

## TEST REPORT

Report No.: HC40013A/2021

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Date: August 23, 2021

VECOW CO., LTD  
3F., NO.10, JIANKANG RD.,  
ZHONGHE DIST., NEW TAIPEI CITY,  
TAIWAN, R.O.C.

The following merchandise was submitted and identified by the vendor as:

Product Description: Fanless Embedded System  
Style/ Item No.: ECX-2000/ No.1 ~ No.3  
Quantity: Total 3 sets  
Testing Period: Apr. 7, 2021 to Aug. 9, 2021  
Note: System Configuration of Equipment under measurement:  
CPU: Intel(R) I7-10700TE, 2.0GHz  
RAM: Vecow VMD4NIS-08G00C 8GB DDR4 3200 W/T SODIMM  
RAM: Vecow VMD4NIS-16G00C 16GB DDR4 3200 W/T SODIMM  
SDD: 2.5" SATA SSD 3ME4 128GB

We have tested the submitted sample(s) as requested and the following results were obtained:

Test Required: (According to client's test specification, please see following sheets in detail.)

1. Low Temperature Test
2. High Temperature Test
3. Random Vibration Test
4. Mechanical Shock Test

Test Results : -PLEASE SEE ATTACHED SHEETS-

Signed for and on behalf of  
SGS TAIWAN Ltd.



Hank Chiou  
Asst. Manager

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## 1. Low Temperature Test:

### Test Equipment:

Name	Brand	Model	Serial No.
Programmable Temperature and Humidity Chamber	GIANT FORCE	GTH-1000-60-CP-AR-H	MAA1810-001

### Lab Environmental Conditions:

Ambient temperature:  $(25 \pm 3) \text{ }^\circ\text{C}$

Ambient humidity:  $(55 \pm 20) \text{ \% RH}$

### Test Location:

No.31, Wu Chyuan Road, New Taipei Industrial Park, WuKu District,  
New Taipei City, Taiwan

### Test Method/ Specification:

Sample condition: Non-Operating

Test Temperature: -40 °C

Duration: 16 hours

- Examine the appearance of specimen(s) by visual check and perform functional check after this test.
- Functional check: Turn on the power of specimen then examine the test program “Burn In Test” while performing functional check.

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**Specimen:**

Style/Item No.: ECX-2000/ No.1

Quantity: Total 1 set

**Test Result:**

<div style="text-align: right;"><b>Check Item</b></div> <div style="text-align: left;"><b>Style/ Item No.</b></div>	<b>Appearance check (Visual check)</b>	<b>Functional check</b>
<b>ECX-2000/ No.1</b>	No visible damage	Normal

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## 2. High Temperature Test:

### Test Equipment:

Name	Brand	Model	Serial No.
Programmable Temperature and Humidity Chamber	GIANT FORCE	GTH-1000-60-CP-AR-H	MAA1810-001

### Lab Environmental Conditions:

Ambient temperature:  $(25 \pm 3) ^\circ\text{C}$

Ambient humidity:  $(55 \pm 20) \% \text{RH}$

Test Location: No.31, Wu Chyuan Road, New Taipei Industrial Park, WuKu District, New Taipei City, Taiwan

### Test Method/ Specification:

Sample condition: Non-Operating

Test Temperature: 75 °C

Test Humidity: 95 % RH

Duration: 16 hours

- Examine the appearance of specimen(s) by visual check and perform functional check after this test.
- Functional check: Turn on the power of specimen then examine the test program“Burn In Test” while performing functional check.

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**Specimen:**

Style/Item No.: ECX-2000/ No.1

Quantity: Total 1 set

**Test Result:**

<div style="text-align: right;"><b>Check Item</b></div> <div style="text-align: left;"><b>Style/ Item No.</b></div>	<b>Appearance check (Visual check)</b>	<b>Functional check</b>
<b>ECX-2000/ No.1</b>	No visible damage	Normal

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### 3. Random Vibration Test:

#### Test Equipment:

Name	Brand	Model	Serial No.
Vibration Tester	UNHOLTZ-DICKIE	SAI60-H560BAC/2/ST	474
Controller	Dactron	LASER	7110357
Control Accelerometer	PCB	353B34	LW213529

#### Lab Environmental Conditions:

Ambient temperature:  $(25 \pm 3) \text{ }^\circ\text{C}$

Ambient humidity:  $(55 \pm 20) \text{ \% RH}$

Test Location: No.31, Wu Chyuan Road, New Taipei Industrial Park, WuKu District, New Taipei City, Taiwan

#### Test Method/ Specification:

Sample condition: Operating (execute " Burn In Test")

Wave form: Random

Frequency: (5 ~ 500) Hz

Frequency (Hz)	Left Slope (dB/ Oct.)	PSD ( $\text{g}^2/\text{Hz}$ )	Right Slope (dB/ Oct.)
5	—	0.05	0
500	0	0.05	—
⇨ equivalent to 5.0 Grms			

Direction: X, Y, Z axes (see photo 5 ~ 7)

Duration: 30 minutes/ axis

- Examine the appearance of specimen(s) by visual check and perform functional check after this test.
- Functional check: Turn on the power of specimen then examine the test program “BurnIn Test” while performing functional check.

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**Specimen:**

Style/Item No.: ECX-2000/ No.2

Quantity: Total 1 set

**Test Result:**

Style/ Item No.	Check Item	Appearance check (Visual check)	Functional check
	ECX-2000/ No.2		No visible damage

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## 4. Mechanical Shock Test:

### Test Equipment:

Name	Brand	Model	Serial No.
Shock Test System	LANSMONT	95-115D	M17656
Data Acquisition & Analysis System	LANSMONT	TP4 8A-CH SML 1115-001	1115-001
ICP Accelerometer	PCB	353M288	196438

### Lab Environmental Conditions:

Ambient temperature:  $(25 \pm 3) ^\circ\text{C}$

Ambient humidity:  $(55 \pm 20) \% \text{RH}$

### Test Location:

No.33, Wu Chyuan Road, New Taipei Industrial Park, WuKu District,  
New Taipei City, Taiwan

### Test Method/ Specification:

Test method: IEC 60068-2-27 Edition 4.0:2008 and client's request

Sample condition: Operating (execute " Burn In Test ")

Pulse shape: Half-Sine

Acceleration: 50 g

Pulse duration: 11 ms

Shock direction: 6 faces ( $\pm X$ ,  $\pm Y$ ,  $\pm Z$  axes, see photo 8 ~ 13)

No. of shock: 3 shocks/ axis (total 18 shocks)

- Examine the appearance of specimen(s) by visual check and perform functional check after this test.
- Functional check: Turn on the power of specimen then examine the test program "BurnIn Test" while performing functional check.



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**Specimen:**

Style/Item No.: ECX-2000/ No.3

Quantity: Total 1 set

**Test Result:**

<div style="text-align: right;"><b>Check Item</b></div> <div style="text-align: left;"><b>Style/ Item No.</b></div>	<b>Appearance check (Visual check)</b>	<b>Functional check</b>
<b>ECX-2000/ No.3</b>	No visible damage	Normal






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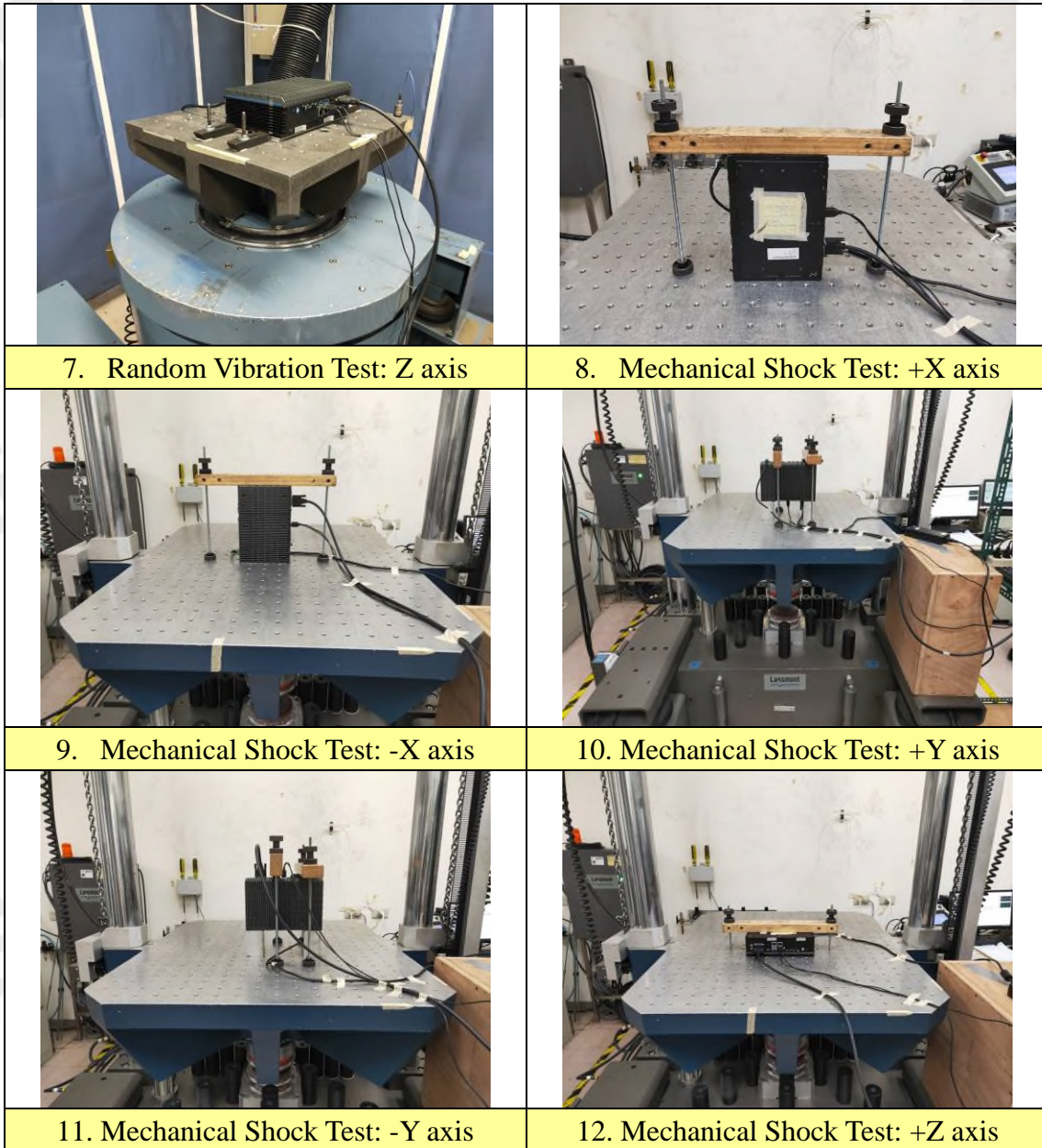
### Test Photos:

	
1. Appearance of specimen	2. Appearance of specimen
	
3. Low Temperature Test/ High Temperature Test	4. Low Temperature Test/ High Temperature Test
	
5. Random Vibration Test: X axis	6. Random Vibration Test: Y axis

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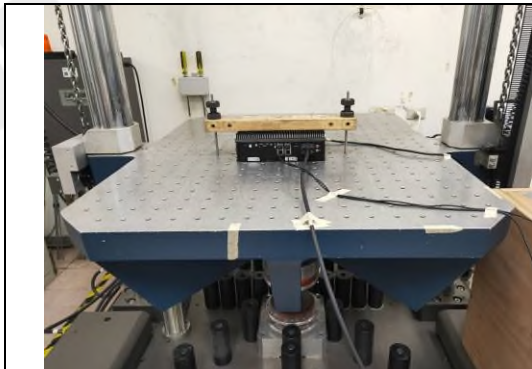


Test Photos--Continued:

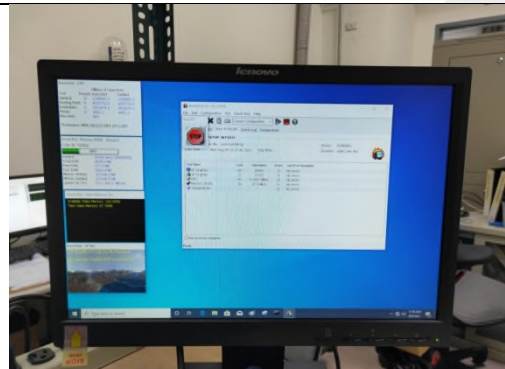


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### Test Photos--Continued:



13. Mechanical Shock Test: -Z axis



14. Functional check

— — — The End of Test Report — — —

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