



**Ecom Sertech Corp.**

Rm. 258, Bldg. 17, NO.195, Sec. 4 Chung Hsing Rd., ChuTung Chen, Hsinchu, Taiwan 310, R.O.C  
TEL:886-3-5918012 FAX : 886-3-5825720

Report No. : ER03-09-009

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# ELECTROMAGNETIC COMPATIBILITY TEST REPORT

Product Name : IP113A

Applicant : IC Plus Corp.

Address : 10F, No. 47, Lane 2, Kwang-Fu RD. Sec. 2, Hsin-Chu,  
Taiwan, R.O.C.

Received Date : Sept. 04, 2003

Tested Date : Sept. 10, 2003

Notes :

1. This report will be invalid if duplicated or photocopied in part.
2. This report refers only to the specimen(s) submitted to testing, and be invalid as seperately used.
3. This report is invalid without examination stamp and signature of this institute.
4. The tested specimen(s) will be preserved for thirty days from the data issued.
5. The report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.





## Test Report Verification

**Product Name** : IP113A  
**Applicant** : IC Plus Corp.


**Measurement Standard :**

\* **Customer requirement**  
EN 61000-4-2+A1:1998

**Tested By** : M. H. Lin, **Date** : Sept. 10, 2003  
(M. H. Lin)

**Reviewed By** : Roger Sheng, **Date** : Sept. 10, 2003  
(Roger Sheng)

**Approved By** : Chieh-De Tsai, **Date** : Sept. 10, 2003  
(Chieh-De Tsai, Manager)



WE HEREBY CERTIFY THAT: The measurements shown in the attachment were made in accordance with the procedures indicated, and the energy emitted by the equipment was found to be within the limits applicable. We assume full responsibility for the accuracy and completeness of these measurements and vouch for the qualifications of all persons taking them.



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# 1. General Information

## 1.1 Test equipment

Use	Equipment No.	Manufacturer or Type	Model No.	Date of Calibration
		HP Vectra 486/33M Computer	D2871A	N/A
		HP VGA Monitor	D1193A	N/A
		HP Keyboard	C1405B #ABO	N/A
		HP Vectra 486/33M Computer	D2871A	N/A
		IBM VGA Monitor	2248-002	N/A
		HP Keyboard	C1405B#ABO	N/A
	K5C02	KeyTek Control Center	ECAT 103	MAY. 09, 2003
	K5C02	Pacific Programmable Controller	UPC-32	MAY. 09, 2003
	K5C02	Xitron Power Analyzer	2503AH	MAY. 09, 2003
	K5C02	Pacific AC Power Source	3120AMXT-UPC32/MEP94	MAY. 09, 2003
	K5C02	KeyTek Reference Impedance Module	ERI3	MAY. 09, 2003
	K5C03	KeyTek Control Center	ECAT 103	NOV. 23, 2002
	K5C03	KeyTek EFT/B Source	E421	NOV. 23, 2002
	K5C03	KeyTek Surge Network	E510,E503	NOV. 23, 2002
	K5C03	KeyTek EFT/B & Surge Coupler/Decoupler	E4552	NOV. 23, 2002
	K5C04	KeyTek Swell/Dip Interrupt Source	EP62	OCT. 17, 2002
	K5C06	Noise Lightning Surge Simulator	LSS-712	MAR. 13, 2003
	K5C07	KeyTek EFT Source	CE-40	JUL. 09, 2003
	K5C08	Noise Impulse Noise Simulator	INS-410	FEB. 18, 2003
√	K5C35	NoiseKen ESD Simulator	ESS-2000	FEB 20, 2003
	K5C36	KeyTek Surge Network	E503, E510A E505A, E4554	JAN. 23, 2003
	K5C13	CHASE Bilog Antenna	CBL 6111A	MAY 06, 2003
	K5C14	R&S Signal Generator Freq. Range : 9KHz ~ 2.08GHz	SMY02	JUL. 27, 2003
	K5C15	Boonton RF Voltmeter	9200B	JUL. 27, 2003
	K5C18	NoiseKen Fast Transient Noise Simulator	FNS-105L	FEB. 18, 2003
	K5C20	HOLADAY	HI-3624	OCT. 23, 2002
	K5C27	FCC Coupling Decoupling Network Freq. range : 150KHz~230MHz	801-M4-25	SEPT. 31, 2002
	K5C28	FCC Coupling Decoupling Network Freq. range : 150KHz~230MHz	801-M3-25	SEPT. 31, 2002
	K5C29	FCC Coupling Decoupling Network Freq. range : 150KHz~230MHz	801-M2-25	SEPT. 31, 2002
	K5C48	FRANKONIA Coupling Decoupling Network Freq. Range : 150MHz ~ 230MHz	CDN RJ45	MAY. 02, 2003
	K5C34	Keytek ESD Simulator	MZ-15/EC	JUN. 17, 2003
	K5D20	AR Amplifier Freq. Range : 10KHz ~ 220MHz	100W/150L	N/A
	K5D23	AR Amplifier Freq. Range : 25MHz ~ 1000MHz	100W1000M1A	N/A
	K5D26	DANA TORINO-ITALY .Power Frequently Magnetic Field	.DAS-G60 .DAS 1S 1000	N/A
		SCHAFFNER EM CLAMP	KEMZ 801	NOV. 05, 2002
		MILMEGA LINEAR AMPLIFIER	AS0825-35	JUL. 14, 2003
		EMC PARTNER	HARMONIC-1000	AUG. 31, 2003



## 1.2 Control software and firmware

Use	Control Software	Firmware Revision	Remark
	Keytek E500 Surgeware V4.10(c) 1995	5.11.1	
	Keytek E400 Burstware V4.10(c) 1995	5.11.1	
	Keytek Arbware V3.092 1993		
	Keytek Pqfware 2.10(c) 1995	5.10	
	EMC Partner	3.15/2.06	

## 1.3 Description of EUT

Manufacturer : IC Plus Corp.

Sample name : IP113A

Power supply : 5VDC, 10W, 2A (From Adapter)

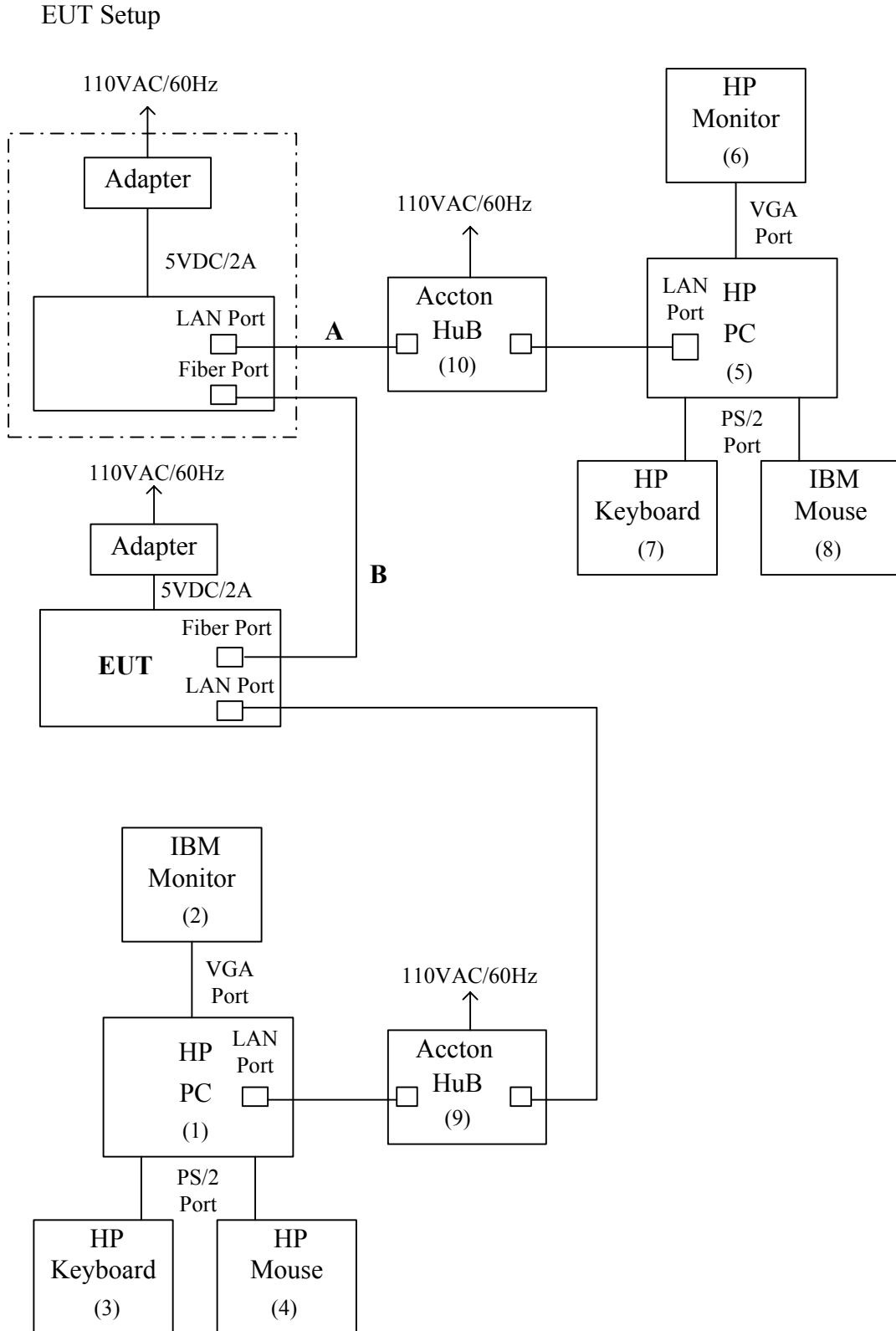
Power cable : Unshielded cable 1.8m × 1

Signal cable : Unshielded Fiber cable 1.5m × 1  
Unshielded uncross-over twisted-pair (RJ-45, plastic) cable  
3m × 4

Power Adapter :

MANUFACTURER : Telkoor CORP.  
MODEL NUMBER : LES9947B03  
SERIAL NUMBER : -----  
INPUT POWER : 100-120VAC, 0.5A  
OUTPUT POWER : 5VAC/2A, 10W

**1.4 EUT & Peripherals setup diagram**



A : Unshielded uncross-over twisted-pair (RJ-45, plastic) cable, 3m x 4

B : Unshielded Fiber cable, 1.5m



## 1.5 Description of peripherals

### (1) PC

MANUFACTURER : HP CORP.  
MODEL NUMBER : 8894  
SERIAL NUMBER : P3129-WOYO  
INPUT POWER : 100-240VAC, 50/60Hz

### (2) Monitor

MANUFACTURER : IBM CORP.  
MODEL NUMBER : 2248-002  
SERIAL NUMBER : 5506721  
INPUT POWER : 100-240VAC, 50/60Hz, 1.2A

### (3) Keyboard

MANUFACTURER : HP CORP.  
MODEL NUMBER : SK-2502C  
SERIAL NUMBER : M00030429  
INPUT POWER : 5VDC (From PC)

### (4) Mouse

MANUFACTURER : HP CORP.  
MODEL NUMBER : M-S34  
SERIAL NUMBER : LZR94800436  
INPUT POWER : 5VDC (From PC)

### (5) PC

MANUFACTURER : HP CORP.  
MODEL NUMBER : DTPC-17  
SERIAL NUMBER : SG95102408  
INPUT POWER : 100-240VAC, 50/60Hz, 1.5A

### (6) Monitor

MANUFACTURER : HP CORP.  
MODEL NUMBER : D2825  
SERIAL NUMBER : MY83443311  
INPUT POWER : 100-240VAC, 50/60Hz, 2A

### (7) Keyboard

MANUFACTURER : HP CORP.  
MODEL NUMBER : 3722  
FCC ID : CIGE03633  
INPUT POWER : 5VDC (From PC)



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### (8) Mouse

MANUFACTURER : IBM CORP.  
MODEL NUMBER : M-SAU-IBM6  
FCC ID : JNE211220  
INPUT POWER : 5VDC (From PC)

### (9) HuB

MANUFACTURER : Accton CORP.  
MODEL NUMBER : 3Com Baseline 10/100 Switch 24 Port  
SERIAL NUMBER : 0100/7PWF001739  
INPUT POWER : 100-240VAC, 50/60Hz, 1.5A

### (10) HuB

MANUFACTURER : Accton CORP.  
MODEL NUMBER : 3Com Baseline 10/100 Switch 24 Port  
SERIAL NUMBER : 0100/7PWF001322  
INPUT POWER : 100-240VAC, 50/60Hz, 1.5A

## 1.6 EUT operating procedure

1. Setup whole system for test as shown on setup diagram.
2. Powered on all equipments.
3. PC run "Acctest.exe" program.
4. Begin the test.

## 1.7 Description of laboratory

TÜV R. certificate No. : I9664582-9911

CNLA certificate No. : CNLA-ZL97018

NAME OF SITE : Ecom Sertech Corp. Hsinchu  
(Spin-off from ITRI / ERSO on Apr. 01, 2003)

SITE LOCATION : Rm.258, Bldg.17, NO.195 , Sec. 4, Chung Hsing Rd.,  
Chu-Tung Chen. Hsin-Chu, Taiwan 310 R.O.C.



## **2. Electrostatic Discharge Test**

### **2.1 Climatic conditions**

Ambient temperature : 25 °C

Relative humidity : 55 %

Atmospheric pressure : 99.2 kpa

### **2.2 Test requirement and procedure**

The test was based on EN 61000-4-2+A1 (1998) and Customer requirement

### **2.3 Test conditions**

.Source voltage / frequency : 110VAC/60Hz, single phase

.R-C network : 330  $\Omega$ , 150 PF.

.Test Level :

Air Discharge : 2KV, 4KV, 8 KV

Contact Discharge : 2KV, 4 KV

.Polarity : Positive / Negative

.Number of test :

10 Discharges / Sensitive Polarity for Air Discharge.

25 Discharges / Sensitive Polarity for Contact Discharge.

.Time between test : 1 Sec.



**2.4 Performance criteria**

- A. The equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer.
- B. After the test the equipment shall continue to operate as intended. No degradation of performance or loss of function is allowed after the application of the phenomena below a performance level specified by the manufacturer. During the test, degradation of performance is allowed however. No change of actual operating state or stored data is allowed.
- C. Loss of function is allowed, provided the function is self recoverable or can be restored by the operation of the controls by the user in accordance with the manufacturers instructions.

**2.5 Uncertainty of electrostatic discharge test**

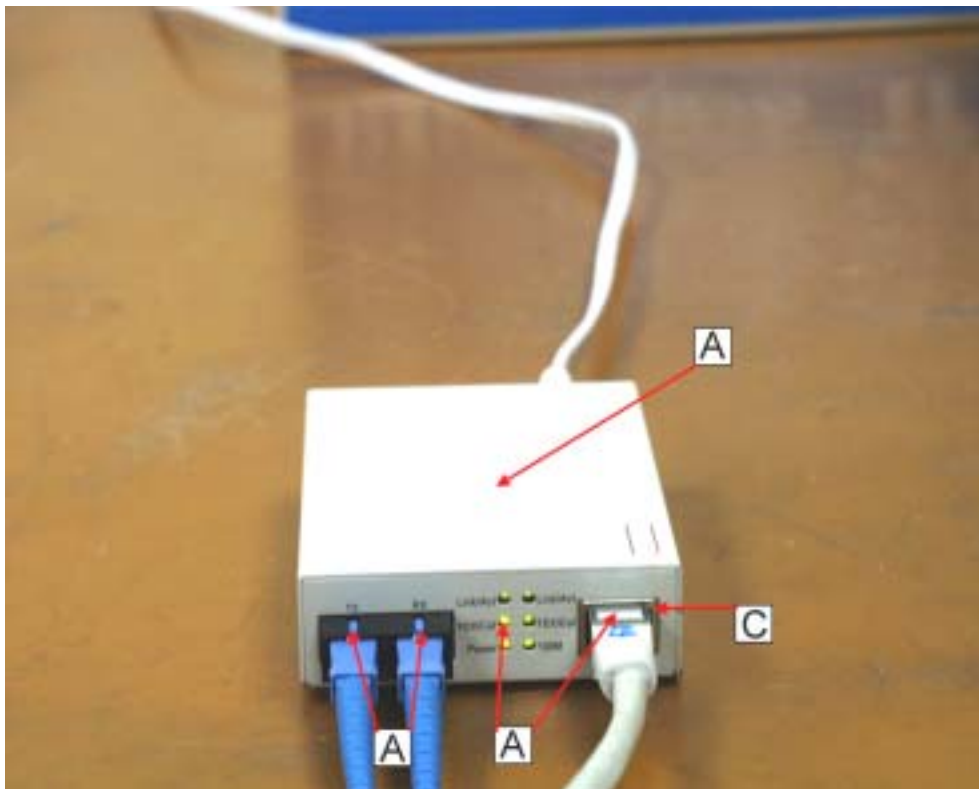
The uncertainty of output voltage indication is  $\pm 5\%$

**2.6 Test results**

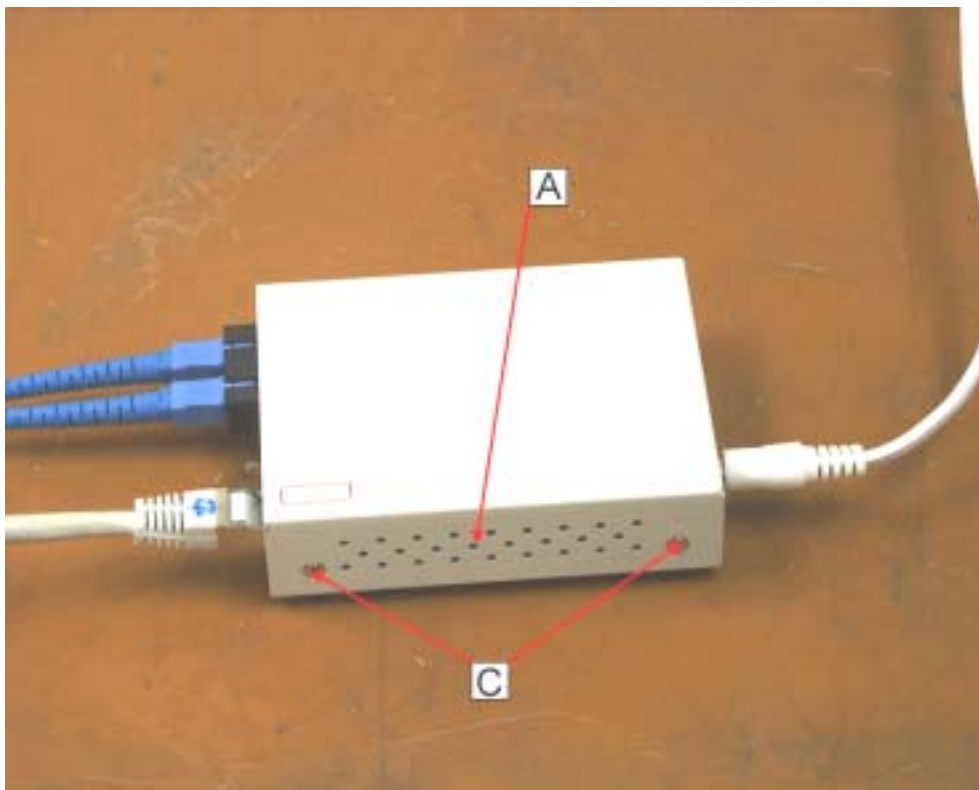
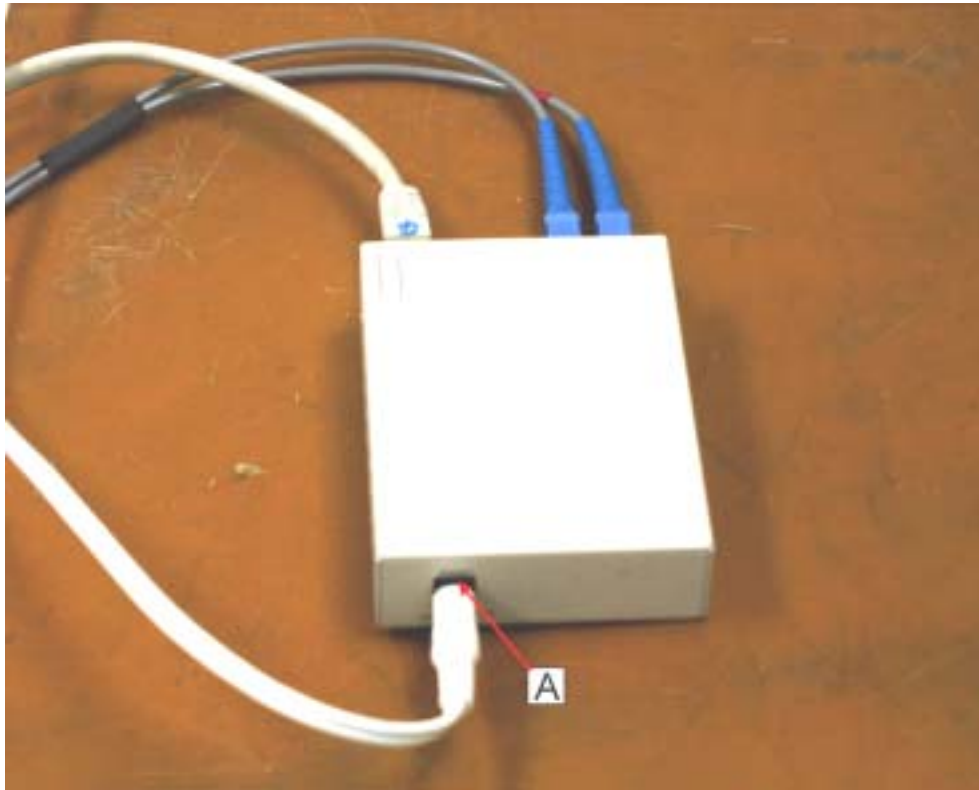
Test Requirement		Customer requirement		Performance verification (criteria)		Test results
		Air discharge	Contact discharge	Air discharge	Contact discharge	
Severity level	Polarity					
2 KV	+	B	A	A	A	pass
	-	B	A	A	A	pass
4 KV	+	B	A	A	A	pass
	-	B	A	A	A	pass
8 KV	+	B	NR	B	NR	pass
	-	B	NR	B	NR	pass

Note : NR means there is no requirement.

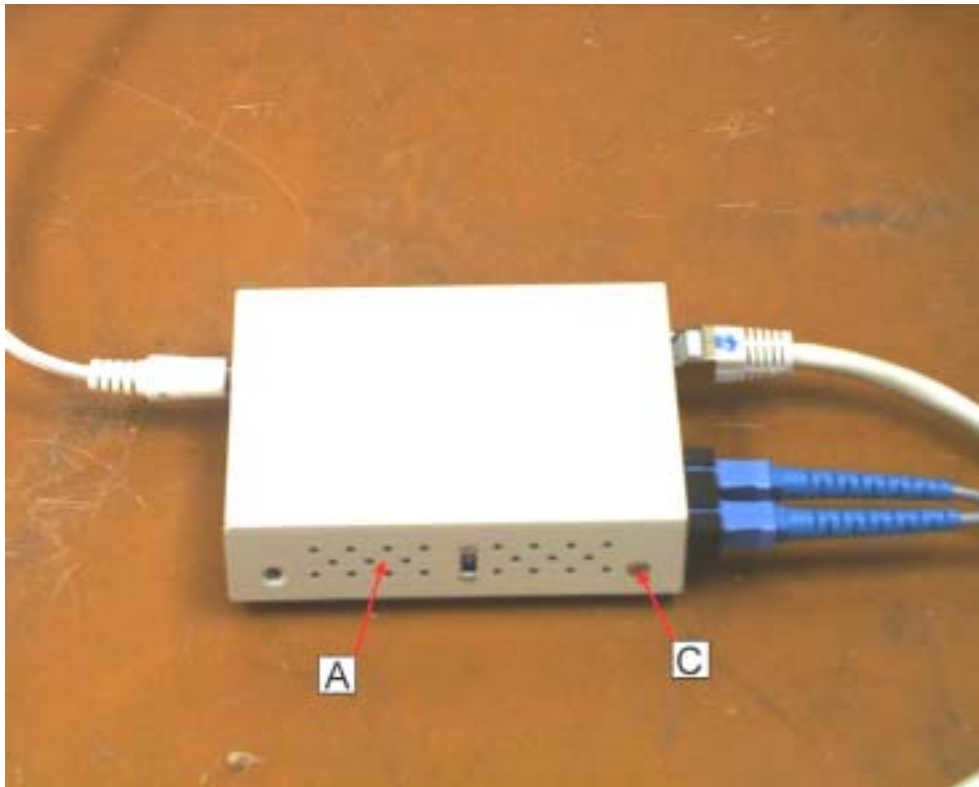
## 2.7 Photos of electrostatic discharge test



※ A : Air Discharge ; C : Contact Discharge



※ A : Air Discharg ; C : Contact Discharge



※ A : Air Discharg ; C : Contact Discharge