

TEST REPORT ELECTROMAGNETIC COMPATIBILITY (EMC)	
Report Reference No.....:	250817
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Date of issue.....:	2014-03-07
Report issued by	Nemko Shanghai Ltd Shenzhen Branch
Address	Unit CD, Floor 10, Tower 2, Kefa Road 8#, Hi-Technology Park, Nanshan District, Shenzhen, China
Testing procedure.....:	Supervised testing at external laboratory
Testing location/ address	See page 8
Applicant's name.....:	APEX TECHNOLOGIES LIMITED
Address	Room A 8/F., Excelsior Building ,68-76 Sha Tsui Road, Tsuen Wan N.T. Hong Kong
Test specification:	
Standards for Emission	EN 60601-1-2:2007
Standards for Immunity	EN 60601-1-2:2007
Arrival of EUT	2014-02-26
Test data of EUT	2014-02-26 to 2014-03-03
Test item description	Bio-Well Impulse Analyzer
Trade Mark	N/A
Manufacturer	APEX TECHNOLOGIES LIMITED
Address	Room A 8/F., Excelsior Building ,68-76 Sha Tsui Road, Tsuen Wan N.T. Hong Kong
Type.....	Bio-Well 2013
Serial number	N/A

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1 Summary Emission

1.1 Standards

Generic standard	/
Product or product family standard	EN 60601-1-2:2007
Product category	Group 1

1.2 Results

Environmental phenomena	Port / Test module	Basic standard and test setup	Limit class	Result
Conducted emission	Input AC power ports(PC AC port)	CISPR 16	Group 1 classB EN 55011:2009+A1:2010	Pass
Radiated emission	Enclosure 30MHz to 1GHz	CISPR 16	Group 1 classB EN 55011:2009+A1:2010	Pass
Harmonic current emission	AC input power ports	EN 61000-3-2	Class A	N/A*
Voltage fluctuations and flicker	AC input power ports	EN 61000-3-3	Clause 5 of EN61000-3-3	N/A*

*) EUT have No AC input port , so the test is not applicable.

2 Summary Immunity

2.1 Standards

Generic standard	As below
Product or product family standard	EN 60601-1-2:2007
Product category:	/
Performance criteria:	see table below

2.2 Results

Environmental phenomena	Port / Test module	Generic standard and test setup	Performance criteria	Result
Electrostatic discharge, ESD	Enclosure	EN 61000-4-2:2009	See 2.3	Pass
Radiated immunity	Enclosure 80 – 2500 MHz	EN 61000-4-3:2006+A1:2008+A2:2010	See 2.3	Pass
Electrical Fast Transients/Bursts Immunity	Input AC power ports (PC AC in port)	EN 61000-4-4:2012	See 2.3	Pass
Electrical Fast Transients/Bursts Immunity	DC port	EN 61000-4-4:2012	See 2.3	N/A**
Surge Immunity	Input AC power ports	EN 61000-4-5:2006	See 2.3	N/A*
Conducted Immunity	Input AC power ports	EN 61000-4-6:2009	See 2.3	N/A*
Conducted Immunity	DC port	EN 61000-4-6:2009	See 2.3	Pass
Voltage dips and interruptions Immunity	Input AC power ports	EN 61000-4-11:2004	See 2.3	N/A*
Power frequency magnetic fields	Enclosure port	EN 61000-4-8:2010	See 2.3	Pass

*) EUT have No AC input port , so the test is not applicable.

**) DC line is shorter than 3m ,so the test is not applicable

2.3 Performance criteria according to product or product family standards

The following DEGRADATIONS associated with ESSENTIAL PERFORMANCE and safety shall not be allowed :

Compliance criteria for EN 60601-1-2

- ① Component failures
- ② Changes in programmable parameters
- ③ Reset to factory defaults (manufacturer's presets)
- ④ Change of operating mode
- ⑤ False alarms
- ⑥ Cessation or interruption of any intended operation, even if accompanied by an alarm
- ⑦ Initiation of any unintended operation, including unintended or uncontrolled motion, even if accompanied by an alarm
- ⑧ Error of a displayed numerical value sufficiently large to affect diagnosis or treatment
- ⑨ Noise on a waveform in which the noise is indistinguishable from physiologically-produced signals or the noise interferes with interpretation of physiologically-produced signals
- ⑩ Artifact or distortion in an image in which the artifact is indistinguishable from physiologically-produced signals or the distortion interferes with interpretation of physiologically-produced signals
- ⑪ Failure of automatic diagnosis or treatment equipment and systems to diagnose or treat, even if accompanied by an alarm.

3 General information

3.1 Description of Equipment under test (EUT)

Type of equipment Table top **Group 1 class B**
 Floor standing
 Combination

The equipment under test (EUT) is Bio-Well Impulse Analyzer

And model name is Bio-Well 2013

Spec: 5VDC USB in

3.2 Measurement Uncertainty

Conducted Emission :	0.15~30MHz	3.29dB
Radiated Emission:	30MHz~1000MHz	4.22dB
Magnetic Field Emission:	9KHz ~ 30MHz	3.51dB

3.3 Test Mode (TM)

TM 1) 230V AC 50Hz Working mode

AE equipment:

PC :
Trade mark:DELL
Model No.: 380MT

Keyboard:
Trade mark:LiSheng
Model No.:KB-101A

Mouse:
Trade mark: Lenovo
Model No.:M028UOL

Monitor:
Trade mark: Dell
Model No.: U3011

3.4 Climatic conditions

parameter	admissible range	actual range	
Ambient temperature	15 °C - 35 °C	24°C -26°C	O.K.
Relative humidity	30 % - 60 %	48%-55%	O.K.
Atmospheric pressure	86-106kPa	100.1kPa – 100.2kPa	O.K.

3.5 Testing location

CENTRE TESTING INTERNATIONAL CORPORATION

Build C, Hongwei Industrial Zone, Baoan 70 District, Shenzhen, China – ELA 503

4 Measurement of conducted emission

4.1 Standards

Product or product family standard	EN 55011:2009+A1:2010
Limit class	Class B
Basic standard	CISPR 16
Date of testing	2014-03-03

4.2 Measurement equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	Receiver	07/06/2014	ESCI	100009	R&S
<input checked="" type="checkbox"/>	LISN	07/06/2014	ENV216	100098	R&S
<input checked="" type="checkbox"/>	LISN	07/06/2014	NNLK8121	8121-529	Schwarzbeck

4.3 Test set-up

The test set-up was realized in a shielded chamber according to the above-mentioned standard. If more details are necessary, e.g. because of wiring or auxiliary equipment, annex B with a photo or a rough figure of the test set-up is attached.

The test has been performed as following:

- 1) Preview test; Peak- and Average-Detector; measuring time 1 ms; frequency step 4 kHz; all lines;
- 2) Find frequencies with maximum emission:
Acceptance-analysis: Limit minus 10dB
Peak-reduction: 10Peaks frequency range 150 kHz - 30 MHz
- 3) Final test; Quasi-Peak and Average-Detector; measuring time 1 s; at frequencies from step 2). IF Bandwidth: 9kHz
- 4) If there are more than 10 peaks within the 10 dB margin a manual test with all settings is necessary to find the maximum readings.

The EUT was placed on the top of an insulating table 0.8 meters above the ground at a shielded room. The EUT was placed 0.4 meters from the conducting wall of shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). The LISN provide 50Ohm/50μH of coupling impedance for the measuring instrument. Both lines of the power mains connected to the EUT were checked for maximum conducted interference. The frequency range from 150kHz to 30MHz was searched. The worst-case emissions are reported.

4.4 Test result

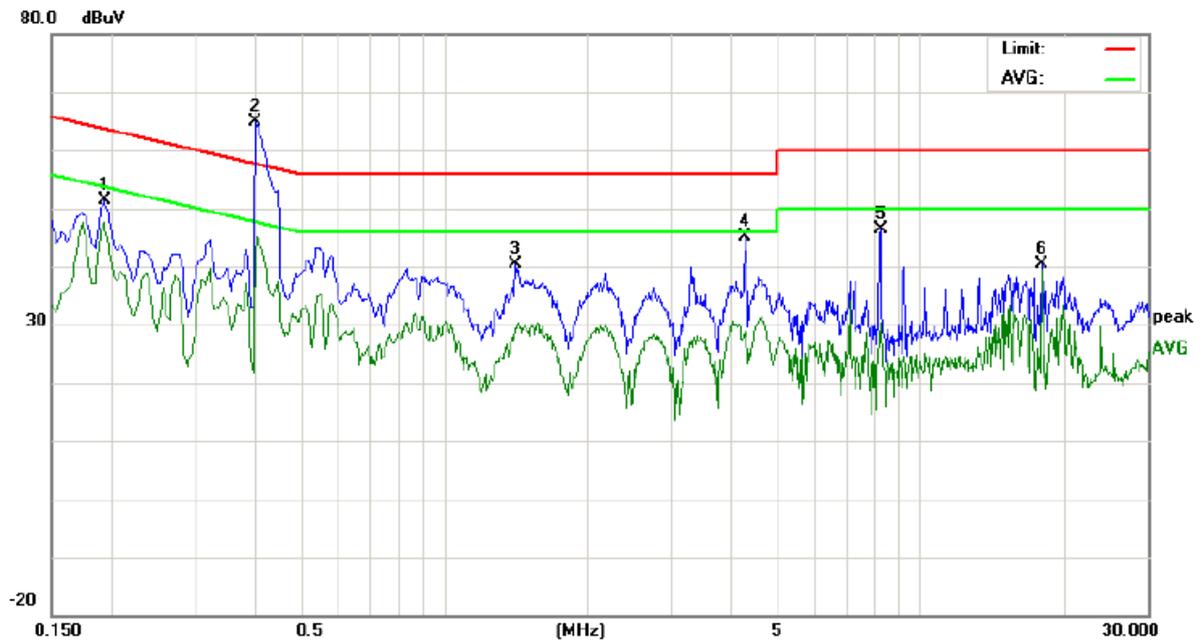
Power ports

AC input of PC

Mode	Diagram	Remarks	Result
TM 1	Diagram 001	Line L	Pass
	Diagram 002	Line N	Pass

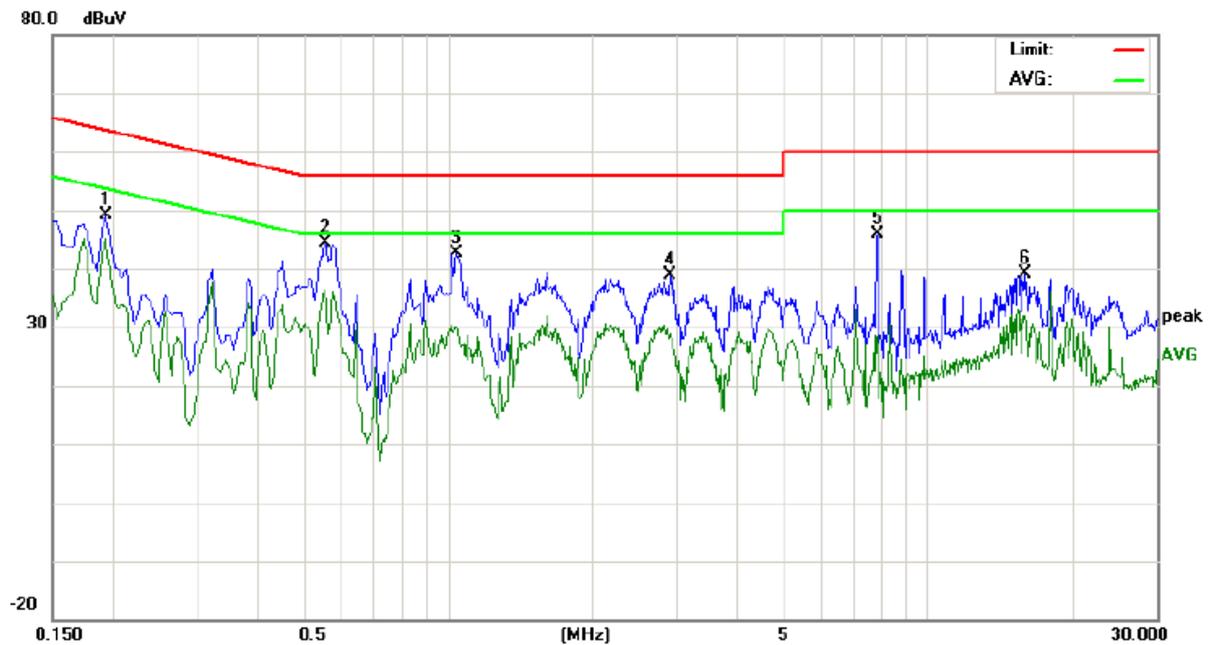
4.5 Diagrams

4.5.1 Diagram 001



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG	
1	0.1940	41.47		37.85	9.79	51.26		47.64	63.86	53.86	-12.60	-6.22	P
2	0.4020	55.18	45.22	22.95	9.80	64.98	55.02	32.75	57.81	47.81	-2.79	-15.06	P
3	1.4180	30.51		19.60	9.84	40.35		29.44	56.00	46.00	-15.65	-16.56	P
4	4.2819	35.10		18.98	9.98	45.08		28.96	56.00	46.00	-10.92	-17.04	P
5	8.2420	36.41		19.52	10.00	46.41		29.52	60.00	50.00	-13.59	-20.48	P
6	18.0020	30.18		29.12	10.28	40.46		39.40	60.00	50.00	-19.54	-10.60	P

4.5.2 Diagram 002



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG	
1	0.1940	39.31		35.37	9.79	49.10		45.16	63.86	53.86	-14.76	-8.70	P
2	0.5580	34.68		26.00	9.80	44.48		35.80	56.00	46.00	-11.52	-10.20	P
3	1.0460	32.91		20.31	9.80	42.71		30.11	56.00	46.00	-13.29	-15.89	P
4	2.9140	28.95		18.84	9.93	38.88		28.77	56.00	46.00	-17.12	-17.23	P
5	7.8540	35.87		18.69	10.00	45.87		28.69	60.00	50.00	-14.13	-21.31	P
6	15.8860	29.05		21.27	10.15	39.20		31.42	60.00	50.00	-20.80	-18.58	P

5 Measurement of radiated emission

5.1 Standards

Product or product family standard	EN 55011:2009+A1:2010
Limit class	Class B
Basic standard	CISPR 16
Date of testing	2014-02-26

5.2 Measurement equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	Spectrum Analyzer	07/06/2014	E4440A	MY46185649	Agilent
<input checked="" type="checkbox"/>	Biconilog Antenna	07/06/2014	3142C	00044562	ETS-LINGREN
<input checked="" type="checkbox"/>	Multi device Controller	07/06/2014	2090	00057230	ETS-LINGREN
<input checked="" type="checkbox"/>	Horn Antenna	07/06/2014	3117	00057407	ETS-LINGREN
<input checked="" type="checkbox"/>	Microwave Preamplifier	07/06/2014	8449B	3008A02425	Agilent

5.3 Test set-up

The EUT has been tested according to the above-mentioned standard, as following:
The EUT was placed on the top of an insulating table 0.8 meters above the ground at 966SAC. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The antenna is a broadband antenna, and its height is varied from 1 to 4 meter above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to the heights from 1 to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detector Function and Specified Bandwidth with Maximum Hold Mode.

If more details are necessary, e.g. because of wiring or auxiliary equipment, annex B with a photo or a rough figure of the test set-up is attached.

The test has been performed as following:

- 1) Preview test; Peak; IF BW=100kHz, VBW=300kHz, Antenna: from 1 to 4m Turntable 0-360deg
- 2) Find frequencies with maximum emission: Acceptance-analysis: Limit minus 10 dB
Peak-reduction: 10Peaks frequency range 30 MHz - 1000 MHz
- 3) Final test; Quasi-Peak; measuring time 1 s; at frequencies from step 2); Search maximum: vary turntable and antenna position to find the maximum readings
- 4) If there are more than 10 peaks within the 10 dB margin a manual test with all settings is necessary to find the maximum readings.

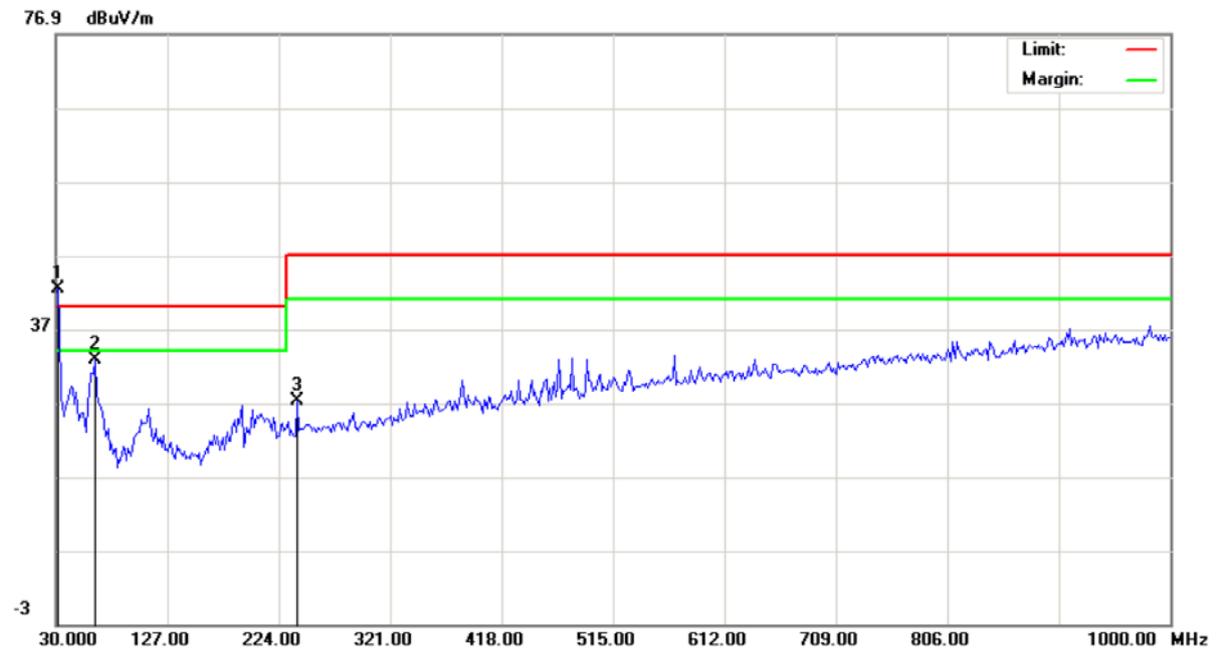
The EUT 's internal freq is lower than 400MHz, RE test above 1GHz is not necessary .

5.4 Test result

Mode	Diagram	Remarks	Result
TM1	Diagram 003	V	Pass
	Diagram 004	H	Pass

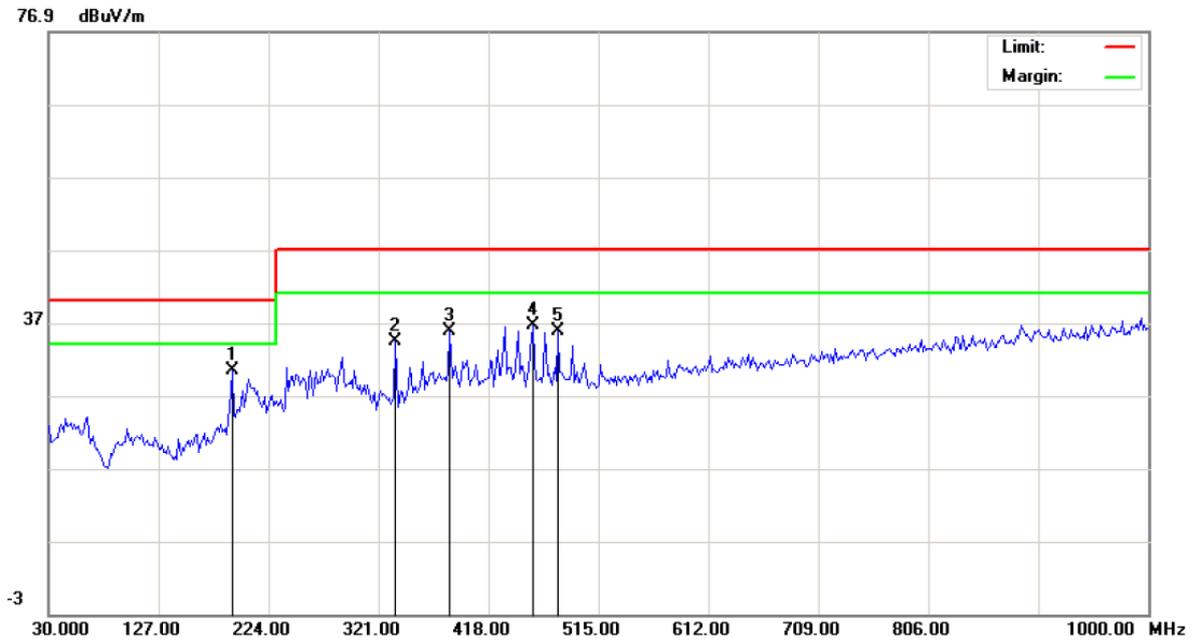
5.5 Diagrams and tables

5.5.1 Diagram 003



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		P/F
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG	
1	31.6167	29.33	22.00		13.01	42.34	35.01	40.00		-4.99		P	
2	63.9500	19.68			13.07	32.75		40.00		-7.25		P	
3	240.1667	12.52			14.78	27.30		47.00		-19.70		P	

5.5.2 Diagram 004



No.	Freq. MHz	Reading_Level (dBuV)			Correct Factor dB	Measurement (dBuV/m)			Limit (dBuV/m)		Margin (dB)		P/F	
		Peak	QP	AVG		peak	QP	AVG	QP	AVG	QP	AVG		
1	191.6667	17.02			13.35	30.37			40.00			-9.63		P
2	335.5500	17.24			17.18	34.42			47.00			-12.58		P
3	384.0500	17.54			18.18	35.72			47.00			-11.28		P
4	456.8000	17.36			19.26	36.62			47.00			-10.38		P
5	479.4333	16.09			19.81	35.90			47.00			-11.10		P

6 Electrostatic discharge, ESD

6.1 Standard

Basic standard	EN 61000-4-2:2009
Date of testing	2014-02-26
Performance criteria:	See 2.3

6.2 Measurement equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	ESD Simulator	04/05/2014	NSG437	156	TESEQ

6.3 Test set-up

See annex B

A ground reference plane was provided on the floor of the test site. It was a metallic sheet (copper or aluminum) of 0.25 mm, minimum thickness; other metallic may be used but they shall have at least 0.65 mm thickness.

The minimum size of the ground reference plane is 1 m x 1 m, the exact size depending on the dimensions of the EUT. It was connected to the protective grounding system. The EUT was arranged and connected according to its functional requirements. A distance of 1m minimum was provided between the EUT and the wall of the lab and any other metallic structure.

Where the EUT is installed on a metal table, the table was connected to the reference plane via a cable with a 470k ohm resistor located at each end, to prevent a build-up of charge. The test setup was consist a wooden table, 0.8m high, standing on the ground reference plane. A HCP, 1.6 m x 0.8 m, was placed on the table. The EUT and cables was isolated from the HCP by an insulating support 0.5 mm thick. The VCP size, 0.5 m x 0.5 m.

The EUT shall be exposed to at least 200 discharges , 100 each at negative and positive polarity ,at a min of four test points (a min of 50 discharges at each point),One of the test points shall be subjected to at least 50 indirect discharges(contact) to the centre of the front edge of the hori coupling plane,The remaining three points shall each receive at least 50 direct contact discharges. If no direct contact test points are available,then at least 200 indirect discharges shall be applied in the indirect mode.Test shall be performed at a max repetition of one discharge per second.

On those parts of the EUT where it is not possible to perform contact discharge testing ,the equipment should be investigated to identify user accessible points where breakdown may occur; A min of 10 single air discharges shall be applied to the selected test point for each such area.

Direct application of discharges to the EUT:

Contact discharge was applied only to conductive surfaces of the EUT.

Air discharges were applied only to non-conductive surfaces of the EUT.

During the test, it was performed with single discharges. For the single discharge time between successive single discharges will be keep longer 1 second. It was at least ten single discharges with positive and negative at the same selected point.

Indirect application of discharges to the EUT:

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single discharges with positive and negative at the same selected point.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge. It was at least ten single

discharges with positive and negative at the same selected point.

In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

In the case of painted surface covering a conducting substrate, the following procedure shall be adopted : - If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate. - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge; The contact discharge test shall not be applied to such surfaces.

In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT . After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.

6.4 Test results

Mode	Table	Remarks	Result
TM1	005	Air discharge: $\pm 2,4,8\text{KV}$ Contact discharge: $\pm 2,4,6\text{KV}$	Pass

6.5 Tables

6.5.1 Table 005

Location	Discharge Method	Test Voltage	Amount of test points	Result
HCP [Horizontal Coupling Plane]	Indirect Contact	$\pm 2,4,6\text{kV}$	4	Pass
VCP [Vertical Coupling Plane]	Indirect Contact	$\pm 2,4,6\text{kV}$	4	Pass
Nonconductive Enclosure(gaps, buttons)	Air	$\pm 2,4,8\text{kV}$	8	Pass
Conductive Enclosure(port, screw, metal enclosure)	Contact	$\pm 2,4,6\text{kV}$	8	Pass

Comment/Performance

During the discharges, not found of any distinguished change.

Result

Compliant

7 Radiated Immunity

7.1 Standard

Basic standard	EN 61000-4-3:2006+A1:2008+A2:2010
Date of testing	2014-02-26
Performance criteria:	See 2.3

7.2 Measurement equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	3M Chamber & Accessory Equipment	07/09/2014	FACT-3	3510	ETS-LINDGREN
<input checked="" type="checkbox"/>	ESG Vector signal generators	03/29/2014	E4438C	MY45095744	Agilent
<input checked="" type="checkbox"/>	Power Amplifier	07/06/2014	150W1000	0322288	AR
<input checked="" type="checkbox"/>	Biconilog Antenna	07/06/2014	3142C	00044562	ETS-LINGREN
<input checked="" type="checkbox"/>	Horn Antenna	06/25/2014	ATH800M5GA	0342530	AR

7.3 Test set-up

See annex B

The testing was performed in a fully anechoic chamber.

The EUT and load, which are placed on a table that is 0.8 meter above ground, The transmit antenna was located at a distance of 3 meters from the EUT and 1.5m from the ground.

The frequency range is swept from 80 MHz to 1000MHz with the signal 80% amplitude modulated with a 1 kHz sine wave.

The rate of sweep did not exceed 1.5×10^{-3} decade/s.

The step size was 1% of fundamental.

The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.

The field strength level was 3V/m.

The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

For monitor the EUT ,CCD is used in the chamber.

7.4 Test results

Mode	Table	Remarks	Result
TM1	006	1. Field Strength :3 V/m (r.m.s unmodulated) 2. Radiated Signal: AM 80% Modulated with 1kHz 3. Scanning Frequency :80MHz - 2500MHz 4. Dwell Time: 1 Seconds 5. Frequency steps : 1% 6. Enclosure port	Pass

Remark : The EUT is not intend to control a physiological parameter.

7.5 Table

7.5.1 Table 006

Frequency Range (MHz)	80-2500MHz	
Field Strength (V/m)	3V/m 1kHz 80%AM	
Steps (%)	1%	
Dwell time	3 s	
Polarization	Horizontal	Vertical
Front	Pass	Pass
Rear	Pass	Pass
Left	Pass	Pass
Right	Pass	Pass

Comment/Performance

During the discharges, not found of any distinguished change.

Result

Compliant

8 Electrical Fast Transients/Bursts Immunity

8.1 Standard

Basic standard	EN 61000-4-4:2012
Date of testing	2014-02-26
Performance criteria:	See 2.3

8.2 Measurement equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	Compact Generator	07/06/2014	UCS500M/6B	V0603101093	EM-TEST

8.3 Test set-up

See annex B

The EUT is placed on a table that is 0.8meter height. A ground reference plane is placed on the table, and uses a 0.1m insulation between the EUT and ground reference plane.

The minimum area of the ground reference plane is 1m*1m, and projected beyond the EUT by at least 0.1m on all sides.

The minimum distance between the EUT and all other conductive structures, except the ground reference plane is more than 0.5 m.

Test on power supply ports:

The duration time of each test sequential was 1 minute.

The length of the signal and power lines between the coupling device and the EUT is 0.5m.

8.4 Test results

Mode	Table	Remarks	Result
TM1	007	±2KV Tr/Th: 5/50ns Repetition frequency:5kHz Test to input a.c. power port (PC AC input port) ±1KV Tr/Th: 5/50ns Repetition frequency:5kHz Test to Dc power output port(N/A)	Pass

8.5 Table

8.5.1 Table 007

Injected Line	Voltage (kV)	Duration time(s)	Injected Method	Result
L,N,PE	+2	60	Direct	Pass
	-2	60	Direct	Pass
DC ouput line	+1	60	Clamp	N/A*
	-1	60	Clamp	N/A*

*: The DC USB line is shorter than 3m, so DC line EFT test is not applicable

Comment/Performance

During the discharges, not found of any distinguished change.

Result

Compliant

9 Conducted Immunity

9.1 Standard

Basic standard	EN 61000-4-6:2007
Date of testing	2014-02-26
Performance criteria:	See 2.3

9.2 Measurement equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	Signal Generator	03/29/2014	2023B	202307/883	IFR
<input checked="" type="checkbox"/>	Power Amplifier	03/29/2014	75A 250A	320297	AR
<input checked="" type="checkbox"/>	Attenuator	07/06/2014	ATT6/75	0320837	EM-Test
<input checked="" type="checkbox"/>	CDN	07/06/2014	CDN M2/M3	0204-01	EM-Test
<input checked="" type="checkbox"/>	CDN	07/06/2014	CDN L801M5	2884	LUTHI
<input checked="" type="checkbox"/>	EM-Clamp	07/06/2014	EM101	35770	EM-Test

9.3 Test set-up

See annex B

The equipment to be tested is placed on an insulating support of 0.1m height above a ground reference plane, all cable exiting the EUT shall be supported at a height of at least 30mm above the ground reference plane. The test is performed with the generator contacted to each CDN in turn. The frequency range is swept from 150kHz to 80MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave. The distance between EUT to CDN is 0.1 to 0.3m. Only applicable to ports interfacing with cables whose total length according to the manufacturer's specification may exceed 1 m.

9.4 Test results

Mode	Table	Remarks	Result
TM1	008	1. Field Strength :3V(unmodulated,r.m.s) 2. Test Signal: AM 80% Modulated with 1kHz 3. Scanning Frequency :0.15MHz – 80MHz 4. Source impedance 150 Ω	Pass

9.5 Table

9.5.1 Table 008

Frequency Range (MHz)	Injected Position	Injection mode	Strength	Result
0.15MHz ~ 80MHz	USB Line	Clamp	3V(r.m.s, Unmodulated)	Pass
Dwell time:1s; Steps: 1%				

Comment/Performance

During the discharges, not found of any distinguished change.

Result

Compliant

10 50/60 Hz Magnetic Field

10.1 Standard

Basic standard	EN 61000-4-8:2010
Date of testing	2014-02-26
Performance criteria:	See 2.3

10.2 Measurement equipment

	Equipment	Calibration Due	Type	Serial No.	Manufacturer
<input checked="" type="checkbox"/>	Compact Generator	07/06/2014	UCS500M/6B	V0603101093	EM-Test
<input checked="" type="checkbox"/>	Induction Coil	03/29/2014	MS100	0106-02	EM-Test
<input checked="" type="checkbox"/>	Current Transformer	03/29/2014	MC2630	0106-02	EM-Test

10.3 Test set-up

See annex B

The induction coil was adequately dimensioned to surround the EUT (three orthogonal positions).

For the standing-floor equipment, the induction coil of standard dimensions for testing small equipment had a square (or circular) form with 1 m side (or diameter).

The EUT was placed on the ground reference plane with the interposition of a 0.1 m thickness insulating support. All cables was exposed to the magnetic field for 1 m of their length.

The induction coil was rotated by 90° in order to expose the EUT to the test field with different orientations. A signal level of 3 A / m 50 Hz and 60 Hz magnetic field was applied to EUT.

10.4 Test results

Mode	Table	Remarks	Result
TM1	009	50 Hz / 60 Hz; 3A/m; 5min/coil	Pass

10.5 Table

10.5.1 Table 009

Frequency Type	Polarity (X/Y/Z)	Current (A / m)	Inject Time	Result (Pass/Fail)
Power	X	3	5min	Pass
Power	Y	3	5min	Pass
Power	Z	3	5min	Pass

Comment/Performance

During the discharges, not found of any distinguished change.

Result

Compliant

Annex A

EUT / technical data

Port	Label	Description		
Enclosure	GH	Plastic		
Mains input AC	NAC.E	N.A		
Mains input DC	NDC.E	5VDC IN		
Mains output AC	NAC.E	N.A		
Mains output DC	NAC.A	N.A		
Process measurement and control ports	PMS.E/A	N.A		
I/O and communication ports	SD.E/A	N.A		
Protective earth connection	EA	N.A		
Interface Cables	Length	Shielded	Type	Special
USB line is shorter than 3m		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

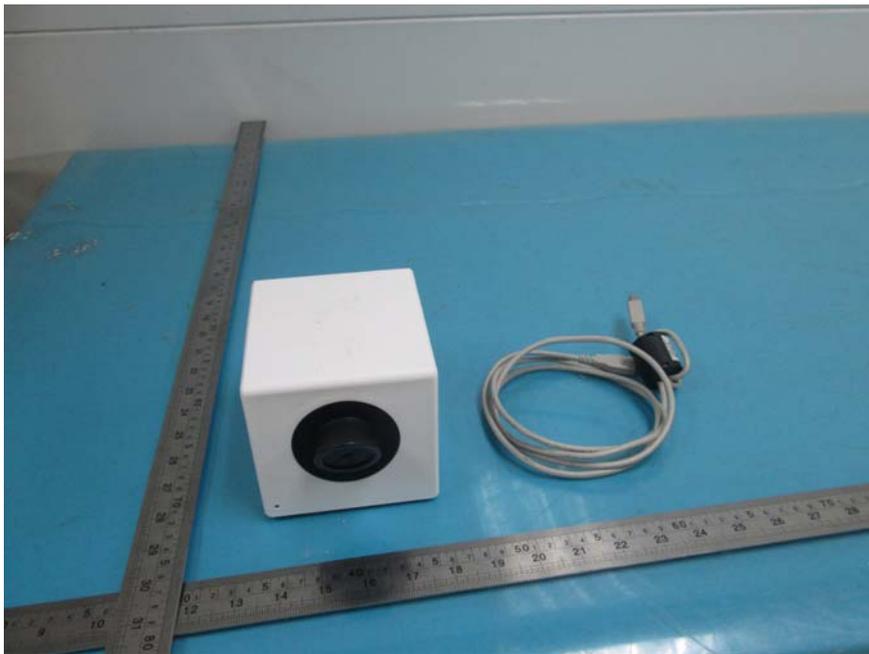


Figure A-1 External photo



Figure A-2 External photo

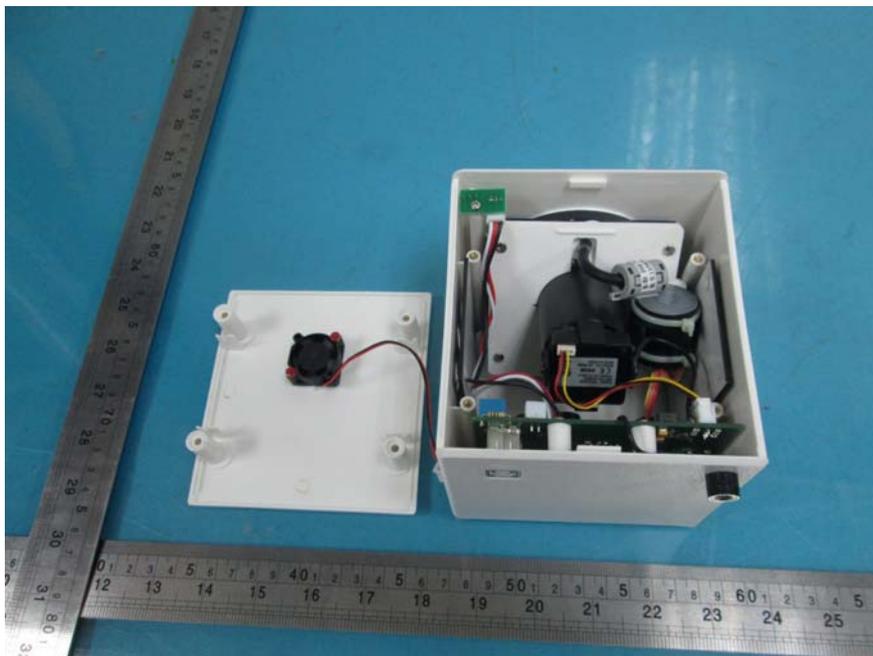


Figure A-3 Internal photo

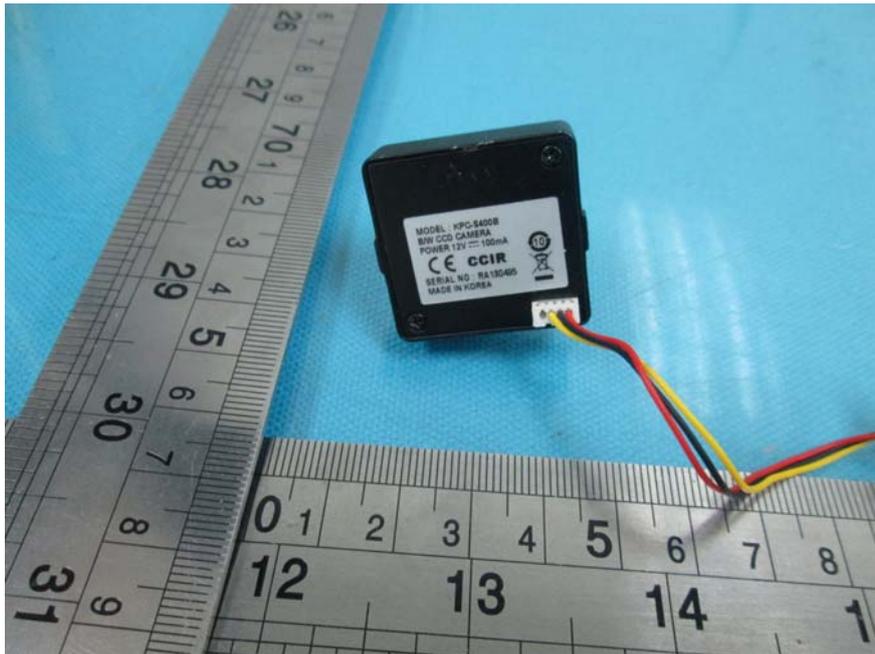


Figure A-4 Internal photo

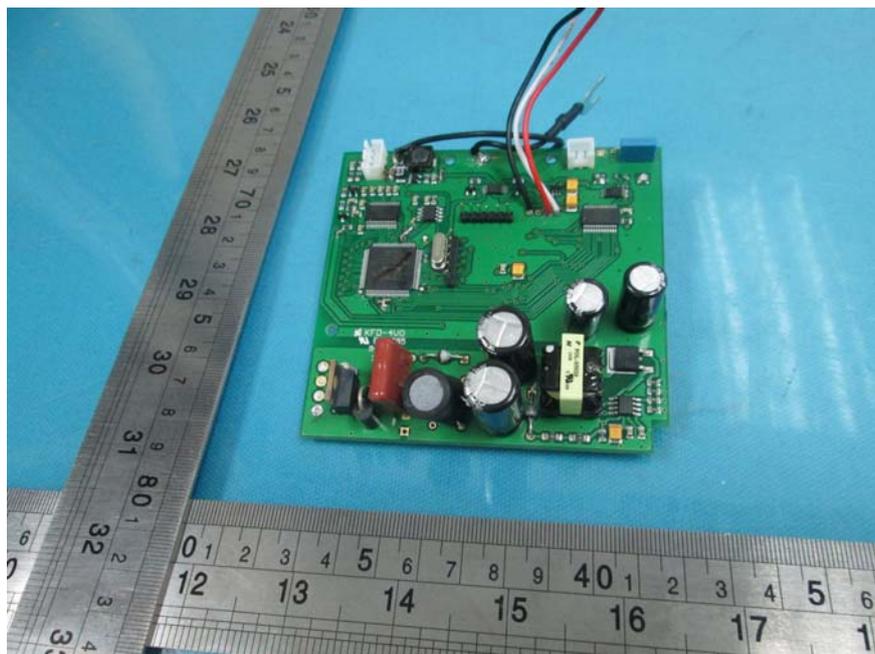


Figure A-5 Internal photo



Figure A-6 Internal photo



Figure A-7 Internal photo

Annex B

EUT set-up -details-



Figure B-1 Setup for Conducted Emission



Figure B-2 Setup for Radiated emission



Figure B-3 Setup for ESD



Figure B-4 EUT Setup for Radiated immunity



Figure B-5 EUT Setup for EFT of AC Input port



Figure B-6 EUT Setup for Conducted Immunity of DC output port



Figure B-7 EUT Setup for 50/60 Hz Magnetic Field

End of report