Prüfbericht - Nr.: *Test Report No.:*	**50075152 001**	**Auftrags-Nr.:** *Order No.:*	133050024	**Seite 1 von 12** *Page 1 of 12*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	24.03.2017	
Auftraggeber: *Client:*	**Suprema Inc.** Parkview Tower, 248, Jeongjail-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, Rep.of Korea			
Prüfgegenstand: *Test Item:*	BioMini Slim 2			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	BM-Slim 2			
Auftrags-Inhalt: *Order content:*	Product Testing			
Prüfgrundlage: *Test Specification:*	WEEE Directive 2012/19/EU Article 11 – Recovery target			

Wareneingangsdatum: *Date of receipt:*	24.03.2017
Prüfmuster-Nr.: *Test sample No.:*	**133040024**
Prüfzeitraum: *Testing period:*	24.03.2017 - 17.04.2017
Ort der Prüfung: *Place of testing:*	Seoul
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland Korea Ltd.
Prüfergebnis*: *Test result*:*	Pass



geprüft von / *tested by:*

17.04.2017	SeungYeop Lee / Project Engineer	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by::*

17.04.2017	Jung-Hee Yoo / Reviewer	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges / *Other.*

The assessment describes the theoretical recyclability

The assessment cannot predict the actual material output by the recycler as the recovery process may vary between recyclers.

Zustand des Prüfgegenstandes bei Anlieferung:
Condition of the test item at delivery:

Prüfmuster vollständig und unbeschädigt
Test item complete and undamaged

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass)=entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getested
** Legend:*	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m.test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.
This test report relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark

V04

Contents

1. General Remarks 3
1.1 Complementary Materials 3

2. General Product Information 3
2.1 Product Description 3
2.2 Submitted Documents 3

3. Assessment Description 4
3.1 Disassembly, Recovery and Recycling Flow 4
3.2 Parameters 4
3.3 Definition 4

4. Assessment Results 5
4.1 Assessment Summary 5
4.2 Product Derivative Table 6
4.3 Product Derivative Summary 7
4.4 Test Result 7
4.5 Product Component Disassembly Assessment Summary 8
4.6 Recommended Disassembly Sequence 10

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix.

Appendix 1: Photo of tested sample



Overall View

2. General Product Information

2.1 Product Description

The product is BioMini Slim 2. It is classified as Category 3 under Annex I of Directive 2012/19/EU

2.2 Submitted Documents

Information of product provided by Suprema Inc.

3. Assessment Description

3.1 Disassembly, Recovery and Recycling Flow

The product is disassembled into different parts (clumps) and grouped by the type of material sharing common characteristic or physical relationship (waste fractions) primarily based on the treatment requirements as set out in the WEEE directive annex VII, followed by the current state of the art recycling and recovery technology available in Europe. Materials for which currently no recycling technology is available or where the recycling is economically not feasible, or which contain hazardous substances, are assumed to be shredded, incinerated or disposed of to landfill with out further use.

Only bigger clumps that can be easily separated and that share a common characteristics or physical relationships 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 with highest content of waste is expected with reduced recovery rate.

3.2 Parameters

The calculation is based on waste fractions consisting of a typical material or substance composition for typical materials. (e.g. a power cord consists of copper wire and PVC, where as the PVC consists of a PVC, polyamide and polyester blend). For every waste fraction a theoretical recovery share for recycling and for incineration respectively waste disposal is assumed based on information provide by recycling companies. The recovery share may change over time as the recycling technology advances. The current recovery shares are available upon request.

3.3 Definition

3.3.1 Regular

Reuse, Recycling and Recovery Rate: Applying commonly used recycling technology.

3.3.2 Ideal

Recycling Rate: Applying highest recycling technology.

3.3.3 Recycling Classification

A class： Common recycling technology and high market need
B class： Recycling technology not popular and high market need
C class： Common recycling technology and low market need
D class： Recycling technology not popular and low market need

4. Assessment Results

4.1 Assessment Summary

Product Name / No.	BioMini Slim 2 / BM-Slim 2



Description	Content	Value
Total Weight, g		48.3
Connection Technique, ea	Screw Connection Wire Connection Snap Joint Glued Joint Distort Combination	4 0 4 2 0 4
Disassembly Time, sec		100
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Recommended Disassembly Sequence	See 4.6 Recommend Disassembly Sequence	
Derivative Summary	See 4.2 Product Derivative Table	
Derivative Rate	See 4.3 Product Derivative Summary	
Reuse/Recycling Rate	See 4.4 Test Result	
Recovery Rate	See 4.4 Test Result	

4.2 Product Derivative Table

Product Name / Type		BioMini Slim 2 / BM-Slim 2						
Derivative		Weight (g)	Weight (%)		Reuse (%)	Recycling (%)	Incineration (%)	Disposal (%)
Cover Top Assembly	Plastic, PC	6.1	12.6			**v**		
Body Assembly	Metal	0.5	1.0			**v**		
	Glass	14.2	29.4			**v**		
	Plastic, PC+GF30%	9.8	20.3			**v**		
	Waste	0.1	0.2					**v**
PCB Assembly	Mixed Metal	2.0	4.2			**v**		
	Fibreglass	4.6	9.5	Ideal		**V** (9.5)		
				Regular				**V** (9.5)
Cover Bottom Assembly	Plastic, PC	11.0	22.8			**v**		
Total		**48.3**	**100**	Ideal	**0.0**	**99.8**	**0.0**	**0.2**
				Regular		**90.3**	**0.0**	**9.7**

4.3 Product Derivative Summary

	BioMini Slim 2 / BM-Slim 2	
	Percentage of Weight (%)	
	Ideal	Regular
Reuse Weight	0.0	
Recycling Weight	99.8	90.3
Incineration Weight	0.0	0.0
Disposal Weight	0.2	9.7
Product Sample Weight	**100.0**	

4.4 Test Result

Pass

	BioMini Slim 2 / BM-Slim 2
Required Reuse / Recycling Rate (%)	Testing Reuse / Recycling Rate (%)
70	**90.3**
Required Recovery Rate (%)	Testing Recovery Rate (%)
80	**90.3**

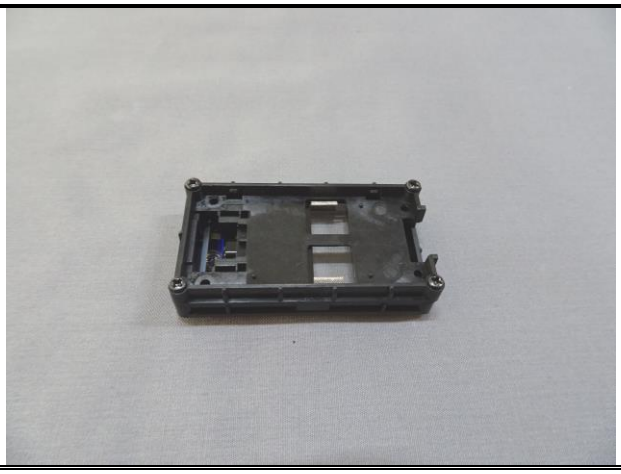
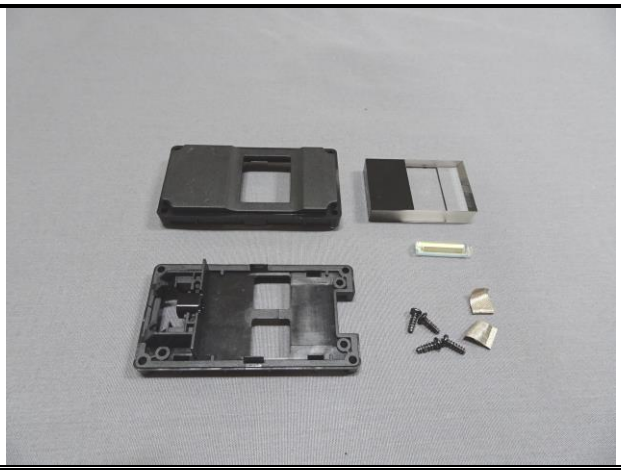
4.5 Product Component Disassembly Assessment Summary

Component Assessment - 1

Component Name	Cover Top Assembly
	

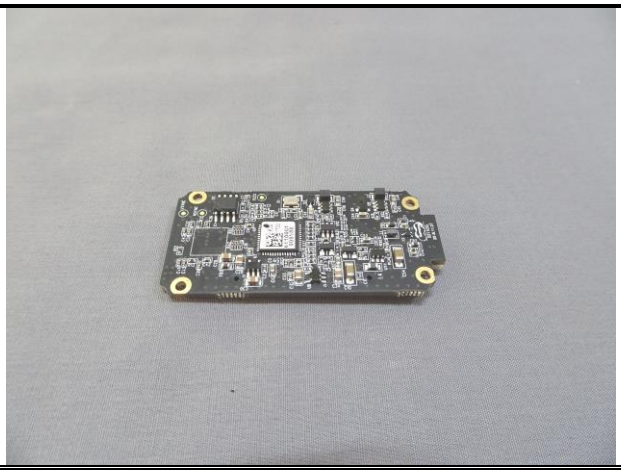
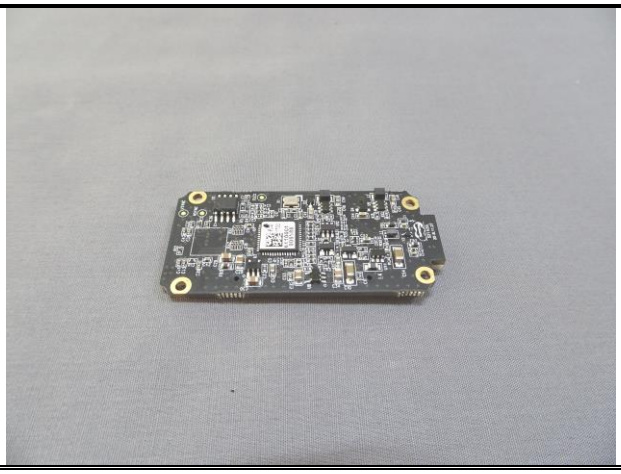
Description	Content	Value
Weight, g		6.1
Connection Technique, ea	Snap Joint Combination	1 1
Disassembly Time, sec		10
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Material, g	Plastic, PC	6.1
Recycling Evaluation, g	Reuse weight Recycling weight Incineration weight Disposal weight	- 6.1 - -
Recycling Potential*	Plastic, PC	A

Component Assessment - 2

Component Name	Body Assembly
	

Description	Content	Value
Weight, g		24.6
Connection Technique, ea	Screw Connection Snap Joint Glued Joint Combination	4 2 2 2
Disassembly Time, sec		80
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Material, g	Metal Glass Plastic, PC +GF30% Waste	0.5 14.2 9.8 0.1
Recycling Evaluation, g	Reuse weight Recycling weight Incineration weight Disposal weight	- 24.5 - 0.1
Recycling Potential*	Metal	A
	Glass	A
	Plastic, PC +GF30%	A
	Waste	-

Component Assessment - 3

Component Name	PCB Assembly
	

Description	Content	Value
Weight, g		6.6
Connection Technique, ea		
Disassembly Time, sec		
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Material, g	Mixed Metal Fibreglass	2.0 4.6
Recycling Evaluation, g	Reuse weight Recycling weight Incineration weight Disposal weight	- 2.0 - 4.6
Recycling Potential*	Mixed Metal	B
	Fibreglass	-

Component Assessment - 4

Component Name	Cover Bottom Assembly
	

Description	Content	Value
Weight, g		11.0
Connection Technique, ea	Snap Joint Combination	1 1
Disassembly Time, sec		10
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Material, g	Plastic, PC	11.0
Recycling Evaluation, g	Reuse weight Recycling weight Incineration weight Disposal weight	- 11.0 - -
Recycling Potential*	Plastic, PC	A

4.6 Recommended Disassembly Sequence

BioMini Slim 2 / BM-Slim 2



Cover Top Assembly → Body Assembly → PCB Assembly
→ Cover Bottom Assembly

- End of Test Report -