

TEST REPORT

Report No.: HC90093/2022

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Date: October 7, 2022

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: High-performance Embedded System
Style/ Item No.: HPS-1000/ No.1
Quantity: Total 1 set
Testing Period: Sep. 13, 2022 to Sep. 28, 2022
Note: (Client's declaration) The internal hardware information of this product is as follows:
CPU: AMD Ryzen 3 PRO 5350GE with Radeon Graphics (3.6G)
RAM: INNODISK 4GB DDR4 2666 SODIMM
SSD: MEMXPRO 2.5" SSD ET30 128GB WT

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

Test Equipment:

Name	Brand	Model	Serial No.
Vibration Tester	IMV	J260/SA7M	14101899
Controller	IMV	K2	14101899
Control Accelerometer	PCB	353B34	LW228240
Control Accelerometer	PCB	353B34	LW228241

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: MIL-STD-810G w/Change 1: 2014, Method 514.7, Procedure I, Table 514.7C-I Category 4 - Common carrier.

Sample condition: Operating (execute “ BurnIn Test V9.2”)

Wave form: Random

Frequency: (10 ~ 500) Hz (Test Spectrums as shown in the following sheets in detail)

Direction: X, Y, Z axes (See photo 3 ~ 5)

Duration: 1 hour/ axis

- Examine the appearance of specimen(s) by visual check and perform functional check after this test.
- Functional check: Connect the specimen with rated power and turn on the power of specimen, then execute test program “Burn-In” while performing functional check.

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Test Method/ Specification--Continued:

Test Spectrums:

Vertical - Z axis		Transverse - X axis		Longitudinal - Y axis	
Frequency (Hz)	PSD (g ² /Hz)	Frequency (Hz)	PSD (g ² /Hz)	Frequency (Hz)	PSD (g ² /Hz)
10	0.01500	10	0.00013	10	0.00650
40	0.01500	20	0.00065	20	0.00650
500	0.00015	30	0.00065	120	0.00020
⇨ equivalent to 1.04 G _{rms}		78	0.00002	121	0.00300
		79	0.00019	200	0.00300
		120	0.00019	240	0.00150
		500	0.00001	340	0.00003
		⇨ equivalent to 0.20 G _{rms}		500	0.00015
		⇨ equivalent to 0.74 G _{rms}			

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Specimen:

Style/Item No.: HPS-1000/ No.1

Quantity: Total 1 set

Test Result:

<div style="text-align: right;">Check Item</div> <div style="text-align: left;">Style/ Item No.</div>	Appearance Check (Visual check)	Functional Check
HPS-1000/ No.1	No visible damage	Normal

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2. Mechanical Shock 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: MIL-STD-810G w/Change 1: 2014, Method 516.7, Procedure I - Functional Shock Test

Sample condition: Operating (execute "BurnIn Test V9.2")

Pulse shape: Sawtooth

Acceleration: 20 g

Pulse duration: 11 ms

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

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: Connect the specimen with rated power and turn on the power of specimen, then execute test program "Burn-In" while performing functional check.

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Specimen:

Style/Item No.: HPS-1000/ No.1

Quantity: Total 1 set

Test Result:

<div style="text-align: right;">Check Item</div> <div style="text-align: left;">Style/ Item No.</div>	Appearance Check (Visual check)	Functional Check
HPS-1000/ No.1	No visible damage	Normal

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3. High Temperature Test:

Test Equipment:

Name	Brand	Model	Serial No.
Programmable Temperature & Humidity Chamber	KSON	THS-D6TS-150+LN2	5654KT

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: Operating (execute "BurnIn Test V9.2")

Test Temperature: 60 °C

Test Humidity: 95 % RH

Test Duration: 16 hours

- Examine the appearance of specimen(s) by visual check after this test.

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Specimen:

Style/Item No.: HPS-1000/ No.1

Quantity: Total 1 set

Test Result:

Check Item Style/ Item No.	Appearance Check (Visual check)
HPS-1000/ No.1	No visible damage

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4. Low Temperature Test:

Test Equipment:

Name	Brand	Model	Serial No.
Programmable Temperature & Humidity Chamber	GIANT FORCE	GTH-800-40-AR	MAA2008-014

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: Operating (execute "BurnIn Test V9.2")

Test Temperature: -40 °C

Test Duration: 16 hours

- Examine the appearance of specimen(s) by visual check after this test.

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Specimen:

Style/Item No.: HPS-1000/ No.1

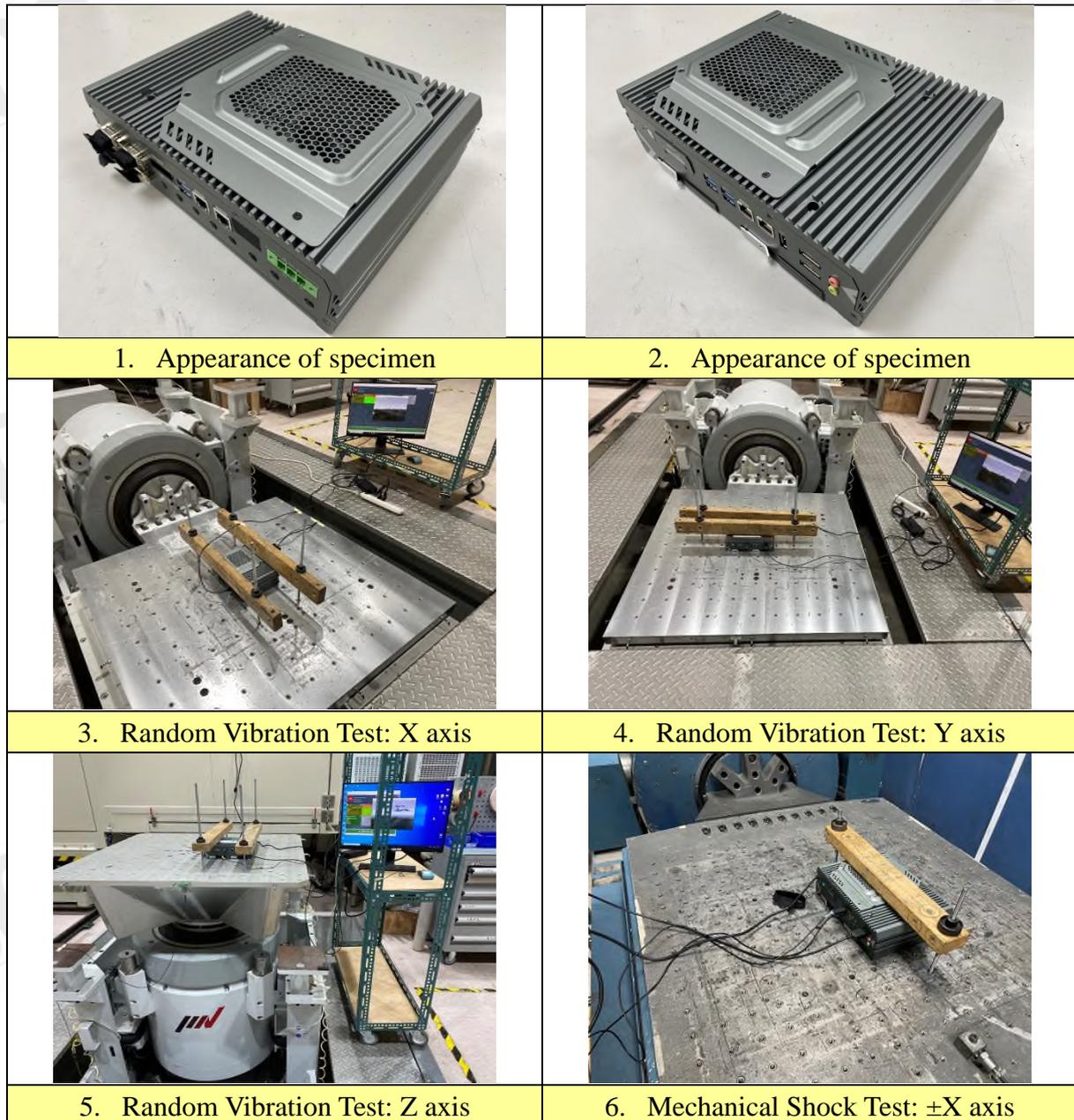
Quantity: Total 1 set

Test Result:

Check Item Style/ Item No.	Appearance Check (Visual check)
HPS-1000/ No.1	No visible damage

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Test Photos:



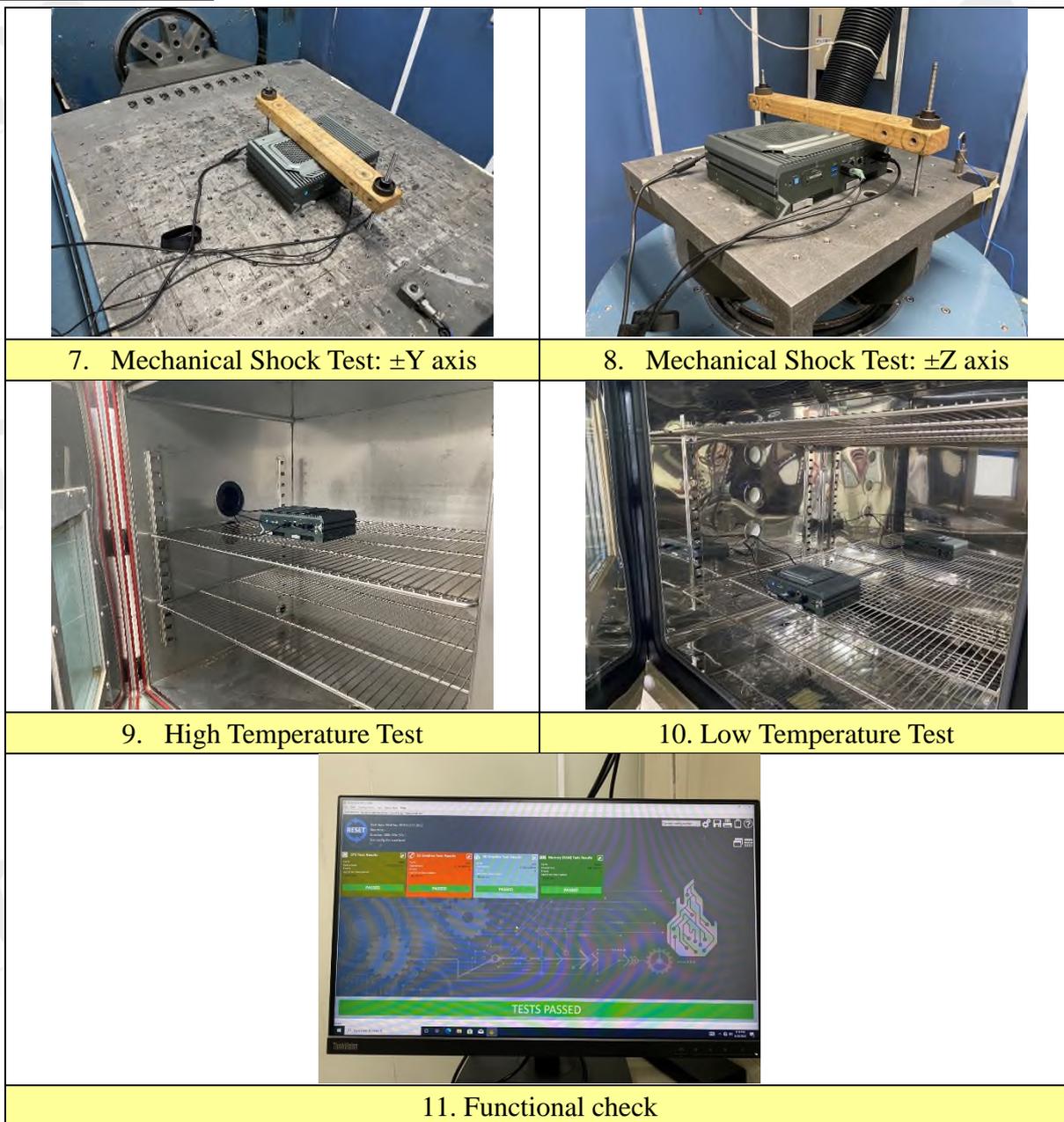
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Test Photos--Continued:



--- The End of Test Report ---

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