

14. Dielectric Resistance	3 G ohm / KM / 20°C min.
---------------------------	--------------------------

## 9. Reliability Testing

Test Item	Procedure	Requirement
<b>1. Visual inspection and Dimension Check</b>	Applicable methods using x5 magnification	follow specification
<b>2. Rapid Changing of Temperature</b>	-40°C (30minutes) to 90°C (30minutes); 120 cycles	After 2 hours recovery: 1. no visible damage 2. bandwidth tolerance < ±5%
<b>3. Damp Heat</b>	500 hours at 60°C; 90 ~ 95% RH	After 2 hours recovery: 1. no visible damage 2. bandwidth tolerance < ±5%
<b>4. Endurance</b>	500 hours at 90°C	After 2 hours recovery: 1. no visible damage 2. bandwidth tolerance < ±5%

## 10. SGS Test Report



## Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F. No.815, CHUNG HSAIO EAST RD. SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 1 of 8

**The following merchandise was (were) submitted and identified by the client as :**

Type of Product : ANTENNA  
Style/Item No. : EM SERIES; IM SERIES; NB SERIES; AN SERIES  
Sample Received : 2004/01/05 & 2004/04/23 & 2004/06/11 & 2004/06/24 &  
2004/12/09 & 2005/01/26 & 2005/02/17  
Testing Date : 2004/01/05 TO 2004/01/06 & 2004/04/23 TO 2004/04/28 &  
2004/06/11 TO 2004/06/21 & 2004/06/24 TO 2004/07/01 &  
2004/12/09 TO 2004/12/16 & 2005/01/26 TO 2005/01/28 &  
2005/02/17 TO 2005/03/03

-----  
Test Result : - Please see the next page -

\*This report is combined with reports of SZTYR050102512/LP & CE/2004/62767 &  
GZSCR040100230/LP & CE/2004/61520 & GZSCR040413274/LP & GZSCR050207531/LP\*

  
Daniel Yen, M.R. / Operation Manager  
Signed for and on behalf of  
SGS TAIWAN LTD.

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.



## Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F, No.815, CHUNG HSAIO EAST RD. SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 2 of 8

### Test Result

PART NAME NO.1 : BRASSY COLOR METAL BAR(SZTYR050102512/LP)  
PART NAME NO.2 : BLACK PLASTIC SHEET(GZSCR040100230/LP)  
PART NAME NO.3 : TAN TRANSPARENT LIQUID(GZSCR040413274/LP)  
PART NAME NO.4 : BLACK PLASTIC JACKET(KHCX 32AWG SB TA)(CE/2004/61520)  
PART NAME NO.5 : TRANSPARENT PEP JACKET(CE/2004/C1640)  
PART NAME NO.6 : WHITE PALSTIC(CE/2004/62767)  
PART NAME NO.7 : SILVER COLORED METAL WIRE(GZSCR050207531/LP NO. 1)  
PART NAME NO.8 : TRANSPARENT LT. BROWN PLASTIC(GZSCR050207531/LP NO. 2)

Test Item (s):	Unit	Method	MDL	Result				
				No.1	No.2	No.3	No.4	No.5
PBBs(Polybrominated biphenyls)(CAS NO:059536-65-1)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	---	---	---	N.D.	N.D.
PBBEs(PBDEs)(Polybrominated biphenyl ethers)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	---	---	---	N.D.	N.D.

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.





# Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F, No.815, CHUNG HSAIO EAST RD, SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 3 of 8

Test Item (s):	Unit	Method	MDL	Result				
				No.1	No.2	No.3	No.4	No.5
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	N.D.	---	N.D.	N.D.	N.D.
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	22.0	N.D.	N.D.	N.D.	N.D.
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	N.D.	---	N.D.	N.D.	N.D.
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	24600.0	6.0	N.D.	N.D.	N.D.

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
PBBs(Polybrominated biphenyls)(CAS NO:039536-65-1)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.	---	N.D.
PBBEs(PBDEs)(Polybrominated biphenyl ethers)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by HPLC/DAD, LC/MS or GC/MS. (prohibited by 2002/95/EC (RoHS), 83/264/EEC, and 76/769/EEC)	0.0005	N.D.	---	N.D.

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company



## Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F, No.815, CHUNG HSAIO EAST RD. SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 4 of 8

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
Chromium VI (Cr+6)	ppm	As per US EPA 7196A and US EPA 3060A.	2	---	N.D.	N.D.
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	2	N.D.	N.D.	---
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	2	---	N.D.	---
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	2	N.D.	N.D.	---
Cadmium (Cd)	ppm	ICP-AES after as per EN 1122, method B:2001 or other acid digestion.	15	---	---	N.D.
Mercury (Hg)	ppm	ICP-AES after as per US EPA 3052 or other acid digestion.	50	---	---	N.D.
Lead (Pb)	ppm	ICP-AES after as per US EPA 3050B or other acid digestion.	15	---	---	N.D.

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
AZO		As per LMBG 8202-2				
4-AMINODIPHENYL (CAS NO.92-67-1)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
BENZIDINE (CAS NO.92-87-5)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
4-CHLORO-O-TOLUIDINE (CAS NO.95-69-2)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
2-NAPHTHYLAMINE (CAS NO.91-59-8)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
O-AMINOAZOTOLUENE (CAS NO.97-56-3)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.





## Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F, No.815, CHUNG HSAIO EAST RD. SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 5 of 8

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
2-AMINO-4-NITROTOLUENE (CAS	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
P-CHLOROANILINE (CAS NO.106-47-8)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
2,4-DIAMINOANISOLE (CAS NO.615-05-4)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
4,4-DIAMINODIPHENYLMETHANE (CAS NO.101-77-9)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
3,3-DICHLOROBENZIDINE (CAS NO.91-94-1)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
3,3-DIMETHOXYBENZIDINE (CAS NO.119-90-4)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
3,3-DIMETHYLBENZIDINE (CAS NO.119-93-7)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
3,3-DIMETHYL-4,4-DIAMINODIPHENYLMETHANE (CAS NO.838-88-0)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
P-CRESIDINE(2-METHOXY-5-METHYLANILINE) (CAS NO.120-71-8)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
4,4-METHYLENE-BIS(2-CHLORANILINE) (CAS NO.101-14-4)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
4,4-OXYDIANILINE (CAS NO.101-80-4)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
4,4-THIODIANILINE (CAS NO.139-65-1)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
O-TOLUIDINE (CAS NO.95-53-4)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.



# Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F, No.815, CHUNG HSAIO EAST RD. SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 6 of 8

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
2,4-TOLUYLENDIAMINE (CAS NO.95-80-7)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
2,4,5-TRIMETHYLANILINE (CAS NO.137-17-7)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
O-ANISIDINE (CAS NO.90- 04-0)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.
P AMINOAZOBENZENE (CAS NO.60-09-3)	ppm	Analysis was performed by GC/MS.	3	N.D.	---	N.D.

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
Mirex(CAS NO:002385-85- 5)	ppm	Analysis was performed by GC/MS.	4	N.D.	---	---

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
PCBs(Polychlorinated Biphenyls)(CAS NO:001336-36-3)	ppm	With reference to USEPA 8082A. Analysis was performed by GC/ECD/MS.	0.5	N.D.	---	---

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
Organic-tin compounds						
Triphenyl Tin(TPI)(CAS NO:000668-34-8)	ppm	With reference to 83/677/EEC & DIN 38407. Analysis was performed by GC/FPD.	0.03	---	---	N.D.
Tributyl Tin(TBT)	ppm	With reference to 83/677/EEC & DIN 38407. Analysis was performed by GC/FPD.	0.03	---	---	N.D.

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.





# Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F. No.815, CHUNG HSAIO EAST RD. SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 7 of 8

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
Asbestos						
Anthrophyllite(CAS NO.017068-78-9)	**	As per NIOSH 9000 method. Analysis was performed by XRD.	-	---	---	Negative
Crocidolite(CAS NO.012001-28-4)	**	As per NIOSH 9000 method. Analysis was performed by XRD.	-	---	---	Negative
Amosite(CAS NO.012172-73-5)	**	As per NIOSH 9000 method. Analysis was performed by XRD.	-	---	---	Negative
Tremolite(CAS NO.014567-73-8)	**	As per NIOSH 9000 method. Analysis was performed by XRD.	-	---	---	Negative
Chrysotile(CAS NO.012001-29-5)	**	As per NIOSH 9000 method. Analysis was performed by XRD.	-	---	---	Negative
Actinolite(CAS NO.013768-00-8)	**	As per NIOSH 9000 method. Analysis was performed by XRD.	-	---	---	Negative

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
PCBs(Polychlorinated Biphenyls)(CAS NO:001336-36-3)	ppm	With reference to USEPA 8082A. Analysis was performed by GC/ECD/MS.	0.5	---	---	N.D.

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
Polychlorinated Naphthalene	ppm	With reference to USEPA 8081B. Analysis was performed by GC/MS.	5	---	---	N.D.

The content of this PDF file is in accordance with the original issued reports for reference only. This Test Report cannot be reproduced, except in full, without prior written permission of the Company.





## Test Report

INVAX SYSTEM & TRADING CORP.  
CORTEC TECHNOLOGY INC.  
4F, No.815, CHUNG HSAIO EAST RD, SEC.5,  
TAIPEI, TAIWAN, R.O.C.

Report No. : CE/2004/C1640A  
Date : 2004/12/16  
Page : 8 of 8

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
PVC (CAS No:9002-86-2)	**	Analysis was performed by FTIR/ATR and Pyro-GC/MS.	-	---	---	N.D.

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
Chlorinated Paraffin (C10-C13) (CAS NO:010871 26 2)	%	With reference to USEPA3540C or USEPA3550C. Analysis was performed by GC/MS or GC/ECD.	0.01	---	---	N.D.

Test Item (s):	Unit	Method	MDL	Result		
				No.6	No.7	No.8
Formaldehyde(CAS No:000050 00 0)	ppm	With reference to DIN 53315 & USEPA 8315A method. Analysis was performed by HPLC/DAD/MS	0.2	---	---	N.D.

- NOTE: (1) N.D. = Not detected (<MDL)  
(2) ppm = mg/kg  
(3) MDL = Method Detection Limit  
(4) " --- " = Not Applicable  
(5) " - " = No Regulation  
(6) \* = Results shown are of the adjusted analytical results  
(7) \*\* = Qualitative analysis (No Unit)  
(8) Negative = Undetectable / Positive = Detectable  
(9) The MDL is 5ppm for the single compound of CP

## ◇ 鎘 (Cadmium) :

- 電接點(electrical contacts)的鎘及鎘化合物以及 91/338/EEC 指令限制範圍以外的鎘鍍層中的鎘。(2005/747/EC)
- 光學玻璃及濾光玻璃(optical and filter glass)中所用的鎘。(2005/747/EC)

## ◇ 六價鉻 (Hexavalent - Chromium) :

- 電冰箱中作為碳鋼冷卻系統防腐劑的六價鉻。(2002/95/EC)

## ◇ 鉛 (Lead) :

- 陰極射線管(cathode ray tubes)、電子部件(electronic components)和發光管(fluorescent tubes)等玻璃內的鉛含量。(2002/95/EC)
- 鋼合金中的鉛含量不超過 0.35%、鋁合金中的鉛含量不超過 0.4%、銅合金中的鉛含量不超過 4%。(2002/95/EC)
- 高熔點錒錫中的鉛 (例如鉛含量  $\geq 85\%$  的合金中的鉛)。(2005/747/EC)
- 用於伺服器(servers)、記憶體(storage)和存儲系統(storage array systems)和交換、信號和傳輸,以及電信網路管理的網路基礎設施設備(network infrastructure equipment for switching, signalling, transmission as well as network management for telecommunications)中焊料的鉛。(2005/747/EC)
- 電子陶瓷產品中的鉛。(2005/747/EC)
- 用於鉛青銅軸承外殼(lead-bronze bearing shells and bushes)的鉛。(2005/717/EC)
- 光學玻璃及濾光玻璃(optical and filter glass)中所用的鉛。(2005/747/EC)
- 順應針連接系統(compliant pin connector systems)中使用的鉛。(2005/747/EC)
- 熱導槍釘模組(thermal conduction module c-ring)塗層中所用的鉛。(2005/747/EC)
- 微處理器針腳及封裝連接所使用含鉛量佔 80%-85%的焊接劑(含有超過兩種成份)中的鉛。(2005/747/EC)
- 用於焊接半導體終端和集成電路板載體的焊料中含鉛量。(2005/747/EC)
- 管狀白熾燈矽酸鹽塗層燈管(linear incandescent lamps with silicate coated tubes)中的鉛。(2006/310/EC)
- 專業複印設備用的高強度放電燈中作為發光劑的鹵化鉛。(Lead halide as radiant agent in High Intensity Discharge (HED) lamps used for professional reprography applications)(2006/310/EC)
- 當放電燈被用作含磷仿日曬燈(例如 BSP)、或二氯化物列印、平版印刷、捕蟲器,以及含磷化學和含磷食物加工過程的專業燈時(例如 SMS),放電燈中的螢光粉觸媒劑的鉛(鉛含量 1%以下) (Lead as activator in the fluorescent powder (1% lead by weight or less) of discharge lamps when used as sun tanning lamps containing phosphors such as BSP (BaSi205:Pb) as well as when used as specialty lamps for diazo-printing reprography, lithography, insect traps, photochemical and curing processes containing phosphors such as SMS ((Sr, Ba) 2MgSi207:Pb)) (2006/310/EC)



- 緊縮節能燈中作為汞的特定成分中 PbBiSn-Hg 及 PbInSn-Hg 中的鉛以及作為輔助汞合金中 PbSn-Hg 中的錫。(Lead with PbBiSn-Hg and PbInSn-Hg in specific compositions as main amalgam and with PbSn-Hg as auxiliary amalgam in very compact Energy Saving Lamps (ESL)) (2006/310/EC)
- 液晶顯示器中焊接前後平板螢光燈基質的玻璃中的氧化鉛。(Lead oxide in glass used for bonding front and rear substrates of flat fluorescent lamps used for Liquid Crystal Displays (LCD)) (2006/310/EC)

#### ◇ 汞 (Mercury) :

- 小型日光燈中不超過 5 mg / 燈管者。(2002/95/EC)
- 一般用途的直管日光燈管不超過(2002/95/EC) :
  - Halophosphate < 10 mg \*
  - Triphosphate with normal lifetime < 5 mg \*
  - Triphosphate with long lifetime < 8 mg \*
- 特殊用途的直管日光燈管。(2002/95/EC)
- 附件中未特別提及用於其他照明燈具的含汞量。(2002/95/EC)

#### ◇ 十溴聯苯醚 (Deca-BDE)

- 應用於高分子類(Polymeric)之十溴聯苯醚之含量。(2005/717/EC)

註:以上翻譯若有誤差,應以原文法規為準。(請參考 2002/95/EC, 2005/717/EC, 2005/747/EC, 2006/310/EC)

#### 聯絡方式:

SGS 台北化學實驗室

地址: 248 台北縣五股工業區五權路 33 號

電話: +886-2-2299-3279 業務客服組 Ext.3102~3124

傳真: +886-2-2299-3237 行政報告組 Ext.3150~3169

## 限用物質不使用聲明書

本公司（包括協力廠商）特此保證：

提供給貴公司，貴公司之子公司或協力廠商的所有產品或零組件中，絕不包含以下所列物質。如果有違背此聲明，本公司將會負責賠償貴公司的損失。

### 【符合RoHS 2002/95/EC指令所規定的六項禁用物質】

1. 鉛及其化合物 < 1000 ppm
2. 鎘及其化合物 < 100 ppm
3. 汞及其化合物 < 1000 ppm
4. 六價鉻 < 1000 ppm
5. 多氯聯苯 (PBB) < 1000 ppm
6. 多溴二苯醚 (PBDE) < 1000 ppm

公司名稱： (印)

負責人： (印)

聲明日期：95年5月20日