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Test Report for CE

Report Number	**ESTCE1506-002**			
Applicant	Company Name	DA Tech Co., Ltd		
	Address	39, Pyeongcheon-ro 141 beon-gil, Bupyeong-gu, Incheon, Korea		
	Contact Person	Mr. Koo, Ja-Yeon		
	Factory address	39, Pyeongcheon-ro 141 beon-gil, Bupyeong-gu, Incheon, Korea		
Product	Product type	Digital Breathalyzer		
	Model	AF-100S	Manufacturer	DA Tech Co., Ltd
	Serial No.	NONE	Country of origin	KOREA
Other	Receipt Date	24-Apr-15	Receipt Number	ESTC-15-00886
	Issued Date	9-Jun-15	Tested Date	2015-4-28 ~2015-4-30
Test Result	Complied			
Standard	EMI Standard		EMS Standard	
	EN 61326-1 : 2013 Class B EN 61326-2-3 : 2013		EN 61326-1 : 2013 EN 61326-2-3 : 2013 EN 61000-4-2 : 2009 EN 61000-4-3 : 2006+A2:2010 EN 61000-4-4 : 2012 EN 61000-4-5 : 2006 EN 61000-4-6 : 2009 EN 61000-4-8 : 2010 EN 61000-4-11 : 2004	
Tested by	K.H. Chung / Senior Engineer (Signature)			
Approved by	J. M. Yang / Engineering Manager (Signature)			

ESTECH CO., LTD

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* Note

o This is certified that the above mentioned products have been tested for the sample provided by client.

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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 : Suite 1015 World Meridian II, 123 Gasan Digital 2-ro,
Geumcheon-gu, Seoul 153-759, R. O. Korea

EMC Test Lab. : 347-69, Jungbu-daero 147beon-gil, Majang-myeon, Icheon-si,
Gyeonggi-do 467-811, R. O. 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

MSIP : 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 APECTEL 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 : Digital Breathalyzer

¨ Model Number : AF-100S

¨ Serial Number : NONE

¨ Manufacturer : DA Tech Co., Ltd

¨ Country of origin : KOREA

¨ Power Rating : Rechargeable Lithium-ion battery(2000 mA)
: Chargable by usb port.

2.2 General descriptions of EUT

Sensor	Fuel cell sensor
Display	The four-side illumination LEDs for signal lamp
	The five LEDs for reading display
Warm-up time	2 seconds
	*Warm up time may vary depending on the BAC measured.
Responding time	1 second
Alarm level	Alarm limit can be set up with 5 different levels.
	(0.010, 0.020, 0.030, 0.040, 0.050%BAC)
Button	3 buttons - ON/OFF, PASSIVE, SIGNAL LAMP
Operating temperature	-10 ~ 40°C (AF-100S is equipped with heater.)
Power supply	Rechargeable Lithium-ion battery (2000mA)
Battery Life	Approx. 10 hours
Dimensions	255mm, 40Ø
Weight	200g including batteries
Calibration	Every 6 months

3. Measurement Condition

3.1 EUT Operation.

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

1. Turn on power the EUT
2. Execute the EUT by max Breath condition
3. Check sensor error to EUT during the test.
4. Check charging status.
5. Mode 1 is operating condition and Mode 2 is charging condition.

3.2 Cable Connecting

Test mode 1

Start Equipment		End Equipment		Cable		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Digital Breathalyzer	-	-	-	-	-	

Test mode 2

Start Equipment		End Equipment		Cable		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
Digital Breathalyzer	Micro-USB	Adapter	USB	1.0	Shielded	

3.3 EUT Configurations

Test mode 1

Equipment Name	Model Name	S/N	Manufacturer	Remark (CE ID)
Digital Breathalyzer	AF-100S	NONE	DA Tech Co., Ltd	**E.U.T**

Test mode 2

Equipment Name	Model Name	S/N	Manufacturer	Remark (CE ID)
Digital Breathalyzer	AF-100S	NONE	DA Tech Co., Ltd	**E.U.T**
Adapter	A1402	NONE	Apple Inc.	

3.4 Performance Criteria

Criterion	Test Result	Remark
A	Normal performance within the specification limits.	
B	Temporary degradation or loss of function or performance which is self-recoverable.	
C	Temporary degradation or loss of function or performance which requires operator intervention or system reset.	

4. Electromagnetic Interference Test

4.1 Measurement of radiated emission

In the range of 30 MHz to 1 GHz the Electric Field strength was measured in accordance with EN 61326-1:2013 Class B & EN 61326-2-3:2013. This standard for emission requirements applies to electrical and electronic apparatus intended for use in the residential, commercial and light-industrial environment. The test setup was made according to EN 55011:2009+A1:2010 Class B on an open test site, 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 set-up.

4.1.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
TEST Receiver	ESCI7	ROHDE & SCHWARZ	100916	13-Jan-16
Logbicon Antenna	VULB 9168	SCHWARZBECK	193	18-Sep-15
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

Test mode 1

Section	Temperature (°C)	Humidity (% R.H.)
Radiated emission	23.1	53.9
Test Place	10 m Semi-Anechoic Chamber	

Test mode 2

Section	Temperature (°C)	Humidity (% R.H.)
Radiated emission	20.2	54.6
Test Place	10 m Semi-Anechoic Chamber	

4.1.3 Test data

Test Date : 29-Apr-15 Test mode 1

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	
33.80	5.49	V	1.0	12.57	1.03	30.0	19.09	10.91
79.30	8.26	V	1.0	9.59	1.54	30.0	19.39	10.61
102.20	8.23	V	1.0	9.01	1.75	30.0	18.99	11.01
161.60	2.31	H	4.0	13.19	2.18	30.0	17.68	12.32
207.50	8.72	H	4.0	10.29	2.46	30.0	21.47	8.53
298.00	4.45	H	3.0	13.44	2.94	37.0	20.83	16.17
325.40	4.93	H	2.7	14.05	3.06	37.0	22.04	14.96
354.90	4.17	H	2.7	14.85	3.23	37.0	22.26	14.74

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-peakdetection

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Test Date : 30-Apr-15 Test mode 2

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	
31.70	6.83	V	1.0	12.44	1.00	30.0	20.27	9.73
64.10	6.74	V	1.0	12.60	1.39	30.0	20.73	9.27
87.70	10.08	V	1.0	8.20	1.62	30.0	19.90	10.10
101.90	9.56	V	1.0	8.98	1.74	30.0	20.28	9.72
147.20	7.56	V	1.0	12.89	2.08	30.0	22.53	7.47
163.30	3.00	H	4.0	13.05	2.19	30.0	18.24	11.76
207.80	10.51	H	4.0	10.30	2.46	30.0	23.27	6.73

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-peakdetection

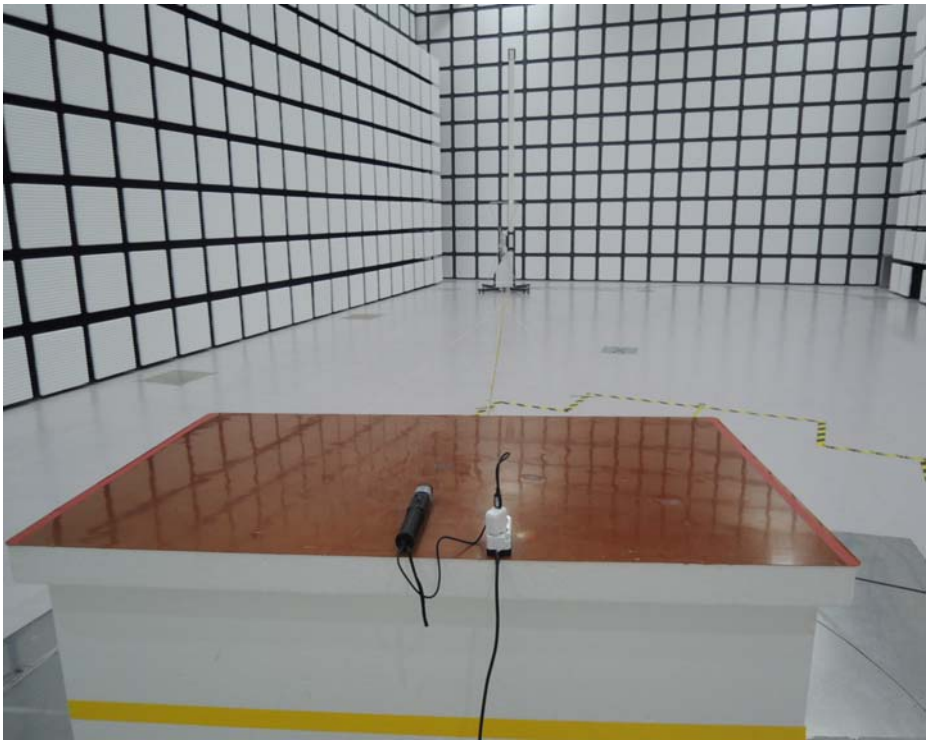
◆ Setup for Radiated Test

[Front] Test mode 1

[Rear] Test mode 1

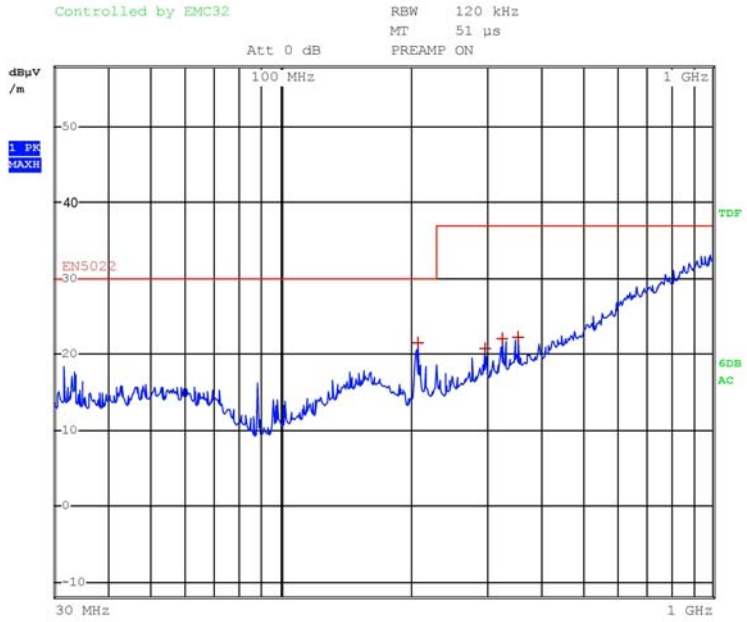
[Front] Test mode 2

[Rear] Test mode 2



4.2.4 Test data graph

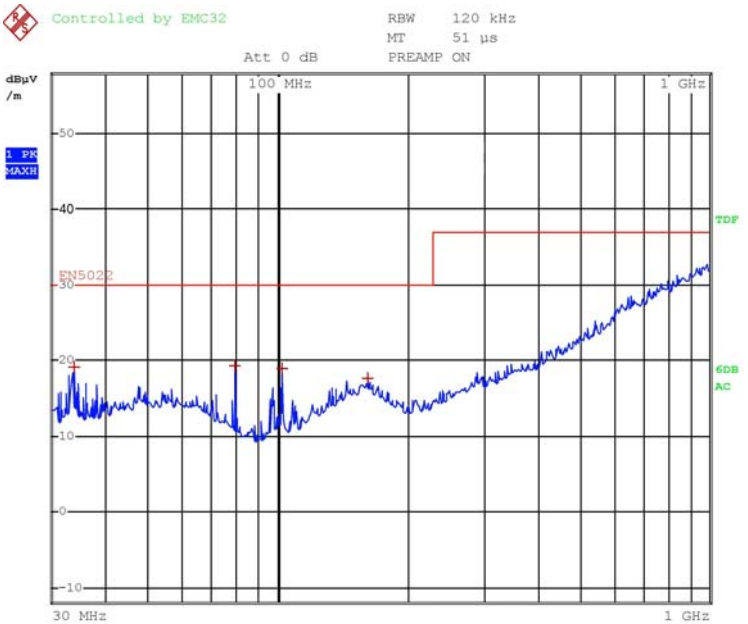
Horizontal (30 MHz to 1 GHz) Test mode 1



15-00886_HOR

Date: 29.APR.2015 11:09:53

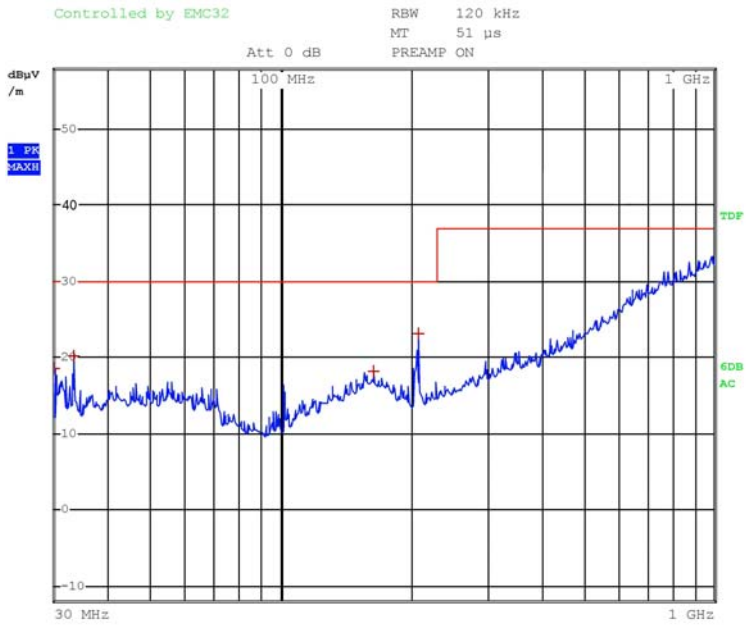
Vertical (30 MHz to 1 GHz) Test mode 1



15-00886_VER

Date: 29.APR.2015 11:12:28

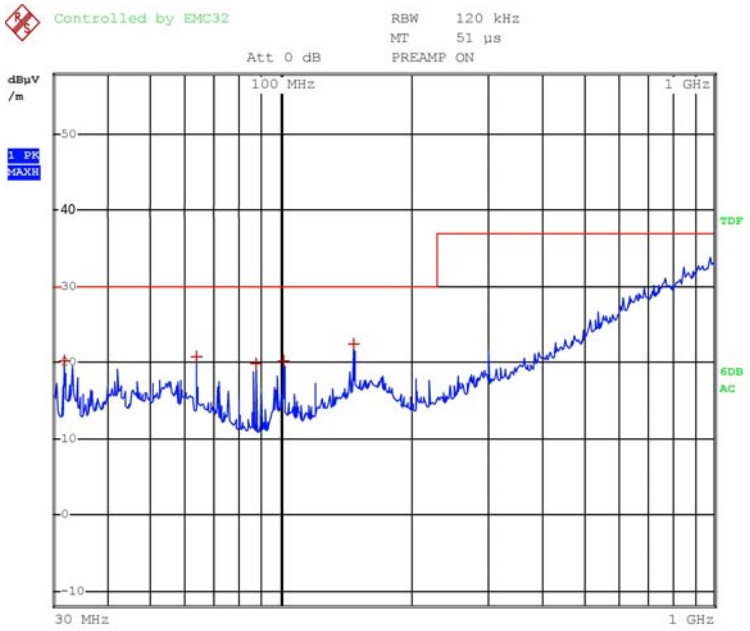
Horizontal (30 MHz to 1 GHz) Test mode 2



15-00886_HOR(CHARGER MODE)

Date: 30.APR.2015 14:28:32

Vertical (30 MHz to 1 GHz) Test mode 2



15-00886_VER(CHARGER MODE)

Date: 30.APR.2015 14:31:16

4.2 Conducted emission test

The continuous disturbance voltage of AC Mains in the frequency from 0.15 MHz to 30 MHz was measured in accordance to EN 61326-1 : 2013 Class B & EN 61326-2-3 : 2013. The test setup was made according to EN 55011 : 2009+A1:2010 Class B in a shielded. 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.

4.2.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Pulse Limiter	ESH3-Z2	ROHDE & SCHWARZ	NONE	13-Jan-16
TEST Receiver	ESPI	ROHDE & SCHWARZ	100005	13-Jan-16
LISN	ENV216	ROHDE & SCHWARZ	101231	18-Aug-15
LISN	ESH3-Z5	ROHDE & SCHWARZ	836679/025	13-Jan-16

4.2.2 Environmental conditions

Test mode 2

Section	Temperature (°C)	Humidity (% R.H.)
Conducted emission	21.8	40.5
Test Place	Shielded Room	

4.2.3 Test data

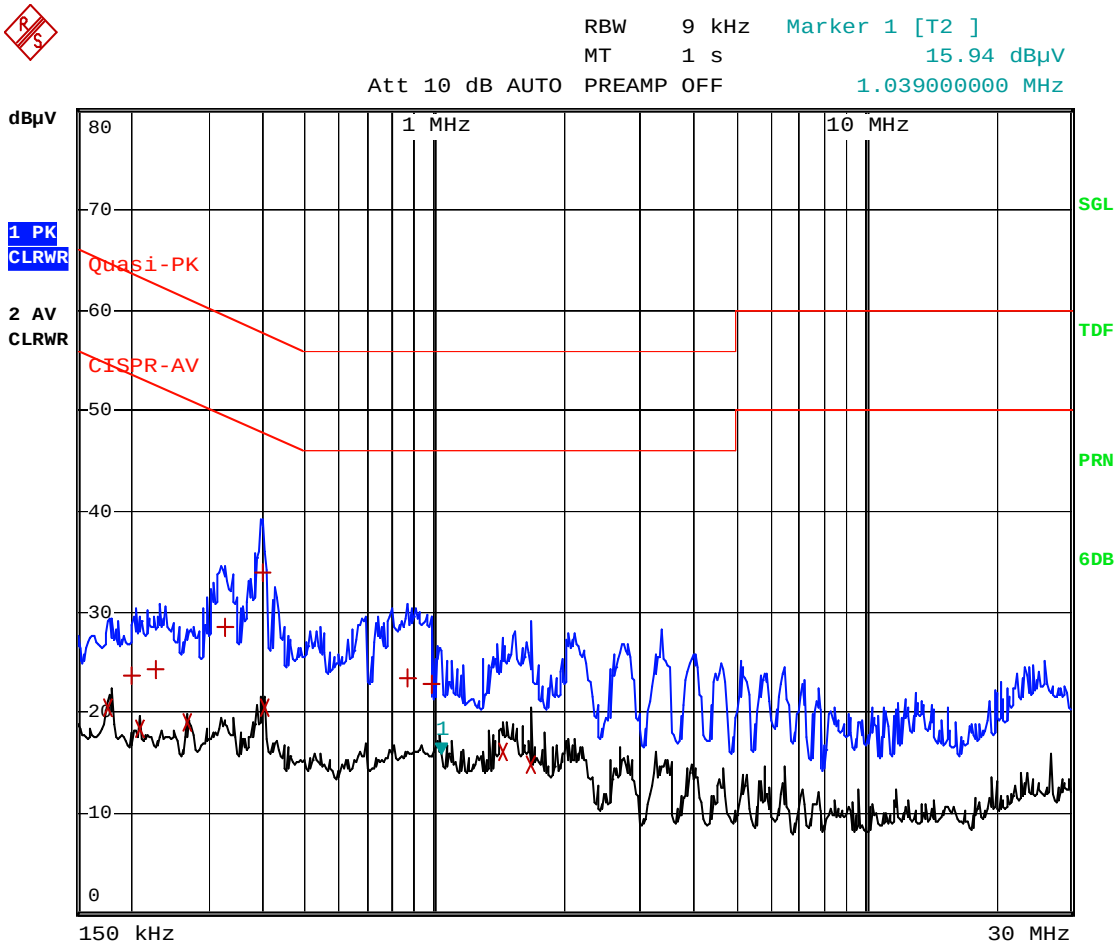
Test Date : 30-Apr-15 Test mode 2

Frequency (MHz)	Correction Factor (dB)		Line (H/N)	Quasi-peak Value (dBuV)			Average Value (dBuV)		
	LISN	Cable etc.		Limit	Reading	Result	Limit	Reading	Result
0.17	0.10	0.12	N	64.8	25.08	25.30	54.8		
0.20	0.12	0.12	H	63.6	23.53	23.77	53.6		
0.23	0.11	0.13	H	62.5	24.24	24.48	52.5		
0.33	0.11	0.13	H	59.5	28.52	28.76	49.5		
0.40	0.11	0.14	H	57.9	33.96	34.21	47.9		
0.87	0.12	0.13	H	56.0	23.48	23.73	46.0		
Remark	H : Hot Line, N : Neutral Line								

4.2.4 Spectral Diagram

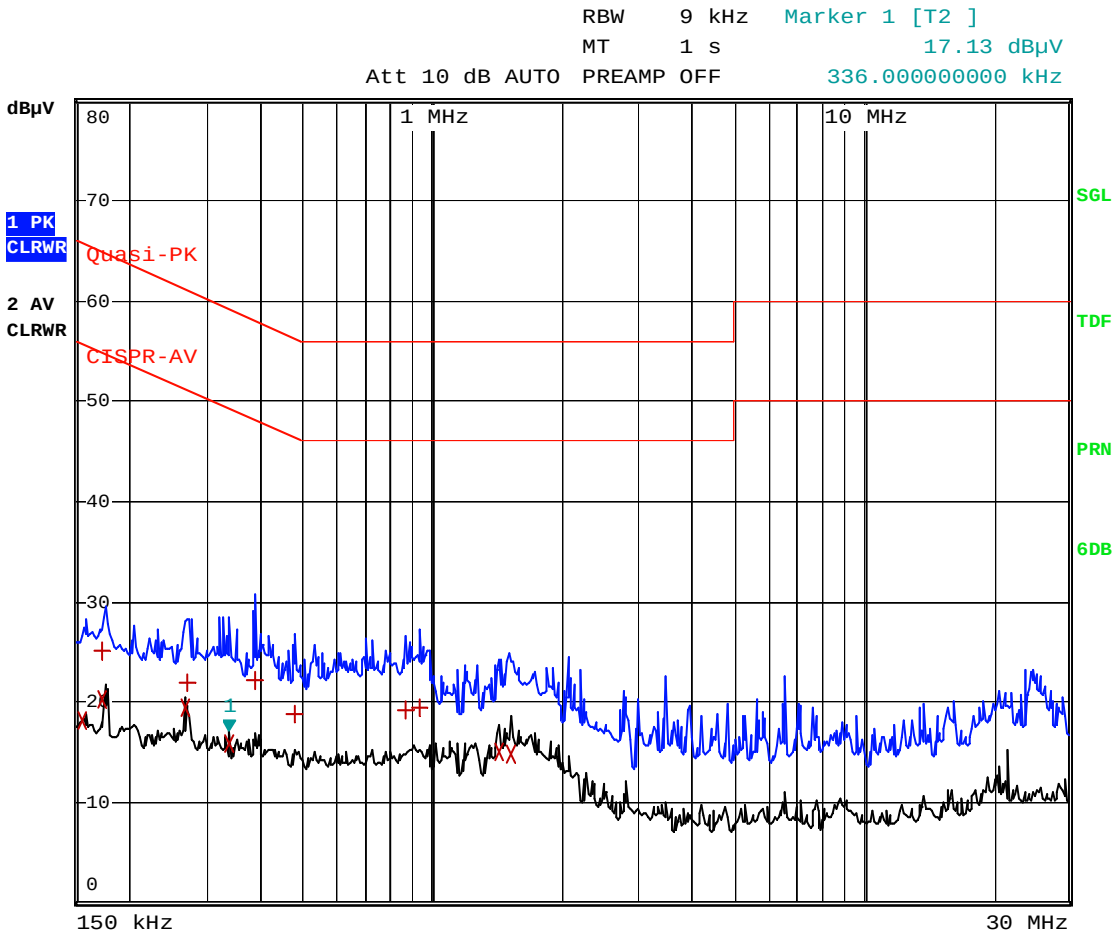
◆ Hot Line

Test mode 2



Comment: AF-100S_HOT(CHARGER MODE)
Date: 30.APR.2015 17:36:01

◆ Neutral Line Test mode 2



Comment: AF-100S_NEUTRAL(CHARGER MODE)
Date: 30.APR.2015 17:32:55

◆ Setup for Conducted Test : 0.15 MHz ~ 30 MHz

[Front] Test mode 2

[Rear] Test mode 2

4.3 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 EN 61326-1 : 2013 & EN 61326-2-3 : 2013 & EN6100-3-2:2006+A1:2009
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 A 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.

4.3.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Test System	PHF555	HAEFELY	080419-11	13-Sep-15
Harmonic & Flicker Test System	DPA 550N	EM Test AG	V1033107193	13-Sep-15

4.3.2 Environmental Conditions

Temperature (°C)	Humidity (%R.H.)	Pressure (kPa)

◆ Setup Figure

N/A

4.3.3 Test data

Test Date :

*It does not need to test this requirement,
because the input power of the EUT is supplied by powered battery.

4.4 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 61326-1 : 2013 & EN 61326-2-3 : 2013 & EN 61000-3-3:2013

4.4.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Test System	PHF555	HAEFELY	080419-11	13-Sep-15
Harmonic & Flicker Test System	DPA 550N	EM Test AG	V1033107193	13-Sep-15

4.4.2 Environmental Conditions

Temperature (°C)	Humidity (%R.H.)	Pressure (kPa)

◆ Setup Figure

N/A

4.4.3 Test data sheet

Test Date :

*It does not need to test this requirement,
because the input power of the EUT is supplied by powered battery.

5. Electromagnetic Susceptibility Test

5.1 Electrostatic Discharge test

5.1.1 Test Standard

- Standard : EN 61326-1 : 2013 & EN 61326-2-3 : 2013 & EN 61000-4-2: 2009
- Performance appraisal standard : B
- Energy storage capacitance : 150 pF (± 10%)
- Discharge resistance : 330Ω (± 10 %)
- Charging resistance : 50 MΩ (50 MΩ ~100 MΩ)
- Tolerance of the output voltage indication : ± 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	NSG 438	Schaffner	601	26-Jan-16

5.1.3 Environmental Conditions

Test mode 1

Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
22.8	51.1	100.5

Test mode 2

Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
21.1	39.1	100.4

5.1.4 Test data

Test Date 29-Apr-15 Test mode 1

Point	Test Method	Test Voltage (+/-)	Criterion	Result	Remark
HCP	Horzontal 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	
7	Air discharge	2,4,8 kV	B	A	
Remark	Line color : RED-Air BLUE-Contact				

◆ Setup Figure Test mode 1

Test Date 29-Apr-15 Test mode 2

Point	Test Method	Test Voltage (+/-)	Criterion	Result	Remark
HCP	Horzontal 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	
7	Air discharge	2,4,8 kV	B	A	
Remark	Line color : RED-Air BLUE-Contact				

◆ Setup Figure Test mode 2

◆ Test Point

Test mode 1

1 2 3 4

5

6

7

1. The front top cover part
2. The front LED part
3. The front power button part
4. The front center cover part
5. The rear center cover part
6. The left handle cover part
7. The right handle cover part

HCP: Indirect Discharge

VCP : Indirect Discharge

◆ Test Point

Test mode 2

1 2 3 4

5

6

7

1. The front top cover part
2. The front LED part
3. The front power button part
4. The front center cover part
5. The micro usb part
6. The left handle cover part
7. The right handle cover part

HCP: Indirect Discharge

VCP : Indirect Discharge

5.2 Radiated Electromagnetic Fields test

5.2.1 Test Standard

- Standard : EN 61326-1 : 2013 & EN 61326-2-3 : 2013 &
  EN 61000-4-3:2006+A2:2010
- Criterion standard : A
- Frequency Range and Test Level : 80 MHz ~ 2 GHz and 3 V/m
  (Exclusion band :1 GHz to 1.4 GHz)
- Frequency Range and Test Level : 2 GHz ~ 2.7 GHz and 1 V/m
- Test Angle : 0°, 90°, 180°, 270°
- Sweep Capability : 1.5×10^{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

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	13-Jan-16
Amplifier	60S1G3M1	Amplifier Research	311684	13-Jan-16
Signal Generator	8648C	HP	3623A03549	13-Jan-16
Power Sensor	URV5-Z2	Rohde & Schwarz	100592	13-Jan-16
Power Meter	NRVD	Rohde & Schwarz	DE25524	13-Jan-16
System Interface	SI-300-2	TDK	41610	N/A

5.2.3 Environmental Conditions

Test mode 1

Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
22.7	49.1	100.6

Test mode 2

Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
21.8	40.3	101.1

5.2.4 Test data

Test Date : 28-Apr-15 Test mode 1

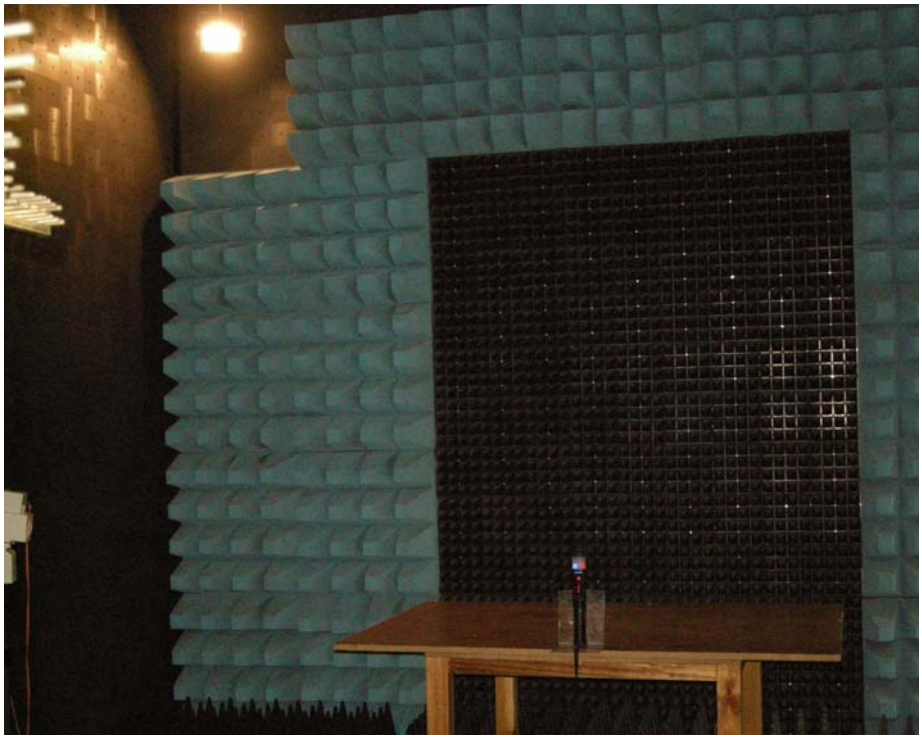
Range of Frequency (MHz)	Position	Polarity	Electromagnetic Intensity (V/m)	Criterion	Result
80 MHz ~ 1 GHz 1.4 GHz ~ 2 GHz	Front side	H	3	A	A
		V	3	A	A
	Right side	H	3	A	A
		V	3	A	A
	Left side	H	3	A	A
		V	3	A	A
	Rear side	H	3	A	A
		V	3	A	A
2 GHz ~ 2.7 GHz	Front side	H	1	A	A
		V	1	A	A
	Right side	H	1	A	A
		V	1	A	A
	Left side	H	1	A	A
		V	1	A	A
	Rear side	H	1	A	A
		V	1	A	A
Reference		H : Horizontality, V : Verticality Exculsion band : 1 GHz to 1.4 GHz			

Test Date : 30-Apr-15 Test mode 2

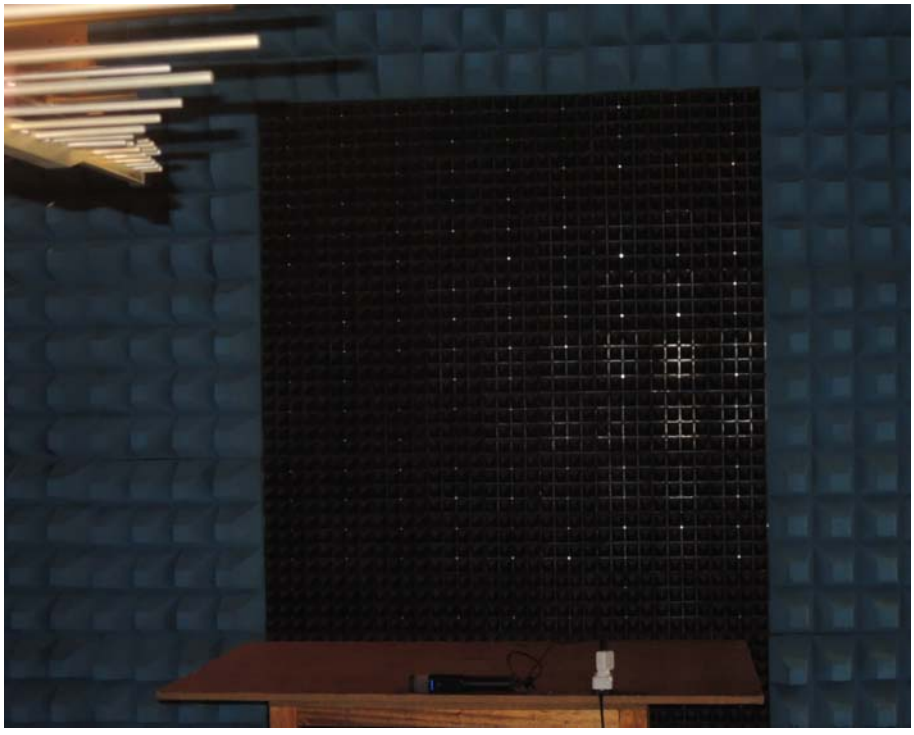
Range of Frequency (MHz)	Position	Polarity	Electromagnetic Intensity (V/m)	Criterion	Result
80 MHz ~ 1 GHz 1.4 GHz ~ 2 GHz	Front side	H	3	A	A
		V	3	A	A
	Right side	H	3	A	A
		V	3	A	A
	Left side	H	3	A	A
		V	3	A	A
	Rear side	H	3	A	A
		V	3	A	A
2 GHz ~ 2.7 GHz	Front side	H	1	A	A
		V	1	A	A
	Right side	H	1	A	A
		V	1	A	A
	Left side	H	1	A	A
		V	1	A	A
	Rear side	H	1	A	A
		V	1	A	A
Reference		H : Horizontality, V : Verticality Exculsion band : 1 GHz to 1.4 GHz			

◆ Setup Figure

Test mode 1



Test mode 2



5.3 Electrical Fast Transients/Burst test

5.3.1 Test Standard

- Standard : EN 61326-1 : 2013 & EN 61326-2-3 : 2013 & EN 61000-4-4:2012
- Performance appraisal standard : B
- Test voltage : AC & DC power : ± 1 kV , other port : ± 0.5 kV
- 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	13-Jan-16

5.3.3 Environmental Conditions

Test mode 2

Temperature (°C)	Relative Humidity (% R.H.)	Pressure (kPa)
22.4	46.1	100.4

5.3.4 Test data

Test Date : 29-Apr-15 Test mode 2

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

◆ Setup Figure Test mode 2

5.4 Surge Test

5.4.1 Test Standard

- Standard : EN 61326-1 : 2013 & EN 61326-2-3 : 2013 & EN 61000-4-5:2006
- Performance appraisal standard : B
- Test voltage AC : line-earth : ± 1 kV, line-line : ± 0.5 kV,
  Telecom. & signal : Line-earth : ± 1 kV, DC port : ± 0.5 kV
- Polarity : Positive(+), Negative(-)
- Repetition rate:max 60 s.
- 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	13-Jan-16

5.4.3 Environmental Conditions

Test mode 2

Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
21.8	42.2	100.5

5.4.4 Test data

Test Date : 29-Apr-15 Test mode 2

Tested Point		Test Voltage	Criterion	Result	Remark
Input AC	L1 - L2	± 0.5 kV	B	A	
Reference		L1: Line, L2: Neutral, PE: Protective earth (Ground)			

◆ Setup Figure Test mode 2

5.5 Conducted Disturbance test

5.5.1 Test Standard

- Standard : EN 61326-1 : 2013 & EN 61326-2-3 : 2013 & EN 61000-4-6:2009
- Performance appraisal standard : A
- Frequency Range : 0.15 MHz ~ 80 MHz
- Field Strength : 3.0 V
- Modulation : AM 80 % with 1 kHz sine wave
- Dwell time : 3 s
- Sweep Capability : 1.5×10^{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	13-Jan-16
Attenuator	ATT6/75	EM TEST	1001-43	13-Jan-16
Coupling/Decoupling Network	CDN M016	Teseq GmbH	27445	13-Jan-16

5.5.3 Environmental Conditions

Test mode 2

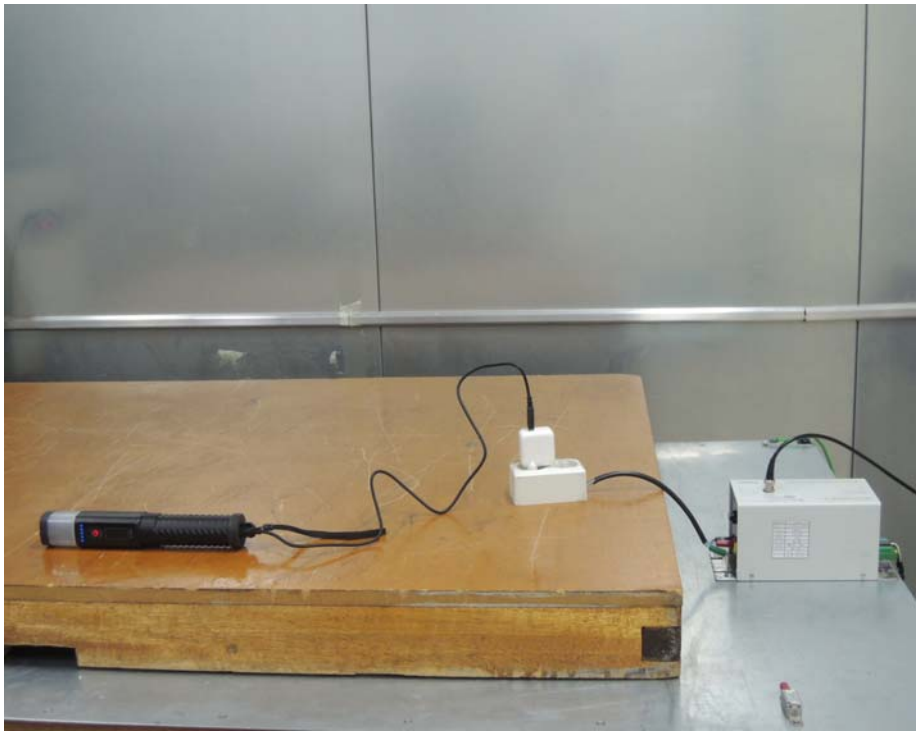
Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
23	41.1	100.5

5.5.4 Test data

Test Date : 29-Apr-15 Test mode 2

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

◆ Setup Figure Test mode 2



5.6 Power Frequency Magnetic Field Immunity

5.6.1 Test Standard

- Standard : EN 61326-1 : 2013 & EN 61326-2-3 : 2013 & EN 61000-4-8:2010
- Performance appraisal standard and test level

  3 A/m : A
- Axis of Orientation : X, Y Z axis

5.6.2 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Magnetic field test system	MFS 100	Haefely	154006	-

5.6.3 Environmental Conditions

Test mode 1

Temperature (°C)	Relative Humidity (% R.H.)	Pressure (kPa)
21	41	101.1

Test mode 2

Temperature (°C)	Relative Humidity (% R.H.)	Pressure (kPa)
22.2	43.4	101.0

5.6.4 Test data

Test Date : 28-Apr-15 Test mode 1

Test Point	Freq. range [Hz]	Axis	Test Level [A/m]	Criterion	Result
Enclosure	(50/60) Hz	X	3	A	A
Enclosure	(50/60) Hz	Y	3	A	A
Enclosure	(50/60) Hz	Z	3	A	A
Remark					

Test Date : 30-Apr-15 Test mode 2

Test Point	Freq. range [Hz]	Axis	Test Level [A/m]	Criterion	Result
Enclosure	(50/60) Hz	X	3	A	A
Enclosure	(50/60) Hz	Y	3	A	A
Enclosure	(50/60) Hz	Z	3	A	A
Remark					

◆ Setup Figure

Test mode 1

Test mode 2

5.7 Voltage Dips and Interruptions test

5.7.1 Test Standard

- Standard : EN 61326-1 : 2013 & EN 61326-2-3 : 2013 & EN61000-4-11:2004
- Performance appraisal standard and test level
- Voltage Reduction : 0.5 Cycle to 100 % : B , 1 Cycle to 100 % : B , (25/30) Cycles to 30 % : C, (250/300) Cycles to 100 % : C
- Number of pulses : 3 at each level
- Recovery time between pulses : 10 s

5.7.2 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Compact Test System	ECOMPACT 4	Haefely Test AG.Basel	153528	13-Jan-16
Motorized Variac	PEV 1610	Haefely Test AG.Basel	154005	N/A

5.7.3 Environmental Conditions

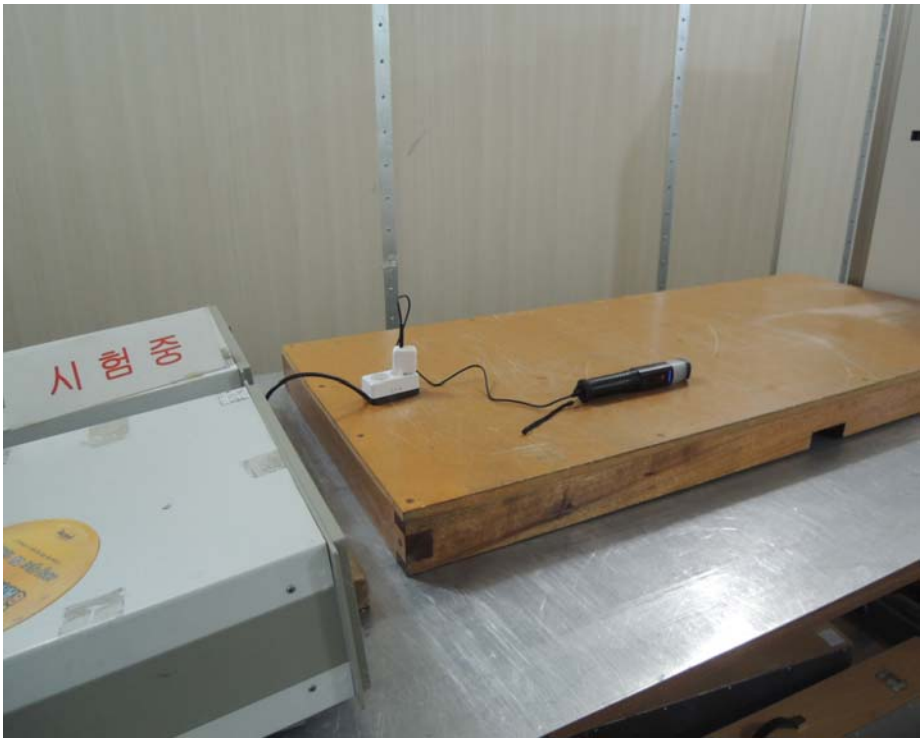
Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
22.6	44.9	100.4

5.7.4 Test data

Test Date : 29-Apr-15 Test mode 2

Voltage Reduction	Duration Cycles	Criterion	Result	Remark
100 %	0.5	B	A	
100 %	1	B	A	
30 %	25/30	C	A	
100 %	250/300	C	B	System reset
Remark				

◆ Setup Figure Test mode 2



6. EUT Photographs

[Front]

[Rear]

[Inside]