



TYPE APPROVAL CERTIFICATE

Certificate No. : LDN04977-AC108 **Initial Approval** : 28th February, 2017
Product : Marine Computer
Manufacturer : Mariner Systems (UK) Ltd
Oaklands Park, Wokingham, Berkshire, RG41 2FD, United Kingdom

Product Description : Model : HP Z440 Workstation

- The type approval is only valid when the product is installed in conjunction with one of the following Mariner kits:

- MS3050 : Desktop configuration
- MS3060 : Tower configuration

" See Appendix 1 "

Approval Condition : 1. The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.
2. Individual Product Certification is not required.

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 27th February, 2022

Issued at Busan, Korea on 28th February, 2017



KOREAN REGISTER OF SHIPPING

*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

Certificate No : LDN04977-AC108

Date of Issue :28th February, 2017

1. Product Description :

- 1) Ratings :
- Operating Voltage Range : 90 ~ 269 V AC
 - Rated Voltage Range : 100 ~ 240 V AC
 - Rated Line Frequency : 50/60 Hz
 - Operating Line Frequency Range : 47 ~ 66 Hz

2) Technical Specification :

| | |
|-----------------------|---|
| Motherboard | Intel C612 Chipset |
| Processor | All processors up to and including Intel Xeon E5-2600 & E5-1600 v3 series (max. 3.7GHz clock speed, 20MB cache, 8 cores) |
| Memory | Up to 128 GB DDR4-2133 DIMM |
| Storage | HP 500GB SATA 6GB/s 7.2k rpm HDD, HP 1TB SATA 6GB/s 7.2k rpm HDD, HP 2TB SATA 6GB/s 7.2k rpm, HP 3TB SATA 6GB/s 7.2k rpm HDD, HP 300GB SAS 10k rpm 2.5-inch HDD, HP 600GB SAS 10k rpm 2.5-inch HDD, HP 1.2TB SAS 10k rpm 2.5-inch HDD, HP 128GB SATA 6GB/s SSD, HP 256GB SATA 6GB/s SSD, HP 512GB SATA 6GB/s SSD, HP 1TB SATA 6GB/s SSD, HP 300GB SAS 15k rpm HDD, HP 600GB SAS 15k rpm HDD, Samsung Ent. 240GB SATA 6GB/s SSD, Samsung Ent. 480GB SATA 6GB/s SSD |
| PCIe SSD | HP Z TurboDrive 512GB 2.5" PCIe SSD, HP Z TurboDrive 256GB 2.5" PCIe SSD |
| Optical Drive | HP 9.5mm Slim SuperMulti DVD Writer, HP 9.5mm Slim Blue-ray Writer, HP 9.5mm Slim DVD-ROM |
| Graphics Card | NVIDIA NVS 310 512MB Graphics, NVIDIA NVS 315 1GB Graphics, NVIDIA NVS 510 2GB Graphics, NVIDIA Quadro K620 2GB Graphics, AMD FirePro W2100 2GB Graphics Card, NVIDIA Quadro 420 1GB Graphics, NVIDIA Quadro K2200 4GB Graphics |
| Networking | Intel I218LM PCIe GbE Controller (integrated), Intel Ethernet I210-T1 PCIe NIC, HP 361T PCIe Dual Port Gigabit PCIe NIC, HP X520 10GbE Dual Port Adapter, HP 10GbE SFP+ SR Transceiver HP X540-T2 10 GbE Dual Port Adapter |
| Controller Card | HP Thunderbolt 2 PCIe 1-port I/O Card |
| RAID | LSI 9217-4i4e 8-port SAS 6Gb/s RAID Card |
| Keyboard & Mouse | HP PS/2 (USB) Standard Keyboard, HP USB CCID Smart Card Keyboard, HP PS/2 (USB) Mouse, HP USB 3-Button Optical Mouse |
| Miscellaneous | HP 15-in-1 Media Card Reader, Optical Drive Bay Carrier Kit, Z4 Fan & Front Guide Kit, Z440 Memory Cooling Solution. |
| Compass Safe Distance | 1 degree deflection (mm) : 500 0.3 degree deflection (mm) : 600 |

2. Documentation

- 1) Technical Specification : DA-15098 Ver.8 dated on 2015-05-01
2) Drawings : MS3050_A (2015-6-11), MS3060_A (2015-6-11)
3) Test Reports : TL15039 (2015-05-22), TL15041 (2015-05-22) and TL15042 (2015-05-26) issued by MS Testing.

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