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EMS61000-2A ESD GENERATOR USER'S MANUAL V 4.02

EVERFINE Corporation (Stock Code: 300306) ADD: Bldg.1 #669 Binkang Rd., Binjiang Hi-Tech Zone, Hangzhou (310053), China Tel: 86-571-86698333

Fax : 86-571-86696433

E-mail: Global@everfine.net Globalservice@everfine.net

http://www.everfine.net

Foreword

Thank you for purchasing the EVERFINE EMS61000-2A_30kV ESD Generator. This user's Manual contains useful information involving the instrument's functions and operating procedures as well as precautions that should be noticed during operation. In order to use the instrument correctly, please read the manual carefully first, then put it in a right place for quick references.

Notes:

- The contents of this manual may be changed without prior notice.
- Great effort has been made in preparation of this manual to ensure the accuracy of its contents. If you have any questions or find any errors, please contact your dealer or EVERFINE sales office.
 - If you have different understanding to this manual, please refer to the Technical Service Department of EVERFINE.

Checking package contents

Please check the instrument carefully when you unpack the box for the first time. If the instrument and related accessories are missing or appear abnormal, please contact the dealer or EVERFINE immediately.

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"Ensure the quality, insist on continuous improvement and make every customer more satisfied" is the quality policy of EVERFINE. Therefore, the quality of products and services provided by EVERFINE should be better than those have been promised. If you have further suggestions or advices on our products and services, please provide your feedback to our quality supervision department. E-mail: qc@everfine.cn; Tel: +86-571-86698333

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Safety regulation

The following general safety precautions must be observed during all phases of operations, including verification and repair. If the instrument is used in a manner not specified in this manual, the function of this instrument may be hindered. Flags below are adopted in the instrument.



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High-voltage



Ground

Warnings

Never use the instrument in an explosive environment

Never use the instrument with explosive, gunpowder and firecracker around.

Using any electrical appliance in the explosive environment may be harmful.

Protecting Grounding

Ensure the instrument has been well grounded before turning on the power to avoid an electric shock. Avoid taking the zero line of alternating current as the protective grounding.

Make sure that the rated voltage of the instrument is equal to the voltage of the power before connection before connection.

Only lithium battery charger will be supplied and the lithium battery should be setted when instrument is on operation.

Maintenance of the lithium battery

The battery should be charged/discharged every 3 months and it should be 60% power left at least before store again. It should be charged within 24 hours if it is turned off as the power shortage, otherwise, the battery would be damaged.

If the battery needs to be changed, please contact the retailer or EVERFINE. VERFINE

Vents

Vents provide necessary cooling channel and should not be blocked when instrument is on operation.

DO NOT take away any parts of the case

Since the instrument works at a high voltage, never remove the case of the instrument or operate with the case opening.

Relative humidity

Never operate the instrument with wet hands or in an environment with high humidity.

Transport

Take care when moving the instrument, and avoid collision, vibration or placing the instrument upside down.

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Chapter 1 Overviews

EMS61000-2A ESD Generator is a highly reliable test system specially designed according to the characteristics and requirements of ESD immunity test, with built-in lithium battery and portable design. The maximum ESD voltage is up to 30 kV and meets the highest severity level requirements of the standards, and provides an accurate and satisfactory basis for the immunity assessment of electrical equipment subject to electrostatic discharge.

EMS61000-2A ESD Generator meets requirements of standards such as ICE610 00-4-2, ISO10605. Equipped with different modules, EMS61000-2A ESD genera tor can output international standard of ISO discharge models.

Main characteristics of EMS61000-2A:

- 1. With built-in lithium battery, portable and convenient to use.
- 2. Test voltage can up to 30KV maximum.
- Identify the discharge resistance/capacitance modules intelligently to conduct ESD test.
- 4. With discharge detection function, its sensitivity can be adjusted.
- 5. 7 inch LCD touch screen displayer and computer interaction interface.
- 6. With file systems, export and save test reports conveniently.

With RJ45 and USB communication Function.

Chapter 2 Specifications

2.1 Main specifications

(1) Electrostatic voltage

Polarity: positive/negative/alternate

Output voltage: up to 30.00kV±5%

Resolution: 0.01kV(10.00kV~30.00kV)

(2) Discharge interval

Contact discharge: 0.050s~30.0s

Air discharge: 1.0s~30.0s

(3) Discharge count

1~9999 when discharge interval is larger than 0.1s EVERFINE

 $1 \sim 100$ when discharge interval is less than 0.1s

(4) Trigger mode

Manual: discharge one time when triggering the discharge gun or discharge button of

trigger module

Auto: continuously discharge as setting interval

External: discharge one time when receive an external trigger signal.

(5) Discharge network

Discharge network are listed in Table 2.1.

Discharge mode	Discharge network	Max electrostatic voltage	Standard	Remark
E	330Ω/150pF	±30.00kV	ISO10605	Fux
150	330Ω/330pF	±30.00kV	ISO10605	ESD gun
150	2000Ω/150pF	±30.00kV	ISO10605/IEC61000-4-2	(optional)
-	2000Ω/330pF	±30.00kV	ISO10605	in
I	EVERT		1	EREN

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UDM	1500Ω/100pF	±8.000kV	ANSI/ESD STM5.1;	IIDM		
ΠΟΙΝΙ		±20.00kV(Optional)	EIA/JESD22–A114;	пвм		
ММ	0Ω/200pF	$\pm 800 V$	ANSI/ESD STM5.2;	MM		
IVIIVI		±4.000kV(Optional)	EIA/JESD22–A115;			
(6) Discharge waveform						
Parameters of discharge waveform are listed in Table2.2.						

	Tab	le.2.2 Parai	meters of disch	arge wavefo	orm		
	Peak		Current@t ₁ /		Current@t ₂ /		
	current	Accuracy	Discharge	Accuracy	Discharge	Accuracy	
Discharge	/Dischar	%	voltage	%	voltage	%	
network	ge		A/kV	INE	A/kV		
la	voltage		EVEN				
	A/kV	ENE				TEINE	
2200/150	F 2.75	+ 10	2	+ 20	1 🗐	+ 20	
330 <u>0</u> 2/150p.	F 3./3	±10	(@t ₁ =30ns)	±30	(@t ₂ =60ns)	±30	
2200/220-	E 2.75	+ 10	2	+20	1	+ 20	
3302/330p.	F 3./3	±10	(@t1=65ns)	±30	(@t ₂ =130ns))	
20000/150	JE 2.75	+30	0.275	+ 20	0.15	1.50	
2000s2/150p	or 3./3	0	$(@t_1=180ns)$	±30	(@t ₂ =360ns)	±30	
20000/220	JE 2.75	+30	0.275	+20	0.15	- 50	
20002/330p	or 3.73	$0 (@t_1=400)$		± 30 (@t ₂ =800ns)		±50	

Battery life is more than 2 hours.

2.2 Conventional specification

- (1) Environment temperature: 25℃±10℃
- 20%~60%R.H. (2) Relative humidity:
- (3) Power supply : 100~240VAC,50Hz/60Hz
- (4) Battery(build-in):

When the instrument is not connected to the charger, its power supply is provided by built-in lithium battery . When instrument connects to AC power supply,the





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Chapter 4 Parameters Setting

- 4.1 Interface and Parameters Setting
- 4.1.1 Main interface

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EMS61000-2A Cipen 💾 Save 🚔 Report Temp: 28℃ +10.00kV 7 RH: 80% 10.00kV Disc only Voltage + Count Mode Discharge Ctc Disc 10 Count Pause 6 Mode Trig Mode Manual RC net 330pF/2k Discharge Interval • Test Prog 1 ▶ SGL Prog 10 TOT Prog 1

Fig.4.1 Main interface of EMS6100_2A

- ① System setting
- ⁽²⁾ Dynamic display section
- ③ Parameters setting
- ④ Test procedure display section
- ⁽⁵⁾ Progress bar display section
- ⁽⁶⁾ Run buttons

⑦ Environment information display section

- (8) Charging indicator display section
- (9) Left power charge display section

Set up and edit related parameter information of the instrument Display present discharge voltage Set up test parameters Display test steps Display current test progress "Run": The run button "Pause": The pause button "Reset": The stop button

Display ambient temperature, humidity Display the charger's connection information

Display the battery level

For resetting parameters, it can be achieved in parameter setting interface and refer to specifications of corresponding function setting part to finish other parameters setting. Press the "Run" button to start test after parameters setting is completed.





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1) Program list	Show all the system programs	
② "Std" tab	Click to enter into the standard program library	
③ "User" tab	Click to enter into the user-defined program library	
ERFINE	"Pg up": turn back to the former page of the program list;	
EVEN	"Pg dn": turn to the latter page of the program list;	
④ Edit button	"conf": download the selected program to the main	
	interface and return to the main interface;	
FINE	"Rtn": back to the main interface.	

Click on corresponding program shown in ① of figure 4.3 to rename the program, then click on the corresponding program name and dialog box will be pop-up as shown in figure 4.4. Click the name in pop-up dialog box to get qwerty keyboard shown in figure 4.4, then program name can be modified through the qwerty keyboard.

	[OPEN]		
15	🍪 Std	🖧 User	
	-		
	1	Test Pg up	
	2	Untitled	
1			
		~ ! @ # \$ % ^ & * () - + <	
		Caps A S D F G H J K L : " Enter	
		$\begin{array}{c c c c c c c c c c c c c c c c c c c $	

Fig.4.4 Testing program rename interface

Notes: Click on "Enter" to affirm input;

Click on "Esc" to quit input state;

Click on "Caps" to switch the capital and small letters.

	•
ACDE	INIC
EVEIXE	INE
	a line

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2 "Penart" tah

2. "Report" tab

	[REPORT]		Expant	EVERFINE IST
1— 2—	$\rightarrow 1$ $2 \rightarrow$	2014-5-5 16:53:13 2014-5-6 10:10:30		Pg up
				Ern

Fig.4.5 "Report" button interface

Click on "Report" tab in (5) of figure 4.2 and the pop-up window is shown as figure 4.5.

	1	Report list		Display the saved system test report;
	2	Report tab	DERFINE	Edit title of the test report;
			E.I.	Export test report to USB driver via USB
	3 "	Export" tab		port; The export report can be printed by
				EmcSuite software;
			iNE	"Pg up": turn back to the former page of
			EVERT	the program list;
		Edit hutton		"Pg dn": turn to the latter page of the
	4	East button		program list;
				"Del": delete the selected test report;
			DER	"Rtn": back to the main interface.
			The second se	

Click on the corresponding number shown in ① of figure 4.5, select the corresponding test report and operate "del"; Click on corresponding title in section ②, enter report edit interface shown in figure 4.6 and edit the report content. Only English and common character are supported.

EMS61000-2A User's Manual [CONCLUSION] EVERFINE EVERFINE Company: Product: LED Model: YF-301B Number: 123456 MW LED CO., LTD. Prod Co.,: 🗸 Conf Result: PASS 🛞 Ren Fig.4.6 Report edit interface 3. "Setup" tab [SETTING] ENGLISH Middle Language: Disc Sens: **OFF** Inv Chk: Co., Cal: ****** Time Set: 2014-9-25 15:55:23 Conf E REA

Fig.4.7 "Setup" tab interface

Click on "Setup" tab of ⁽⁶⁾ in figure 4.2 and the window will be popped-up as shown in figure 4.7, then relevant functions can be set up as "ON and OFF". Settings and their functions are specified in the following Table 1.

Tuble in Sectings function specification					
Settings	Setting contents	Notes			
Language	Chinese/English	Setting instrument's language			
EUT failed detection	ON/OFF	EUT failure detection ON/OFF			

Table4.1 Settings function specification	n
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Time	Time/Date	Setting instrument's time and date
Discharge sensitivity	High/Middle/Low	High: Count when detecting larger discharge current, maybe without discharge spark; Middle: Count when detecting discharge spark; Low: Count when detecting discharge spark, maybe discharge continuously;
Adjust	Input password	Calibration instrument only for manufacturer

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Waveform	ESD GENERATOR SoftwarV4.01	

Fig.4.8 "Help" tab interface

Click on the "Help" tab of \overline{O} in figure 4.2 and the window will be popped-up as shown in figure 4.8. Communication and language can be set up in this interface. Click on the "waveform" label and it will display standard waveform figure.

4.1.3 Dynamic display interface



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① Left display section	Display the current test voltage;
Dight dignlaw spation	Display the ambient temperature and
	relative humidity.
CINE	CINE .

4.1.4 Parameter setting region

\rightarrow Voltage	+ 10.00kV	Count Mode	Disc only	<
→ Discharge Mode	Ctc Disc	Count	10	
	Manual	RC net	330pF/2k	€
Discharge Interval]		

Fig.4.10 Parameter setting interface

Click on the corresponding item in figure 4.10 and set it on the pop-up small window.

① Voltage	Setting discharge voltage range as:
	Air discharge: 0.5kV~30.0kV;
	Contact discharge: 0.1kV~30.0kV;
	Polarity: +/-/Alt;
② Discharge Mode	Air discharge/Contact discharge;
③ Trigger mode	Auto/manual/external;
④ Discharge Interval	Discharge interval under auto trigger mode;
	Range: 0.05s~30.00s;
⁽⁵⁾ Count Mode	Every pulse/Discharge count;
	Every pulse: Counter works for every discharge
	pulse;
	Discharge count: Counter works when detecting
	effective discharge;
⁽⁶⁾ Count	1~9999 when discharge interval is larger than 0.1s
	1~100 when discharge interval is less than 0.1s
⑦ RC net	Display current discharge RC network



① Left button	Left shift;
② Progress	Display test steps and highlight the current test steps:
③ Right button	Right shift.
4.1.6 Progress bar displ	ay section

4.1.6 Progress bar display section



Fig.4.12 Progress bar display interface

① Single time	Display remaining time of single test;
② Numbers of test	Display remaining time of whole test.

4.1.7 Communication interface

			Te	mp: 28℃ RH: 80%			
Voltage	+	10.00kV	Count Mode	Disc only	Run		
Discharge Mode	C	tc Disc	Count	10	Pause		
Trig Mode	M	lanual	RC net	330pF/2k	Reset	NE	
Discharge Interval							
◀ Test F	^o rog 1			►			

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When communicating with PC, the interface is shown as figure 4.13 and a computer icon shows up at the right corner. Then press the "Reset" button to exit the communication mode and enter into the stand-by state. When it is in the communication state, other buttons do not work.

Chapter 5 Operation

5.1 Preparations

1. Check the environment conditions before the test, and carry it out according to the requirements;

2. The electric wire in rear panel is not connected, the ground terminal is connected correctly ; the instrument is turned off .

3. Connect ground terminal of discharge gun to the ground reference surface, and connect discharge gun's input port to output terminal in front panel .

4. Check and make sure the voltage is in the rated voltage range if the power supply is needed.

5.2 Power ON

Turn on the power supply button on rear panel, the instrument starts up and enters into stand-by mode after self-adjustment.

5.3 Test parameter setting

Set test voltage, test number, test interval, trigger mode, etc. Refer to chapter 4 for more details.

5.4 Starting test

Press "Run" button to start test. If the instrument is normal, the interface will pop-up as shown in figure 5.1.

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			E	
/S61000-2A				= 10 0-
New	Open Save	📥 Report	🔀 Setting 🛛 Help	
+1	0.00 kV	Te	mp: 28℃ RH: 80%	
Voltage	+ 10.00kV	Count Mode	Disc only	
Discharge Mode	Ctc Disc	Count	10	
Trig Mode	Manual	RC net	330pF/2k	
Discharge Interval]		
Test P	Prog 1		•	
SGL Prog TOT Prog			10 1	

Fig.5.1 Run state interface

For ISO electrostatic test, if the setting target has been reached and comes the buzzer alarm, that means high voltage is readied. Then place discharge gun vertical and contact with the tested instrument, hold on the discharge posture and press the rifle bolt to discharge. If the interface shown in figure 5.1 is not appear, please take actions according to chapter 5.7.

5.5 Test termination

If setting target has been reached, instrument will alert "test finish". If setting target is not reached and users want to terminate test as well, press "STOP" button in figure 5.1 to terminate the test.

5.6 Ending test

Turn off the power supply of instrument, place the instrument and its accessories according to regulations.

5.7 Altering information and its countermeasures

If the message "Warning: net null" is shown as figure 5.2 after press "Run" button, it means the discharge network was connected error or undependable. Then click on

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"Rtn" to check the connection of discharge gun.

[WARN]		EV
Warnin	g:Net null	

Fig.5.2 Connection error alert interface of discharge network

If the message "Warning: High voltage exception" is shown as figure 5.3 after start, press "Rtn" and close down the instrument. Restart instrument, set voltage parameters, press "start" button and observe voltage output, if the voltage is still abnormal, please contact the manufacturer.



Fig.5.3 Output voltage abnormal alert interface

If the message "Warning: Low battery power" is shown as figure 5.4 after start, press "Rtn" and connect charger. Tab " " " " will be popped-up, then close down the instrument to charge about half an hour. Restart instrument, if the same alert appears, please contact manufacture to change battery.



Chapter 6 Verification

6.1 Verification basis

- GB/T 17626.2 Electromagnetic compatibility(EMC) Testing and measurement techniques ESD immunity test
- IEC 61000-4-2 Electromagnetic compatibility (EMC)-Testing and measurement techniques – Electrostatic discharge immunity test
- ISO 10605 Road vehicles Test methods for electrical disturbances from electrostatic discharge

6.2 Verification conditions

- 1. Temperature: $23^{\circ}C \pm 2^{\circ}C$;
- 2. Relative humidity: 25%~45%R.H.;
- 3. Frequency: 50Hz±1Hz或60Hz±1Hz;
- 4. Atmospheric pressure: 86kPa~106kPa;
- 5. No electromagnetic environment will interfere with the test results.

6.3 Verification of ESD high voltage output

6.3.1 Instruments for the verification

High-voltage meter: the voltage range is $0\sim40$ kV, the resistance is $100G\Omega$ and the voltage accuracy is $\pm1\%$.

6.3.2 Verification items

Connection of the instrument and verification of the ESD output voltage should be carried out as Fig.6.1.



Fig.6.1 Test measurement of high-voltage meter

Connect the input port of discharge gun to the output terminal of the instrument, and connect their ground terminals. At air discharge mode, the discharge interval is set to be 5s and the trigger mode is set as 'Auto'. When the discharge voltages are set to 2kV, 4kV, 6kV, 8kV and 15kV, the error should be less than $\pm 5\%$.

6.4 Verification of ESD gun

6.4.1 Instruments for the verification

The instruments below are necessary when verifying the ESD gun:

- 1. Oscilloscope: Bandwidth is 2GHz;
- 2. Current target: Resistance is 2Ω ;
- 3. Attenuator: 20dB, 6dB;
- Faraday cage: The reference surface area is larger than 1.2m*1.2m, and the distance between coaxial Ammeter and edges of the Faraday cage is larger than 0.6m.

6.4.2 Verification items and methods

Typical calibration configuration of ESD generator is shown as Fig.6.2. 1.Verification method for the ESD gun.



Fig.6.2 Performance testing diagram

At the contact discharge mode, the ESD gun head should be placed on the current target. The discharge circuit cable is 0.5m below the current target and connected with the operation surface. Pull the circuit wire to form a isosceles triangle, and the distances between the target center and the edges should be over 0.6m. When calibrating, the discharge circuit cable must not be placed on the floor. (When oscilloscope is coupled to test system indirectly and have no influence on the test results, the shielding case of 1.2m*1.2m vertical reference surface area is not necessary.)

Current target output end should be connected with a end of 20dB attenuator, the other end of 20dB attenuator is connected with a end of 6dB attenuator by a coaxial cable. The other end of 6dB attenuator is connected with the oscillograph by a coaxial cable.

2. Verification parameters of ESD gun

- -I_P: Peak discharge current;
- -I₁: Discharge current at t₁;
- -I₂: Discharge current at t₂;
- -t_r: Rising time of current;

At the rated voltage, the ESD generator will discharge for 10 times. Record the peak discharge current and the rising time, and take the averages of the measurement data

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to check whether the test results meet the standard. Table6.1, Fig.6.3 and Fig.6.4 show the parameters and reference waveforms of different discharge networks. The range of the current rising time is 0.7ns~1ns.

IE	Capacitance/ Resistance	Peak discharge current I _p (A/kV)	Discharge current at t ₁ I ₁ (A/kV)	Discharge current at t ₂ I ₂ (A/kV)
	150pF/330Ω	3.75 ±10%	$2\pm 30\%$	$1\pm 30\%$
	330pF/330Ω		$(l_1 - 30 \text{ ns})$	(12-00 ms)
FINE		$3.75 \pm 10\%$	$2\pm 30\%$	$1\pm 30\%$
10.00			(t ₁ =65ns)	$(t_2=130ns)$
	150pF/2000Ω	3.75 +30%	0.275±30%	0.15±50%
		Salt	(t ₁ =180ns)	(t ₂ =360ns)
		2.75 + 200/	0.275±30%	0.15±50%
	330pF/200012	3.75 +30%	(t ₁ =400ns)	(t ₂ =800ns)
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Table.6.1 Parameters of different discharge networks



Fig.6.3 Reference wave of 330pF/330Ω,150pF/330Ω,5kV



Chapter7 Set-up in laboratory

7.1 Test set-up in laboratories

A ground reference plane shall be provided on the floor of the laboratory. It shall be a metallic sheet (copper or aluminum) of 0.25 mm minimum thickness; other metallic materials may be used but they shall have at least 0.65 mm minimum thickness. The minimum area of the reference plane is 1 m^2 , the exact size depends on the dimensions of the EUT. It shall project beyond the EUT or coupling plate by at least 0.5 m on all sides, and shall be connected to the protective grounding system.

The EUT shall be arranged and connected according to its functional requirements. The distance between the EUT and the walls of the laboratory and any other metallic structure should be larger than 1 m. The EUT shall be connected to the grounding system, in accordance with its installation specifications. No additional grounding connections are allowed. The layout of the power and signal cables shall be representative of the practice installation. The discharge loop cable of the ESD generator shall be connected to the ground reference plane. Its length is in general 2 m. In cases this length exceeds the needed length, the excess length shall, where possible, be placed non-inductively off the ground reference plane and shall not come closer than 0.2 m to other conductive parts in the test set-up. The earth cables connected to the ground reference plane and all bondings shall be low impedance, for example, using clamp devices for high frequency applications. Where coupling plates are specified, its material type and thickness should agree with the ground reference plane, and shall be connected to the grounding reference panel via a cable with a 470 k Ω resistor located at each end. These resistors shall be capable of withstanding the discharge voltage and shall be well insulated to avoid short circuits to the grounding reference plane.

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7.1.1 Table-top equipment

The test set-up for table-top equipment is shown in Fig.7.1. The EUT and cables shall be isolated from the coupling plate by a 0.5mm thick insulating support. If the EUT is too large to be located, an additional, identical HCP shall be overlapping used to make sure all sides of the HCP (horizontal coupling plate) is minimum over 0.1m to the EUT , the overlapped parts should over 0.3m(without needs to be welded). Any mounting feet associated with the EUT shall be remained in place.



7.1.2 Test set-up for floor-standing equipment

The test set-up for floor-standing equipment is shown in Fig.7.2. Any mounting feet associated with the EUT shall be remained in place.



Fig7.2 Test set-up for floor-standing equipment

7.1.3 Test set-up for post-installation tests

These tests are optional, and not mandatory for certification tests, they may be applied only when approved by both manufacturer and customer. It has to be considered that other co-located equipment may be unacceptably affected. The equipment or system shall be tested in its final installed conditions.

In order to facilitate a connection for the discharge loop cable, a ground reference plane shall be placed on the floor of the installation, close to the EUT at about 0.1 m distance. This plane should be copper or aluminium sheet with thickness no less than

0.25 mm. Other metallic materials may also be used, while its minimum thickness is 0.65 mm. The plane should be approximately 0.3m wide, and 2.0m in length when the installation allows. This ground reference plane should be connected to the protective grounding system. Where this is not possible, and there do existing a grounding terminal of EUT, then the ground reference plane should be connected to the grounding terminal of the EUT. The discharge loop cable of the ESD generator shall be connected to the reference plane at a point close to the EUT. Where the EUT is installed on a metal table, the table shall be connected to the reference plane via a cable with a 470k Ω resistor located at each end, to prevent a build-up of charge. An example of the set-up for post-installation tests is given in figure 7.3.



Fig.7.3 Test set-up for post-installation tests

Chapter 8 Driver installation

8.1 Internet driver installation

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By using cable, connect the module to debugging computer or net export with same gateway of the debugging computer, then connect module serial to computer by serial communication board and open "ZL Vircom" software .

序 状态	虚拟串口	设备名称	设备来路IP	
	COM3	ZLDEV0001	192.168.3.199	FINE
信息				
[2014-01-09,14:43:46] 连接 192 [2014-01-09,14:43:46] 在端口51 [2014-01-09,14:43:46] 正在连接	.168.3.199 成功。 96监听成功。 _192.168.3.199 .			*

Fig.8.1 Main interface of ZLVircom software

Click on "Serial management" and the virtual serial management interface will

pop-up shown in figure 8.2, add a virtual serial such as "COM3".

Z 虚拟串口&设备管理器 - VirCom ■ □ × 使理 (1) 影響 (2) 夜景 (2) 朝助 (1)	1
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	
序 状态 通知中口 現象々称 投备未路卫	
信息 ※加度初串口 第定的设备 [2009-01-02, 05:49:05] 正在连择 [2009-01-02, 05:49:05] 正在连择 [2009-01-02, 05:45:05] 正在连接 [2009-01-02, 05:45:05] 正在连接 [2009-01-02, 05:45:05] 正在连接 [2009-01-02, 05:45:05] 正在连接 [2009-01-02, 05:45:32] 正在连接 [2009-01-02, 05:45:32] 正在注意 [2009-01-02, 05:45:32] 正確当時 [2009-01-02, 05:45:32] 在端口4196监听成功。	2.015
Fig.8.2 Virtual serial management interface	



8.4.

Click on "Equipment management" in figure 8.3. If connection fail, click on "auto search" to seeking equipment. After connection success, select the equipment and click on "equipment edit", equipment setting interface will pop-up as shown in figure

12	【虚拟	串口&设备	管理番 - VirC									
1	管理 (M)	配置(C)	查看 (V) 帮助 (H)									
	D	C			2							
	启动服	务 停止)	服务 设备管理	串口管理	关于							
ľ	序 壮	犬态			虚拟串口		设备	备名称		设备来	路IP	
h	6名管1	ŧ										
P												-
	序	类型	设备名称	设备IP		目的IP	模式	TCP连接	虚拟串口号	虚拟串口	设备ID	
	1	内网	ZLDEV0001	192.168.3	. 200	200.200.203.6	TCP Server	: 未建立	未设置	未联通	FA13B34C	自动搜索
L												
L												手动添加
L												
												编辑设备
L												查找设备
L												
L												返回
1												
	1											

Fig.8.3 Equipment management interface

Set the serial to serial number same with added serial number such as "COM3", Set IP address and subnet mask to same IP segment with the computer. After setting up, click on "Modify setting" and "Restart equipment".

虚拟串口(COM3) 🚽	IP模式	静态	DNS服务器IP	8.8.4	. 4
设备名称 ZLDEV0001	IP地址	(192 . 168 . 3 . 200)	目的模式	动态	•
设备ID FA13B34C	端口	4196	转化协议	无	
固件版本 \V1.546	工作模式	TCP 服务器 ▼	保活定时时间	60	(秒)
该设备支持功能	子网掩码	255 . 255 . 255 . 0	断线重连时间	12	(秒)
┏ 厨畜玉井	网关	(192 . 168 . 3 . 1)	网页访问端口	80	
	目的IP或域名	192.168.3.20 本地IP	所在组播地址	230 . 90 . 76	. 1
☑ 域名系统	目的端口	4196	IO端口配置0x	00	
☑ REAL_COM协议	□	·	一无数据重启	Г	
T Modbus TCP转RTU	波特率	2400	定时发送参数	□ 每隔 5	(分钟)
▶ 串口修改参数	数据位	8		更多高级选项	
☞ 自动获取IP	校验位	无			
┏ 存储扩展EX功能	停止位	1 💌	数据包长度	1300	(字节)
▼ 多TCP连接	流控	无	数据包间隔(起	越小越好) 7	(毫秒)
系统默认参数 保存默认	参数 加载默认多	参数	重启	自设备 修改设置	取消

Fig.8.4 Equipment edit interface

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After completing setting, open "EmcSuit.exe" to test, more details about the setting regulation of "EmcSuite.exe", please refers to the user manual of "Everfine EMC multi-module test system software".