

TEST REPORT

Report No.: HC60112/2023

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Date: July 7, 2023

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

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

Product Description: Expandable Fanless Embedded System
Style/ Item No.: ECX-3200/ No.1
Quantity: Total 1 piece
Testing Period: Jun. 16, 2023 to Jun. 30, 2023
Note: (Client's declaration) The configuration of specimen(s) as shown below:
1. CPU: 12th Gen Intel® Core™ i7-12700 TE @1.40GHz
2. RAM: Gold key (Neo Forza) DDR5 4800 NON-ECC SODIMM 32GB x 2
3. SSD: Innodisk 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 and High Humidity Test
3. Random Vibration Test
4. Mechanical Shock Test

Test Results: - PLEASE SEE ATTACHED SHEETS -

Signed for and on behalf of
SGS TAIWAN Ltd.



Alex Chen
Asst. Supervisor

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1. Low Temperature Test:

Test Equipment:

Name	Brand	Model	Serial No.
Programmable Temperature & Humidity Chamber	Giant Force	GTH-1000-60-CP-AR-H	MAA1904-001

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, TaiwanTest Method/ Specification:Test method: IEC 60068-2-1 Edition 6.0: 2007 and client's requestSample condition: OperatingTemperature: -40°CDuration: 16 hours

- Examine the appearance of specimen by visual check and perform functional check after this test.
- Functional check: Turn on the power of specimen then execute the test program "Burn-In Test" and "3D Mark" while performing functional check.

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Specimen:

Style/ Item No.: ECX-3200/ No.1

Quantity: Total 1 piece

Test Result:

Check Item Style/ Item No.	Appearance Check (visual check)	Functional Check
ECX-3200/ No.1	No visible damage	Normal

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2. High Temperature and High Humidity Test:Test Equipment:

Name	Brand	Model	Serial No.
Programmable Temperature & Humidity Chamber	Giant Force	GTH-1000-60-CP-AR-H	MAA1904-001

Lab Environmental Conditions:Ambient temperature: (25 ± 3) °CAmbient humidity: (55 ± 20) % RHTest Location:No.31, Wu Chyuan Road, New Taipei Industrial Park, WuKu District, New Taipei City, TaiwanTest Method/ Specification:Test method: IEC 60068-2-78 Edition 2.0: 2012 and client's requestSample condition: OperatingTemperature: 75°CTest Humidity: 95% RHDuration: 16 hours

- Examine the appearance of specimen by visual check and perform functional check after this test.
- Functional check: Turn on the power of specimen then execute the test program "Burn-In Test" and "3D Mark" while performing functional check.

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Specimen:

Style/ Item No.: ECX-3200/ No.1

Quantity: Total 1 piece

Test Result:

Check Item Style/ Item No.	Appearance Check (visual check)	Functional Check
ECX-3200/ No.1	No visible damage	Normal

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3. Random Vibration Test:

Test Equipment:

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

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:

Test Method: IEC 60068-2-64 Edition 2.1: 2019 and client's request

Wave form: Random

Frequency: (10 ~ 2000) Hz

Frequency (Hz)	Left Slope (dB/Oct.)	PSD (g^2/Hz)	Right Slope (dB/Oct.)
10	-	0.0020	0
2000	0	0.0020	-

⇒ equivalent to 2.0 grms

Direction: X, Y, Z axes (as show in photo 5 ~ 7)

Test duration: 2 hours/ axis

- Sample condition: Operating
- Examine the appearance of specimen by visual check and perform functional check after this test.
- Functional check: Turn on the power of specimen then execute the test program "Burn-In Test" and "3D Mark" while performing functional check.

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Specimen:

Style/ Item No.: ECX-3200/ No.1

Quantity: Total 1 piece

Test Result:

Check Item Style/ Item No.	Appearance Check (visual check)	Functional Check
ECX-3200/ No.1	No visible damage	Normal

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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
ICP Accelerometer	PCB	353M288	190564

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:

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

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)

- Sample condition: Operating
- Examine the appearance of specimen by visual check and perform functional check after this test.
- Functional check: Turn on the power of specimen then execute the test program "Burn-In Test" and "3D Mark" while performing functional check.

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Specimen:

Style/ Item No.: ECX-3200/ No.1







Quantity: Total 1 piece

Test Result:

Check Item Style/ Item No.	Appearance Check (visual check)	Functional Check
ECX-3200/ No.1	No visible damage	Normal

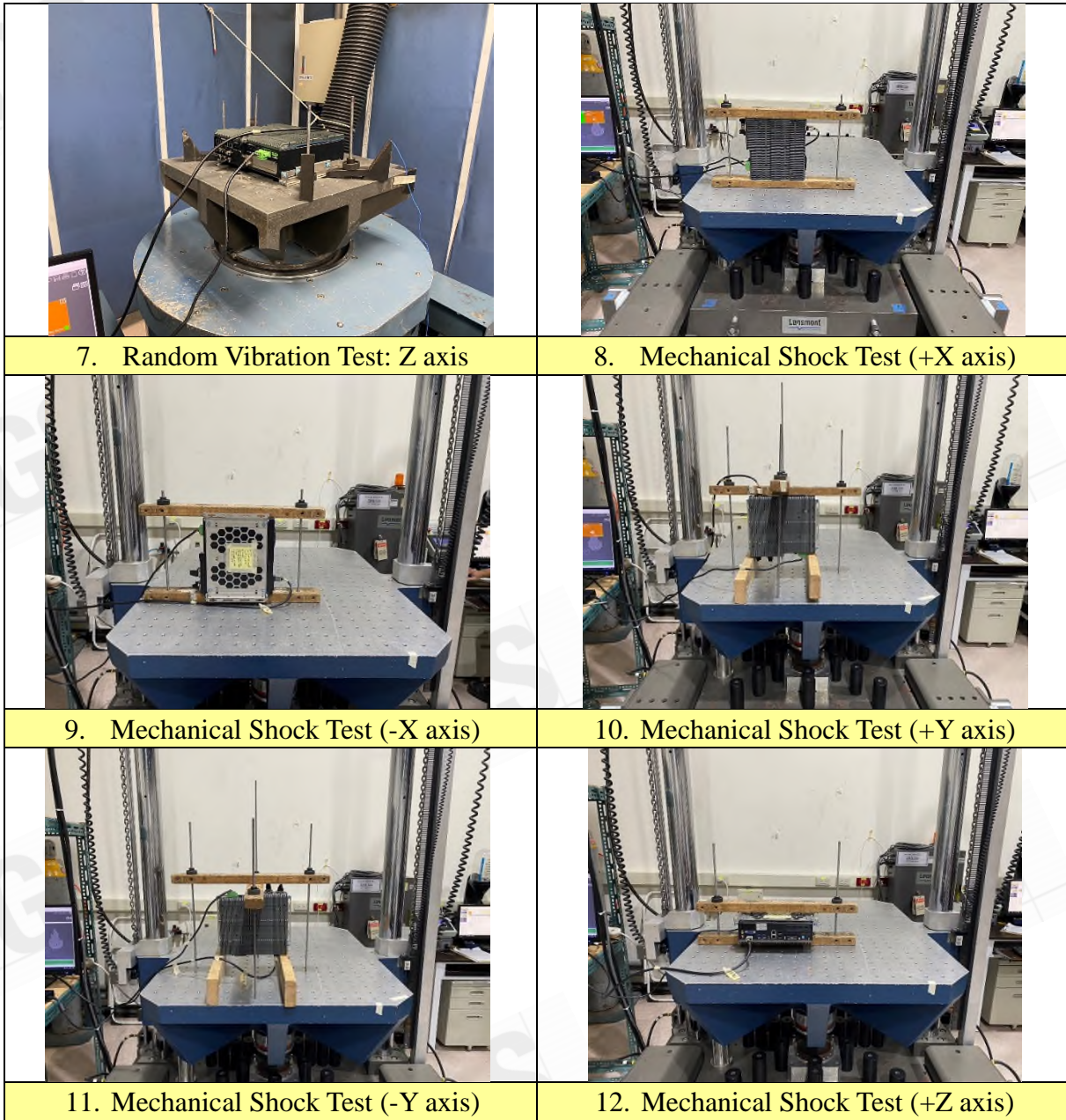
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Test Photos:

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

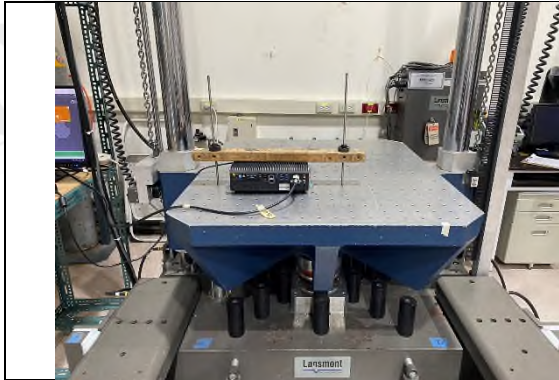
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Test Photos--Continued:

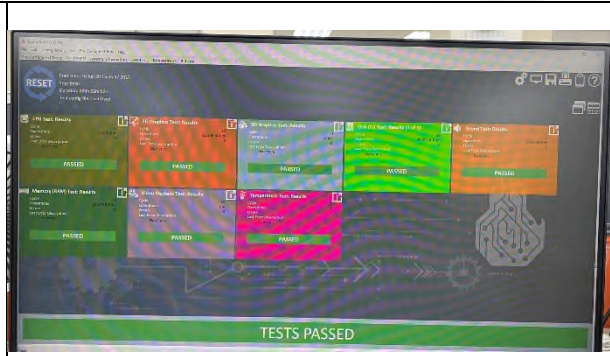


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Test Photos--Continued:



13. Mechanical Shock Test (-Z axis)



14. Functional Shock

--- The End of Test Report ---

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