



TYPE APPROVAL CERTIFICATE

Certificate No. : LDN04977-AC115 **Initial Approval** : 4th January, 2019
Product : Marine Computer
Manufacturer : Mariner Systems (UK) Ltd.
Oaklands Park, Wokingham, Berkshire, RG41 2FD, United Kingdom

Product Description : Marine Computer (Model : HP EliteDesk 800 G4 Personal Computers)

" The HP EliteDesk 800 G4 Small Form Factor (SFF) PC must be used in conjunction with one of the Mariner Kit MS2530 or MS2540 "

" The HP EliteDesk 800 G4 Tower (TWR) PC must be used in conjunction with one of the Mariner Kit MS2510 or MS2520 "

- MS2510 : Desktop configuration
- MS2520 : Tower configuration
- MS2530 : Horizontal mount
- MS2540 : Vertical mount

" See Appendix 1 ~ 2 "

Approval Condition : " See Appendix 2 "

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 and entered in the "List of Approved Manufacturers and Type Approved Equipment".

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

This Certificate is valid until 3rd January, 2024

Issued at Busan, Korea on 4th January, 2019



KOREAN REGISTER OF SHIPPING

Jung Eun. Kim

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.*

Appendix 1

Product Description and/or Approval Condition

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Date of Issue :04 January, 2019

A. Product Description

1. Product Specification

- 1) Processor
 - All processors up to and including Intel Core i7, Core i5, Core i3 or Intel Pentium with 3.7GHz (4.6GHz turbo) frequency, 12MB cache, 6 cores
- 2) Memory
 - Up to 64 GB DDR4-2666 DIMM
- 3) Hard Disk
 - 512GB M.2 2280 PCIe NVMe TLC SSD
 - 256GB M.2 2280 PCIe NVMe TLC SSD
 - 128GB M.2 2280 PCIe TLC SSD
 - 512GB M.2 2280 PCIe NVMe SSD
 - 256GB M.2 2280 PCIe NVMe SSD
 - 1TB PCIe-3x4 NVMe TLC 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)
 - 256GB SATA 2.5" SED Opal 2 TLC SSD
 - 256GB SATA 2.5" SSD
- 4) Optical Drive
 - HP ODD 9.5mm DVD Writer
 - HP ODD 9.5mm DVD-ROM
- 5) Graphics Card
 - Intel HD Graphics (integrated)
 - NVIDIA Quadro P400 2GB (PCIe x16)
 - AMD Radeon R7 430 2GB 2DP (PCIe x16)
- 6) Network Interface Card
 - Intel Ethernet I210-T1 GbE NIC(PCIe x1)
 - Intel Ethernet I219LM GbE LOM Network Connection(Integrated)
- 7) Keyboard
 - HP PS/2 Business Slim Keyboard
 - HP USB Business Slim Keyboard
- 8) Mouse
 - HP PS/2 Mouse
 - HP USB Optical Mouse
 - HP USB 1000dpi Laser Mouse
 - HP USB Hardened Mouse
- 9) Miscellaneous
 - HP SD 4 Media Card Reader
 - HP Type-C USB 3.1 Gen2 Port
 - HP DisplayPort to HDMI True 4K Adapter
 - HP 800 G4 TWR Dust Filter
 - HP 800 G4 SFF Dust Filter
 - HP Serial Port Rear Wall
 - HP Serial / PS/2 Module
 - HP Parallel Port Card (PCIe x1)
 - HP VGA Port
 - HP HDMI Port
 - Moxa 4-Port RS-232/422/485 Serial Card(PCIe x1)
 - HP DisplayPort to DVI-D Adapter
 - HP DisplayPort to VGA Adapter
 - HP DisplayPort Cable

< To be Continued >

Appendix 2

Product Description and/or Approval Condition

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Date of Issue :04 January, 2019

- 10) Operating System
- Windows 10 Professional (64-bit)
 - Windows 10 Home (64-bit)
 - Windows 10 Home Plus (64-bit)
 - Windows 10 Home Advanced (64-bit)
 - FreeDOS 2.0

2. Approved Drawings and documents

- 1) Technical Specification: DA-16286 Ver.17 dated on 2018-11-14
- 2) Component list file no. HP 800 G4 Components Nov 18 dated on 2018-11-23
- 3) Drawing: MS2510_A Issue No.1, MS2520_A Issue No.1, MS2530_A Issue No.1, MS2540_A Issue No.1

3. Test Reports, etc.

- 1) Test Report No. TL18114 issued by MS Testing, dated 2018-11-21
- 2) Test Report No. TL18115 issued by MS Testing, dated 2018-11-21
- 3) Test Report No. TL18116 issued by MS Testing, dated 2018-11-21

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.
- 4) When this product is installed in the vicinity of a standard or a steering magnetic compass, it should 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.

4. Others

- 1) Test condition

Test	Condition	Remark
EMC	All locations including the bridge and deck zone	-
Temperature	-25 ~ +70°C	-
Vibration	Acceleration $\pm 1.0g$	-
Salt mist	Not Applied	-

- 2) Compass Safety Distance

Type	1 degree deflection	0.3 degree deflection
Small Form Factor (SFF)	600mm	700mm
Tower (TWR)	600mm	700mm

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