



**ESTECH Co., Ltd.**  
Rm.1015, World Venture Center II,  
426-5, Gasan-dong, Geumcheon-gu,  
Seoul, 153-803, Korea

**Testing and Certification  
Laboratory**

## Test Report for CE

Report Number	<b>ESTCE1308-003</b>			
Applicant	Company Name	Suprema Inc.		
	Address	16F Parkview Tower, Jeongja-dong, Bundang-gu, Seongnam, Gyeonggi, 463-863 Korea		
	Contact Person	HyeongGak Lim		
Product	Product type	BioMini/SFU Slim(S20)		
	Model	BioMini/SFU Slim(S20)	Manufacturer	Suprema Inc.
	Serial No.	NONE	Country of origin	KOREA
Other	Receipt Date	16-Jul-13	Receipt Number	ESTC-13-01146
	Issued Date	2-Aug-13	Tested Date	2013/7/16 ~ 2013/7/17
Test Result	Complied			
Standard	EMI Standard		EMS Standard	
	EN 55022:2010+AC:2011 Class B		EN 55024:2010 EN 61000-4-2:2009 EN 61000-4-3:2006+A2:2010 EN 61000-4-4:2004+A1:2010 EN 61000-4-5:2006 EN 61000-4-6:2009 EN 61000-4-11:2004	
Tested by	S.Y. Lee / Senior Engineer		(Signature)	
Approved by	J.M. Yang / Engineering Manager		(Signature)	
<b>ESTECH CO., LTD</b>  Rm. 1015 World Venture Center, 426-5 Gasan-dong, Geumcheon-gu, Seoul, 153-803, Korea. Tel:82-2-867-3201, Fax:82-2-867-3204				
* Note				
o This is certified that the above mentioned products have been tested for the sample provided by client. o No part of this document may not be duplicated or reproduced by any means without the express written permission of Estech Co., Ltd.				



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## 1. Laboratory Information

### 1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and tested in accordance with the measurement procedures as indicated in this report ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd.

ESTECH Lab. assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

### 1.2 Test lab.

Corporation Name : ESTECH Co., Ltd.

Head Office : Head Office : Rm 1015, World Venture Center II, 426-5, Gasan-dong,  
Geumcheon-gu, Seoul, Korea

EMC Test Lab. : 97-1, Hooeok-ri, Majang-myeon, Icheon-si, Gyeonggi-do, Korea

### 1.3 Registration Information

Our Test lab has worked test lab system by ISO/IEC 17025:2005 and was registered the follows certification body

**KCC** : Granted Accreditation from Ministry of Information & Communication for EMC, Safety and Telecom.

**KOLAS** : Granted Accreditation from Ministry of commerce, Industry & Energy for EMC, Safety and Telecom

**EK** : Granted Accreditation from Ministry of commerce, Industry & Energy for Safety

**FCC** : Conformity Assessment Body(CAB) with registration number 659627 under APEC TEL MRA

between the RRA and the FCC.

**VCCI** : Granted Accreditation from Voluntary Control Council for Interference by Information Technology Equipment



## 2. Description of EUT

### 2.1 Summary of Equipment Under Test

“ EUT Name : BioMini/SFU Slim(S20)  
“ Model Number : BioMini/SFU Slim(S20)  
“ Serial Number : NONE  
“ Manufacturer : Suprema Inc.  
“ X-tallist(s) or  
Frequencies : The highest operating frequency is 480 Mbps  
generated  
“ Power Rating : USB PORT (5 Vd.c.)

### 2.2 General descriptions of EUT

Section	Specification
Sensor technology	Optical
Sensing area	17.0mm x 25.0mm
Image size(pixels)	320 x 480
Image resolution	500 dpi
Interface	USB 2.0 high speed and full speed
Dimension	82mm(W) X 57.7mm(L) X 27mm(H)
Weight	Approximately 120g
USB Cable Length	Approximately 1450mm
Operating temperature	-10 °C ~ 50 °C
Max Current	5VDC / 320mA



### 3. Measurement Condition

#### 3.1 EUT Operation.

- The EUT was in the following operation mode during all testing

1. Connect the EUT to USB port of the Note PC.
2. Install the provided test program by the manufacturer.
3. Execute the test program and check the operating status of the EUT.
  - Check fingerprint detection and display on the note pc continuously

#### 3.2 Cable Connecting

Start Equipment		End Equipment		Cable		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
BioMini/SFU Slim(S20)	USB	Notebook Computer	USB	2.0	Shielded	
Notebook Computer	POWER	Adapter	-	2.0	Shielded	

#### 3.3 EUT Configurations

Equipment Name	Model Name	S/N	Manufacturer	Remark (CE ID)
BioMini/SFU Slim(S20)	BioMini/SFU Slim(S20)	NONE	Suprema Inc.	<b>EUT</b>
Notebook Computer	DV5-1206TX	CNF9100JMW	HEWLETT-PACKARD COMPANY	
Adapter	PPP012L-E	105624202	Suzhou Li Shin Electronic Co., Ltd	



## 4. Electromagnetic Interference Test

### 4.1 Measurement of radiated emission (Below 1 GHz)

In the range 30 MHz to 1 GHz Electric Field strength was measured in accordance with EN 55022:2010+AC:2011 Class B. The test setup was made according to EN 55022:2010+AC:2011 Class B on an 10 m Semi-Anechoic Chamber, which allows a 10 m distance measurement. The height of this table was 0.8 m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test setup.

#### 4.1.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESCI7	ROHDE & SCHWARZ	1166.5950.07	25-Jan-14
Logbicon Antenna	VULB 9168	SCHWARZBECK	237	24-Jan-14
Turn Table	DT3000-2t	Innco System GmbH	N/A	-
Antenna Mast	MA4000-EP	Innco System GmbH	N/A	-
Antenna Master & Turn table controller	CO2000-P	Innco System GmbH	CO2000/641 /28051111/L	-

#### 4.1.2 Environmental conditions

Section	Temperature (°C)	Humidity (% R.H.)
Radiated emission	21.5	52.1
Test Place	10 m Semi-Anechoic Chamber	



#### 4.1.3 Test data

Test Date 16-Jul-13

Frequency [MHz]	Reading [dBuV]	Position [V/H]	Height [m]	Correction Factor		Result Value [dBuV/m]		Margin [dB]
				Antenna [dB/m]	Cable etc. [dB]	Limit	Result	
59.70	6.73	H	4.0	12.14	1.28	40.0	20.14	19.86
81.70	11.77	V	1.0	9.15	1.51	40.0	22.43	17.57
126.70	9.33	H	4.0	10.41	1.84	40.0	21.57	18.43
144.01	11.02	V	1.0	12.27	1.95	40.0	25.24	14.76
184.40	17.31	V	1.0	10.57	2.19	40.0	30.07	9.93
221.60	18.94	H	4.0	10.11	2.36	40.0	31.41	8.59
270.40	13.65	V	1.0	12.16	2.59	47.0	28.40	18.60
330.00	9.57	H	3.0	14.01	2.85	47.0	26.42	20.58
480.00	2.06	H	2.0	17.32	3.40	47.0	22.78	24.22
Remark	H : Horizontal, V : Vertical Result Value = Reading + Antenna + Cable loss *The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection							





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◆ Setup for Radiated Test

[ Front ]



[ Rear ]







## 4.2 Measurement of radiated emission(Above 1 GHz)

Above 1 GHz the radiated emission was measured in accordance with EN 55022:2010+AC:2011 Class B. The test setup was made according to EN 55022:2010+AC:2011 Class B on an 3 m Semi-Anechoic Chamber, which allows a 3 m distance measurement. The height of this table was 0.8 m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test setup.

### 4.2.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Antenna Mast	MA4000-EP	inn-co GmbH	N/A	N/A
Antenna Master & Turn table controller	CO2000-P	inn-co GmbH	CO2000/642 /28051111/L	N/A
Turn Table	DT1500-S	inn-co GmbH	N/A	N/A
Horn Antenna	BBHA9120D	SCHWARZBECK	469	21-Oct-13
PREAMPLIFIER	8449B	AGILENT	3008A00595	25-Jan-14
Test Receiver	ESPI7	Rohde & Schwarz	100185	25-Jan-14

### 4.2.2 Environmental conditions

Section	Temperature (°C)	Humidity (% R.H.)
Radiated emission	20.1	55.6
Test Place	3 m Semi-Anechoic Chamber	



#### 4.2.3 Test data

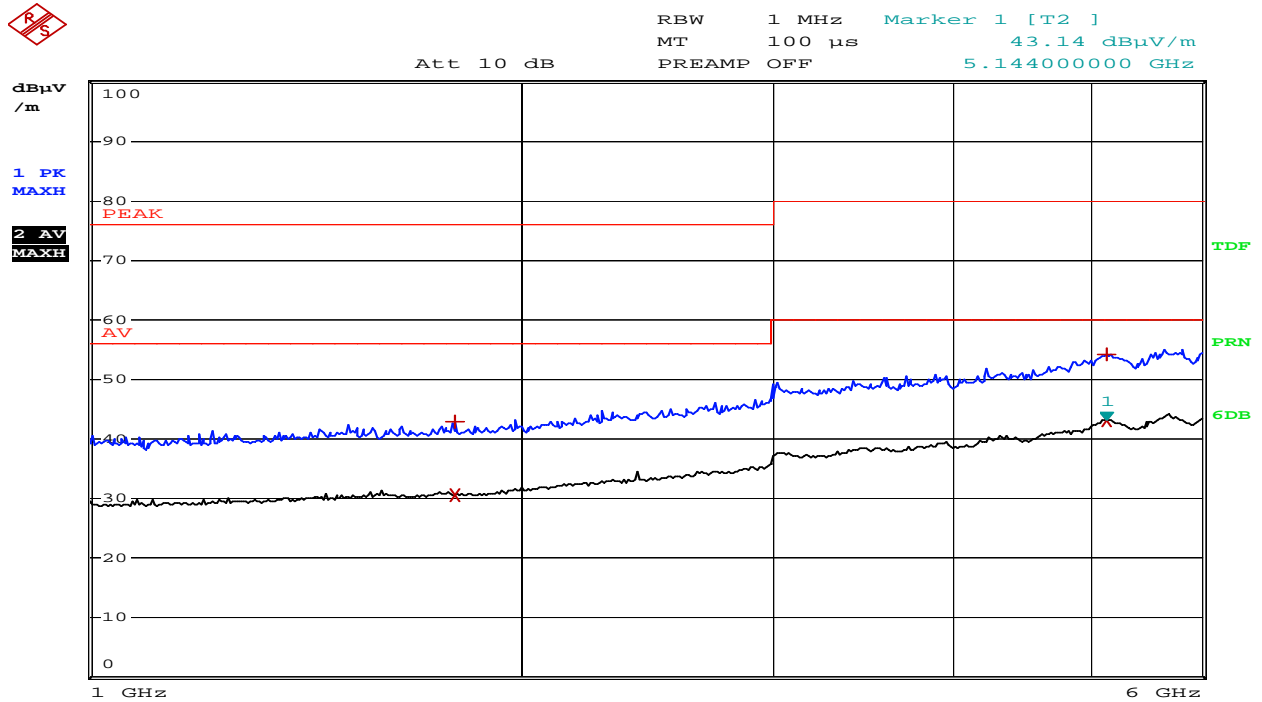
Test Date 16-Jul-13

Frequency [MHz]	Reading [dBuV]	Position [V/H]	Height [m]	Correction Factor		Result Value [dBuV/m]		Margin [dB]
				Antenna [dB/m]	Cable etc. [dB]	Limit	Result	
Peak (RBW:1 MHz VBW:1 MHz)								
1798.00	46.72	H	1.0	25.58	-29.50	76.0	42.80	33.20
2046.00	48.07	V	1.0	26.02	-28.73	76.0	45.36	30.64
2286.00	47.12	V	1.0	26.69	-28.19	76.0	45.63	30.37
5144.00	45.49	H	1.0	31.93	-23.19	80.0	54.24	25.76
Average (RBW:1 MHz VBW:10 Hz).								
1798.00	34.53	H	1.0	25.58	-29.50	56.0	30.61	25.39
2046.00	36.25	V	1.0	26.02	-28.73	56.0	33.54	22.46
2286.00	34.84	V	1.0	26.69	-28.19	56.0	33.35	22.65
5144.00	34.38	H	1.0	31.93	-23.19	60.0	43.13	16.87
Remark	H : Horizontal, V : Vertical							
	*Reading = receiver reading + Amplifier Gain							
	*CL = Cable Loss-Amplifier Gain							
	*The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for							
	Average detection at frequency above 1 GHz.							



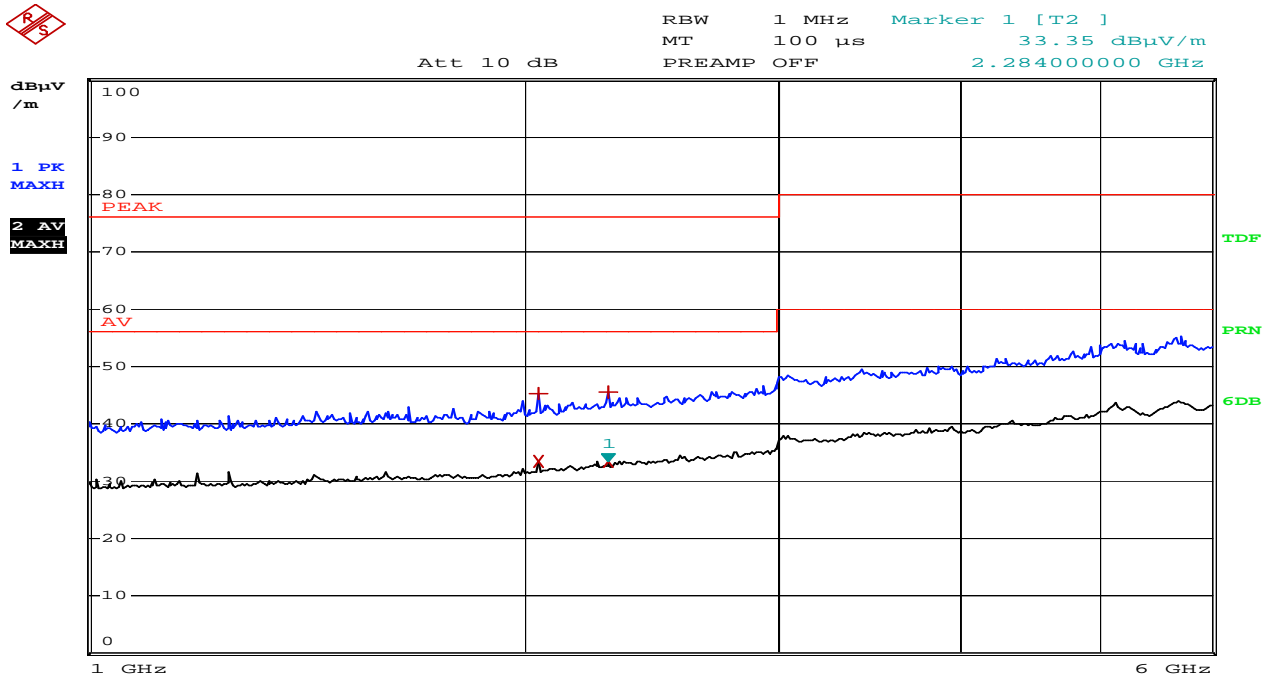
#### 4.2.4 Test data graph

Horizontal (1 GHz to 6 GHz)



Comment: BioMini/SFU Slim(S20)\_HOR  
Date: 16.JUL.2013 03:24:05

Vertical (1 GHz to 6 GHz)



Comment: BioMini/SFU Slim(S20)\_VER  
Date: 16.JUL.2013 03:28:23

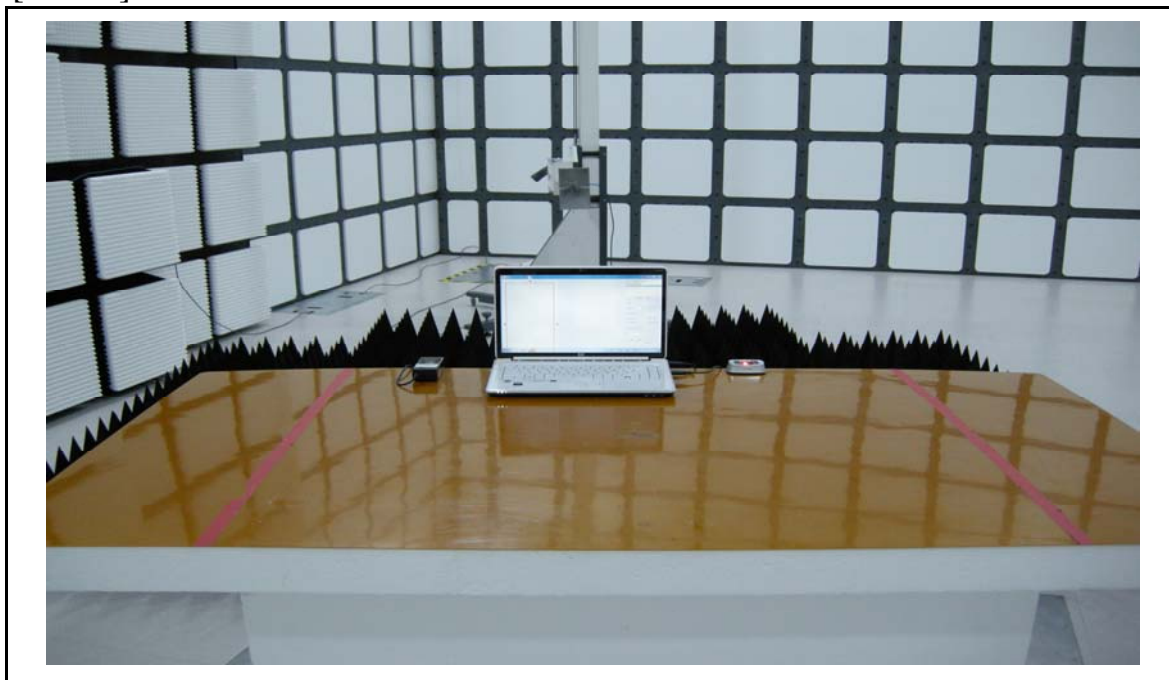


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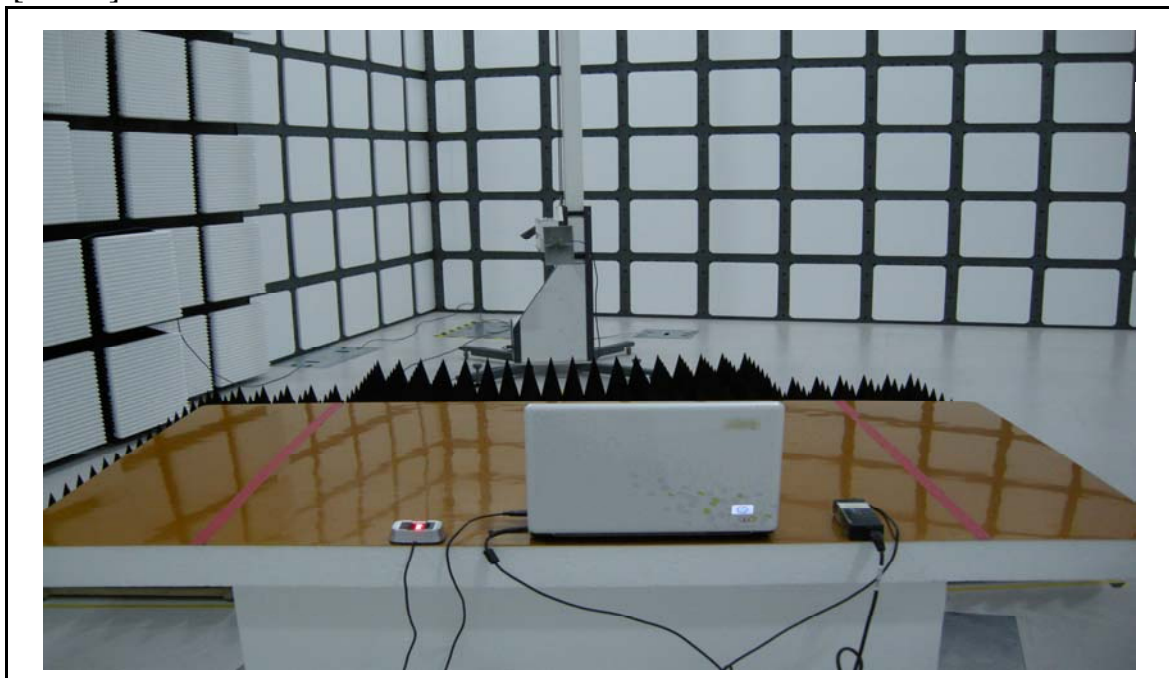
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◆ Setup for Radiated Test

[ Front ]



[ Rear ]





#### 4.3 Conducted emission test

The continuous disturbance voltage of AC Mains was measured in accordance to EN 55022:2010+AC:2011 Class B. The test setup was made according to EN 55022:2010+AC:2011 Class B in a shielded Room. The EUT was placed on a non-conductive table at least 0.8 m above the ground plane. A grounded vertical reference plane was positioned in a distance of 0.4 m from the EUT. The distance from the EUT to other metal surfaces was at least 0.8 m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0 m. The test receiver with Quasi peak detector.

##### 4.3.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Pulse Limiter	ESH3-Z2	ROHDE & SCHWARZ	NONE	25-Jan-14
EMI TEST Receiver	ESHS 10	ROHDE & SCHWARZ	844077/018	25-Jan-14
LISN	ESH3-Z5	ROHDE & SCHWARZ	838979/010	25-Jan-14

##### 4.3.2 Environmental conditions

Section	Temperature (°C)	Humidity (% R.H.)
Conducted emission	21.4	52.5
Test Place	shielded Room	



#### 4.3.3 Test data

Test Date 16-Jul-13

Frequency (MHz)	Correction Factor (dB)		Line (H/N)	Quasi-peak Value (dBuV)			Average Value (dBuV)		
	LISN	Cable etc.		Limit	Reading	Result	Limit	Reading	Result
0.15	0.12	0.17	H	79.0	59.70	59.99	66.0	46.51	46.80
0.19	0.13	0.16	N	79.0	53.90	54.19	66.0	44.39	44.68
0.20	0.13	0.16	H	79.0	54.40	54.69	66.0	45.88	46.17
0.23	0.13	0.16	H	79.0	50.02	50.31	66.0	37.51	37.80
0.90	0.12	0.19	H	73.0	42.20	42.51	60.0		
3.30	0.17	0.26	N	73.0	40.38	40.81	60.0		
Remark	H : Hot Line, N : Neutral Line Correction factor=LISN factor + Cable loss								





#### 4.3.4 Spectral Diagram

◆ Hot Line

ES TECH

16 Jul 2013 14:56

HOT

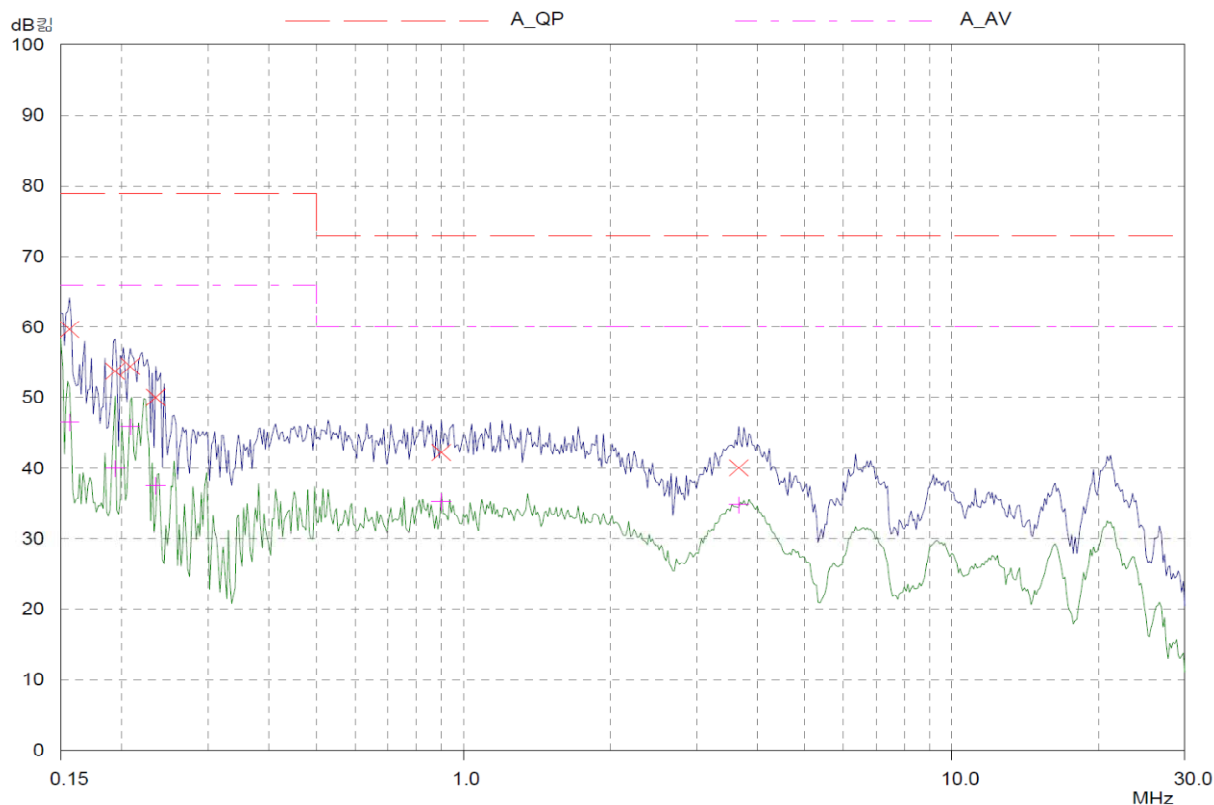
EUT: BioMini/SFU Slim(S20)  
Manuf:  
Op Cond: 230 Va.c.  
Operator: S.Y. LEE  
Test Spec: CLASS A  
Comment:

Result File: 130803\_h.dat :

Scan Settings (1 Range)

Frequencies			Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten
150kHz	30MHz	0.8%	10kHz	PK+AV	10msec	Auto

Final Measurement: Detectors: X QP / + AV  
Meas Time: 1sec  
Subranges: 25  
Acc Margin: 0 dB





◆ Neutral Line

ES TECH  
NEUTRAL

16 Jul 2013 15:00

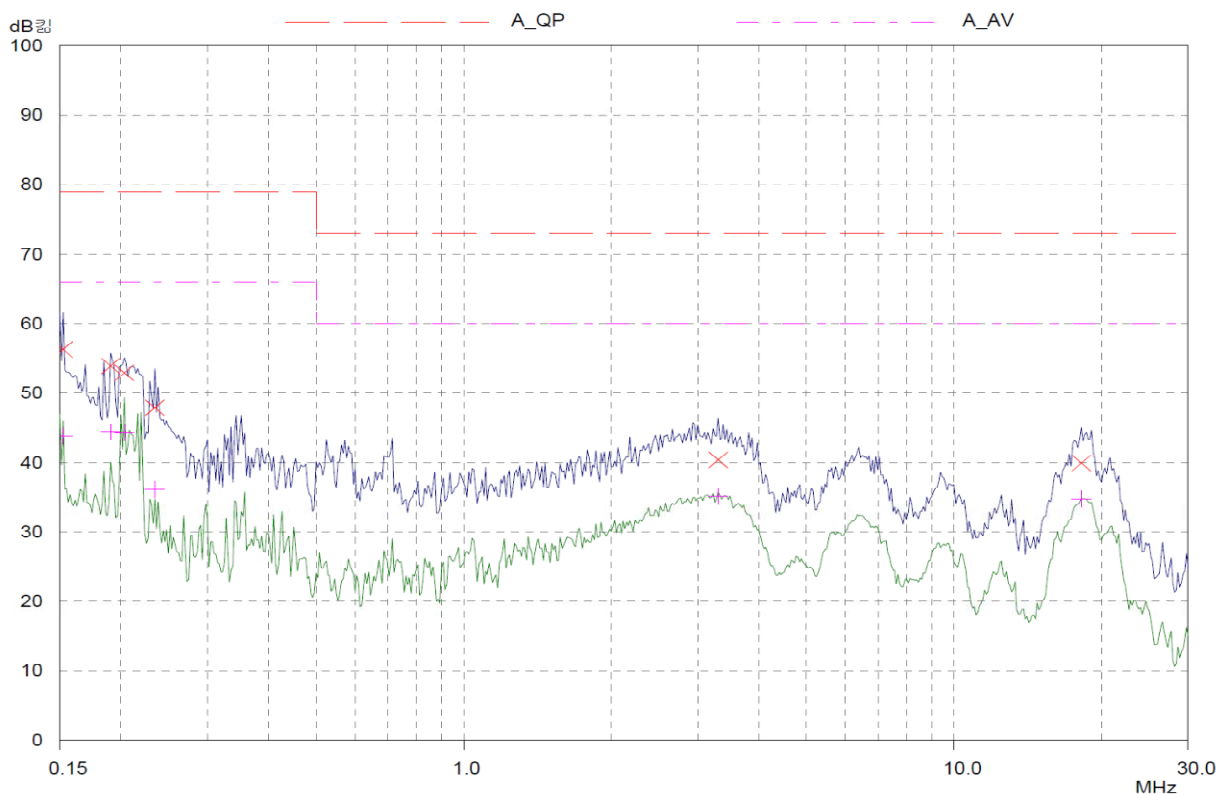
EUT: BioMini/SFU Slim(S20)  
Manuf:  
Op Cond: 230 V.a.c.  
Operator: S.Y. LEE  
Test Spec: CLASS A  
Comment:

Result File: 130803\_n.dat :

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	10msec	Auto	OFF	60dB

Final Measurement: Detectors: X QP / + AV  
Meas Time: 1sec  
Subranges: 25  
Acc Margin: 0 dB





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◆ Setup for Conducted Test : 0.15 MHz ~ 30 MHz

[ Front ]



[ Rear ]



#### 4.3.5 Test data (Telecommunication Port )-N/A

Test Date :

[illegible]



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#### 4.3.6 Spectral Diagram

**N/A**



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◆ Setup for Conducted Test : 0.15 MHz ~ 30 MHz

[ Front ]

**N/A**

[ Rear ]

**N/A**





#### 4.4 Limits concerning harmonic current test-N/A

The harmonics on AC Mains in the frequency from 0 kHz to 2 kHz were measured in accordance to EN61000-3-2:2006+A1:2009+A2:2009

The objective of this standard is to set limits for harmonic emissions of equipment within its scope, so that, with due allowance for the emissions from other equipment, compliance with the limits ensures that harmonic disturbance do not exceed the compatibility levels defined in EN 61000-3-2.

For the purpose of harmonic current limitation, equipment is classified as follows.

Class A : - Balanced three-phase equipment;

- Household appliances excluding equipment identified as Class D;
- Tools excluding portable tools;
- Dimmers for incandescent lamps;
- Audio equipment.

Equipment not specified in one of the three other classes shall be considered as Class B equipment.

Class B : - Portable tools;

- Arc welding equipment which is not professional equipment.

Class C : - Lighting equipment.

Class D : Equipment having a specified power less than or equal to 600 W, of the following types:

- Personal computers and personal computer monitors;
- Television receivers.

##### 4.4.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Test System	PHF555	HAEFELY	080419-11	14-Sep-13
Harmonic & Flicker Test System	DPA 550N	EM Test AG	V1033107193	14-Sep-13

##### 4.4.2 Environmental Conditions

Temperature (°C)	Relative Humidity (% R.H.)



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◆ Setup Figure

**N/A**



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#### 4.4.3 Test data

Test Date

**N/A**



#### 4.5 Limits Concerning Voltage Fluctuations & Flicker test-N/A

The voltage fluctuations on AC mains in the frequency range from 0 kHz to 2 kHz were measured in accordance to EN 61000-3-3:2008

##### 4.5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Test System	PHF555	HAEFELY	080419-11	14-Sep-13
Harmonic & Flicker Test System	DPA 550N	EM Test AG	V1033107193	14-Sep-13

##### 4.5.2 Environmental Conditions

Temperature (°C)	Relative Humidity (% R.H.)



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◆ Setup Figure

**N/A**



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#### 4.5.3 Test data

Test Date :

**N/A**





## 5. Electromagnetic Susceptibility Test

### 5.1 Electrostatic Discharge test

#### 5.1.1 Test Standard

- Standard : EN 61000-4-2:2009
- Performance appraisal standard : B
- Energy storage capacitance : 150 pF ( $\pm 10\%$ )
- Discharge resistance : 330  $\Omega$  ( $\pm 10\%$ )
- Charging resistance : 50 M $\Omega$  (50 M $\Omega$  ~100 M $\Omega$ )
- Tolerance of the output voltage indication :  $\pm 5\%$
- Polarity of the output voltage : Positive(+) and Negative(-)
- Holding time : at least 5 s
- Discharge, Mode of operation : Single discharge
- Interval discharge time : At least 1 s
- Repetition time : At least 200 discharges. 100 each at negative and positive polarity of four test points (a minimum of 50 discharges of each point)
  - At least 50 indirect discharge(contact) to the center of the front edge of the horizontal coupling plane
  - At least 200 indirect discharges shall be applied in the indirect mode use of the vertical conducting plane.

#### 5.1.2 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
ESD Generator	NSG438	SCHAFFNER	601	13-Feb-14

#### 5.1.3 Environmental Conditions

Temperature ( $^{\circ}\text{C}$ )	Relative Humidity (% R.H.)	Pressure (kPa)
23.5	51.5	99.8

#### 5.1.4 Test data

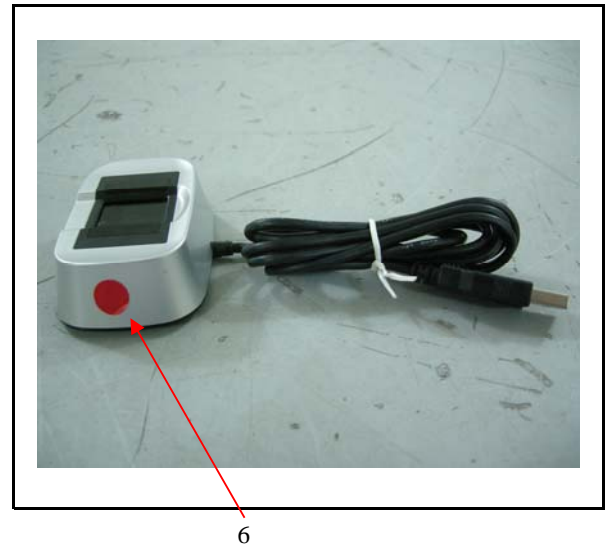
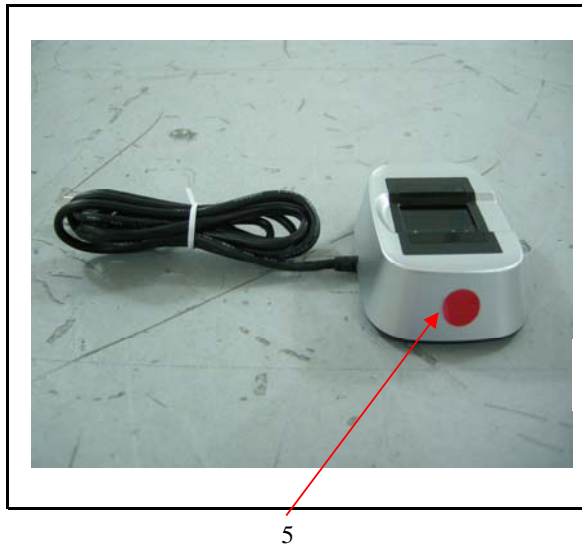
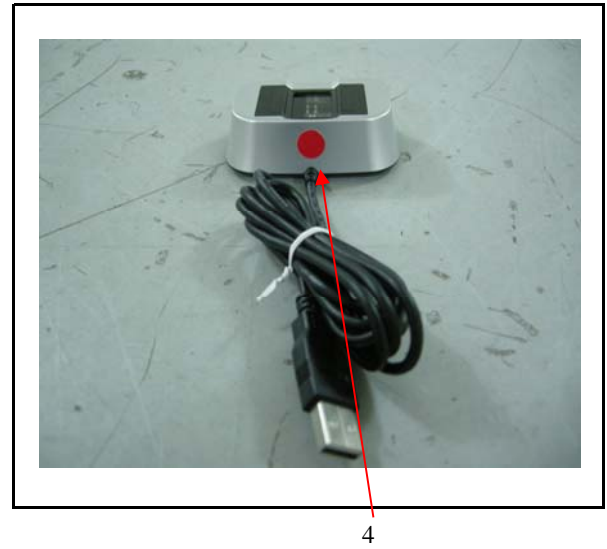
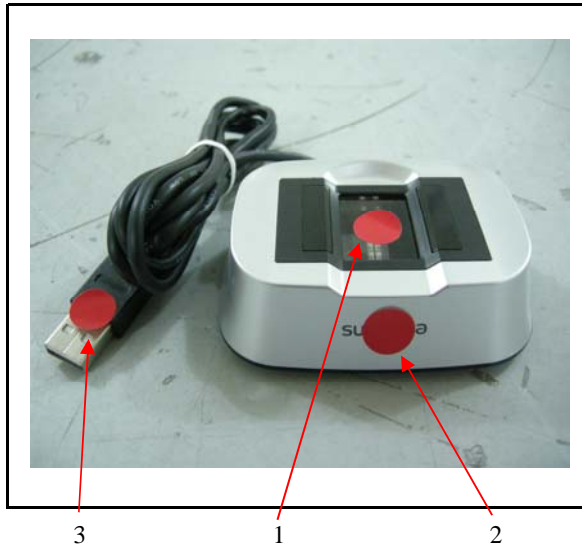
Test Date 16-Jul-13

Point	Test Method	Test Voltage (+/-)	Criterion	Result	Remark
HCP	Horizontal Coupling	2,4 kV	B	A	
VCP	Vertical Coupling	2,4 kV	B	A	
1	Air discharge	2,4,8 kV	B	A	
2	Air discharge	2,4,8 kV	B	A	
3	Air discharge	2,4,8 kV	B	A	
4	Air discharge	2,4,8 kV	B	A	
5	Air discharge	2,4,8 kV	B	A	
6	Air discharge	2,4,8 kV	B	A	
Reference	Line color : RED-Air BLUE-Contact				

#### ◆ Setup Figure



◆ Test Point



1. The Front fingerprint recognition Cover Part.
3. The USB Port Part.
5. The left Cover Part.

2. The Front Cover Part.
4. The Rear Cover Part.
6. The right Cover Part.

HCP: Indirect Discharge

VCP : Indirect Discharge



## 5.2 Radiated Electromagnetic Fields test

### 5.2.1 Test Standard

- Standard : EN 61000-4-3:2006+A2:2010
- Criterion standard : A
- Frequency Range : 80 MHz ~ 1000 MHz
- Test Angle : 0°, 90°, 180°, 270°
- Sweep Capability :  $1.5 \times 10^{-3}$  decade/s
- Step Size : 1% of Fundamental
- Antenna Polarity : Horizontally/Vertically
- Measurement Distance : 3 m
- Modulation : AM 80% with 1 kHz sine wave
- Dwell time : 3 s
- Field Strength: 3 V/m

### 5.2.2 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Hybrid Log Periodic Antenna	LPDA-0803	TDK	130243	N/A
Amplifier	250W1000AM1	Amplifier Research	311841	25-Jan-14
Signal Generator	8648C	HP	3623A03549	25-Jan-14
Power Sensor	URV5-Z2	Rohde & Schwarz	100592	25-Jan-14
Power Meter	NRVD	Rohde & Schwarz	DE25524	25-Jan-14
System Interface	SI-300-2	TDK	41610	N/A

### 5.2.3 Environmental Conditions

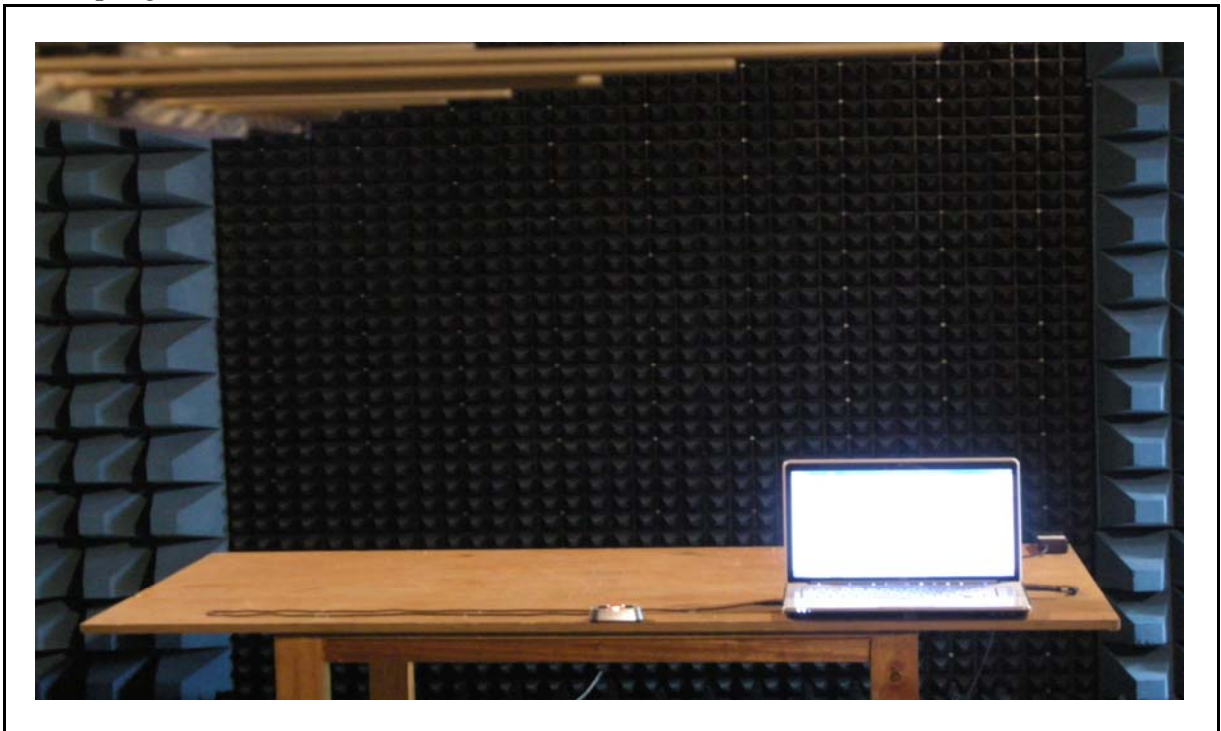
Temperature (°C)	Relative Humidity (% R.H.)	Pressure (kPa)
23.1	55.1	99.8

#### 5.2.4 Test data

Test Date : 16-Jul-13

Range of Frequency (MHz)	Position	Polarity	Electromagnetic Intensity (V/m)	Criterion	Result
80 MHz ~ 1 GHz	Front side	H	3	A	A
		V	3	A	A
	Right side	H	3	A	A
		V	3	A	A
	Left side	H	3	A	A
		V	3	A	A
	Rear side	H	3	A	A
		V	3	A	A
Reference		H : Horizontality, V : Verticality			

#### ◆ Setup Figure





### 5.3 Electrical Fast Transients/Burst test

#### 5.3.1 Test Standard

- Standard : EN 61000-4-4:2004+A1:2010
- Performance appraisal standard : B
- Test voltage : AC power :  $\pm 1\text{kV}$  , other port : 0.5kV
- Polarity : Positive(+), Negative(-)
- Repetition Frequency : 5 kHz
- Duration Time : 60 s

#### 5.3.2 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Compact Test System	ECOMPACT 4	Haefely Test AG.Basel	153528	25-Jan-14

#### 5.3.3 Environmental Conditions

Temperature (°C)	Relative Humidity (% R.H.)	Pressure (kPa)
22.7	52.4	99.9

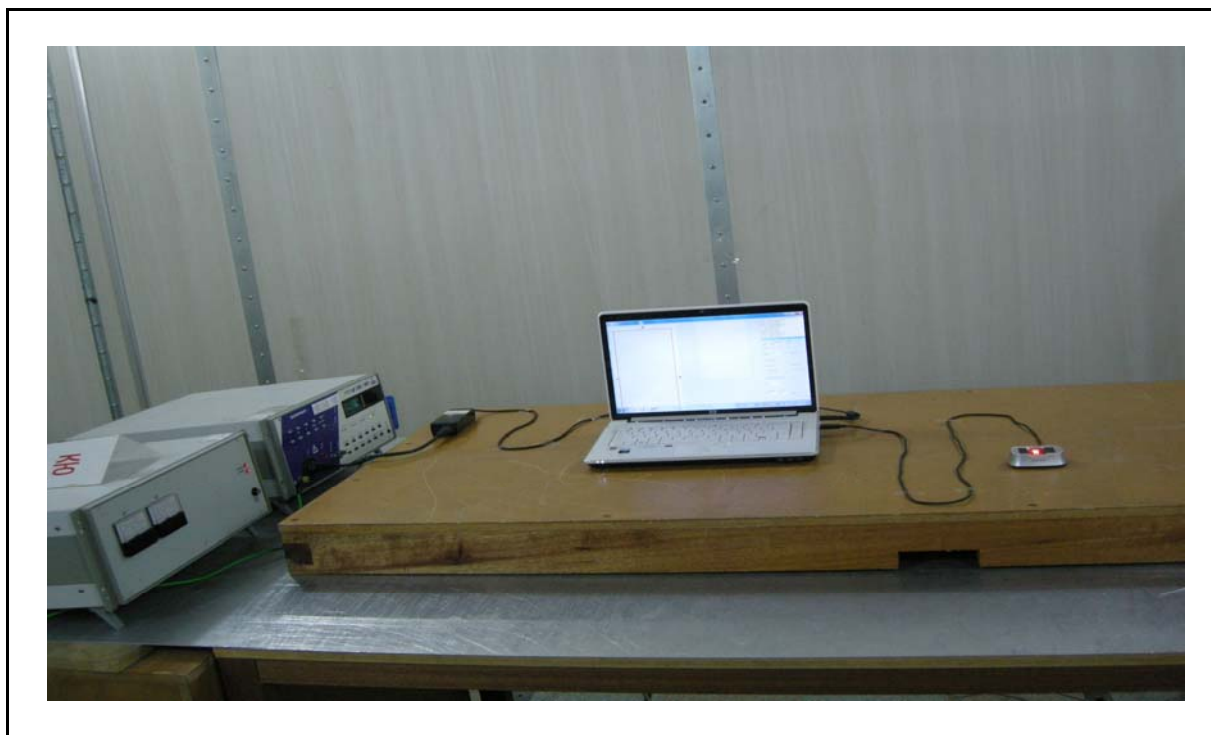


### 5.3.4 Test data

Test Date : 17-Jul-13

Tested Point		Test Voltage	Duration Time (s)	Criterion	Result	Remark
Input AC	L1	±1kV	60 s	B	A	
	L2	±1kV	60 s	B	A	
	L1-L2	±1kV	60 s	B	A	
	PE	±1kV	60 s	B	A	
	L1-PE	±1kV	60 s	B	A	
	L2-PE	±1kV	60 s	B	A	
	L1-L2-PE	±1kV	60 s	B	A	
Reference	L1: Line, L2: Neutral, PE: Protective earth (Ground)					

#### ◆ Setup Figure





## 5.4 Surge Test

### 5.4.1 Test Standard

- Standard : EN 61000-4-5:2006
- Performance appraisal standard : B
- Test voltage AC : line-earth :  $\pm 2$  kV, line-line :  $\pm 1$  kV,  
Telecom. & signal : Line-earth :  $\pm 1$  kV, DC port :  $\pm 0.5$  Kv
- Polarity : Positive(+), Negative(-)
- Repetition rate: max 1/min.
- Number of tests: at least five positive and five negative at the selected points.
- Phase shifting: in a range between 0 to 360 versus the a.c. line phase angle.

### 5.4.2 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Compact Test System	ECOMPACT 4	Haefely Test AG.Basel	153528	25-Jan-14

### 5.4.3 Environmental Conditions

Temperature (°C)	Relative Humidity (% R.H.)	Pressure (kPa)
22.7	52.4	99.9



#### 5.4.4 Test data

Test Date : 17-Jul-13

Tested Point		Test Voltage	Criterion	Result	Remark
Input AC	L1-L2	$\pm 1$ kV	B	A	
	L1-PE	$\pm 2$ kV	B	A	
	L2-PE	$\pm 2$ kV	B	A	
Reference		L1: Line, L2: Neutral, PE: Protective earth (Ground)			

#### ◆ Setup Figure





## 5.5 Conducted Disturbance test

### 5.5.1 Test Standard

- Standard : EN 61000-4-6:2009
- Performance appraisal standard : A
- Frequency Range : (0.15~80) MHz
- Field Strength : 3.0 V
- Modulation : AM 80 % with 1 kHz sine wave
- Dwell time : 3 s
- Sweep Capability :  $1.5 \times 10^{-3}$  decade/s
- Step Size : 1 % of Fundamental

### 5.5.2 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Continuous Wave Simulator	CWS 500C	EM TEST	1101-07	25-Jan-14
Attenuator	ATT6/75	EM TEST	1001-43	25-Jan-14
CDN	CDN M016	Teseq GmbH	27445	25-Jan-14

### 5.5.3 Environmental Conditions

Temperature (°C)	Relative Humidity (% R.H.)	Pressure (kPa)
24.2	48.6	99.9

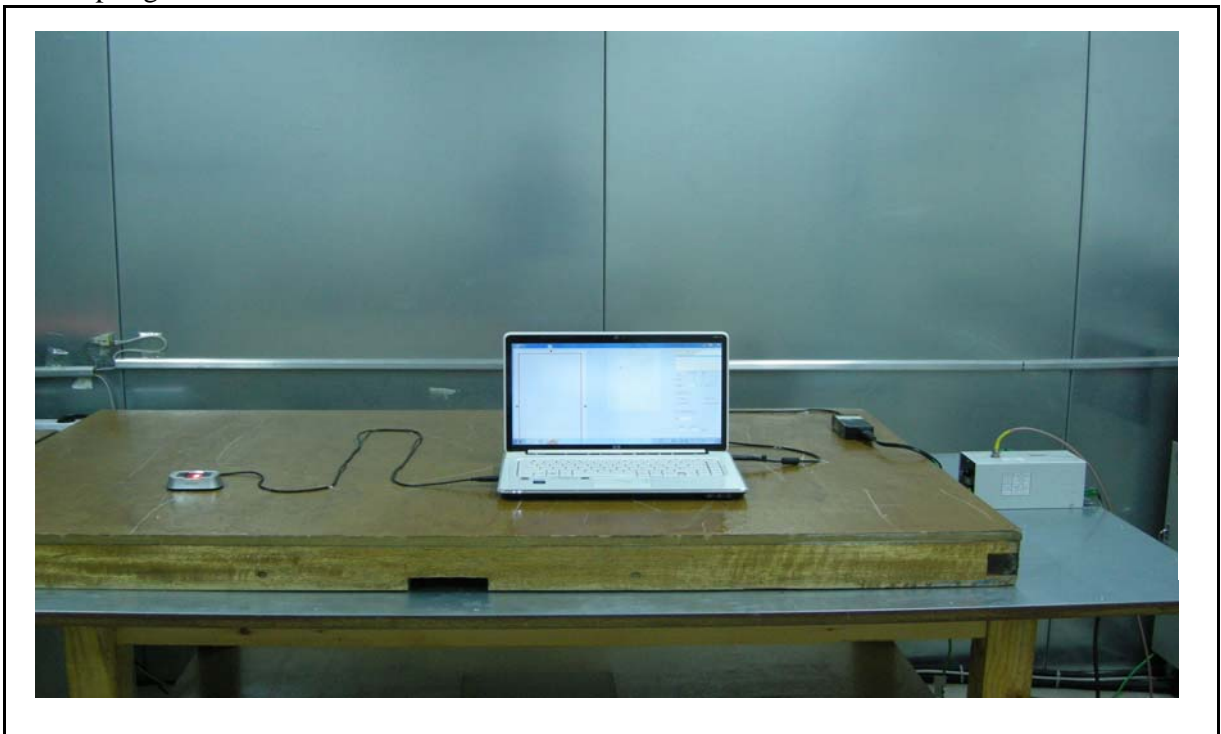


#### 5.5.4 Test data

Test Date : 17-Jul-13

Freq [MHz]	Level [V]	Tested point	Criterion	Result	Remark
0.15~80	3	Mains(M3)	A	A	
Reference					

#### ◆ Setup Figure





## 5.6 Voltage Dips and Interruptions test

### 5.6.1 Test Standard

- Standard : EN 61000-4-11:2004
- Performance appraisal standard and Voltage Reduction
  - >95 % 250 cycles : C , >95 % 0.5cycles : B, 30 % 25 cycles : C
- Number of pulses : 3 at each level
- Recovery time between pulses : 10 s
- Additional angles : 45°,90° ,135° , 180° ,225°,270° ,315°

### 5.6.2 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Test System	PHF555	HAEFELY	080419-11	14-Sep-13
Harmonic & Flicker Test System	DPA 550N	EM Test AG	V1033107193	14-Sep-13

### 5.6.3 Environmental Conditions

Temperature (°C)	Relative Humidity (% R.H.)	Pressure (kPa)
23.1	51.8	99.9

#### 5.6.4 Test data

Test Date : 17-Jul-13

Voltage Reduction	Duration Cycles	criteria	Result	Remark
> 95 %	0.5	B	A	
30%	25	C	A	
> 95 %	250	C	A	
Reference	The EUT was measured both lower voltage ( 100Va.c.) and higher voltage ( 240Va.c. ).			

#### ◆ Setup Figure







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## 6. EUT Photographs

[ Front ]



[ Rear ]







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[ Inside ]

