



# TEST REPORT

REPORT No.: DG1220420-15313E-M1

Date: August 23, 2022

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This report is to supersede test report No. DG1220420-15313E Date: April 27,2022 . The items used black in italics in the report was revised due to the applicant's requirements.

Report on the submitted samples said to be:

Sample Description : ***4-gang Wi-Fi Smart Switch with RF Control***  
 Style/ Item No. : 4CHPROR3  
 Brand: SONOFF  
 Category under the WEEE directive : Small IT and telecommunication equipment(no external dimension more than 50 cm)  
 Sample Receiving Date : April 20,2022  
 Testing Period : From April 20,2022 to April 27,2022  
 Results : Please refer to next page(s).

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## TEST REQUEST

## CONCLUSION

A As specified by client, to evaluate the waste in the submitted sample(s) in accordance with WEEE Directive 2012/19/EU

**Pass**

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Signed for and on behalf of BACL

Checked by: \_\_\_\_\_  
Chevy Feng

Approved by: \_\_\_\_\_  
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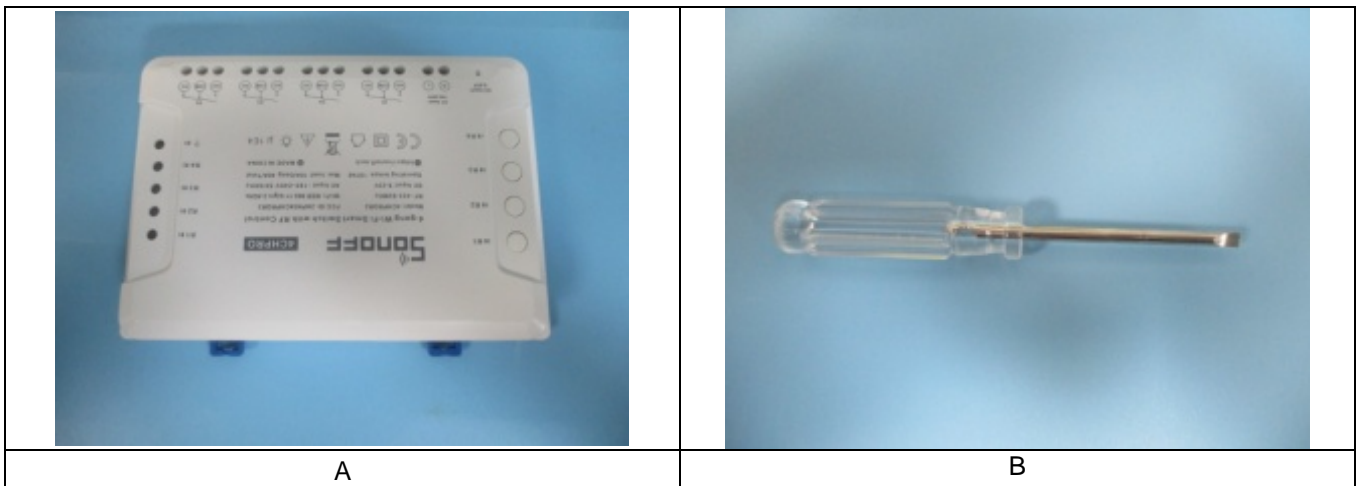
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## 1. Result of Reuse/Recycling/Recovery Assessments

Reuse /Recycling /Recovery	Reuse /Recycling (%)	Recovery (%)
Reuse /Recycling /Recovery Targets under the 2012/19/EU WEEE Directive Annex V	55	75
Result of Assessment	89.15	89.15
WEEE requirement compliance	PASS	PASS

## 2. Appearance of the Product



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### 3. Disassembly Assessment

#### 3.1 Disassembly Procedure

The product is disassembled into different parts and grouped by the type of material sharing common characteristic( such as plastic, metal, glass) based on the treatment requirements as set out in the WEEE Directive, followed by the current state of the art of recycling and recovery technology. In addition, the recycling is subject to the economic feasibility, disassembly tools, only bigger parts that can be easily separated are included in the recycling and reuse calculation. Other parts, respectively materials that cannot be separated by e.g. standard tools are classified as either unspecified materials or distributed to the relative waste fraction is expected with recovery rate.

#### 3.2 Disassembly Tools

The disassembly tools used for this product show as following:

			
Side cutter	Cutter Knife	scissor	screwdriver

#### 3.3 Connection Technique

The connection technique used for this product show as following:

Screw:4	Snap:3
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#### 3.4 Disassembly Time

1 Minutes

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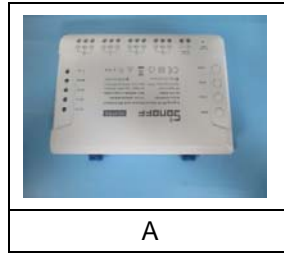
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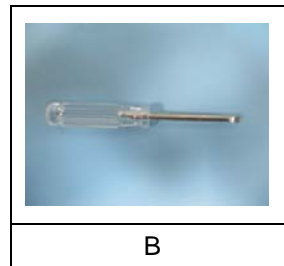
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## 3.5 Disassembly Tree



A-1	A-2	A-3	A-4	A-5



B-1	B-2

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#### 4. Selective Treatment for Materials and Components

According to Article 8(2) and the Annex VII of the WEEE Directive, this product contains components and materials items are described in the following table.

Component/Material	Photo No.	Size/Model	Quantity	Weight (g)
PCB	A-1	12.0cm×8.6cm	1	100.96

#### 5. Material Recycling Information

##### 5.1 Material Reuse/Recycling and Recovery Table

Photo No.	Component / Material Composition	Weight (g)	Percent Weight (%)	Reuse /Recycling Rate (%)	Energy Recovery Rate (%)	Recovery Rate (%)
A-2.B-1	Iron/steel	4.69	2.18	2.13	0.00	2.13
A-3.A-4.A-5.B-2	Plastic	109.63	50.92	44.81	0.00	44.81
A-1	PCB	100.96	46.90	42.21	0.00	42.21
Total weight		215.28	100.00	89.15	0.00	89.15

Note: Due to their insignificant weight and difficulty of their separation in a manual operation, sticker, solder, paint and printing materials are not included in this assessment. Plastic containing brominated flame retardants is not assessed in this list.

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## 5.2. Reuse/Recycling and Recovery Rate Calculation

Calculation Method	
Product total weight	a(g)
Weight of components, sub-assemblies and consumables which are reused for their original purpose or recycled.	b(g)
Weight of materials or components where energy is recovered through incineration.	c(g)
Reuse / Recycling Rate	$b/a * 100(\%)$
Recovery Rate	$(b+c)/a * 100(\%)$

## 6. ANNEX VII of WEEE Directive (2012/19/EU)

Selective treatment for materials and components of waste electrical and electronic equipment referred to in Article 8(2) As a minimum the following substances, mixtures and components have to be removed from any separately collected WEEE

- polychlorinated biphenyls (PCB) containing capacitors in accordance with Council Directive 96/59/EC of 16 September 1996 on the disposal of polychlorinated biphenyls and polychlorinated terphenyls (PCB/PCT),
  - mercury containing components, such as switches or backlighting lamps,
  - batteries,
  - printed circuit boards of mobile phones generally, and of other devices if the surface of the printed circuit board is greater than 10 square centimetres,
  - toner cartridges, liquid and paste, as well as colour toner,
  - plastic containing brominated flame retardants,
  - asbestos waste and components which contain asbestos,
  - cathode ray tubes,
  - chlorofluorocarbons (CFC), hydrochlorofluorocarbons (HCFC) or hydrofluorocarbons (HFC), hydrocarbons (HC),
  - gas discharge lamps,
  - liquid crystal displays (together with their casing where appropriate) of a surface greater than 100 square centimeters and all those back-lighted with gas discharge lamps,
  - external electric cables,
  - components containing refractory ceramic fibres as described in Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress for the 23rd time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances,
  - components containing radioactive substances with the exception of components that are below the exemption thresholds set in Article 3 of and Annex I to Council Directive 96/29/Euratom of 13 May 1996 laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionizing radiation,
  - electrolyte capacitors containing substances of concern (height > 25 mm, diameter > 25 mm or proportionately similar volume).
- These substances, mixtures and components shall be disposed of or recovered in compliance with Directive 2008/98/EC.

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## 7.Recommendations for WEEE Directive Compliance

- (1) To make the product comply with the reuse/recycling/recovery target required under WEEE Directive (2012/19/EU) and other EU waste regulation, the applicant company should consider the product they design can be easily reused and recycled by selecting recyclable materials and components.
- (2) To make the product easily dismantled, less the disassembling time, the applicant company should design the product for easy disassembly by choosing easy separate techniques, avoiding the utilizing embedded components, designing the separable procedure.
- (3) The product should be subjected to the RoHS Directive (2011/65/EU), restricting using hazardous substance. In addition, the materials selected to design should consider the dangerous substance regulated or list under other environmental specifications, as Regulation (EC) 1907/2006(REACH), 67/548/EEC, etc.
- (4) In case that a product have new design, or employ materials or components, then the product should need to be reassessed and retested in accordance with the WEEE Directive for reuse/recycle/recycling target and RoHS for restricted substances requirement.
- (5) The applicant company should take attention to the future possible update concerning the WEEE Directive and related requirement.

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2. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.
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4. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
5. The information which provided by the applicant, such as sample description, sample name ,material component, style/item No. , P.O. No. , manufacture, age phase, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
6. The test samples were in good condition before testing.
7. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

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