

No.: ED180717010C001 Date: July 27, 2018 Page 1 of 33

Applicant Š **Address** •

Sample Name Home speaker with wireless charger

Style/Item No. : P328.12X, SL218 Sample Received Date : July 17, 2018 **Testing Completed Date** July 27, 2018

: As requested by client, to evaluate the compliance of the submitted sample **Test Requested**

> with the Directive 2011/65/EU and amendment directive 2015/863/EU of the European Parliament and of the Council of 8 June 2011 on the restriction of

the use of certain hazardous substances in electrical and electronic

equipment.

Test Method 1. Review was performed for the sample and the related Bill of Material

submitted by the Applicant.

2. a) To refer to the standard IEC 62321-3-1:2013: Screening by XRF Spectroscopy.

b) Wet chemical test

1) to refer to IEC 62321-5: 2013, determine the Cadmium, Lead content by ICP-OES.

2) to refer to IEC 62321-4: 2013, determine the Mercury content by ICP-OES.

3) to refer to IEC 62321-7-1:2015 & IEC 62321-7-2:2017, determine the Hexavalent Chromium content by UV-VIS.

4) to refer to IEC 62321-6:2015, determine the Polybrominated Biphenyls and Polybrominated Diphenyl Ethers by GC-MS.

Test Results Please refer to next page (s).





No.: ED180717010C001 Page 2 of 33 Date: July 27, 2018

Conclusion:

Basing on the test results obtained from the homogenous materials, the submitted sample COMPLIES with the requirements stated in the Annex II of RoHS Directive 2011/65/EU and amendment directive 2015/863/EU.

> Signed for and on behalf of EMTEK (Dongguan) Co., Ltd.

Prepared by:

Kira Fu

Report Engineer

Reviewed by:

Carrie Zhang

Supervisor

Approved by:

Lainey Qin

Manager





No.: ED180717010C001 Date: July 27, 2018 Page 3 of 33

Test Results:

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL			
	Transparent soft	Cd	BL		Pass	
1	plastic with grey	Hg	BL	NA 		Non comment
	coating	Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
2	Grey fabric	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
	3 White hard plastic	Pb	BL			Non comment
		Cd	BL	NA	Pass	
3		Hg	BL			
		Cr	BL			
		Br	BL			
To Williams		Pb	BL	NA		
		Cd	BL		Pass	Non comment
4	White soft plastic	Hg	BL			
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
5	White hard plastic with black coating	Hg	BL	NA	Pass	Non comment
	with black coating	Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
6	Silver metal with	Hg	BL	NA	Pass	Non comment
	black coating	Cr	BL			i con common
		Br	NA			





No.: ED180717010C001 Date: July 27, 2018 Page 4 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL		NOTE MOTER	A TRACTOR
		Cd	BL			
7	Black soft plastic	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
8	Silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
9	Black solid	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL	NA NA		Non comment
		Cd	BL		Pass	
10	Silver metal	Hg	BL			
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
11	Solder-silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL	NA		
12	Silver metal	Hg	BL		Pass	Non comment
		Cr	BL			
		Br	NA			





No.: ED180717010C001 Date: July 27, 2018 Page 5 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
KIET BY		Pb	BL	Y 15 16 16 16 16 16 16 16 16 16 16 16 16 16	NEW NEW A	
		Cd	BL			Non comment
13	White hard plastic	Hg	BL	NA	Pass	
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
14	Brown paper	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
	Copper metal with red coating	Pb	BL			Non comment
		Cd	BL	NA	Pass	
15		Hg	BL			
		Cr	BL			
		Br	NA			
		Pb	BL	NA		
		Cd	BL		Pass	Non comment
16	White glue	Hg	BL			
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
17	Brown fabric	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
18	Black soft plastic	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			





No.: ED180717010C001 Date: July 27, 2018 Page 6 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL			
		Cd	BL			
19	Black paper	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
20	Black paper	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL		Pass	
	Brown fabric	Cd	BL			
21		Hg	BL	NA		Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			Non comment
		Cd	BL			
22	Black solid	Hg	BL	NA	Pass	
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
23	Black soft plastic with glue	Hg	BL	NA	Pass	Non comment
	with gide	Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL	NA		
24	Black foam	Hg	BL		Pass	Non comment
		Cr	BL			
		Br	BL			
18 18 B	The state of the s	1	A STATE OF STATE	1	10 1 10 10 10 10 10 10 10 10 10 10 10 10	





No.: ED180717010C001 Date: July 27, 2018 Page 7 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL	Market Market State of Reserve		
		Cd	BL			
25	Copper metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
26	Pink fabric	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			Non comment
	Yellow translucent glue tape	Cd	BL			
27		Hg	BL	NA	Pass	
		Cr	BL			
		Br	BL			
		Pb	BL			Non comment
		Cd	BL			
28	SMD resister	Hg	BL	NA	Pass	
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
29	SMD triode	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL	NA		
30	SMD capacitor	Hg	BL		Pass	Non comment
		Cr	BL			
		Br	BL			





Page 8 of 33 No.: ED180717010C001 Date: July 27, 2018

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL		NEW NEW A	
		Cd	BL			
31	SMD IC	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
32	SMD crystal oscillator	Hg	BL	NA	Pass	Non comment
	Osomator	Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL	NA NA	Pass	Non comment
33	Green PCB(big)	Hg	BL			
		Cr	BL			
		Br	BL			
		Pb	BL	NA		
		Cd	BL		Pass	Non comment
34	Solder-silver metal	Hg	BL			
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
35	SMD diode	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL	NA		
36	Copper metal	Hg	BL		Pass	Non comment
		Cr	BL			
		Br	NA			





No.: ED180717010C001 Date: July 27, 2018 Page 9 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL	MANAGER AND ENDER OF		A. T.N.E.T.N.T.T.N.
		Cd	BL			Non comment
37	Black solid	Hg	BL	NA	Pass	
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
38	Silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
39	White hard plastic	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL	NA		
		Cd	BL		Pass	Non comment
40	Black solid	Hg	BL			
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
41	Silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL	NA		
42	Silver metal	Hg	BL		Pass	Non comment
		Cr	BL			
		Br	NA			





No.: ED180717010C001 Date: July 27, 2018 Page 10 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL	Y 15 16 16 16 16 16 16 16 16 16 16 16 16 16	NEW NEW A	
		Cd	BL			Non comment
43	Copper metal	Hg	BL	NA	Pass	
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
44	Silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
45	Yellow translucent soft plastic	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL	NA		Non comment
		Cd	BL		Pass	
46	Silver metal	Hg	BL			
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
47	Grey soft plastic	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL	NA		
48	Silver metal	Hg	BL		Pass	Non comment
		Cr	BL			
and the		Br	NA			





No.: ED180717010C001 Date: July 27, 2018 Page 11 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL		TATETE ATETE A	(d. 9 N.H.9 N.H.9 N.
		Cd	BL			
49	Silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
50	Green PCB	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
	Copper metal	Cd	BL			Non comment
51		Hg	BL	NA	Pass	
		Cr	BL			
		Br	NA			
		Pb	BL	NA NA		Non comment
		Cd	BL		Pass	
52	White solid	Hg	BL			
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
53	Yellow glue tape	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
CALLET CO		Pb	BL			
		Cd	BL	NA NA		
54	Black soft plastic with grey coating	Hg	BL		Pass	Non comment
	g. c y coag	Cr	BL			
		Br	BL			





No.: ED180717010C001 Date: July 27, 2018 Page 12 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL	Y 15 16 16 16 16 16 16 16 16 16 16 16 16 16	NEW NEW A	
		Cd	BL			Non comment
55	Silver metal	Hg	BL	NA	Pass	
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
56	Brown paper	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			Non comment
	Dark silver metal	Cd	BL			
57		Hg	BL	NA	Pass	
		Cr	BL			
		Br	NA			
		Pb	BL	NA		Non comment
		Cd	BL		Pass	
58	Silver metal	Hg	BL			
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
59	Black soft plastic	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
60	Silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			





No.: ED180717010C001 Date: July 27, 2018 Page 13 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL	Y 15 16 16 16 16 16 16 16 16 16 16 16 16 16	NEW NEW A	
		Cd	BL			Non comment
61	Silver metal	Hg	BL	NA	Pass	
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
62	Silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL			
63	Black hard plastic	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL	NA		Non comment
		Cd	BL		Pass	
64	SMD LED	Hg	BL			
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
65	SMD resister	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL	NA		
66	SMD capacitor	Hg	BL		Pass	Non comment
		Cr	BL			
		Br	BL			





No.: ED180717010C001 Date: July 27, 2018 Page 14 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
		Pb	BL		NEW NEW A	CONTRACTOR
		Cd	BL			
67	Green PCB	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
68	Solder-silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			Non comment
		Cd	BL			
69	SMD IC	Hg	BL	NA	Pass	
		Cr	BL			
		Br	BL			
		Pb	BL	NA		Non comment
		Cd	BL		Pass	
70	SMD triode	Hg	BL			
		Cr	BL			
		Br	BL			
		Pb	BL			
		Cd	BL			
71	Silver metal	Hg	BL	NA	Pass	Non comment
		Cr	BL			
		Br	NA			
		Pb	BL			
		Cd	BL	NA		
72	Black soft plastic	Hg	BL		Pass	Non comment
		Cr	BL			
		Br	BL			





No.: ED180717010C001 Date: July 27, 2018 Page 15 of 33

No.	Sample description	Restricted substances	Results of EDXRF ⁽¹⁾	Results of Chemical Testing ⁽²⁾ (mg/kg)	Conclusion	Remark
73	Red soft plastic	Pb	BL	NA	Pass	Non comment
		Cd	BL			
		Hg	BL			
		Cr	BL			
		Br	BL			
	Copper metal with red coating	Pb	BL	NA NA	Pass	Non comment
74		Cd	BL			
		Hg	BL			
		Cr	BL			
		Br	NA			
75		Pb	BL	NA	Pass	Non comment
	Copper metal with green coating	Cd	BL			
		Hg	BL			
		Cr	BL			
		Br	NA			
76	Silver metal	Pb	BL	NA	Pass	Non comment
		Cd	BL			
		Hg	BL			
		Cr	BL			
		Br	NA			
	Black hard plastic	Pb	BL	NA	Pass	As declared by client, the tested material is only contained in the sample item White
77		Cd	BL			
		Hg	BL			
		Cr	BL			
		Br	BL			
	Dark grey fabric	Pb	BL	NA	Pass	As declared by client, the tested material is only contained in the sample item White
78		Cd	BL			
		Hg	BL			
		Cr	BL			
		Br	BL			





No.: ED180717010C001 Date: July 27, 2018 Page 16 of 33

- Remark: (1) ① Results are obtained by XRF for primary screening, and further wet chemical testing by ICP-OES / AAS (for Cd, Pb, Hg), UV-VIS (for Cr(VI)) and GC/MS (for PBBs, PBDEs) is recommended to be performed, if an inconclusive result was found (as "X" in below table) (unit: ma/ka).
 - ② OL = Over Limit, BL = Below Limit, X = Inconclusive, NA= Not Applicable.
 - 3 The XRF screening test for RoHS elements The reading may be different to the actual content in the sample be of non-uniformity composition.

Element	Polymer	Metal	Composite Materials
Cd	$BL \leq (70\text{-}3\sigma) < X < (130\text{+}3\sigma)$ $\leq OL$	$BL \leq (70\text{-}3\sigma) < X < (130\text{+}3\sigma)$ $\leq OL$	LOD < X <(150+3 σ)≤ OL
Pb	BL \leq (700-3 σ) $<$ X $<$ (1300+3 σ) \leq OL	BL \leq (700-3 σ) < X < (1300+3 σ) \leq OL	BL ≤(500-3 σ)< X <(1500+3 σ)≤ OL
Hg	BL \leq (700-3 σ) < X < (1300+3 σ) \leq OL	BL \leq (700-3 σ) < X < (1300+3 σ) \leq OL	BL ≤(500-3 σ) < X <(1500+3 σ) ≤ OL
Br	BL ≤ (300-3 σ)< X	NA	BL ≤ (250-3 σ)< X
Cr	BL ≤ (700-3 σ)< X	BL ≤ (700-3 <i>σ</i>)< X	BL ≤ (500-3 <i>σ</i>)< X

- (2) ① mg/kg = ppm = 0.0001%, ND = Not Detected (Less than reporting limit value.).
 - 2 Unit, Reporting Limit (RL) and Requirement limit in wet chemical test.

Test items	Pb	Cd	Hg	Cr6+(Non-metal)	Cr ⁶⁺ (metal)	PBBs(single)	PBDEs(single)
Unit	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
RL	2	2	2	2	2	5	5
Requirement Limit	1000	100	1000	1000	Negative	1000	1000

- 3 According to IEC 62321-7-1:2015 & IEC 62321-7-2:2017, result on Cr6+ for metal sample is shown as Positive/Negative.
 - Negative = Absence of Cr^{6+} coating, Positive = Presence of Cr^{6+} coating. Storage condition and production date of the tested sample are unavailable and thus results of Cr6+ represent status of the sample at the time of testing.
- According to IEC 62321-3-1:2013, this column represents the results of wet chem test. And "NA" means no need to perform wet chem test, when the XRF screening results are qualified.





No.: ED180717010C001 Date: July 27, 2018 Page 17 of 33

Photo Appendix

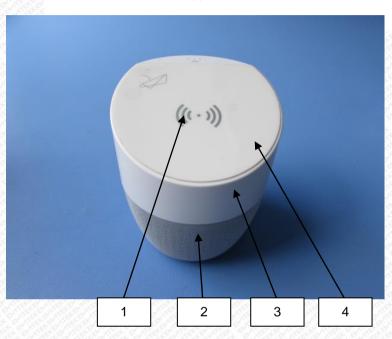






No.: ED180717010C001 Date: July 27, 2018 Page 18 of 33

Photo Appendix



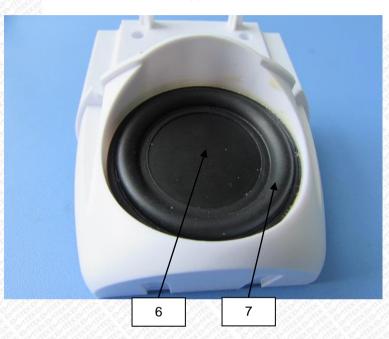


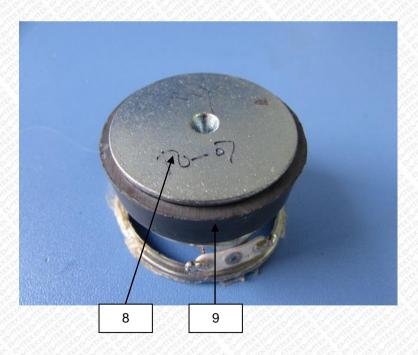




No.: ED180717010C001 Date: July 27, 2018 Page 19 of 33

Photo Appendix



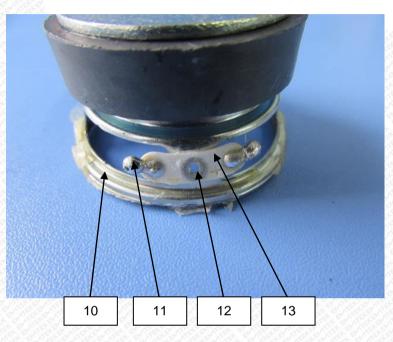


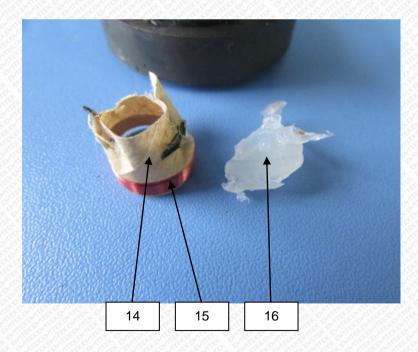




No.: ED180717010C001 Date: July 27, 2018 Page 20 of 33

Photo Appendix



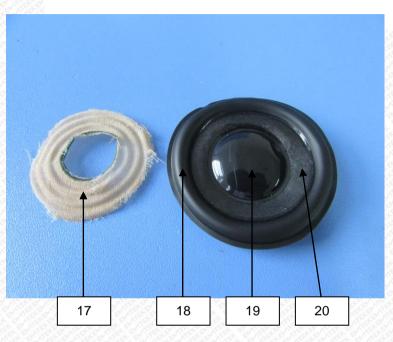


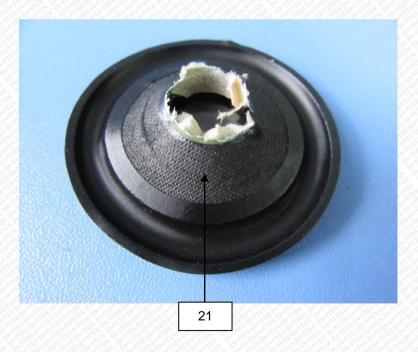




No.: ED180717010C001 Date: July 27, 2018 Page 21 of 33

Photo Appendix





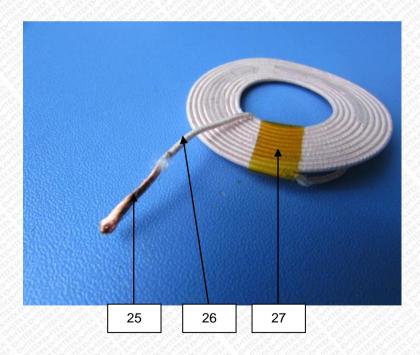




No.: ED180717010C001 Date: July 27, 2018 Page 22 of 33

Photo Appendix



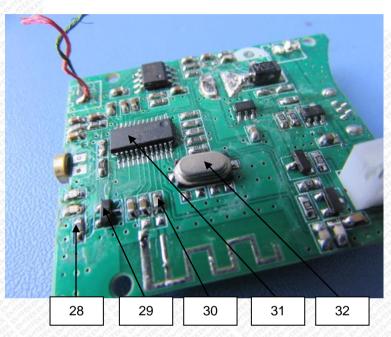


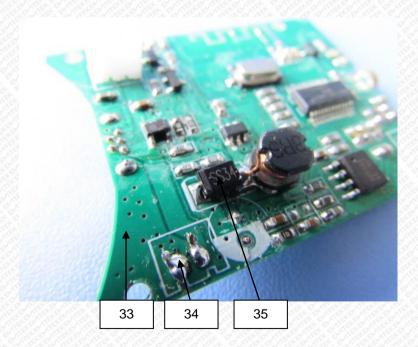




No.: ED180717010C001 Date: July 27, 2018 Page 23 of 33

Photo Appendix



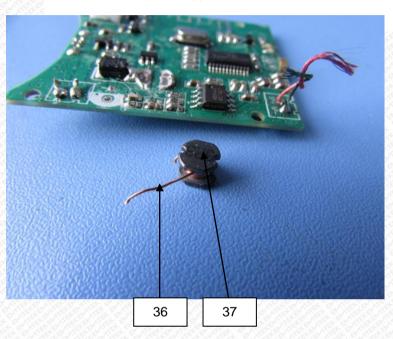


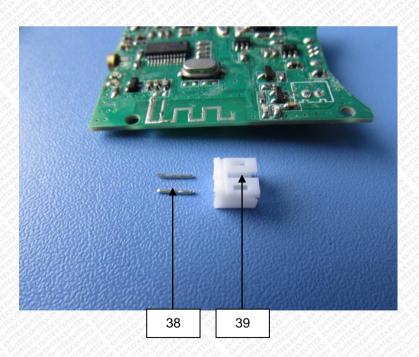




No.: ED180717010C001 Date: July 27, 2018 Page 24 of 33

Photo Appendix



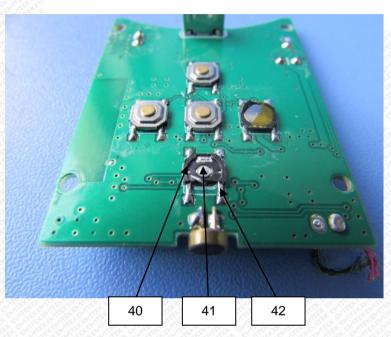


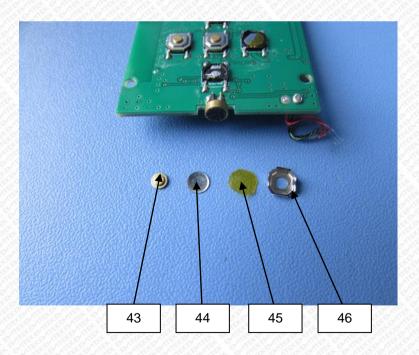




No.: ED180717010C001 Date: July 27, 2018 Page 25 of 33

Photo Appendix



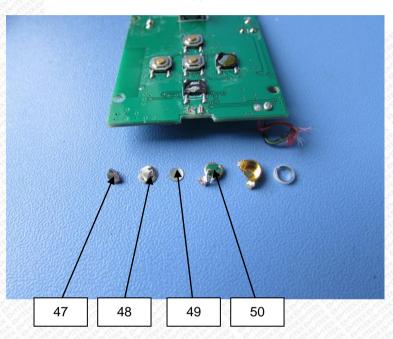


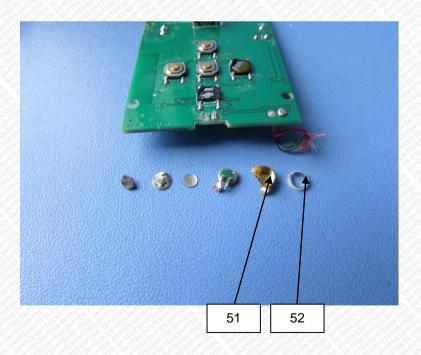




No.: ED180717010C001 Date: July 27, 2018 Page 26 of 33

Photo Appendix



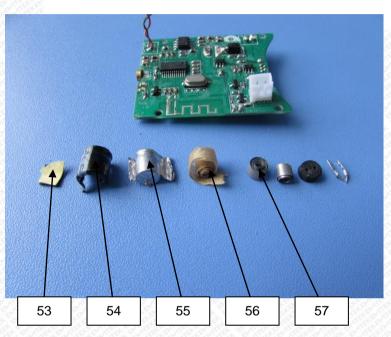


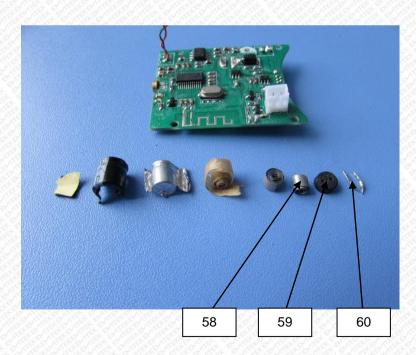




No.: ED180717010C001 Date: July 27, 2018 Page 27 of 33

Photo Appendix



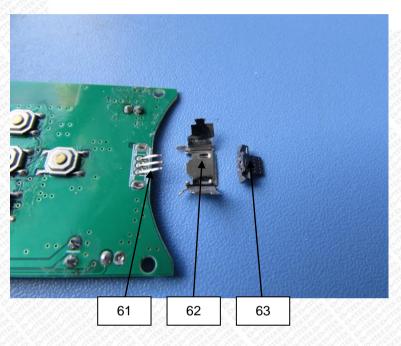


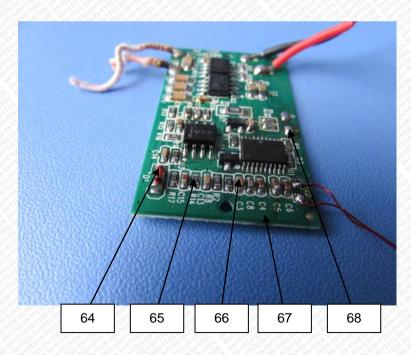




No.: ED180717010C001 Date: July 27, 2018 Page 28 of 33

Photo Appendix



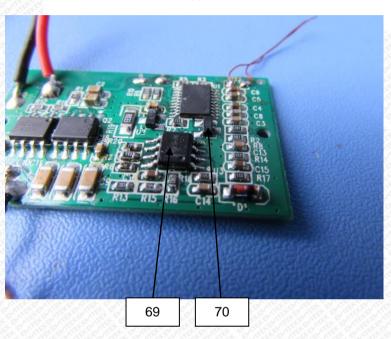


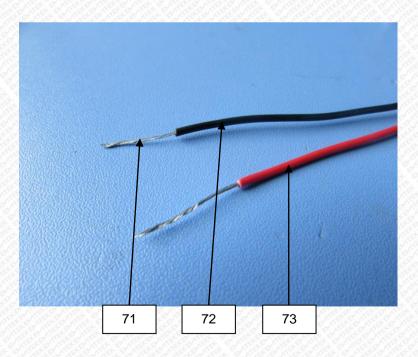




No.: ED180717010C001 Date: July 27, 2018 Page 29 of 33

Photo Appendix



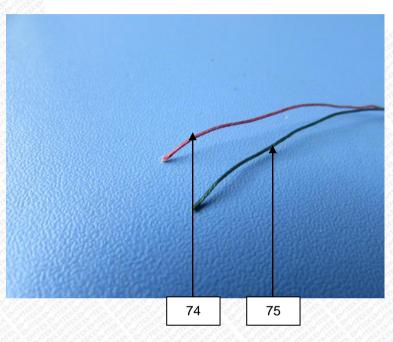






No.: ED180717010C001 Date: July 27, 2018 Page 30 of 33

Photo Appendix



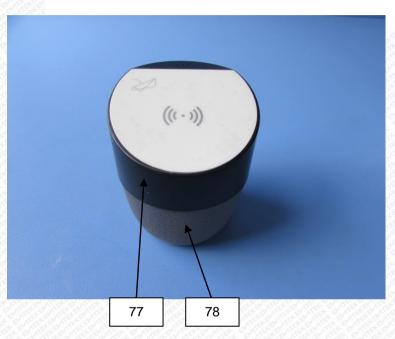






No.: ED180717010C001 Date: July 27, 2018 Page 31 of 33

Photo Appendix



* * * * * * The End * * * * * *





No.: ED180717010C001 Date: July 27, 2018 Page 32 of 33

ANNEX

EXEMPTION LIST

- Mercury in single capped (compact) fluorescent lamps not exceeding (per burner):
- For general lighting purposes < 30W: 5mg (expires on 31 December 2011; 3.5mg may be used per burner after 31 December 1(a) 2011 until 31 December 2012; 2.5mg shall be used per burner after 31 December 2012)
- 1(b) For general lighting purposes ≥ 30W and <50W: 5mg (expires on 31 December 2011; 3.5mg may be used per burner after 31 December 2011)
- For general lighting purposes ≥ 50W and <150W: 5mg 1(c)
- 1(d) For general lighting purposes ≥ 150W: 15mg
- For general lighting purposes with circular or square structural shape and tube diameter ≤17mm (no limitation of use until 31 1(e) December 2011; 7mg may be used per burner after 31 December 2011)
- 1(f) For special purposes: 5mg
- For general lighting purposes < 30 W with a lifetime equal or above 20 000 h: 3,5 mg (Expires on 31 December 2017) 1(g)
- Mercury in double-capped linear fluorescent lamps for general lighting purples not exceeding (per lamp): 2(a)
- 2(a)(1) Tri-band phosphor with normal lifetime and a tube diameter < 9mm (e.g. T2): 5mg (expires on 31 December 2011; 4mg may be used per lamp after 31 December 2011)
- Tri-band phosphor with normal lifetime and a tube diameter ≥ 9mm and ≤ 17mm (e.g. T5); 5mg (expires on 31 December 2(a)(2) 2011; 3mg may be used per lamp after 31 December 2011)
- Tri-band phosphor with normal lifetime and a tube diameter > 17mm and ≤ 28mm (e.g. T8): 5mg (expires on 31 December 2(a)(3) 2011; 3.5mg may be used per lamp after 31 December 2011)
- 2(a)(4) Tri-band phosphor with normal lifetime and a tube diameter > 28mm (e.g. T12): 5mg (expires on 31 December 2012; 3.5mg may be used per lamp after 31 December 2012)
- Tri-band phosphor with long lifetime (≥ 25000h): 8mg (expires on 31 December 2011; 5mg may be used per lamp after 31 2(a)(5) December 2011)
- Mercury in other fluorescent lamps not exceeding (per lamp): 2(b)
- 2(b)(2) Non-linear halophosphate lamps (all diameters): 15mg (expires on 13 April 2016)
- 2(b)(3)Non-linear tri-band phosphor lamps with tube diameter > 17mm (e.g. T9) (no limitation of use until 31 December 2011; 15mg may be used per lamp after 31 December 2011)
- Lamps for other general lighting and special purposes (e.g. induction lamps) (no limitation of use until 31 December 2011; 2(b)(4)15mg may be used per lamp after 31 December 2011)
- Mercury in cold cathode fluorescent lamps and external electrode fluorescent lamps (CCFL and EEFL) for special purposes not exceeding (per lamp):
- Short length (≤ 500mm) (No limitation of use until 31 December 2011; 3.5mg may be used per lamp after 31 December 2011) 3(a)
- Medium length (> 500m and ≤ 1500mm) (No limitation of use until 31 December 2011; 5mg may be used per lamp after 31 3(b)
- Long length (> 1500mm) (No limitation of use until 31 December 2011; 13mg may be used per lamp after 31 December 2011) 3(c)
- 4(a) Mercury in other low pressure discharge lamps (per lamp) (no limitation of use until 31 December 2011; 15mg may be used per lamp after 31 December 2011)
- Mercury in High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner) in lamps with 4(b) improved colour rendering index Ra > 60:
- P ≤ 155W (no limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011) 4(b)-I
- 155W < P ≤ 405W (no limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011) 4(b)-II
- 4(b)-III P > 405W (no limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011)
- Mercury in other High Pressure Sodium (vapour) lamps for general lighting purposes not exceeding (per burner): 4(c)
- 4(c)-I P≤ 155W (no limitation of use until 31 December 2011; 25mg may be used per burner after 31 December 2011) 4(c)-II 155W < P ≤405W (no limitation of use until 31 December 2011; 30mg may be used per burner after 31 December 2011)
- P > 405W (no limitation of use until 31 December 2011; 40mg may be used per burner after 31 December 2011) 4(c)-III
- Mercury in High Pressure Mercury (vapour) lamps (HPMV) (expires on 13 April 2015) 4(d)
- 4(e) Mercury in metal halide lamps (MH)
- 4(f) Mercury in other discharge lamps for special purposes not specifically mentioned in this Annex
- 4(g) Mercury in hand crafted luminous discharge tubes used for signs, decorative or architectural and specialist lighting and lightartwork, where the mercury content shall be limited as follows: (Expires on 31 December 2018)
 - 20 mg per electrode pair + 0,3 mg per tube length in cm, but not more than 80 mg, for outdoor applications and indoor applications exposed to temperatures below 20 °C;
 - 15 mg per electrode pair + 0,24 mg per tube length in cm, but not more than 80 mg, for all other indoor applications.





No.: ED180717010C001 Date: July 27, 2018 Page 33 of 33

ANNEX

EXEMPTION LIST

Continued

5(a) Lead in glass of cathode ra	y tubes
----------------------------------	---------

- Lead in glass of fluorescent tubes not exceeding 0.2% by weight 5(b)
- 6(a) Lead as an alloying element in steel for machining purposes and in galvanized steel containing up to 0.35% lead by weight
- 6(b) Lead as an alloying element in aluminium containing up to 0.4% lead by weight
- Copper alloy containing up to 4% lead by weight. 6(c)
- 7(a) Lead in high melting temperature type solders (i.e. lead based alloys containing 85% by weight or more lead)
- 7(b) Lead in solders for servers, storage and storage array systems, network infrastructure equipment for switching, signalling, transmission, and network management for telecommunications
- Electrical and electronic components containing lead in a glass or ceramic other than dielectric ceramic in capacitors, e.g. 7(c)-l piezoelectronic devices, or in a glass or ceramic matrix compound
- 7(c)-II Lead in dielectric ceramic in capacitors for a rated voltage of 125V AC or 250V DC or higher
- 7(c)-III Lead in dielectric ceramic in capacitors for a rated voltage of less than 125V AC or 250V DC (expires on 1 January 2013 and after that date may be used in spare parts for EEE placed on the market before 1 January 2013).
- 7(c)-IV Lead in PZT based dielectric ceramic materials for capacitors being part of integrated circuits or discrete semiconductors
- Cadmium and its compounds in one shot pellet type thermal cut-offs (expires on 1 January 2012 and after that date may be used in spare parts for EEE placed on the market before 1 January 2012) 8(a)
- 8(b) Cadmium and its compounds in electrical contacts
- Hexavalent chromium as an anti-corrosion agent of the carbon steel cooling system in absorption refrigerators up to 0.75% by weight in the cooling solution
- Lead in bearing shells and bushes for refrigerant-containing compressors for heating, ventilation, air conditioning and 9(b) refrigeration (HVACR) applications
- Lead used in other than C-press compliant pin connector systems (expires on 1 January 2013 and after that date may be used 11(b) in spare parts for EEE placed on the market before 1 January 2013)
- 13(a) Lead in white glasses used for optical applications
- 13(b) Cadmium and lead in filter glasses and glasses used for reflectance standards
- Lead in solders consisting of more than two elements for the connection between the pins and the package of microprocessors 14 with a lead content of more than 80% and less than 85% by weight (expires on 1 January 2011 and after that date may be used in spare parts for EEE placed on the market before 1 January 2011)
- Lead in solders to complete a viable electrical connection between semiconductor die and carrier within integrated circuit Flip 15
- Lead halide as radiant agent in High Intensity Discharge (HID) lamps used for professional reprography applications
- 18(b) Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi₂O₅:Pb)
- Lead and cadmium in printing inks for the application of enamels on glasses, such as borosilicate and soda lime glass 21
- Lead in solders for the soldering to machined through hole discoidal and planar array ceramic multilayer capacitors
- Lead oxide in surface conduction electron emitter displays (SED) used in structural elements, notably in the seal frit and frit ring
- Lead bound in crystal glass as defined in Annex 1 (Categories 1, 2, 3 and 4) of Council Directive 69/493/EEC 29
- 30 Cadmium alloys as electrical/mechanical solder joints to electrical conductors located directly on the voice coil in transducers used in high-powered loudspeakers with sound pressure levels of 100 dB (A) and more
- Lead in soldering materials in mercury free flat fluorescent lamps (which e.g. are used for liquid crystal displays, design or 31 industrial lighting)
- Lead oxide in seal frit used for making window assemblies for Argon and Krypton laser tubes 32
- Lead in solders for the soldering of thin copper wires of 100 µm diameter and less in power transformers
- Lead in cermet-based trimmer potentiometer elements
- Lead in the plating layer of high voltage diodes on the basis of a zinc borate glass body 37
- Cadmium and cadmium oxide in thick film pastes used on aluminium bonded beryllium oxide
- Cadmium in colour converting II-VI LEDs (< 10 µg Cd per mm2 of light- emitting area) for use in solid state illumination or 39 display systems (expires on 1 July 2014)
- Lead in solders and termination finishes of electrical and electronic components and finishes of printed circuit boards used in 41 ignition modules and other electrical and electronic engine control systems, which for technical reasons must be mounted directly on or in the crankcase or cylinder of hand-held combustion engines (classes SH:1, SH:2, SH:3 of Directive 97/68/EC of the European Parliament and of the Council (2)) (Expires on 31 December 2018)

