Prüfbericht - Nr.: *Test Report No.:*	**50049969 001**	**Auftrags-Nr.:** *Order No.:*	133047154	**Seite 1 von 12** *Page 1 of 12*
Kunden-Referenz-Nr.: *Client Reference No.:*	N/A	**Auftragsdatum:** *Order date:*	23.08.2016	
Auftraggeber: *Client:*	**Suprema Inc** 16F Parkview, Jeongia,Bungdang,Seongnam,Gyeonggi,463-863 Korea			
Prüfgegenstand: *Test Item:*	BioMini Slim S / BioMini S3			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	BMSS-LFD			
Auftrags-Inhalt: *Order content:*	Type Examination			
Prüfgrundlage: *Test Specification:*	WEEE Directive 2012/19/EU Article 11 – Recovery target			

Wareneingangsdatum: *Date of receipt:*	23.08.2016
Prüfmuster-Nr.: *Test sample No.:*	**133047154**
Prüfzeitraum: *Testing period:*	24.08.2016 - 06.09.2016
Ort der Prüfung: *Place of testing:*	Seoul
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland Korea Ltd.
Prüfergebnis*: *Test result*:*	Pass

geprüft von / *tested by:*

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*
06.09.2016	SeungYeop Lee / Project Engineer	

kontrolliert von / *reviewed by::*

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*
06.09.2016	Jung-Hee Yoo / Reviewer	

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.
The tested item BioMini Slim S and BioMini S3 is identical except for the different model naming depending on customer.

Zustand des Prüfgegenstandes bei Anlieferung: **Prüfmuster vollständig und unbeschädigt**
Condition of the test item at delivery: *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*

V04

Contents

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 S. It is classified as Category 3 under Annex I of Directive 2012/19/EU

2.2 Submitted Documents

Information of product provided by Suprema. Co. Ltd

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 S / BMSS-LFD

Description	Content	Value
Total Weight, g		135.0
Connection Technique, ea	Screw Connection Wire Connection Snap Joint Glued Joint Distort Combination	16 4 7 6 9 12
Disassembly Time, sec		463
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 S / BMSS-LFD					
Derivative		Weight (g)	Weight (%)		Reuse (%)	Recycling (%)	Incineration (%)	Disposal (%)
Cover Top Assembly	Metal	1.0	0.7			**v**		
	Mixed Metal	1.0	0.7			**v**		
	Plastic, PC	31.0	23.0			**v**		
	Mixed Plastic	12.0	8.9				**v**	
	Waste	1.0	0.7					**v**
PCB Assembly	Mixed Metal	4.3	3.2			**v**		
	Fibreglass	6.4	4.8	Ideal		**v** (4.8)		
				Regular				**v** (4.8)
Cover Bottom Assembly	Metal	23.5	17.5			**v**		
	Plastic, PC	11.0	8.2			**v**		
	Rubber	1.8	1.3				**v**	
USB Cable Assembly	Copper	16.0	11.9			**v**		
	Aluminium	0.6	0.4			**v**		
	Mixed Metal	3.0	2.2			**v**		
	Plastic, PVC	20.4	15.1				**v**	
	Mixed Plastic	1.0	0.7				**v**	
	Waste	1.0	0.7					**v**
Total		**135.0**	**100**	Ideal	**0.0**	**72.6**	**26.0**	**1.4**
				Regular		**67.8**	**26.0**	**6.2**

4.3 Product Derivative Summary

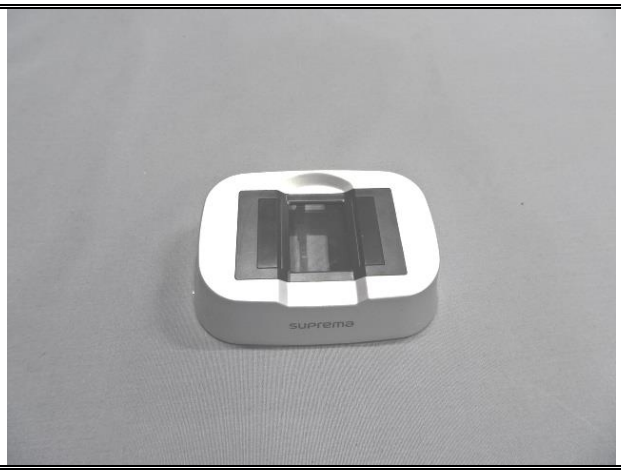
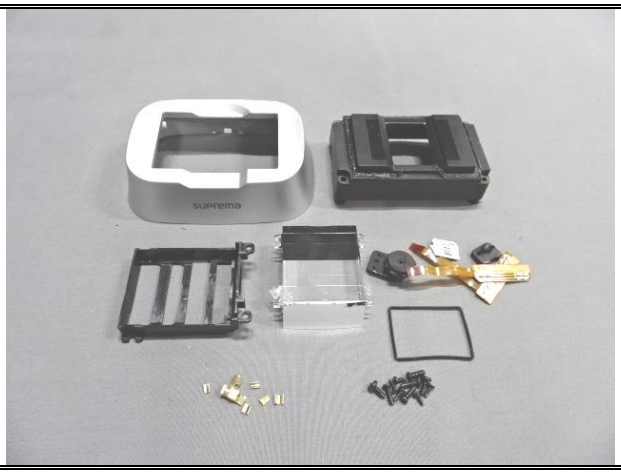
	BioMini Slim S / BMSS-LFD	
	Percentage of Weight (%)	
	Ideal	Regular
Reuse Weight	0.0	
Recycling Weight	72.6	67.8
Incineration Weight	26.0	26.0
Disposal Weight	1.4	6.2
Product Sample Weight	**100.0**	

4.4 Test Result

	BioMini Slim S / BMSS-LFD	
Required Reuse / Recycling Rate (%)	Testing Reuse / Recycling Rate (%)	
	Ideal	Regular
70	**72.6**	**67.8**
Required Recovery Rate (%)	Testing Recovery Rate (%)	
	Ideal	Regular
80	**98.6**	**93.8**

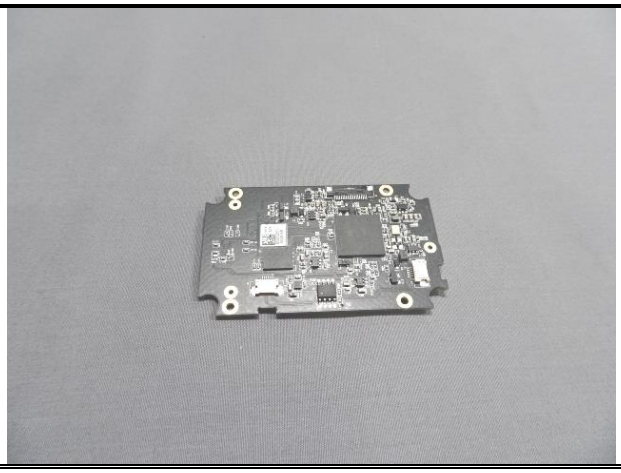
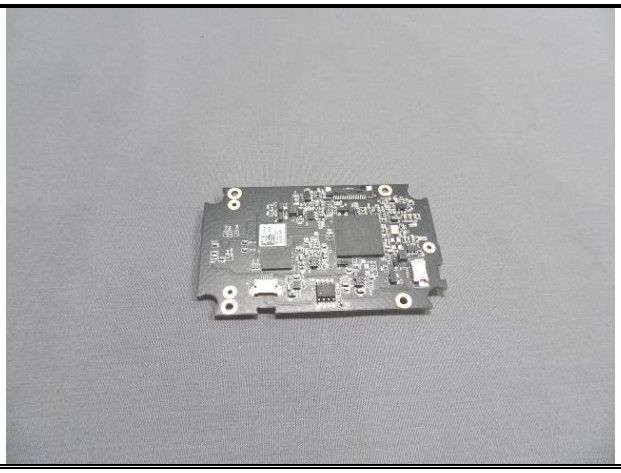
4.5 Product Component Disassembly Assessment Summary

Component Assessment - 1

Component Name	Cover Top Assembly
	

Description	Content	Value
Weight, g		46.0
Connection Technique, ea	Screw Connection Snap Joint Glued Joint Distort Combination	12 5 3 5 5
Disassembly Time, sec		260
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Material, g	Metal Mixed Metal Plastic, PC Mixed Plastic Waste	1.0 1.0 31.0 12.0 1.0
Recycling Evaluation, g	Reuse weight Recycling weight Incineration weight Disposal weight	- 33.0 12.0 1.0
Recycling Potential*	Metal	A
	Mxied Metal	B
	Plastic, PC	A
	Mixed Plastic	-
	Waste	-

Component Assessment - 2

Component Name	PCB Assembly
	

Description	Content	Value
Weight, g		10.7
Connection Technique, ea		
Disassembly Time, sec		
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Material, g	Mixed Metal Fibreglass	4.3 6.4
Recycling Evaluation, g	Reuse weight Recycling weight Incineration weight Disposal weight	- 4.3 - 6.4
Recycling Potential*	Mixed Metal	B
	Fibreglass	-

Component Assessment - 3

Component Name	Cover Bottom Assembly
	

Description	Content	Value
Weight, g		36.3
Connection Technique, ea	Screw Connection Snap Joint Glued Joint Distort Combination	4 2 3 1 2
Disassembly Time, sec		102
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Material, g	Metal Plastic, PC Rubber	23.5 11.0 1.8
Recycling Evaluation, g	Reuse weight Recycling weight Incineration weight Disposal weight	- 34.5 1.8 -
Recycling Potential*	Metal	A
	Plastic, PC	A
	Rubber	-

Component Assessment - 4

Component Name	USB Cable Assembly
	

Description	Content	Value
Weight, g		42.0
Connection Technique, ea	Wire Connection Distort Combination	4 3 5
Disassembly Time, sec		101
Disassembly Tools	Philip Screwdriver Slotted Screwdriver Nipper Knife	
Material, g	Copper Aluminium Mixed Metal Plastic, PVC Mixed Plastic Waste	16.0 0.6 3.0 20.4 1.0 1.0
Recycling Evaluation, g	Reuse weight Recycling weight Incineration weight Disposal weight	- 19.6 21.4 1.0
Recycling Potential*	Copper	A
	Aluminium	A
	Mixed Metal	B
	Plastic, PVC	-
	Mixed Plastic	-
	Waste	-

4.6 Recommended Disassembly Sequence

BioMini Slim S / BMSS-LFD

Cover Top Assembly → PCB Assembly → Cover Bottom Assembly → USB Cable Assembly

- End of Test Report -