



# Type Approval Certificate

[ Marine Computer ]

**Initial Approval** 7 July 2023  
**Manufacturer** Mariner Systems (UK) Ltd.  
 Oaklands Park, Wokingham, Berkshire, RG41 2FD, United Kingdom

**Product Description** Marine Computer (Model : HP Elite Series 800 G9 Desktops PC)

“ The HP Elite Small Form Factor (SFF) 800 G9 Desktop PC must be used in conjunction with one of the Mariner Kit MS2670 or MS2680 ”

“ The HP Elite Tower (TWR) 800 G9 Desktop PC must be used in conjunction with one of the Mariner Kit MS2650 or MS2660 ”

- MS2650 : Desktop configuration
- MS2660 : Tower configuration
- MS2670 : Horizontal mount
- MS2680 : Vertical mount

**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 6 July 2028  
 Issued at Busan, Korea on 7 July 2023



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(ME23028979774) and certificate No.(LDN04977-AC120).



**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 : 7 July 2023

### A. Product Description

#### 1. Product Specification

- 1) Processor
  - All processors up to and including Intel Core i7, Core i5 or Core i3 with 3.3GHz (4.9GHz turbo) frequency, 25MB cache, 12 cores
- 2) Memory
  - Up to 128 GB DDR4-2666 DIMM
- 3) Hard Disk
  - 2TB M.2 2280 PCIe NVMe TLC SSD
  - 1TB M.2 2280 PCIe NVMe TLC SSD
  - 512GB M.2 2280 PCIe NVMe TLC SSD
  - 256GB M.2 2280 PCIe NVMe TLC SSD
  - 512GB M.2 2280 PCIe NVMe SSD
  - 256GB M.2 2280 PCIe NVMe SSD
  - 2TB SATA-6G 3.5" (7200 rpm)
  - 1TB SATA-6G 3.5" (7200 rpm)
  - 500GB SATA-6G 3.5" (7200 rpm)
  - 1TB SATA-6G 2.5" (7200 rpm)
  - 500GB SATA 2.5" (7200 rpm)
  - 500GB SATA 2.5" SED Opal 2 (7200 rpm)
- 4) Optical Drive
  - HP ODD 9.5mm DVD Writer
  - HP ODD 9.5mm DVD-ROM
- 5) Graphics Card
  - Intel UHD Graphics (integrated)
  - NVIDIA T400 4GB w/2 mDP-to-DP (PCIe x16)
  - NVIDIA T1000 8GB 4mDP (PCIe x16)
  - NVIDIA Quadro P620 2GB (PCIe x16)
  - NVIDIA Quadro P400 2GB (PCIe x16)
  - NVIDIA GeForce GT730 2GB (PCIe x8)
  - AMD Radeon RX 550X 4GB (PCIe x16)
  - AMD Radeon R7 430 2GB 2DP (PCIe x16)
- 6) Network Interface Card
  - Intel Ethernet I219LM GbE LOM Network Connection (integrated)
  - Intel I225-T1 GbE NIC (PCIe x1)
  - Intel I350-T2 GbE NIC (PCIe x1)
  - Intel Ethernet I350-T4 1GB 4-port NIC (PCIe x1)
  - Intel Ethernet I210-T1 GbE NIC (PCIe x1)
  - Intel Wi-Fi 6 AX201 ax 2x2 vPro +Bluetooth 5 WW
- 7) Keyboard
  - HP USB 320K Keyboard
  - HP USB Business Slim Keyboard
  - HP USB Keyboard
  - HP PS/2 Business Slim Keyboard
- 8) Mouse
  - HP USB Black 125 Wired Mouse
  - HP Wired 320M Mouse
  - HP USB Optical Mouse
  - HP PS/2 Mouse
  - HP USB 1000dpi Laser Mouse
  - Kensington Orbit Trackball with Scroll Ring

## Product Description and/or Approval Condition

Date of Issue : 7 July 2023

- 9) Miscellaneous
  - HP SD 4 Media Card Reader
  - HP Type-C USB 3.1 Gen2 Port
  - HP DisplayPort to HDMI True 4K Adapter
  - HP DisplayPort Port
  - HP Serial Port Rear Wall
  - HP Serial Port
  - HP Serial / PS/2 Module
  - HP VGA Port
  - HP PCIe x1 Parallel Port Card
  - HP DisplayPort to DVI-D Adapter
  - HP DisplayPort to VGA Adapter
- 10) Operating System
  - Windows 11 Professional
  - Windows 11 Home
  - Windows 10 Professional (64-bit)
  - FreeDOS

### 2. Approved Drawings and Documents

- 1) Drawings for mariner kit
  - MS2650 Assembly, Dwg. No. MS2650\_A, Issue No. 1, dated 2022-11-14
  - MS2660 Assembly, Dwg. No. MS2660\_A, Issue No. 1, dated 2022-11-14
  - MS2670 Assembly, Dwg. No. MS2670\_A, Issue No. 1, dated 2022-11-14
  - MS2680 Assembly, Dwg. No. MS2680\_A, Issue No. 1, dated 2022-11-14
- 2) Drawings for RFI filter
  - RF-1004-MST-C, Dwg No. DS 103-MST, Issue No. 2, dated 2020-01-30

### 3. Test Reports, etc.

- 1) Test Reports
  - Test Report No. TL22296 issued by MS Testing, dated 2022-11-17
  - Test Report No. TL22277 issued by MS Testing, dated 2022-11-17
- 2) Etc.
  - QuickSpecs, Doc. c08017769-DA 17000-Worldwide-Version 28, dated 2022-10-27

## B. Approval Condition

### 1. Application & Limitation

- 1) This approval is granted on the basis of the test reports and the approved documentation.
- 2) Degree of protection is to be complied with Rule Pt. 6 Ch. 1 Sec. 2 201.2. (5).
- 3) The manufacturer is to inform this Society of all kinds of revisions of the equipment including the major changes of software. If the changes are recognized to affect the functionality of the approved equipment, type test to confirm the reliability of the revised equipment may be performed in the presence of our surveyor.
- 4) When this product is installed in the vicinity of a standard or a steering magnetic compass, it is to have the minimum safe distance stated in Product Description or more at which it may be mounted from such compasses.

### 2. Individual Product Cert. and Drawing Approval Requirement

- 1) Individual Product Certification is not required.
- 2) Drawing Approval is not required.

### 3. Marking

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

## Product Description and/or Approval Condition

Date of Issue : 7 July 2023

### 4. Others

#### 1) Test condition (IACS UR E10 Rev. 8 basis)

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

#### 2) Compass Safety Distance

Type	1 degree deflection	0.3 degree deflection
Small Form Factor (SFF)	700mm	1000mm
Tower (TWR)	800mm	1000mm



KOREAN REGISTER