



Type Approval Certificate

[Marine Computer]

Initial Approval 14 November 2024
Manufacturer Mariner Systems (UK) Ltd.
Oaklands Park, Wokingham, Berkshire, RG41 2FD, United Kingdom

Product Description Marine Computer (Model : HP Z4 G5 Workstation)

“ The HP Z4 G5 Workstation must be used
in conjunction with one of the Mariner Kit MS3110 or MS3120 ”

- MS3110 : Desktop configuration
- MS3120 : Tower configuration

“ See Appendix 1 ”

Approval Condition “ See Appendix 1 ”

THIS IS TO CERTIFY that the above-mentioned product has been approved in accordance with the relevant requirement of this Society's Rules and / or of the recognized standards as follows.

Pt. 6, Ch. 2, Art. 301 of the Rules for Classification, Steel Ships.

This Certificate is valid until 13 November 2029

Issued at Busan, Korea on 14 November 2024



This certificate is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication of the certificate can be confirmed from "http://e-cert.krs.co.kr" by using the tracking No(ME24054413737) and certificate No.(LDN04977-AC123).



KOREAN REGISTER

*General Manager of
Marine & Ocean Equipment Team*

- Note :**
1. This certificate will be valid subject to complying with the approval conditions described on the certificate and/or on the Rules of this Society.
 2. This certificate will be invalid from the expiry date aforementioned unless the extension or renewal has been granted to the applicant or the manufacturer.
 3. Any significant modifications or changes in design or construction to the above product without approval from this Society will render this certificate invalid.
 4. Should the specified rules, regulations or standards be amended during the validity of this certificate, the product is to be re-approved by this Society in accordance with the requirements as amended.

Product Description and/or Approval Condition

Date of Issue : 14 November 2024

A. Product Description

1. Product Specification

- 1) Processor
 - All Intel Xeon processors up to and including 4.0GHz (4.8GHz turbo) frequency, 37.5MB cache, 20 cores
- 2) Power Supply
 - 775W 90% efficient
 - 1125W 90% efficient
- 3) Memory
 - Up to 512 GB DDR5-4800 DIMM ECC Reg (16GB/32GB)
- 4) Hard Disk
 - 1TB SATA 3.5" Ent HDD (7200 rpm)
 - 2TB SATA 3.5" Ent HDD (7200 rpm)
 - 4TB SATA 3.5" Ent HDD (7200 rpm)
 - 8TB SATA 3.5" Ent HDD (7200 rpm)
 - 512GB Z Turbo TLC / Opal2 TLC SSD
 - 1TB Z Turbo TLC / Opal2 TLC SSD
 - 2TB Z Turbo TLC / Opal2 TLC SSD
 - 4TB Z Turbo TLC / Opal2 TLC SSD
 - Z Turbo Drive Dual Pro PCIe-4x4 NVMe Carrier
 - Z Turbo Drive Quad Pro PCIe-4x16 NVMe Carrier
 - Z Turbo Drive Dual Pro 512GB/1TB TLC SSD
 - Z Turbo Drive Quad Pro 512GB/1TB TLC SSD
- 5) Optical Drive
 - HP 9.5mm Slim DVD-ROM Drive
 - HP 9.5mm Slim Super Multi DVD Writer
- 6) Graphics Card
 - NVIDIA T400 2GB
 - NVIDIA T1000 4GB
 - NVIDIA T1000/T1000E 8GB
 - AMD Radeon RX 6400 4GB
 - AMD Radeon Pro W6600 8GB
- 7) Network Interface Card
 - Integrated 1GbE RJ-45 LAN port
 - HP Flex 1GbE Single Port NIC
 - Intel I225-T1 Single Port 2.5GbE NIC
 - Intel i350-T2 Dual Port 1GbE NIC
 - Intel i350-T4 4-Port 1GbE NIC
 - Intel X550-T2 Dual Port 10GbE NIC
 - Allied Telesis AT-2911T/2-901 Dual Port 1GbE NIC
- 8) Keyboard
 - HP 320K Wired Keyboard
- 9) Mouse
 - HP Wired 320M Mouse
 - HP 125 Wired Mouse
- 10) Miscellaneous
 - Intel VROC NVMe SSD Standard Controller Module
 - HP SD 4 Card Reader
 - HP Serial Port
 - HP Serial+PS/2 Port
 - HP Entry FIO Module
 - HP Premium FIO Module
 - HP Fan & Front Card Guide Kit
 - HP Memory Cooling Solution
 - HP miniDP-to-DP Adapter
- 11) Operating system
 - Windows 11 Pro for Workstations
 - Windows 11 Pro for Workstations (downgraded to Windows 10 Pro)
 - Ubuntu Linux 22.04
 - HP Linux Ready
 - Red Hat Enterprise Linux

Product Description and/or Approval Condition

Date of Issue : 14 November 2024

2. Approved Drawings and Documents

- 1) Drawings
 - MS3110 Assembly, Dwg. No. MS3110_A, Issue No.1, dated 2024-03-14
 - MS3120 Assembly, Dwg. No. MS3120_A, Issue No.1, dated 2024-03-14
 - RF 101-MST-A Filter, Dwg. No. DS 106-MST, Issue No. 1.1
- 2) Specifications
 - QuickSpecs, Doc. c08482306-DA17147 Ver. 22, dated 2024-04-01
 - HP Z4 G5 Workstation Components, dated 2024-04-16

3. Test Reports, etc.

- 1) Report TL24009 Issue 1 issued by MS Testing, dated 2024-04-16
- 2) Report TL24010 Issue 1 issued by MS Testing, dated 2024-04-16

B. Approval Condition

1. Application & Limitation

- 1) This Approval is granted on the basis of the test reports and the approved documentation.
- 2) The manufacturer should inform this Society of all kinds of revisions of the equipment including software. If the changes are recognized to affect functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.
- 3) The product is to be installed as manufacturer's instructions.

2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual Product Certification is not required.

3. Marking

- 1) The product or packing is to be marked with manufacturer name and type designation on a suitable position.

4. Others

- 1) Test condition

Test	Condition	Remark
EMC	All locations including the bridge and deck zone	-
Temperature	-25 ~ +70°C	-
Vibration	Acceleration $\pm 0.7g$	-

- 2) Compass Safe Distance

Description	1 degree deflection	0.3 degree deflection
HP Z4 G5 Workstation	1100mm	1300mm

< End of Certificate >