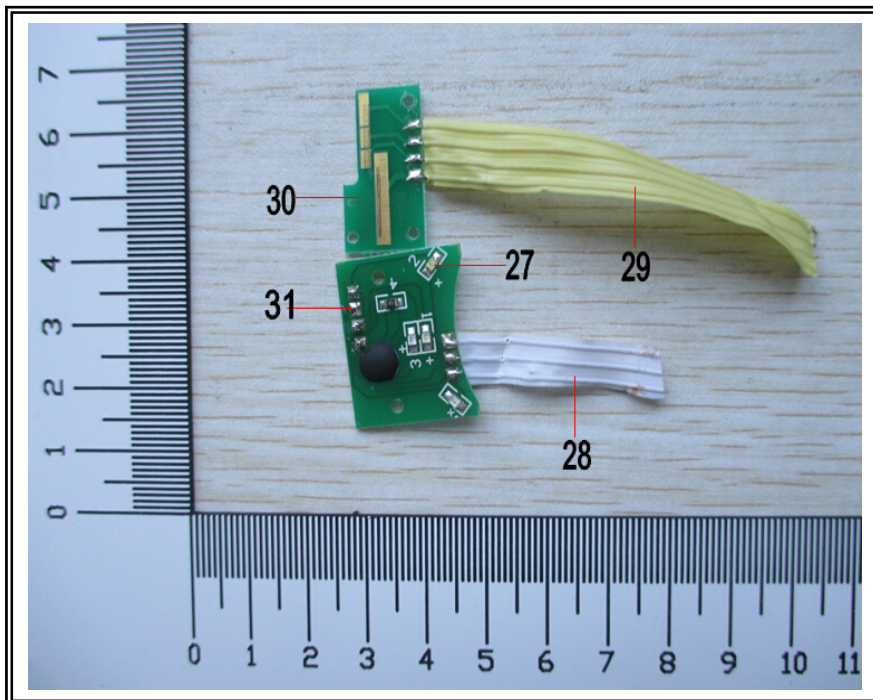
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GIG authenticate the photo(s) on original report only

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

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