Report No.: QHJ2206002801/EN Page 1 of 32 Issued: 2022-06-29

# **Test Report**

Applicant : HARDWARIO a.s.

Address : U Jezu 525/4, 460 01 Liberec, CZECHIA

Manufacturer : HARDWARIO a.s.

Address : U Jezu 525/4, 460 01 Liberec, CZECHIA

Sample Name : CHESTER Sample Model : CHESTER

Received Date : June 2, 2022

Testing Period : June 2, 2022 ~ June 16, 2022

Test Requested : As specified by client, with reference to RoHS Directive 2011/65/EU and

(EU) 2015/863 to determine the Lead (Pb), Cadmium (Cd), Mercury (Hg), Hexavalent Chromium (Cr(VI)), Polybrominated biphenyls (PBBs), Polybrominated diphenyl ethers (PBDEs), Dibutuyl Phthalate (DBP), Benzyl butyl phthalate (BBP), Bis-(2-ethyl hexyl)-phthalate (DEHP) and

Diisobutyl phthalate (DIBP) content in the submitted sample.

Test Method : Please refer to next page.

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

Conclusion : Based on the performed tests on submitted sample(s), the results Comply with

the RoHS Directive 2011/65/EU and (EU) 2015/863.

CCIC (Shenzhen) Environmental Service Co., Ltd.

Completed by:

Bimei.Fan

Reviewed by:

Renyou.Yang

Approved:

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Report No. : QHJ2206002801/EN Page 2 of 32 Issued: 2022-06-29

#### 1. Test Method(s):

As requested by the client, Reference to IEC 62321-3-1-2013 (Ed1.0) Procedures for the screening analysis of Lead (Pb), Cadmium (Cd), Mercury (Hg), total Chromium (Cr), and Bromine (Br) by XRF. If the screening analysis results exceed the screening limits of IEC 62321-3-1-2013 (Ed1.0) Annex A, use the chemical methods for testing.

Table1 IEC 62321-3-1-2013 (Ed1.0) Annex A screening limits of XRF (mg/kg)

Element	Polymer	Metal	Composite Materials		
Cd	BL≤ (70-3σ)< X <(130+3σ)≤ OL	BL≤ (70-3σ)< X <(130+3σ)≤ OL	LOD < X <(150+3σ)≤ OL		
Pb	BL≤ (700-3σ)< X <(1300+3σ)≤ OL	BL≤ (700-3σ)< X <(1300+3σ)≤ OL	BL≤ (500-3σ)< X <(1500+3σ)≤ OL		
Hg	BL≤ (700-3σ)< X <(1300+3σ)≤ OL	BL≤ (700-3σ)< X <(1300+3σ)≤ OL	BL≤ (500-3σ)< X <(1500+3σ)≤ OL		
Br	BL ≤ (300-3σ)< X	Not applicable	BL≤ (250-3σ)< X		
Cr	BL ≤ (700-3σ)< X	BL ≤ (700-3σ)< X	BL≤ (500-3σ)< X		

BL = Less than screening limits of XRF

OL = More than screening limits of XRF

X = The results of screening analysis by XRF are within this range, requiring further chemical testing.

LOD = Limit of Detection

Table2 testing methods & Equipments

Testing Item	Testing Method	Equipment								
Screening analysis by XRF										
Lead (Pb)										
Cadmium (Cd)										
Mercury (Hg)	IEC 62321-3-1-2013 (Ed1.0)	ED-XRF								
Chromium (Cr)										
Bromine (Br)										
Chemical testing	Chemical testing									
Lead (Pb)	IEC 62321-5-2013 (Ed1.0)	ICP-OES								
Hexavalent chromium (Cr(VI))	JEO 20024 7 2 2047 (E 14 2)	10/1/0								
for plastic	IEC 62321-7-2-2017 (Ed1.0)	UV-VIS								
Hexavalent chromium (Cr(VI))	IFO 60204 7 4 2045 (Fd4 0)	UV-VIS								
for coating on metals	IEC 62321-7-1-2015 (Ed1.0)	00-412								
PBBs	IEC 62321-6-2015 (Ed1.0)	GC-MS								
PBDEs	IEC 62321-6-2015 (Ed1.0)	GC-MS								

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 3 of 32 Issued: 2022-06-29

DBP	IEC 62321-8-2017 (Ed1.0)	GC-MS
ВВР	IEC 62321-8-2017 (Ed1.0)	GC-MS
DEHP	IEC 62321-8-2017 (Ed1.0)	GC-MS
DIBP	IEC 62321-8-2017 (Ed1.0)	GC-MS

# 2. Test Result(s):

Part		Restricted		Results (r	ng/kg)	Conclusion	
No.	Part Description	Substances	EDXRF	PHTH	Chamical teating	(P/F)	Resubmitted Date/ Source of Data
140.	No.	Substances	(P/F/D)	Screening	Chemical testing	(F/I)	004.00 0. 24.4
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
	0.1	PBBs	\			\	,
1	Silvery metal screw	PBDEs	\			\	
		DEHP	\	\	\	\	
		DBP	\	\	\	\	
		BBP	\	\	1	\	
		DIBP	\	\	\	\	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
	AA/IL'G G . I	PBBs	Р			Р	\
2	White sticker	PBDEs	Р			Р	
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 4 of 32 Issued: 2022-06-29

Dout		Bootviotod		Results (ı	ng/kg)	Conclusion	
Part No.	Part Description	Restricted Substances	EDXRF	PHTH	21 1 11 11		Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D)	Screening	Chemical testing	(P/F)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,		Р	
		Cr(VI)	Р	\	\	Р	
	VA III. 14	PBBs	Р			Р	,
3	White sticker	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	1	Р	
		DIBP	\	Р	1	Р	
	White sticker	Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р		\	Р	
		Cr(VI)	Р	\	\	Р	
,		PBBs	Р			Р	-
4		PBDEs	Р			Р	
		DEHP	\	Р	\	Р	
		DBP	١	Р	\	Р	
		BBP	\	Р	1	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
_	\\/\bita	PBBs	Р			Р	,
5	White plastic	PBDEs	Р			Р	\ - -
		DEHP	١	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	

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Report No. : QHJ2206002801/EN Page 5 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	ng/kg)	Conclusion	
No.	Part Description	Substances	EDXRF	PHTH			Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D) Screening Chemical testing	(P/F)	Godice of Buta		
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
	T	PBBs	Р			Р	,
6	Transparent plastic	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
	White plastic	Pb	Р			Р	
		Hg	Р		,	Р	
		Cr(VI)	Р	,	\	Р	
_		PBBs	Р			Р	,
7		PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	-
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	PBBs	Р			Р	,
8	White plastic	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	١	Р	\	Р	
	DIBP	\	Р	\	Р		

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 6 of 32 Issued: 2022-06-29

Dowt		Destricted		Results (ı	ng/kg)	Canalusian	
Part	Part Description	Restricted	EDXRF	PHTH		Conclusion	Resubmitted Date/ Source of Data
No.		Substances	(P/F/D)	Screening	Chemical testing	(P/F)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р		,	Р	
		Cr(VI)	Р	\	\	Р	
	District the least	PBBs	Р			Р	,
9	Black soft plastic	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
	Cilvanu mastal assau	Pb	Р			Р	
		Hg	Р	,	Cr(VI): Negative	Р	
		Cr(VI)	D	\	(< 0.10 μg/cm <sup>2</sup> )	Р	
40		PBBs	١			\	,
10	Silvery metal screw	PBDEs	\			\	\
		DEHP	\	\	\	\	-
		DBP	\	\	\	\	
		BBP	\	\	\	\	
		DIBP	\	\	\	\	
		Cd	Р			Р	
		Pb	F			Р	
		Hg	Р	,	Pb: 3.02×10 <sup>4</sup>	Р	
		Cr(VI)	Р	,	See remark (5)	Р	\
11	Coldon motal	PBBs	\			\	
''	Golden metal	PBDEs	١			١	
		DEHP	١	\	١	١	
		DBP	\	\	\	\	
		BBP	\	\	\	\	
		DIBP	\	\	\	\	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 7 of 32 Issued: 2022-06-29

Dout		Destricted		Results (ı	ng/kg)	Conclusion	
Part No.	Part Description	Restricted Substances	EDXRF	PHTH			Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D)	Screening	Chemical testing	(P/F)	Source of Data
		Cd	Р			Р	
		Pb	Р		,	Р	
		Hg	Р	,		Р	
		Cr(VI)	Р	\	\	Р	
40	0	PBBs	Р			Р	,
12	Green PCB	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	1	Р	
		DIBP	\	Р	1	Р	
	White sticker	Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	\	Р	
		Cr(VI)	Р	\	\	Р	
40		PBBs	Р			Р	,
13		PBDEs	Р		Р	\	
		DEHP	\	Р	\	Р	-
		DBP	١	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
14	Croon plactic	PBBs	Р			Р	,
14	Green plastic	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	١	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 8 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	ng/kg)	Conclusion	
No.	Part Description		EDXRF	PHTH			Resubmitted Date/ Source of Data
NO.		Substances (	(P/F/D)	Screening	Chemical testing	(P/F)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
45	Orașa miastis	PBBs	Р			Р	,
15	Green plastic	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
	Silvery metal	Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	,	\	Р	
40		PBBs	\			/	,
16		PBDEs	١			\	,
		DEHP	\	\	1	1	-
		DBP	\	\	\	\	
		BBP	\	\	\	\	
		DIBP	\	\	\	1	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
47	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	PBBs	Р			Р	,
17	White plastic	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	١	Р	\	Р	
		DIBP	\	Р	\	Р	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 9 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	ng/kg)	Conclusion	
No.	Part Description	Substances	EDXRF	PHTH			Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D) Screening	Chemical testing	(P/F)	Source of Data	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	,	\	Р	
40	Cibram resetal	PBBs	\			\	,
18	Silvery metal	PBDEs	١			\	\
		DEHP	\	\	\	\	
		DBP	\	\	\	\	
		BBP	\	\	\	\	
		DIBP	\	\	1	\	
		Cd	Р		Р		
	Black plastic	Pb	Р			Р	
		Hg	Р	,	PBBs: ND	Р	
		Cr(VI)	Р	\	PBDEs: ND	Р	
40		PBBs	D			Р	-
19		PBDEs	D			Р	
		DEHP	\	Р	1	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
00	0.1	PBBs	\			\	, I
20	Silvery metal	PBDEs	١			\	\
		DEHP	\	\	\	\	
		DBP	\	\	\	1	
		BBP	١	\	\	\	
		DIBP	\	\	\	1	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 10 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	ng/kg)	Conclusion	
No.	Part Description	Substances	EDXRF	PHTH			Resubmitted Date/ Source of Data
140.		Substances	(P/F/D) Screening	Chemical testing	(P/F)	Source of Data	
		Cd	Р		,	Р	
		Pb	Р			Р	
		Hg	Р	,		Р	
		Cr(VI)	Р	(	\	Р	
04	0:1	PBBs	\			\	,
21	Silvery metal	PBDEs	١			\	\
		DEHP	\	\	\	\	
		DBP	\	\	\	\	
		BBP	\	\	\	\	
		DIBP	\	\	1	/	
		Cd	Р			Р	
	Black plastic	Pb	Р			Р	
		Hg	Р	\	,	Р	
		Cr(VI)	Р	\	\	Р	
00		PBBs	Р			Р	,
22		PBDEs	Р			Р	\
		DEHP	\	Р	1	Р	-
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
	Diagram C	PBBs	Р			Р	,
23	Black IC	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	١	Р	\	Р	
		DIBP	\	Р	\	Р	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 11 of 32 Issued: 2022-06-29

Dout		Restricted		Results (ı	ng/kg)	Conclusion	
Part No.	Part Description		EDXRF	PHTH	21 1 11 11		Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D)	Screening	Chemical testing	(P/F)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,		Р	
		Cr(VI)	Р	\	\	Р	
0.4	0.11	PBBs	\			\	,
24	Silvery metal	PBDEs	\			1	\
		DEHP	\	\	\	\	
		DBP	\	\	\	\	
		BBP	\	\	1	\	
		DIBP	\	\	1	\	
	Black IC	Cd	Р		P P		
		Pb	Р			Р	
		Hg	Р		\	Р	
		Cr(VI)	Р	\	\	Р	
05		PBBs	Р			Р	-
25		PBDEs	Р			Р	
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	PBBs: ND	Р	
		Cr(VI)	Р	\	PBDEs: ND	Р	
26	Plus DCP	PBBs	D			Р	,
26	Blue PCB	PBDEs	D			Р	\
		DEHP	\	Р	\	Р	
		DBP	١	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	

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Report No. : QHJ2206002801/EN Page 12 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	mg/kg)	Conclusion	
	Part Description	Substances	EDXRF	PHTH			Resubmitted Date/ Source of Data
No.		Substances	(P/F/D)	Screening	Chemical testing	(P/F)	Godiec of Bata
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р		,	Р	
		Cr(VI)	Р	(	\	Р	
0.7	Dia ale in decada na a	PBBs	Р			Р	,
27	Black inductance	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
	DBP	\	Р	\	Р		
		BBP	\	Р	1	Р	
		DIBP	\	Р	1	Р	
	Silvery metal crystal	Cd	Р			Р	
		Pb	Р	\		Р	
		Hg	Р		,	Р	
		Cr(VI)	Р		\	Р	
00		PBBs	\			\	,
28	oscillator	PBDEs	١			\	\
		DEHP	\	\	1	1	
		DBP	١	\	\	1	
		BBP	\	\	\	\	
		DIBP	\	\	\	1	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
20	Plack IC	PBBs	Р			Р	,
29	Black IC	PBDEs	Р			Р	\
		DEHP	١	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	

Http://www.ccicshenzhen.com.cn



Report No.: QHJ2206002801/EN Page 13 of 32 Issued: 2022-06-29

Dowt		Destricted		Results (ı	mg/kg)	Canalysian	
Part No.	Part Description	Restricted Substances	EDXRF (P/F/D)	PHTH Screening	Chemical testing	Conclusion (P/F)	Resubmitted Date/ Source of Data
		Cd	P		Р	P	
		Pb	Р			Р	
		Hg	Р			Р	
		Cr(VI)	Р	\	\	Р	
30 Black		PBBs	Р			Р	_
	Black IC	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
	Blue capacitor	Pb	Р			Р	
		Hg	Р		,	Р	
		Cr(VI)	Р	\	\	Р	
		PBBs	Р			Р	
31		PBDEs	Р			Р	\
		DEHP	\	Р	1	Р	
		DBP	\	Р	1	Р	
		BBP	\	Р	1	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	,	\	Р	
00	MANIEL AND LONG	PBBs	Р			Р	,
32	White sticker	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	١	Р	\	Р	
		DIBP	\	Р	1	Р	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 14 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	mg/kg)	Conclusion	
	Part Description	Substances	EDXRF	PHTH			Resubmitted Date/ Source of Data
No.		Substances	(P/F/D)	Screening	Chemical testing	(P/F)	Godino di Bata
		Cd	Р			Р	
		Pb	Р			Р	
33		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
	D. DOD	PBBs	Р			Р	,
	Brown PCB	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
	DBP	\	Р	\	Р		
		BBP	\	Р	1	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
	Black IC	Pb	Р	\	\	Р	
		Hg	Р			Р	
		Cr(VI)	Р		\	Р	
24		PBBs	Р			Р	,
34		PBDEs	Р			Р	\
		DEHP	\	Р	1	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р		,	Р	
		Cr(VI)	Р	,	\	Р	
25	Plank DCP	PBBs	Р			Р	,
35	Black PCB	PBDEs	Р			Р	,
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	

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Report No.: QHJ2206002801/EN Page 15 of 32 Issued: 2022-06-29

Dowt		Destricted		Results (ı	mg/kg)	Canalysian	
Part No.	Part Description	Restricted Substances	EDXRF	PHTH		Conclusion (P/F)	Resubmitted Date/ Source of Data
NO.		Oubstances	(P/F/D)	Screening	Chemical testing	(171)	Source of Bata
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	,	\	Р	
36 Silvery metal	Cilven, mental	PBBs	\			\	,
	Silvery metal	PBDEs	\			\	\
		DEHP	\	\	1	\	
	DBP	\	\	\	\		
		BBP	\	\	\	\	
		DIBP	\	\	\	\	
		Cd	Р			Р	
	Black IC	Pb	Р	\		Р	
		Hg	Р		,	Р	
		Cr(VI)	Р		\	Р	
27		PBBs	Р			Р	,
37		PBDEs	Р			Р	\
		DEHP	\	Р	1	Р	
		DBP	\	Р	1	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	,	\	Р	
20	Plack IC	PBBs	Р			Р	,
38	Black IC	PBDEs	Р			Р	,
		DEHP	١	Р	1	Р	
		DBP	١	Р	1	Р	
		BBP	١	Р	1	Р	
		DIBP	\	Р	\	Р	

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Report No. : QHJ2206002801/EN Page 16 of 32 Issued: 2022-06-29

Dout		Doctricted		Results (ı	ng/kg)	Conclusion	
Part No.	Part Description	Restricted Substances	EDXRF	PHTH			Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D)	Screening	Chemical testing	(P/F)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р		,	Р	
		Cr(VI)	Р	\	\	Р	
39 Silvery metal crystal oscillator	Silvery metal crystal	PBBs	\			\	,
	oscillator	PBDEs	\			\	\
		DEHP	\	\	\	1	
		DBP	\	\	\	\	
	BBP	١	\	1	/		
		DIBP	\	\	1	\	
		Cd	Р			Р	
	Black PCB	Pb	Р	,		Р	
		Hg	Р		\	Р	
		Cr(VI)	Р	\	\	Р	
40		PBBs	Р			Р	,
40		PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	١	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	Cr(VI): Negative	Р	
		Cr(VI)	D	\	(< 0.10 μg/cm <sup>2</sup> )	Р	
44	Cibram r mastal	PBBs	\			\	,
41	Silvery metal	PBDEs	١			\	\
		DEHP	١	\	\	\	
		DBP	\	١	\	\	
		BBP	\	\	\	\	
		DIBP	\	\	1	\	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 17 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	mg/kg)	Conclusion	
No.	Part Description	Substances	EDXRF	PHTH		(P/F)	Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D)	Screening	Chemical testing	(F/F)	Course of Buta
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	Cr(VI): Negative	Р	
		Cr(VI)	D	,	(< 0.10 μg/cm <sup>2</sup> )	Р	
42	0:1	PBBs	١	\	,		
	Silvery metal	PBDEs	\			\	\
		DEHP	\	\	\	\	
	DBP	\	\	\	\		
		BBP	\	\	\	\	
		DIBP	\	\	1	\	
		Cd	Р			Р	
	Black plastic	Pb	Р	\		Р	
		Hg	Р		,	Р	
		Cr(VI)	Р		\	Р	
40		PBBs	Р			Р	,
43		PBDEs	Р			Р	\
		DEHP	١	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р		,	Р	
		Cr(VI)	Р	\	\	Р	
,,	Oib	PBBs	١			\	,
44	Silvery metal	PBDEs	١			\	\
		DEHP	\	\	\	\	
		DBP	\	\	\	1	
		BBP	\	\	\	\	
		DIBP	\	\	\	\	

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Report No. : QHJ2206002801/EN Page 18 of 32 Issued: 2022-06-29

Dowt		Dootsisted		Results (ı	mg/kg)	Canalusian	
Part No.	Part Description	Restricted Substances	EDXRF	PHTH		Conclusion (P/F)	Resubmitted Date/ Source of Data
NO.		Oubstances	(P/F/D)	Screening	Chemical testing	(F/1)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
45	Die als plantin	PBBs	Р			Р	,
	Black plastic	PBDEs	Р			Р	\
		DEHP	\	Р	1	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
	Black plastic	Pb	Р	\	,	Р	
		Hg	Р			Р	
		Cr(VI)	Р		\	Р	
46		PBBs	Р			Р	,
46		PBDEs	Р			Р	\
		DEHP	\	Р	1	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	,	\	Р	
47	Cilven t-1	PBBs	\			\	,
47	Silvery metal	PBDEs	\			\	\
		DEHP	\	\	\	\	
		DBP	\	\	\	1	
		BBP	\	\	\	\	
		DIBP	\	\		1	

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Report No. : QHJ2206002801/EN Page 19 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	mg/kg)	Conclusion	
No.	Part Description	Substances	EDXRF	PHTH		(P/F)	Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D)	Screening	Chemical testing	(F/F)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	,	\	Р	
40	Cray industance	PBBs	Р			Р	,
48	Gray inductance	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
	DBP	\	Р	\	Р		
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
	Black IC	Pb	Р	\	,	Р	
		Hg	Р			Р	
		Cr(VI)	Р		\	Р	
40		PBBs	Р			Р	,
49		PBDEs	Р			Р	\
		DEHP	\	Р	1	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
F0	Plack IO	PBBs	Р			Р	,
50	Black IC	PBDEs	Р			Р	,
		DEHP	١	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	

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Report No. : QHJ2206002801/EN Page 20 of 32 Issued: 2022-06-29

Dout		Destricted		Results (ı	mg/kg)	Canalusian	
Part No.	Part Description	Restricted Substances	EDXRF	PHTH		Conclusion (P/F)	Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D)	Screening	Chemical testing	(F/1)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	O=(\()(\). ND	Р	
		Cr(VI)	D	\	Cr(VI): ND	Р	
51	Disch OMD as data	PBBs	Р			Р	,
	Black SMD resistor	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
		Pb	Р	\		Р	
		Hg	Р		\	Р	
		Cr(VI)	Р		\	Р	
50		PBBs	Р			Р	,
52	Black IC	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
	<b>D.</b>	PBBs	Р			Р	,
53	Black diode	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 21 of 32 Issued: 2022-06-29

Dowt		Do o twi o to d		Results (ı	mg/kg)	Canalusian	
Part No.	Part Description	Restricted Substances	EDXRF (P/F/D)	PHTH Screening	Chemical testing	Conclusion (P/F)	Resubmitted Date/ Source of Data
		Cd	P			Р	
		Pb	Р			Р	
		Hg	Р			Р	
		Cr(VI)	Р	\	\	Р	
54		PBBs	Р			Р	
	Black IC	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	
		Cd	Р			Р	
	Black IC	Pb	Р		,	Р	
		Hg	Р			Р	
		Cr(VI)	Р	\	\	Р	
		PBBs	Р			Р	_
55		PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	١	Р	\	Р	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
	T	PBBs	Р			Р	,
56	Translucent LED	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	

Http://www.ccicshenzhen.com.cn



Report No. : QHJ2206002801/EN Page 22 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	mg/kg)	Conclusion	
	Part Description	Substances	EDXRF	PHTH			Resubmitted Date/ Source of Data
No.		Substances	(P/F/D)	Screening	Chemical testing	(P/F)	Source of Data
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	PBBs: ND	Р	
		Cr(VI)	Р	\	PBDEs: ND	Р	
57	Daine nlastic	PBBs	D			Р	,
	Beige plastic	PBDEs	D			Р	1
		DEHP	\	Р	\	Р	
	DBP	\	Р	\	Р		
		BBP	\	Р	\	Р	
		DIBP	١	Р	1	Р	
	58 Silvery metal	Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	,	\	Р	
50		PBBs	\			\	,
58		PBDEs	١			\	\
		DEHP	\	\	1	\	
		DBP	\	\	\	\	
		BBP	\	\	\	\	
		DIBP	\	\	\	\	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	,	Р	
		Cr(VI)	Р	\	\	Р	
<sub>=0</sub>	Dlook die de	PBBs	Р			Р	,
59	Black diode	PBDEs	Р			Р	'
		DEHP	١	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	

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Report No. : QHJ2206002801/EN Page 23 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	ng/kg)	Conclusion	
No.	Part Description	Substances	EDXRF	PHTH		(P/F)	Resubmitted Date/ Source of Data
NO.		Substances	(P/F/D)	Screening	Chemical testing	(F/F)	Course of Buta
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р		,	Р	
		Cr(VI)	Р	,	\	Р	
60	Dio alchrio do	PBBs	Р			Р	,
	Black triode	PBDEs	Р			Р	\
		DEHP	\	Р	\	Р	
	DBP	\	Р	\	Р		
		BBP	\	Р	\	Р	
		DIBP	\	Р	1	Р	
		Cd	Р			Р	
	Solder	Pb	Р	\		Р	
		Hg	Р		\	Р	
		Cr(VI)	Р		\	Р	
04		PBBs	١			\	,
61		PBDEs	\			\	\
		DEHP	\	\	\	\	
		DBP	\	\	\	\	
		BBP	\	\	\	\	
		DIBP	\	\	\	\	
		Cd	Р			Р	
		Pb	Р			Р	
		Hg	Р	,	PBBs: ND	Р	
		Cr(VI)	Р	\	PBDEs: ND	Р	
60	Vellow DCD	PBBs	D			Р	,
62	Yellow PCB	PBDEs	D			Р	\
		DEHP	١	Р	\	Р	
		DBP	\	Р	\	Р	
		BBP	\	Р	\	Р	
		DIBP	\	Р	\	Р	

Http://www.ccicshenzhen.com.cn

Report No. : QHJ2206002801/EN Page 24 of 32 Issued: 2022-06-29

Part		Restricted		Results (ı	ng/kg)	Conclusion			
No.	Part Description	Substances	EDXRF (P/F/D)	PHTH Screening	Chemical testing		Resubmitted Date/ Source of Data		
		Cd	Р			Р			
		Pb	Р			Р			
		Hg	Р		PBBs: ND	Р			
		Cr(VI)	Р	\	PBDEs: ND	Р			
00		PBBs	D			Р	,		
63	Green PCB	PBDEs	D			Р	\		
		DEHP	\	Р	1	Р			
		DBP	\	Р	\	Р			
		BBP	١	Р	1	Р			
		DIBP	١	Р	1	Р			
		Cd	Р			Р			
		Pb	Р			Р			
		Hg	Р		,	Р			
		Cr(VI)	Р	\	\	Р			
2.4	Golden metal	PBBs	\			\	,		
64		PBDEs	\			\	\		
		DEHP	\	\	\	\			
		DBP	١	\	1	\			
		BBP	\	\	\	\			
		DIBP	\	\	1	1			

### Note:

mg/kg = milligram per kilogram = ppm

ND = Not detected (<MDL)

P = PASS = Less than screening limits of XRF

F = FAIL = More than screening limits of XRF

D = DETECTED = Inconclusive

NA = Not applicable

\ = Not available

## Remark:

- (1) The results of XRF are only for reference;
- (2) For hexavalent chromium (Cr(VI)), XRF testing result is the content of Chromium (Cr) elements; for polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs), XRF testing result is the content of Bromine (Br) elements;

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Report No.: QHJ2206002801/EN Page 25 of 32 Issued: 2022-06-29

(3) Screening results of PHTH are for primary screening, and further chemical testing by GC-MS (for DBP, BBP, DEHP and DIBP) are recommended to be performed if the concentration (based on weight of a single sample) exceeds the below warning value.

TEST ITEM	Screening Limit (Unit: mg/kg)
Di-2-ethylhexyl phthalate (DEHP)	P≤600 <d< td=""></d<>
Dibutyl phthalate (DBP)	P≤600 <d< td=""></d<>
Benzylbutyl phthalate (BBP)	P≤600 <d< td=""></d<>
Diisobutyl phthalate (DIBP)	P≤600 <d< td=""></d<>

(4) According to IEC 62321-7-1-2015, three types of Cr(VI) results for coating on metals is as follows: Sample Cr(VI) concentration is < 0.10  $\mu g/cm^2$ , The coating is considered a non-Cr(VI) based coating, the sample is negative for Cr(VI);

Sample Cr(VI) concentration is between 0.10  $\mu g/cm^2$  and 0.13  $\mu g/cm^2$ , The result is considered to be inconclusive, if addition samples are available, perform a total of 3 trials to increase sampling surface area, use the averaged result of the 3 trials for the final determination;

- Sample Cr(VI) concentration is > 0.13  $\mu g/cm^2$ , The sample coating is considered to contain Cr(VI), The sample is positive for Cr(VI).
- (5) According to the product specification from client, No. 11 is copper alloy, while Lead as an alloying element in copper alloy containing up to 4% Lead by weight is exempted by RoHS Directive 2011/65/EU of the European Parliament and of the council of 8 June 2011.

#### 3. Method Detection Limit (MDL):

For XRF screening analysis (mg/kg)

Item	Pb	Cd	Hg	Br	Cr
Polymer	20	20	20	20	20
Other materials	50	50	50	50	50

## For chemical testing (mg/kg)

	0 ( 0 0)									
Item	Pb	Cd	Hg	PBBs	PBDEs	DEHP	BBP	DBP	DIBP	Cr(VI)
General materials	2	2	2	5	5	50	50	50	50	See remark (2)

#### Remark:

- (1) PBBs and PBDEs method detection limit only for one substance;
- (2) MDL for polymer and Composites is 8 mg/kg, MDL for coating on metals is 0.02 μg/cm<sup>2</sup>.

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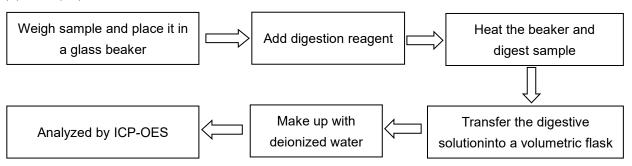
Report No. : QHJ2206002801/EN Page 26 of 32 Issued: 2022-06-29

## 4. RoHS Requirement (mg/kg):

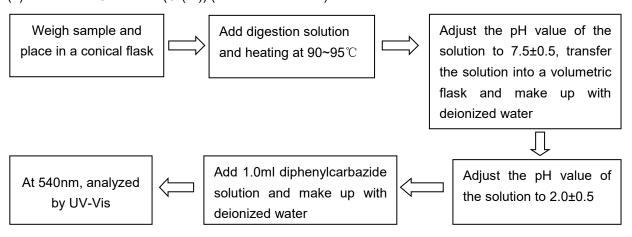
Restricted substances	Cd	Pb	Hg	Cr(VI)	PBBs	PBDEs	DEHP	BBP	DBP	DIBP
RoHS limit	100	1000	1000	1000	1000	1000	1000	1000	1000	1000

#### 5. Chemical Test Process:

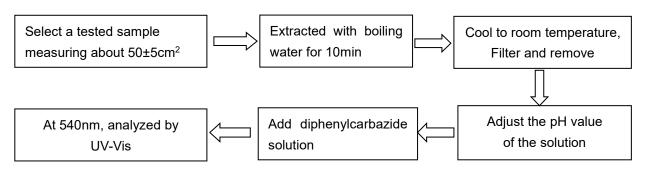
### (1) Lead (Pb)



## (2) Hexavalent Chromium (Cr(VI)) (Alkaline extraction)



## (3) Hexavalent Chromium (Cr(VI)) (Boiling water extraction)

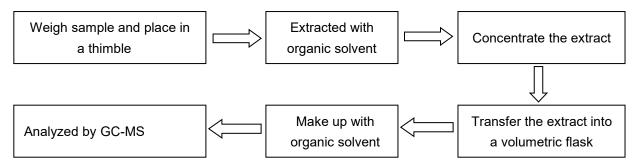


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Report No.: QHJ2206002801/EN Page 27 of 32 Issued: 2022-06-29

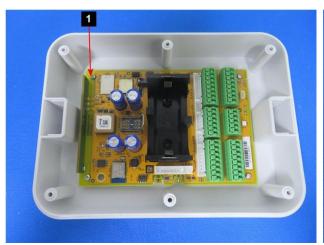
## (4) PBBs /PBDEs, DEHP, BBP, DBP, DIBP



# 6. Appendix:



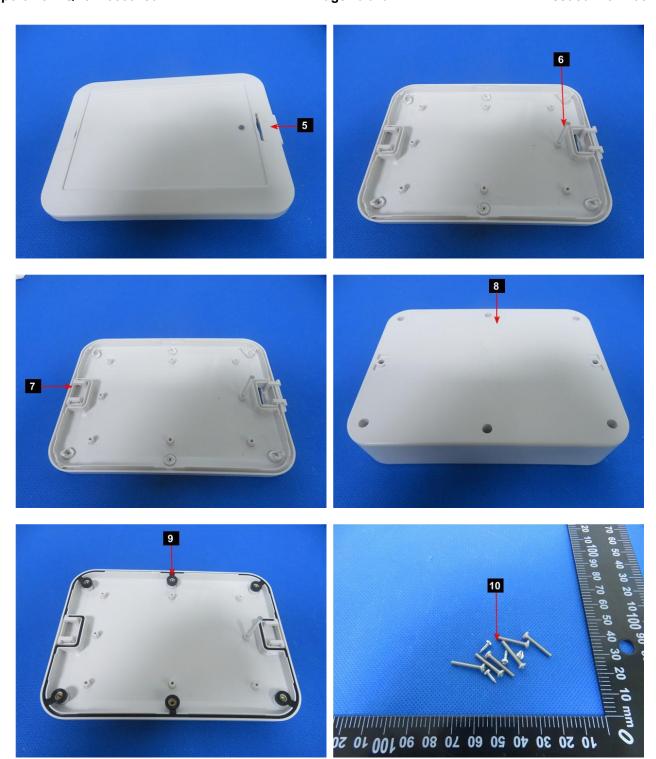






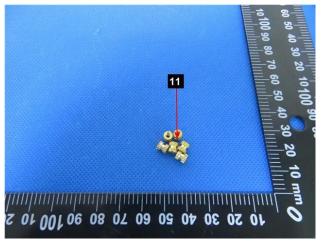
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Report No. : QHJ2206002801/EN Page 28 of 32 Issued: 2022-06-29

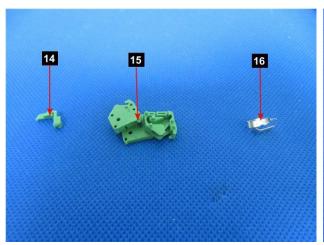


Http://www.ccicshenzhen.com.cn

Report No. : QHJ2206002801/EN Page 29 of 32 Issued: 2022-06-29

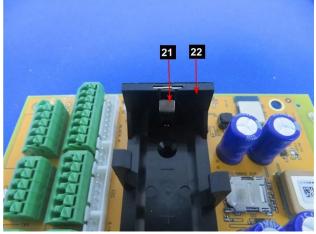






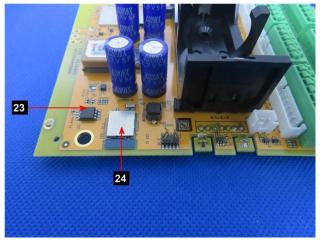


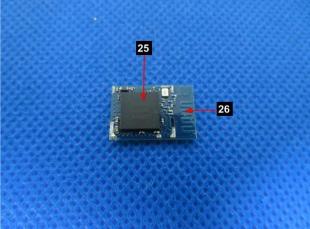


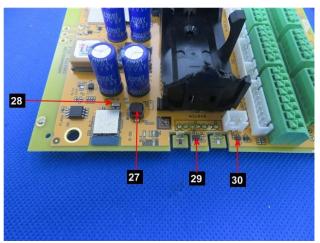


Http://www.ccicshenzhen.com.cn

Report No.: QHJ2206002801/EN Page 30 of 32 Issued: 2022-06-29

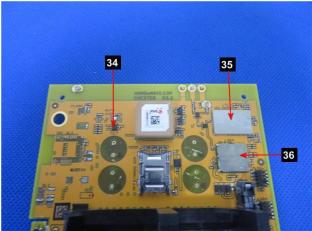






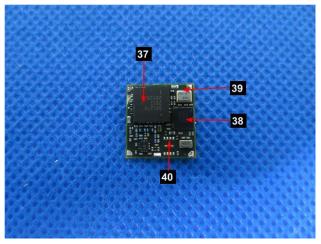


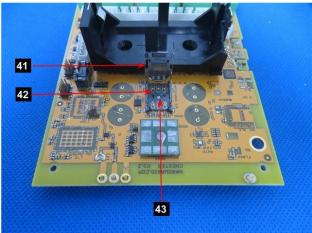


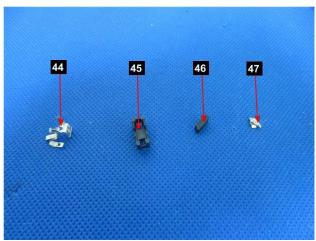


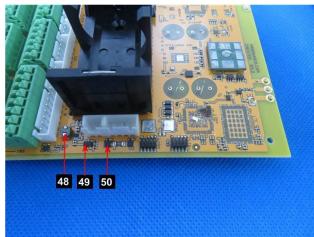
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Report No. : QHJ2206002801/EN Page 31 of 32 Issued: 2022-06-29







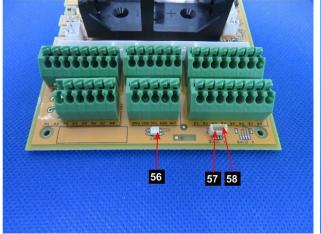


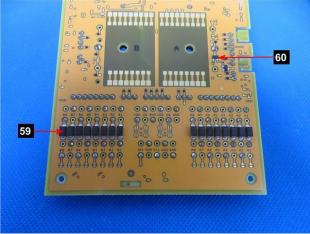


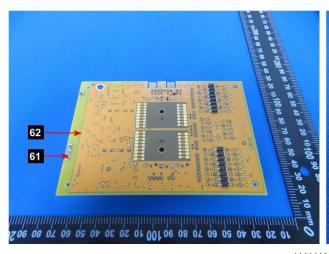


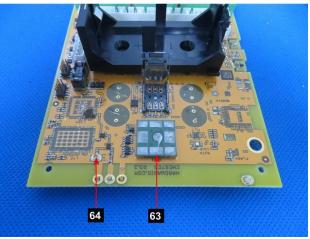
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Report No. : QHJ2206002801/EN Page 32 of 32 Issued: 2022-06-29









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