

TEST REPORT

Report No.: HC60048A/2017

Page: 1 of 12

Date: June 22, 2017

VECOW CO., LTD.

12 F., NO. 111, ZHONGCHENG RD.,

TUCHENG DIST., NEW TAIPEI CITY,

TAIWAN, R.O.C.

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

Product Description: Ultra-Compact Embedded System

Style/ Item No.: ECS-4500-PoER/ No.1

Quantity: Total 1 set

Testing Period: Jun. 8, 2017 to Jun. 19, 2017

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

Test Results: – PLEASE SEE ATTACHED SHEETS –

*HC60048/2017, dated on June 21, 2017, is hereby canceled and replaced by HC60048A/2017.

Signed for and on behalf of
SGS TAIWAN Ltd.



Hank Chiou
Supervisor

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1. High Temperature/ Humidity Test:

Test Equipment:

Name	Brand	Model	Serial No.
Programmable Temperature and Humidity Chamber	KSON	THS-D6TS-150+LN2	A0494

Lab Environmental Conditions:

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

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

Test Method/ Specification:

Test Method: IEC 60068-2-78, Edition 2.0:2012 and client's request

Sample Condition: Operating (execute Burn-In Test)

Test temperature: 85°C

Test humidity: 95%RH

Test 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 execute test program "Burn-In Test" while performing functional check.

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Specimen:

Style/ Item No.: ECS-4500-PoER/ No.1

Quantity: Total 1 set

Test Result:

Style/ Item No.	Check Item	Appearance check (Visual check)	Functional check
ECS-4500-PoER/ No.1		No visible damage	Normal

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2. Low Temperature Test:

Test Equipment:

Name	Brand	Model	Serial No.
Programmable Temperature and Humidity Chamber	KSON	THS-D6TS-150+LN2	A0494

Lab Environmental Conditions:

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

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

Test Method/ Specification:

Test Method: IEC 60068-2-1, Edition 6.0:2007 and client's request

Sample Condition: Operating (execute Burn-In Test)

Test temperature: -40°C

Test 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 execute test program "Burn-In Test" while performing functional check.

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Specimen:

Style/ Item No.: ECS-4500-PoER/ No.1

Quantity: Total 1 set

Test Result:

<div style="text-align: center;">Check Item</div> <div style="text-align: left;">Style/ Item No.</div>	<div style="text-align: center;">Appearance check (Visual check)</div>	<div style="text-align: center;">Functional check</div>
<div style="text-align: center;">ECS-4500-PoER/ No.1</div>	<div style="text-align: center;">No visible damage</div>	<div style="text-align: center;">Normal</div>

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3. Random Vibration Test:

Test Equipment:

Name	Brand	Model	Serial No.
Vibration Tester	King Design	EM-800F2K-50N120	RU104080389
Controller	Dactron	COMET 200	10539718
Control Accelerometer	PCB	353B34	143549

Lab Environmental Conditions:

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

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

Test Method/ Specification:

Test method: IEC 60068-2-64, Edition 2.0: 2008

Sample condition: Operating (execute "BurnIn Test")

Wave form: Random

Frequency: (5 ~ 500) Hz

Frequency (Hz)	Left Slope (dB/Oct.)	PSD (G^2/Hz)	Right Slope (dB/Oct.)
5	—	0.05	0
500	0	0.05	—
⇨ equivalent to 5.0 G_{rms}			

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" could work normally or not.

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Specimen:

Style/Item No.: ECS-4500-PoER/ No.1

Quantity: Total 1 set

Test Result:

Style/ Item No.	Check Item	Appearance check (Visual check)	Functional check
	ECS-4500-PoER/ No.1		No visible damage

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4. Mechanical Shock Test:

Test Equipment:

Name	Brand	Model	Serial No.
Shock Test System	LANSMONT	65-81 TTSII	M-13418
Data Acquisition & Analysis System	LANSMONT	103570-2-B	0503-73
ICP Accelerometer	PCB	353B14	79347

Lab Environmental Conditions:

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

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

Test Method/ Specification:

Test Method: IEC 60068-2-27, Edition 4.0: 2008

Sample condition: Operating (execute "BurnIn 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" could work normally or not.

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Specimen:

Style/Item No.: ECS-4500-PoER/ No.1





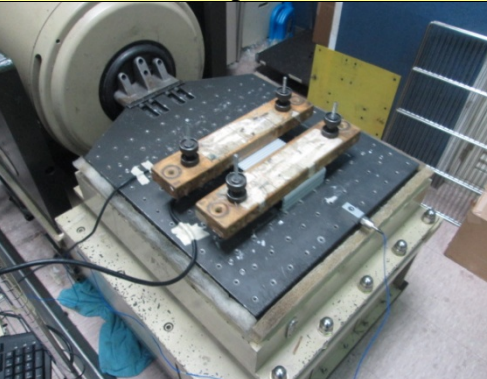
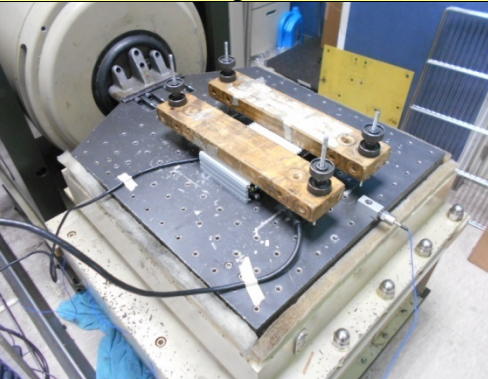
Quantity: Total 1 set

Test Result:

Style/ Item No.	Check Item	Appearance check (Visual check)	Functional check
	ECS-4500-PoER/ No.1		No visible damage

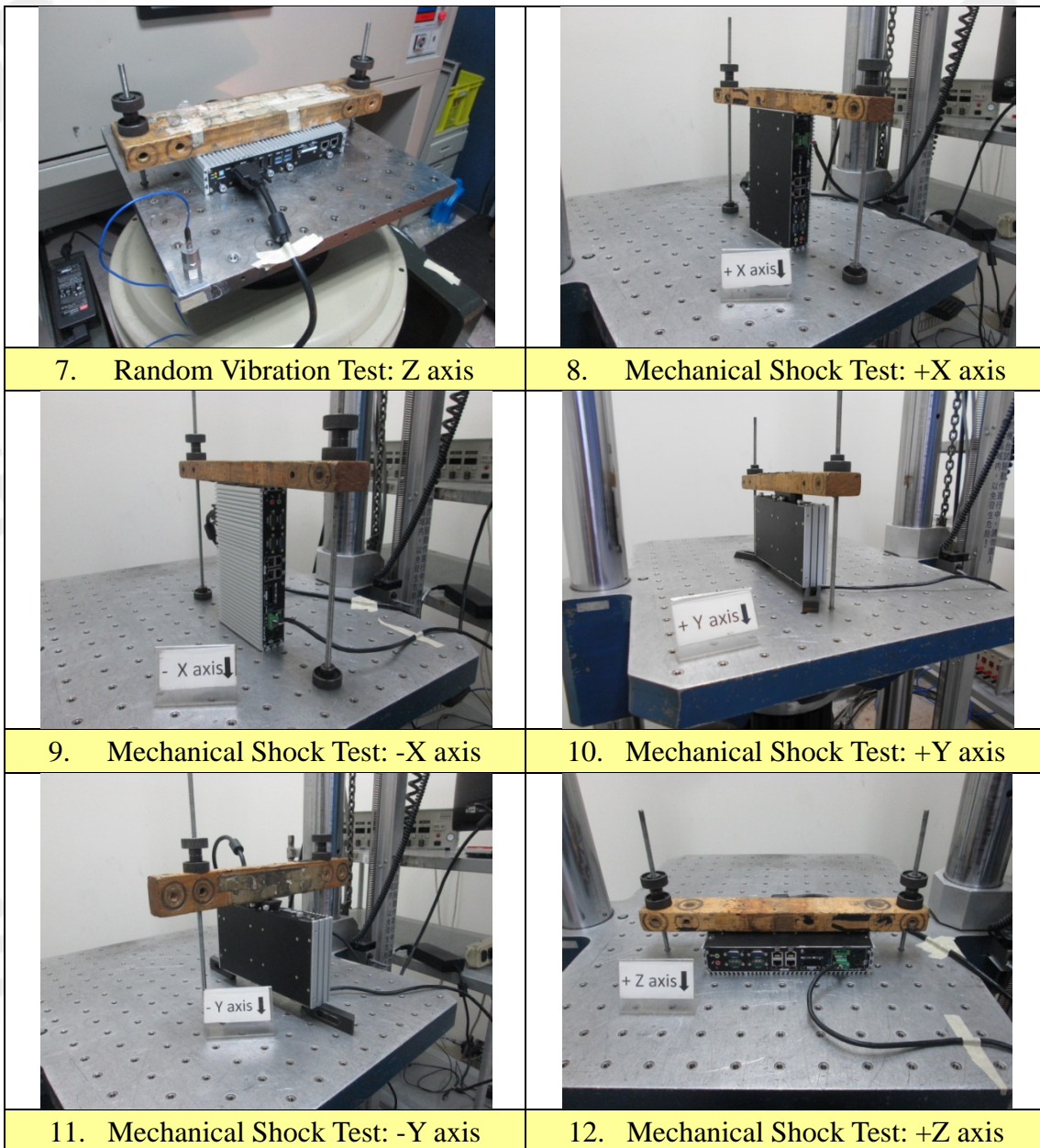
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Test Photos:

	
<p>1. Appearance of specimen</p>	<p>2. Appearance of specimen</p>
	
<p>3. High Temperature/ Humidity Test / Low Temperature Test</p>	<p>4. High Temperature/ 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:



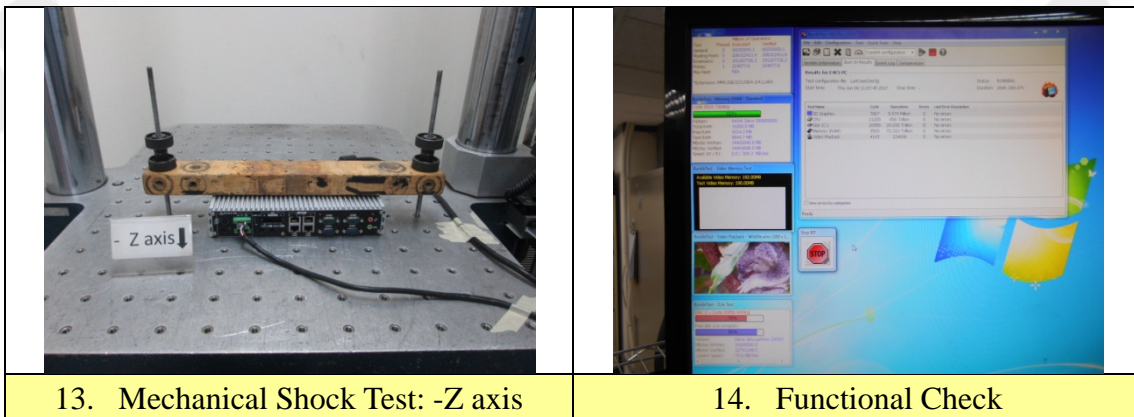
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Test Photos -- continued:



13. Mechanical Shock Test: -Z axis

14. Functional Check

— — — **The End of Test Report** — — —

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