



TYPE APPROVAL CERTIFICATE

Certificate No. : LDN04977-AC101 **Initial Approval** : 21st January, 2014.
Product : Marine Computer(Workstation)
Manufacturer : Mariner Systems (UK) Limited.
 Oaklands Park, Wokingham, Berkshire, RG41 2FD, UK

Product Description : Type : HP Z420 Workstation

" The above model must be used in conjunction with the Mariner Kit MS3030 or MS3040 "

" See Appendix 1 ~ 2 "

Approval Condition : 1. This approval is granted on the basis of the environmental test report file no. TL13011 & TL13012.
 2. The product or packing is to be marked with the manufacturer's name and type designation on a suitable position.
 3. 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 20th January, 2019.

Issued at Busan, Korea on 21st January, 2014.



KOREAN REGISTER OF SHIPPING

*General Manager of
Equipment and BWMS Team*

Note : 1 : The approval will be automatically suspended and the Certificate become invalid from the expiry date of the Certificate in the event that the extension has not been granted or the renewal of the Certificate is not underway.

2 : The manufacturer should notify this Society of any modification or changes that may affect the validity of this Certificate.

Appendix 1

Product Description and/or Approval Condition

Certificate No : LDN04977-AC101

Date of Issue : 21st January, 2014.

1. Product Description :

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

- MS3030 : Desktop configuration
- MS3040 : Minitower configuration

Operating Voltage Range : 90 ~ 269 V AC
Rated Voltage Range : 100 ~ 240V AC / 118V AC
Rated Line Frequency : 50 ~ 60 Hz / 400 Hz
Operating Line Frequency Range : 47 ~66 Hz / 393~407 Hz

- 1) Processor: All processors up to and including Intel Xeon E5-2600 & E5-1600 series 3.6GHz clock speed, 20MB cache, 8 cores
- 2) Memory: Up to 64 GB 1600 MHz DDR3 Unbuffered SDRAM. Memory slots: 8 DIMM
- 3) Hard Disk Drive:
 - a) 250 GB SATA 6.0 Gb/s (7200 rpm)
 - b) 500 GB SATA 6.0 Gb/s (7200 rpm)
 - c) 1 TB SATA 6.0 Gb/s (7200 rpm)
 - d) 2 TB SATA 6.0 Gb/s (7200 rpm)
 - e) 3 TB SATA 6.0 Gb/s (7200 rpm)
 - f) 250 GB SATA SFF (10000 rpm)
 - g) 500 GB SATA SFF (10000 rpm)
 - h) 1 TB SATA SFF (10000 rpm)
 - i) 128 GB SATA 6.0 Gb/s Solid State Drive (SSD)
 - j) 256 GB SATA 6.0 Gb/s Solid State Drive (SSD)
 - k) 300 GB SAS (10000 rpm)
 - l) 600 GB SAS (10000 rpm)
- 4) Optical Drive:
 - a) 16X DVD-ROM SATA
 - b) 16X DVD+/-RW SuperMulti SATA
 - c) Blu-ray Writer
- 5) Graphics Card :
 - a) NVIDIA NVS 300 512MB
 - b) NVIDIA NVS 310 512MB
 - c) NVIDIA NVS 510 2GB
 - d) NVIDIA Quadro 410 512MB
 - e) NVIDIA Quadro 600 1GB
 - f) NVIDIA Quadro 4000 2GB
- 6) Network Interface Card:
 - a) Intel Gigabit CT Desktop NIC
 - b) Broadcom NetXtreme Gigabit Plus PCIe NIC
 - c) Intel 82579LM Gigabit Ethernet Network Connection (integrated)
 - d) HP 361T PCIe Dual Port Gigabit NIC (PCIe x4)
 - e) HP X520 10GbE Dual Port Adapter
- 7) Keyboard:
 - a) HP PS/2 Standard Keyboard
 - b) HP USB Standard Keyboard
- 8) Mouse:
 - a) HP PS/2 Optical Scroll Mouse
 - b) HP USB 2-Button Optical Scroll
 - c) HP USB Laser Mouse

< To be continued >

Appendix 2

Product Description and/or Approval Condition

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9) Miscellaneous:

- a) LSI 9212 4-Port SAS 6Gb/s RAID Card
- b) HP 22-in-1 Media Card Reader

2. Compass Safe Distance

Description	1 degree deflection (mm)	0.3 degree deflection (mm)
HP Z420 Workstation	500	700

3. Approved document

Technical Specification: DA-14261 Ver.14 dated on 2013-01-15
Component list: HPZ420-Components-Mar2013 dated on 2013-03-15
Drawing: MS3030_A_1, MS3040_A_1 dated on 2013-02-02

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