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# EMC TEST REPORT

According to

**EN 61131-2: 2007**

**EN 55011 : 2007+A2: 2007**

**EN 61000-3-2: 2006 / EN 61000-3-3: 1995+A1: 2001+A2: 2005**

**EN 61000-4-2: 1995+A1: 1998+A2: 2001 / EN 61000-4-3: 2006**

**EN 61000-4-4: 2004 / EN 61000-4-5: 2006 / EN 61000-4-6: 2004**

**EN 61000-4-8: 1993+A1: 2001 / EN 61000-4-11: 2004**

<b>EUT Name</b>	:	Human Machine Interface
<b>Model No.</b>	:	VX301, SD300, GP-30E, HMI311
<b>Applicant</b>	:	VX Technology, Inc.
<b>Address</b>	:	2F, NO. 262, SEC. 2, GUANGFU RD., EAST DISTRICT, HSINCHU CITY 300, TAIWAN, R.O.C.

Reviewed by : NICK LEE

Issued Date: : DEC. 04, 2008

The test report shall not be reproduced except in full, without the written approval of the laboratory.

The report can't be used by the client to claim product endorsement by PEP Testing Laboratory.

This report is only for the equipment which described in page 7.

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# 1. General

## 1.1 General Information :

**Applicant :** VX Technology, Inc.  
**Address :** 2F, NO. 262, SEC. 2, GUANGFU RD., EAST DISTRICT,  
 HSINCHU CITY 300, TAIWAN, R.O.C.

**Manufacturer :** VX Technology, Inc.  
**Address :** 2F, NO. 262, SEC. 2, GUANGFU RD., EAST DISTRICT,  
 HSINCHU CITY 300, TAIWAN, R.O.C.

Measurement Procedure : EN55011

Measurement Uncertainty :

The uncertainty of the testing result is given as below. The method of uncertainty Calculation is provided in PEP Testing Lab document No. QP-T-28-B & QP-T-27-B

Frequency ( MHz )	0.15 ~ 30	30 ~ 1000
Expanded Uncertainty $\mu_c$	1.4 (dB)	2.84 (dB)

95% Confidence Level; K=2

## 1.2 Place of Measurement

### PEP TESTING LABORATORY

NO. 9-6, Huzi, Hubei Village, Linkou Shiang, Taipei Hsien, Taiwan 244, R. O. C.

E-Mail : [peplab@ms32.hinet.net](mailto:peplab@ms32.hinet.net)

TEL : 886-2-26021042

FAX : 886-2-26021045

Accreditation ---

NEMKO Aut. No. : ELA133

(Europe)

### 1.3 Test Standards

Tested for compliance with:

<b>EN 61131-2: 2007</b>	- Programmable controllers – Part 2: Equipment requirements and tests
<b>EN 55011 : 2007+A2: 2007</b>	- Industrial , scientific and medical (ISM) radio-frequency equipment Radio disturbance characteristics-Limits and methods of measurement
<b>EN 61000-3-2: 2006</b>	- Electromagnetic compatibility (EMC) Part 3-2: Limits –Limits for harmonic current emissions (equipment input Current up to and including 16A per phase
<b>EN 61000-3-3: 1995 +A1: 2001+A2: 2005</b>	- Electromagnetic compatibility (EMC) Part 3-2: Limits – Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current up to 16A
<b>EN 61000-4-2: 1995 +A1: 1998+A2: 2001</b>	- Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 2: Electrostatic discharge immunity test Basic EMC Publication
<b>EN 61000-4-3: 2006</b>	- Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 3: Radiated, radio-Frequency, electromagnetic field immunity test
<b>EN 61000-4-4: 2004</b>	- Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 4: Electrical fast transient / Burst immunity test Basic EMC publication
<b>EN 61000-4-5: 2006</b>	- Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 5: Surge immunity test (includes corrigendum: 1995)
<b>EN 61000-4-6: 2004</b>	- Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 6: Immunity to conducted disturbances, induced by radio-frequency fields
<b>EN 61000-4-8: 1993 +A1: 2001</b>	- Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 8: Power frequency magnetic field immunity test Basic EMC publication
<b>EN 61000-4-11: 2004</b>	- Electromagnetic compatibility (EMC) Part 4: Testing and measurement techniques, Section 11: Voltage dips, short interruptions and voltage variations immunity tests

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## 2. Product Information/Product Technical Judgement

<b>a. EUT Name:</b>	Human Machine Interface
<b>b. Model No. :</b>	VX301
<b>c. CPU Type :</b>	N/A
<b>d. CPU Frequency :</b>	N/A
<b>e. Crystal/Oscillator(s) :</b>	3.6864 MHz
<b>f. Chassis Used :</b>	ABS
<b>g. Port/Connector(s) :</b>	RS-232 Port * 1
<b>h. Power Rating :</b>	DC 24V (From DC Power Supply)
<b>i. Condition of the EUT :</b>	Prototype Sample Engineering Sample Production Sample
<b>j. Test Item Receipt Date :</b>	NOV. 27, 2008
<b>k. Date(s) of performance of test:</b>	NOV. 27, 2008 – DEC. 03, 2008

### 2a. Product Technical Judgement

N/A

### 3. EUT Description and Test Conclusion/Test Software Used/ Modification(s):

<b>EUT Name:</b>	Human Machine Interface		
<b>Representative Model:</b>	VX301		
<b>Serial Model:</b>	SD300, GP-30E, HMI311		
<b>Power Rating:</b>	DC 24V (From DC Power Supply)		
<b>Model Difference Description :</b>	OEM MODEL		
<b>EUT'S I/O Port(s):</b>	<b>I/O Port</b>	<b>Number</b>	<b>Connector Equipment</b>
	RS-232 Port	1	PC
<b>Operation Mode(s) of EUT for Preliminary test(s):</b>	To set the super terminal up, and typed the data to transmits through the RS-232 cable to the EUT through keyboard and showed in the display monitor.		
<b>Worst-case operation mode(s) of EUT:</b>	To set the super terminal up, and typed the data to transmits through the RS-232 cable to the EUT through keyboard and showed in the display monitor.		
<b>Software used to Operate EUT Function(s) :</b>	(1) EMCTEST program that continuously generates a complete line of repeating "H" letter was the software used during test.		
	(2) Super terminal: It is a platform to transmit the data to the EUT.		
<b>Modification(s):</b>	N/A		

## 4. Support Equipment Used

<b>Personal Computer (PC4)</b>	<b>CPU</b> : Intel Pentium 4 524MHz <b>FCC ID</b> : Declaration of Conformity(DoC) <b>Manufacturer</b> : ACER <b>Model Number</b> : Aspire T650 <b>Power Supply</b> : Switching <b>Power Cord</b> : Non-Shielded, Detachable, 1.8m <b>Data Cable</b> : N/A
<b>LCD (LCD1 15")</b>	<b>FCC ID</b> : Declaration of Conformity(DoC) <b>Manufacturer</b> : ViewSonic <b>Model Number</b> : VLCDS21588-1 <b>Power Supply</b> : Switch, 12Vdac <b>Power Cord</b> : Non-Shielded, Detachable, 1.8m <b>Data Cable</b> : 1 > Shielded , Detachable,1.7m 2 > Back Shell : Metal
<b>Printer (PRN1)</b>	<b>FCC ID</b> : B94C2642X <b>Manufacturer</b> : Hewlett-Packard <b>Model Number</b> : C2642E <b>Power Supply</b> : Linear, 30Vdc O/P <b>Power Cable</b> : Non-Shielded , Detachable,1.8m <b>Data Cable</b> : 1 > Shielded , Detachable,1.2m 2 > Back Shell : Metal
<b>Mouse (MOUS/1 PS/2)</b>	<b>FCC ID</b> : DZL211106 <b>Manufacturer</b> : LOGITECH <b>Model Number</b> : M-S43 <b>Power Supply</b> : +5Vdc from PS2 of PC <b>Power Cord</b> : N/A <b>Data Cable</b> : 1 > Shielded , Non-detachable,1.8m 2 > Back Shell : Metal
<b>Modem (MOD1)</b>	<b>FCC ID</b> : IFAXDM1414 <b>Manufacturer</b> : ACEEX <b>Model Number</b> : 1414 <b>Power Supply</b> : Linear, 9Vac O/P <b>Power Cable</b> : Non-Shielded , Detachable,1.7m <b>Data Cable</b> : 1 > Shielded , Detachable,1m 2 > Back Shell : Metal



<b>Keyboard (KBS1 PS/2)</b>	<b>FCC ID</b> : E5XKB5121WTH0110
	<b>Manufacturer</b> : BTC
	<b>Model Number</b> : 5121W
	<b>Power Supply</b> : +5Vdc from PS2 of PC
	<b>Power Cord</b> : N/A
	<b>Data Cable</b> : 1 > Shielded , Non-detachable,1.6m
	2 > Back Shell : Metal
<b>DC Power Supply</b>	<b>Manufacturer</b> : SCHMIDT
	<b>Model Number</b> : EPS-3030SD (DC-0-30V)

## 5. EN 55011 Conducted Disturbance Test

Test Standard	Model No.	Criterion
EN 55011	VX301	N/A

The EUT is not supplied by the means of mains connection and it is deemed to fully comply with the requirements of this standard without additional tests under engineering judgment.

## 6. EN 55011 Radiated Disturbance Test

Test Standard	Model No.	Criterion
EN 55011	VX301	Class A

## 6.1 Radiated Disturbance Test Description

Preliminary measurements were made indoors chamber at 3 meter using broadband antennas, broadband amplifier, and spectrum analyzer to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna were noted for each frequency found. The spectrum was scanned from 30 to 1000 MHz using logbicon antenna. Above 1GHz, linearly polarized double ridge horn antenna were used.

Final measurements were made outdoors at 10-meter test range using biconical, dipole antenna or horn antenna. The test equipment was placed on a wooden bench situated on a 1.5x1 meter area adjacent to the measurement area. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. Each frequency found during pre-scan measurements was re-examined and investigated using Quasi-Peak Adapter. The detector function was set to CISPR quasi-peak mode and the bandwidth of the receiver was set to 120kHz.

The half-wave dipole antenna was tuned to the frequency found during preliminary radiated measurements. The EUT, support equipment and interconnecting cables were re-configured to the set-up producing the maximum emission for the frequency and were placed on top of a 0.8-meter high non-metallic 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each EME emission. The turntable containing the system was rotated; the antenna height was varied 1 to 4 meters and stopped at the azimuth or height producing the maximum emission.

## 6.2 Radiated Disturbance Test Limits

Electromagnetic radiation disturbance limits for group 1 equipment

Frequency band  MHz	Measured on a test site		Measured in situ
	Group 1, class A 30 m measurement distance  dB( $\mu$ V/m)	Group 1, class B 10 m measurement distance  dB( $\mu$ V/m)	Group 1, class A limits with measuring distance 30 m from exterior wall outside the building in which the equipment is situated dB( $\mu$ V/m)
0.15 – 30	Under consideration	Under consideration	Under consideration
30 – 230	30	30	30
230 – 1000	37	37	37

NOTE – For group 1, classes A and B equipment, intended to be permanently installed in X-ray shielded locations, an increase in the electromagnetic radiation disturbance limits of 12 dB for tests conducted on a test site is allowed.

Such equipment which does not meet the table 3 limits is ;labelled as “Class A + 12”or “Class B + 12”.The installation instructions should contain the following warning :  
“Warning : This equipment is allowed to be installed only in X – ray protected rooms, which provide an attenuation of at least 12 dB for radio disturbances from 30MHz to 1 GHz.”

Electromagnetic radiation disturbance limits for group 2, class B equipment  
measured on a test site

Frequency band MHz	Quasi – peak electric field measurement distance 10m dB( $\mu$ V/m)	Quasi – peak magnetic field measurement distance 3m dB( $\mu$ A/m)
0.15 to 30	-	39 decreasing linearly with logarithm of frequency to 3
30 to 80.872	30	-
80.872 to 81.848	50	-
81.848 to 134.786	30	-
134.786 to 136.414	50	-
136.414 to 230	30	-
230 to 1000	37	-

### 6.3 Radiated Disturbance Test Configuration Photos

**\* FRONT VIEW \***



**\* REAR VIEW \***



## 6.4 Radiated Disturbance Test Data

Model No.	: VX301	Detector	: Quasi-Peak Value
Frequency range	: 30MHz to 1GHz	Detector	: Quasi-Peak/Average Value
Frequency range	: above 1GHz	Humidity	: 52 %
Temperature	: 26° C		

Antenna polarization : HORIZONTAL ; Test distance : 10m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
100.640	26.65	-13.35	40.00	33.36	10.80	3.10	20.61	83	4.0
218.040	29.91	-10.09	40.00	35.53	10.88	3.80	20.30	50	4.0
265.440	40.86	- 6.14	47.00	45.43	11.37	4.10	20.04	297	4.0
331.800	43.84	- 3.16	47.00	46.09	13.32	4.43	20.00	336	4.0
530.860	40.55	- 6.45	47.00	37.60	17.31	5.46	19.82	248	4.0
962.120	26.61	-20.39	47.00	16.11	23.06	6.89	19.45	327	4.0

Antenna polarization : VERTICAL ; Test distance : 10m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Azimuth (°angle)	Antenna High(m)
199.220	33.94	- 6.06	40.00	39.78	10.73	3.73	20.30	36	1.0
234.600	26.74	-20.26	47.00	32.53	10.49	3.92	20.20	244	1.0
265.450	38.09	- 8.91	47.00	42.66	11.37	4.10	20.04	232	1.0
331.790	41.04	- 5.96	47.00	43.29	13.32	4.43	20.00	228	1.0
464.500	33.20	-13.80	47.00	31.54	16.47	5.18	19.99	206	1.0
796.890	24.52	-22.48	47.00	16.02	21.47	6.37	19.34	271	1.0

Note :

1. Level = Read Level + Antenna Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

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## 7. EN 61000-3-2 Harmonic Current Test

Test Standard	Model No.	Criterion
EN 61000-3-2	VX301	N/A

The EUT is not supplied by the means of mains connection and it is deemed to fully comply with the requirements of this standard without additional tests under engineering judgment.



## 8. EN 61000-3-3 Voltage Fluctuations Test

Test Standard	Model No.	Criterion
EN 61000-3-3	VX301	N/A

The EUT is not supplied by the means of mains connection and it is deemed to fully comply with the requirements of this standard without additional tests under engineering judgment.

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## 9. EN 61000-4-2 Electrostatic Discharge Test

Test Standard	Model No.	Criterion
EN 61000-4-2	VX301	B

The test results shall be classified on the basis of the operating conditions and the functional specifications of the equipment under test , as in the following , unless different specifications are given by product committees or product specifications :

Performance Criterion :

- 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 ;

## 9.1 Electrostatic Discharge Test Description

This standard relates to equipment, systems, sub-systems and peripherals which may be involved in static electricity discharges owing to environmental and installation conditions. such as low relative humidity, use of low-conductivity (artificial-fibre) carpets, vinyl garments, etc., which may exist in allocations classified in standards relevant to electrical and electronic equipment.

The test set-up shall consist of a wooden table, 0.8 m high standing on the ground reference plane. A horizontal coupling plane(HCP), 1.6 m x 0.8 m, shall be placed on the table. The EUT and cables shall be isolated from the coupling plane by an insulating support 0.5 mm thick .

A ground reference plane shall be provided on floor of the laboratory. It shall be metallic sheet of 0.25 mm minimum thickness. The minimum size of the reference plane is 1 m, the exact size depending on the dimensions of the EUT .

It shall project beyond the EUT or coupling plane by at least 0.5 m on all sides. and shall be connected to the protective grounding system.

In order to minimize the impact of environmental parameters on test results, the tests shall be carried out in climatic and electromagnetic reference conditions.

### Climatic conditions

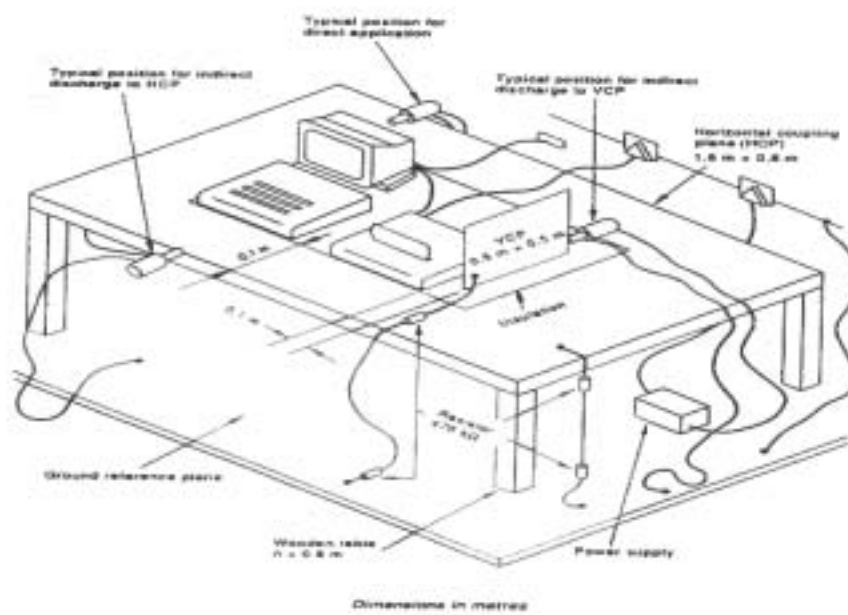
- ambient temperature: 15 to 35 ;
- relative humidity: 30 % to 60%
- atmospheric pressure: 86 KPa (860 mbar) to 106 KPa (1 060 mbar).

NOTE – Any other values are specified in the product specification.

### Electromagnetic conditions

The electromagnetic environment of the laboratory shall not influence the test results.

## 9.2 Electrostatic Discharge Test Setup



- Example of test set-up for table-top equipment, laboratory tests

### 9.3 Electrostatic Discharge Test Limits

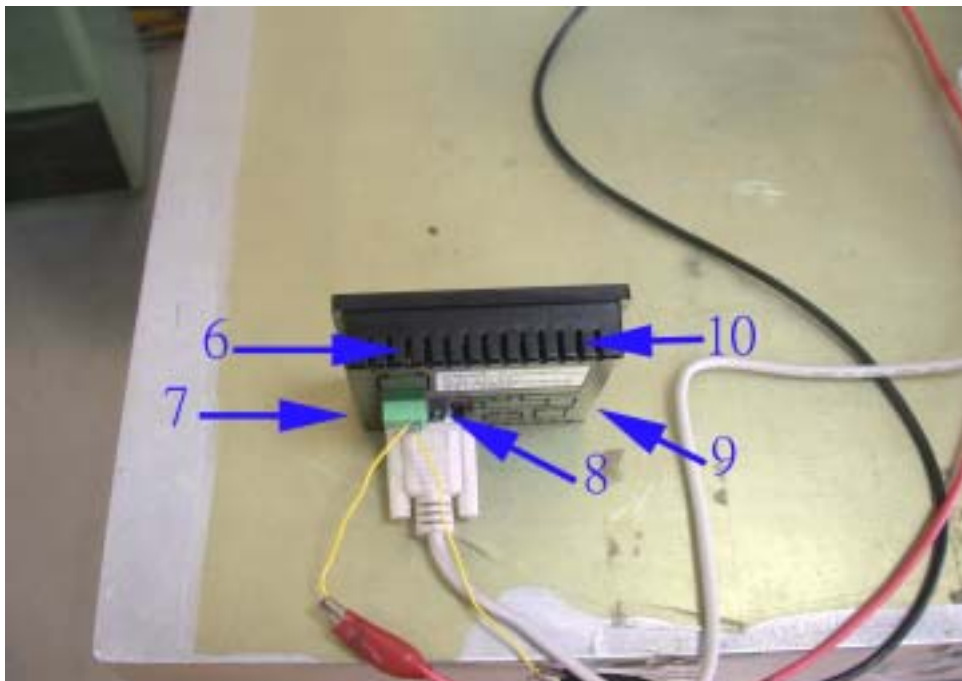
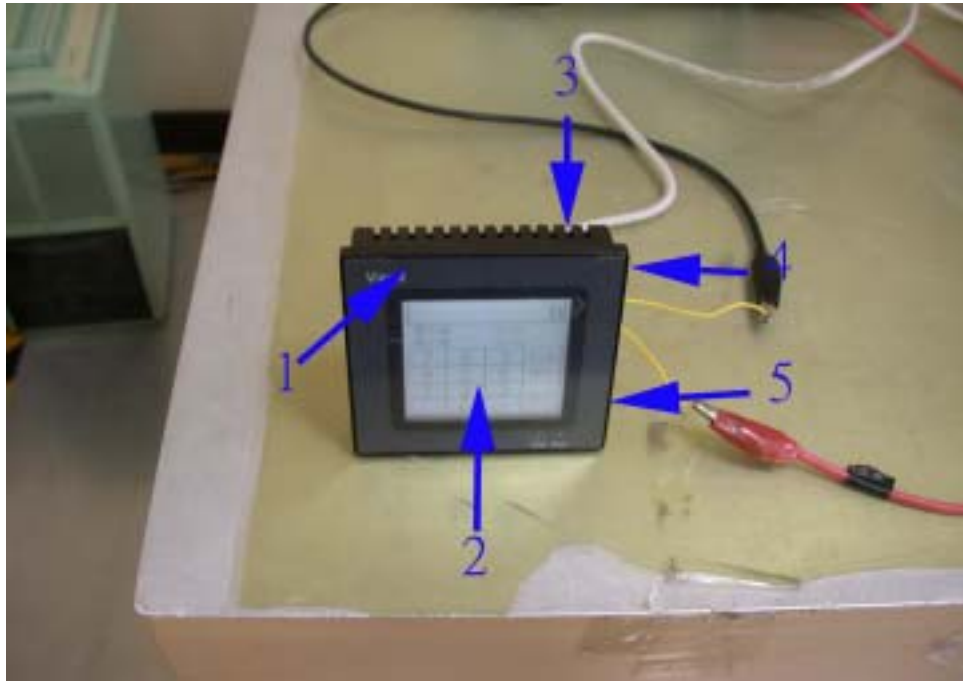
Test levels

Contact discharge		Air discharge	
Level	Test voltage kv	Level	Test voltage
1	2	1	2
2	4	2	4
3	6	3	8
4	8	4	15
x <sup>1)</sup>	Special	x <sup>1)</sup>	Special

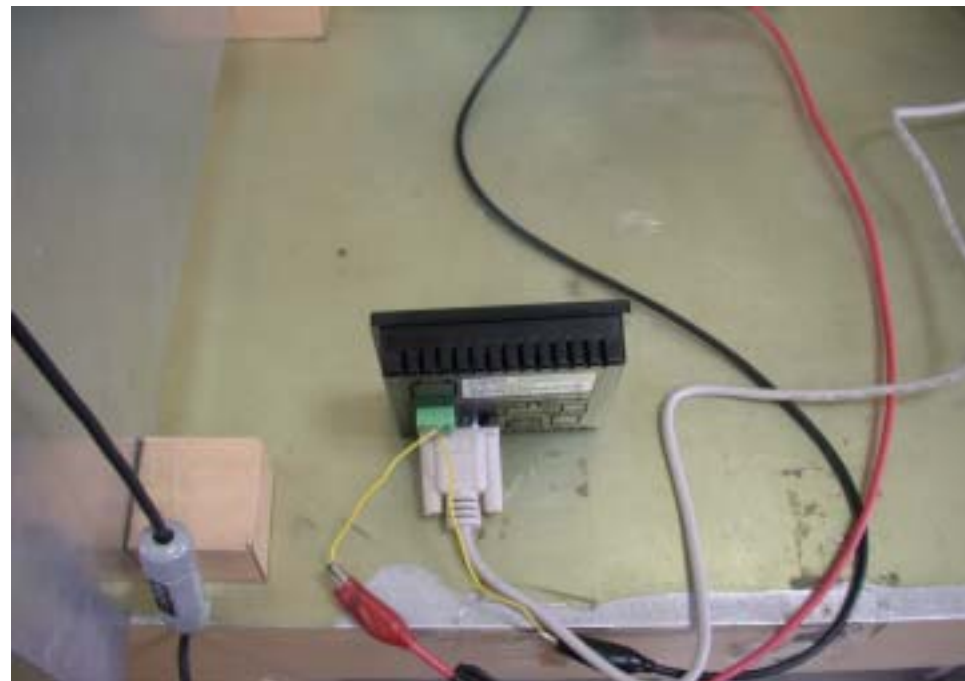
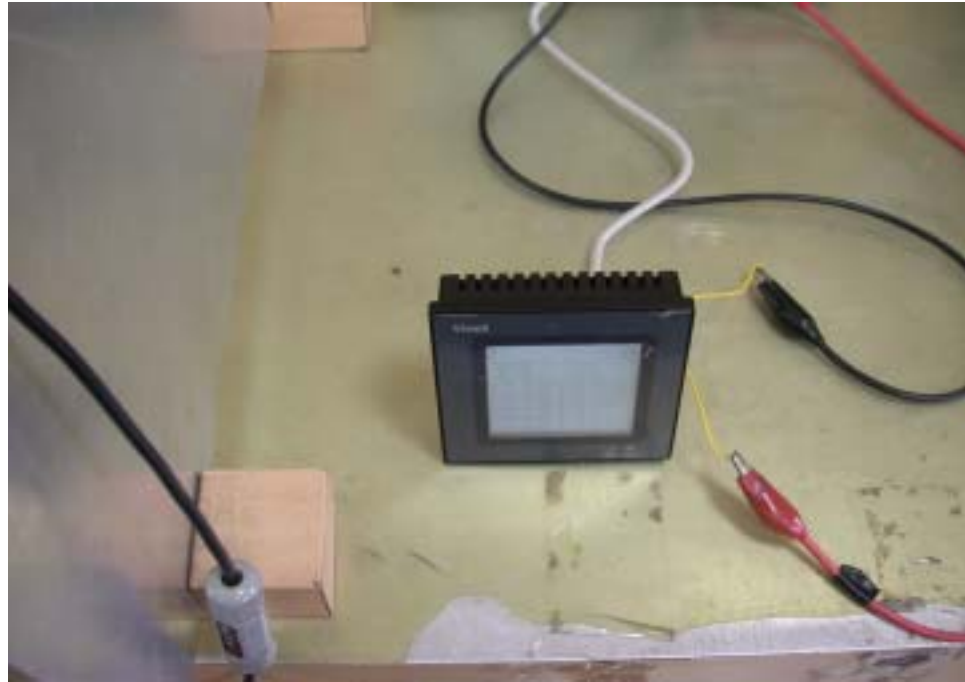
1) "x" is an open level . The level has to be specified in the dedicated equipment specification .

- If higher voltages than those shown are specified , special test equipment may be needed .

### 9.4 Direct Discharge Test Setup Drawing



### Indirect Discharge Test Setup Drawing



### 9.5 Electrostatic Discharge Test Data

Model No. : \_\_\_\_\_ VX301 \_\_\_\_\_

Test Item : <b>Direct Discharge</b>								Instrument :							
Temperature : <u>26</u>								Relative Humidity : <u>53 %RH</u>							
Storage Capacitor : 150 pf								Discharge Resistor : 330 Ohm							
Discharge Rate : < 1 / Sec															
Contact Discharge								Air Discharge							
2kV		4kV		kV		kV		2 kV		4kV		6kV		8kV	
+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
P	P	P	P	/	/	/	/	P	P	P	P	P	P	P	P

Test Item : <b>Indirect Discharge</b>								Instrument :							
Temperature : <u>26</u>								Relative Humidity : <u>53 %RH</u>							
Storage Capacitor : 150 pf								Discharge Resistor : 330 Ohm							
Discharge Rate : < 1 / Sec															
Contact Discharge															
2 kV		4kV		kV		kV									
+	-	+	-	+	-	+	-								
P	P	P	P	/	/	/	/								

1. " P " ---- means the EUT function is correct during the test.
2. " / " ---- no test.



## 10. EN 61000-4-3 Radio-Frequency Electromagnetic Field Test

Test Standard	Model No.	Criterion
EN 61000-4-3	VX301	A

### TEST RESULT:

Field Strength : 10 V/M , Level 3 .

Modulation : AM 80 % , 1KHz . ON (YES) . OFF (\_\_\_)

Start : 80 MHz , Stop : 1000 MHz . AC Power : N/A Vac

DC Power : 24 Vdc

Field Strength : 3 V/M , Level 2 .

Modulation : AM 80 % , 1KHz . ON (YES) . OFF (\_\_\_)

Start : 1400 MHz , Stop : 2000 MHz .

Field Strength : 1 V/M , Level 1 .

Modulation : AM 80 % , 1KHz . ON (YES) . OFF (\_\_\_)

Start : 2000 MHz , Stop : 2700 MHz .

The test results shall be classified on the basis of the operating conditions and the functional specifications of the equipment under test , as in the following , unless different specifications are given by product committees or product specifications :

#### Performance Criterion :

- 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 ;

## 10.1 Radio-Frequency Electromagnetic Field Test Description

Most electronic equipment is, in some manner, affected by electromagnetic radiation.

This radiation is frequently generated by such sources as the small hand-held radio transceivers that are used by operating, maintenance and security personnel, fixed-station radio and television transmitters, vehicle radio transmitters, and various industrial electromagnetic sources.

In addition to electromagnetic energy deliberately generated, there is also spurious radiation caused by devices such as welders, thyristors, fluorescent lights, switches operating inductive loads, etc. For the most part, this interference manifests itself as conducted electrical interference and, as such, is dealt with in other parts of this standard. Methods employed to prevent effects from electromagnetic fields will normally also reduce the effects from these sources.

The electromagnetic environment is determined by the strength of the electromagnetic field (field strength in volts per metre). The field strength is not easily measured without sophisticated instrumentation nor is it easily calculated by classical equations and formulae because of the effect of surrounding structures or the proximity of other equipment that will distort and/or reflect the electromagnetic waves.

All testing of equipment shall be performed in a configuration as close as possible to the installed case. Wiring shall be consistent with the manufacturer's recommended procedures, and the equipment shall be in its housing with all covers and access panels in place, unless otherwise stated.

If the equipment is designed to be mounted in a panel, rack or cabinet, it shall be tested in this configuration.

## 10.2 Radio-Frequency Electromagnetic Field Test Limits

Table 1 - Test levels

Level	Test field strength V/m
1	1
2	3
3	10
x	Special

NOTE – x is an open test level. This level may be given in the Product specification.

Table 1 gives details of the field strength of the unmodulated signal. For testing of equipment, this signal is 80 % amplitude modulate with a 1 KHz sinewave to simulate actual threats.

### 10.3 Radio-Frequency Electromagnetic Field Test Setup Photo

**\* FRONT VIEW \***



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## 11. EN 61000-4-4 Fast Transient Burst Test

Test Standard	Model No.	Criterion
EN 61000-4-4	VX301	B

The test results shall be classified on the basis of the operating conditions and the functional specifications of the equipment under test , as in the following , unless different specifications are given by product committees or product specifications :

Performance Criterion :

- 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 ;

## 11.1 Fast Transient Bursts Test Description

The repetitive fast transient test is a test with bursts consisting of a number of fast transients, coupled into power supply, control and signal ports of electrical and electronic equipment. Significant for the test are the short rise time, the repetition rate and the low energy of the transients.

The test shall be carried out on the basis of a test plan including verification of the performances of the EUT as defined in the technical specification.

### Climatic conditions

The tests shall be carried out in standard climatic conditions in accordance with IEC 68-1:

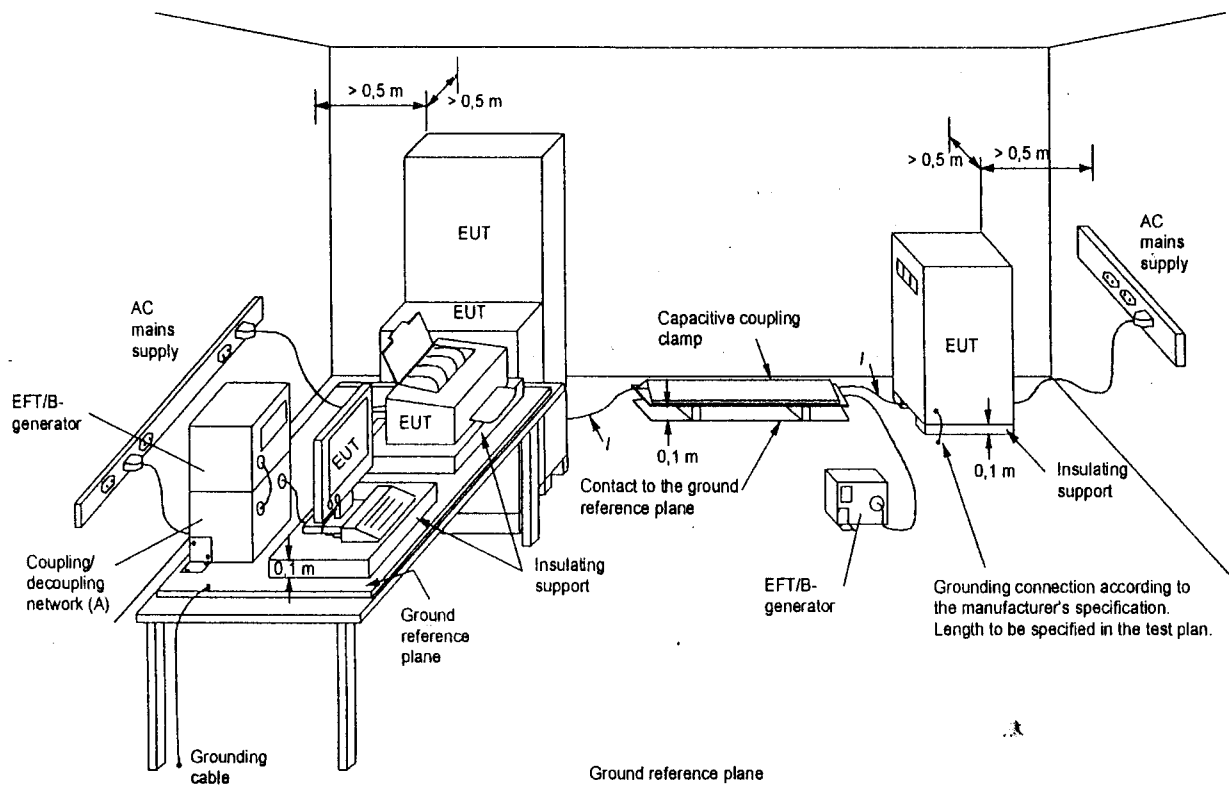
- ambient temperature: 15 to 35
- relative humidity: 25% to 75%
- atmospheric pressure: 86kPa (860 mbar) to 106Kpa (1 060 mbar)

NOTE – Any other values are specified in the product specification.

### Electromagnetic conditions

The electromagnetic conditions of the laboratory shall be such to guarantee the correct operation of the EUT in order not to influence the test results.

## 11.2 Fast Transient Burst Test Setup



### Key

- I Length between clamp and the EUT to be tested (should be  $0,5 \text{ m} \pm 0,05 \text{ m}$ )
- (A) Location for supply line coupling
- (B) Location for signal lines coupling

### 11.3 Fast Transient Burst Test Limits

#### Test Levels

Open-circuit output test voltage ( $\pm 10\%$ ) and repetition rate of the impulses ( $\pm 20\%$ )				
Level	On power supply port, PE		On I/O (Input/Output) signal, data and control ports	
	Voltage peak kV	Repetition rate kHz	Voltage peak kV	Repetition rate kHz
1	0.5	5	0.25	5
2	1	5	0.5	5
3	2	5	1	5
4	4	2.5	2	5
x <sup>1)</sup>	Special	Special	Special	Special

1) "x" is an open level. The level has to be specified in the dedicated equipment specification.



## 11.4 Fast Transient Burst Test Setup Photo

**\* FRONT VIEW \***



## 11.5 Fast Transient Burst Test Data

MODEL NO. : VX301

REGULATION : **According to EN 61000-4-4 (2004) Spec.**

### TEST RESULT

Temperature : <u>28 degree.</u>		Duration of tests : <u>1 min.</u>					
Relative Humidity : <u>54 % RH.</u>		Time between test : <u>60 second.</u>					
Pulse : <u>5 / 50 ns.</u>		AC Power : <u>N/A Vac.</u>					
Burst : <u>15 ms / 300 ms.</u>		DC Power : <u>24 Vdc.</u>					
Voltage \ Polarity		0.5 kV		1 kV		2 kV	
\ Test Point \ Mode \ Result		+	-	+	-	+	-
<b>Power Line</b>	<b>L</b>	/	/	P	P	/	/
	<b>N</b>	/	/	P	P	/	/
	<b>G</b>	/	/	/	/	/	/
<b>Signal Line Clamp Test</b>		/	/	/	/	/	/

- Note :
1. "P" mean the EUT function is correct during the test.
  2. "F" - - - - Fail
  3. "/" - - - - no test

## 12. EN 61000-4-5 Surge Immunity Test

Test Standard	Model No.	Criterion
EN 61000-4-5	VX301	N/A

The EUT is not supplied by the means of mains connection and it is deemed to fully comply with the requirements of this standard without additional tests under engineering judgment.

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### 13. EN 61000-4-6 Immunity To Conducted Disturbances, Induced By Radio- Frequency Fields

Test Standard	Model No.	Criterion
EN 61000-4-6	VX301	N/A

The EUT is not supplied by the means of mains connection and it is deemed to fully comply with the requirements of this standard without additional tests under engineering judgment.

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## 14. EN 61000-4-8 Power Frequency Magnetic Field Immunity Test

Test Standard	Model No.	Criterion
EN 61000-4-8	VX301	N/A

The EUT is not supplied by the means of mains connection and it is deemed to fully comply with the requirements of this standard without additional tests under engineering judgment.

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## 15. EN 61000-4-11 Voltage Dips, Short Interruptions And Voltage Variations Immunity Tests

Test Standard	Model No.	Criterion
EN 61000-4-11	VX301	N/A

The EUT is not supplied by the means of mains connection and it is deemed to fully comply with the requirements of this standard without additional tests under engineering judgment.

## 16. Labelling Requirement, WARNING



1. The vertical size is 5mm.
2. The mark will be placed in a visible spot on the outside of the equipment, but in cases where that is impractical, it may be included on the packaging and/or documentation

ITE is subdivided into two categories denoted class A ITE and class B ITE.

### **Class A ITE**

Class A ITE is a category of all other ITE which satisfies the Class A ITE limits but not the Class B ITE limits. Such equipment should not be restricted in its sale but the following warning shall be included in the instructions for use :

#### **Warning**

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

### **Class B ITE**

Class B ITE is a category of apparatus which satisfies the class B ITE disturbance limits. Class B ITE is intended primarily for use in the domestic environment and may include:

- equipment with no fixed place of use; for example, portable equipment powered by built-in batteries;
- telecommunication terminal equipment powered by a telecommunication network;
- personal computers and auxiliary connected equipment.

## 17. The List of Test Instruments

Test Site	Instrument	Model No.	S/N	Next Cal. Date	Cal. Interval
<b>Radiation (OP No.3)</b>	R & S Receiver	ESVS 30	863342/012	Aug. 05, 2009	1 Year
	Schaffner Pre-Amp.	CPA-9232	1012	Aug. 15, 2009	1 Year
	SCHWARZBECK Antenna	9161	9161-4077	Aug. 02, 2009	1 Year
	RF Cable	No.3	N/A	Aug. 15, 2009	1 Year
<b>EMS (NO.2)</b>	(EMC-PARTNER) Transient Tester	TRA-2000IN6	TRA-2000IN6 456	July 04, 2009	2 Years
	ESD Simulator	ESS-2002	ESS0767151	Sep. 03, 2009	1 Year
	(EMC-PARTNER) EFT/B Clamp	TRA1Z03B	CNEFT 1000-268	N/A	N/A
	(EMC-PARTNER) Magnetic Field Loop antenna	MF-1000	MF 1000-169	July 02, 2009	2 Years
	CONDUCTED IMMUNITY	FRANKONIA CIT-10	102C3117	Dec. 07, 2008	2 Years
	T4 CDN	FRANKONIA CDN-RJ45	A3023011	Nov. 24, 2009	2 Years
	(EMC-PARTNER) Harmonic/ Flicker	HAR-1000	66	Oct. 03, 2009	2 Years
	(Amplifier & Research) Power Amplifier	100W1000M11	25616	N/A	N/A
	(Amplifier & Research) Power Amplifier	80S1G3	313546	N/A	N/A
	(Amplifier & Research) Power Meter	PM2002	N/A	Aug. 17, 2009	2 Years
	(Boonton) Power Sensor	51011-EMC	31094	Sep. 20, 2010	2 Years
	(Boonton) Power Sensor	31011-EMC	31078	Sep. 20, 2010	2 Years
	R & S Signal Generator	SMY02	829846/038	Apr. 30, 2010	2 Years

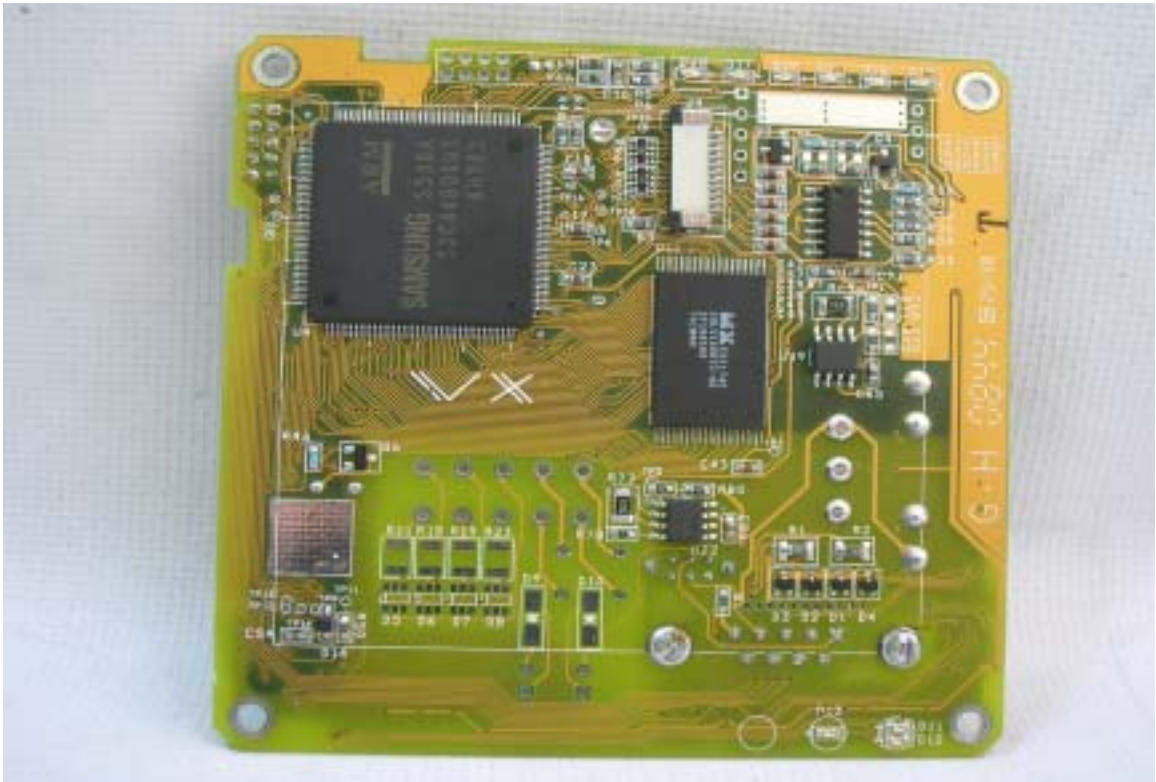


## 18. EUT Photos

MODEL NO. : VX301







# VERIFICATION

## of conformity with European EMC Directive

No. E960154-1

*Document holder:* **VX Technology, Inc.**  
*Type of equipment:* **Human Machine Interface**  
*Type designation:* **VX301, SD300, GP-30E, HMI311**

A sample of the equipment has been tested for CE-marking according to the EMC Directive, 2004/108/EC.  
*Standard(s) used for showing compliance with the essential requirements of the directive:*

*EMC Standard(s):*

EN 61131-2: 2007  
EN 55011: 2007 + A2: 2007 Class A  
EN 61000-3-2: 2006  
EN 61000-3-3: 1995 + A1: 2001 + A2: 2005

	<i>Performance Criterion</i>
EN 61000-4-2: 1995 + A1: 1998 + A2: 2001	B
EN 61000-4-3: 2006	A
EN 61000-4-4: 2004	B
EN 61000-4-5: 2006	N/A
EN 61000-4-6: 2004	N/A
EN 61000-4-8: 1993 + A1: 2001	N/A
EN 61000-4-11: 2004	N/A

The referred test report(s) show that the product fulfills the requirements in the EMC Directive for CE marking. On this basis, together with the manufacturer's own documented production control, the manufacturer (or his European authorized representative) can in his EC Declaration of Conformity verify compliance with the EMC Directive.

Signed for and on behalf of  
**PEP Testing Laboratory**



*M. Y. Tsui*

Date: DEC. 04, 2008

M. Y. Tsui / President

# Declaration of Conformity

The following

**Applicant** : **VX Technology, Inc.**  
**Equipment** : **Human Machine Interface**  
**Model No.** : **VX301, SD300, GP-30E, HMI311**  
**Report No.** : **E960154-1**

is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility(2004/108/EC).

For the evaluation of above mentioned Directives, the following standards were applied:

EN 61131-2: 2007

EN 55011: 2007+A2: 2007

Class A

EN 61000-3-2 : 2006

EN 61000-3-3 : 1995+A1: 2001+A2: 2005

EN 61000-4-2 : 1995+A1: 1998+A2: 2001

EN 61000-4-3 : 2006

EN 61000-4-4 : 2004

EN 61000-4-5 : 2006

EN 61000-4-6 : 2004

EN 61000-4-8 : 1993+A1: 2001

EN 61000-4-11 : 2004

The following manufacturer is responsible for this declaration:

VX Technology, Inc.

2F, NO. 262, SEC. 2, GUANGFU RD., EAST DISTRICT, HSINCHU CITY 300,  
TAIWAN, R.O.C.

TAIWAN / DEC. 04, 2008

Place and Date

\_\_\_\_\_  
Signature of responsible Person