

# MS2210

Mariner Kit for use with HP Compaq 8000 Elite  
Convertible Minitower PC (Desktop configuration)



The HP Compaq 8000 Elite Convertible Minitower (CMT) PC is marine type-approved by all of the major international marine Classification Societies when it is installed in conjunction with our Mariner Kit MS2210.

The MS2210 Mariner Kit affords protection against the effects of vibration and shock experienced in the offshore marine environment and has been type-tested against IACS Unified Requirement E10 and the relevant sections of IEC60945 (see below right for test details).

This type-approved combination of hardware and Mariner Kit can be used as the platform for your critical navigation, control, loading and general purpose applications (please check individual type-approval certificates for any restrictions).

**“Steer the right course  
with Mariner Systems”**



## WHAT IS SO SPECIAL ABOUT THE HP COMPAQ 8000 ELITE CMT PC?

- ◆ The 8000 Elite has been engineered for the specific needs of business computing
- ◆ Lengthy lifecycle (approx 15 months) and stable hardware and software images
- ◆ The 8000 Elite Convertible Minitower (CMT) PC can convert between minitower and desktop configurations
- ◆ All 8000 Elite models have improved energy efficiency over previous generations by 30% when the PCs are at an idle state
- ◆ The 8000 Elite meets or exceeds many voluntary and mandatory global environmental regulations and standards – EPEAT Gold registered and ENERGY STAR® qualified
- ◆ Tool-less serviceability features for easier upgrades and repairs
- ◆ Built around the Intel® Q45 Express chipset and the latest Intel® Core™ 2 Quad and Intel® Core™ 2 Duo and Intel® Pentium® dual-core processors to provide the performance you expect from a commercial class PC
- ◆ Integrated Intel® Graphics Media Accelerator 4500 delivers exceptional graphics performance for all essential and multimedia requirements
- ◆ Three full-height PCI slots; Two full-height PCI Express x16 slots; One full-height PCI Express x1 slot
- ◆ Four front and six rear USB 2.0 ports; One DisplayPort
- ◆ Three-year limited warranty on parts and labour as standard

This Mariner system is type-tested against the consolidated, 'worst-case' requirements of all the major international marine Classification Societies:

**ABS, BV, CCS, DNV, GL, KR, LR, NKK, PRS, RINA**

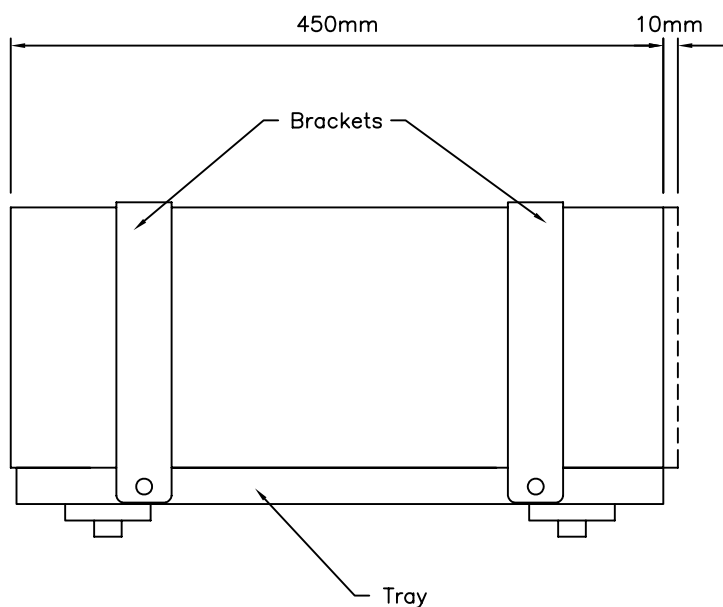
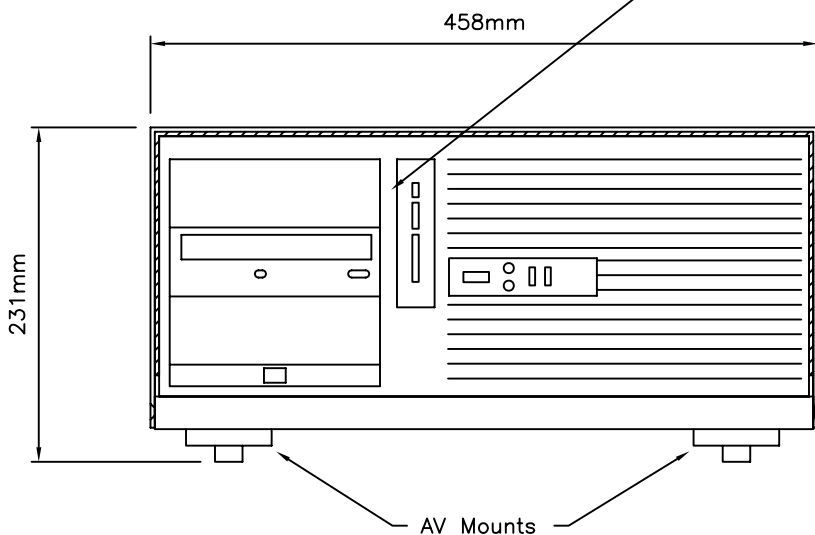
Type-tests included on the test programme are as follows:

- > Vibration, Shock, Static and Dynamic Inclination
- > Dry & Damp Heat, Low Temperature
- > Acoustic Noise, Compass Safe Distance
- > High Voltage, Power Supply Variation & Power Supply Failure
- > Conducted LF & RF, Electromagnetic Field
- > Radiated & Conducted Emissions, Electrostatic Discharge
- > Insulation Resistance, Burst / Fast Transients
- > Surge Immunity, Access to Dangerous Voltages

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HP Compaq 8000 Elite CMT PC



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## OPERATING GUIDELINES

Although all our equipment is tested against extreme environmental conditions for the purposes of marine type-approval, installation should take into account the following guidelines:

- Keep the computer away from excessive moisture, direct moisture and the extremes of heat and cold and, wherever possible, ensure that the unit is within the manufacturer's specified operating/non-operating ranges:

	Operating	Non-Operating
<b>Temperature</b>	+10° to +35°C (+50° to +95°F)	-30° to +60°C (-22° to +140°F)
<b>Humidity</b>	10% to 90% (non-condensing)	5% to 95% (non-condensing)

- Leave a 10.2 cm (4-inch) clearance on all vented sides of the computer to permit the required airflow
- Never restrict airflow into the computer by blocking any vents or air intakes
- Occasionally clean the air vents on the front, back and any other vented side of the computer as lint, dust and other foreign matter can block the vents and limit the airflow
- If the computer is to be operated within a separate enclosure, intake and exhaust ventilation must be provided on the enclosure, and the same operating guidelines listed above will still apply

By following these guidelines you will maximise the life of your equipment and minimise service costs.

## STATISTICS

<b>Overall Fitted Dimensions</b>	458mm (w) x 231mm (h) x 460mm (d)
<b>Weight (Mariner Kit only)</b>	Approx 3 kg
<b>Weight (including hardware)</b>	Approx 15 kg
<b>Chipset</b>	Intel® Q45 Express
<b>Processor</b>	Intel® Core™ 2 Quad Q8400 / Q9505 / Q9550 / Q9650 (2.66 to 3.0 GHz, 4 to 12 MB L2 cache, 1333 MHz FSB); Intel® Core™ 2 Duo E7500 / E7600 / E8400 / E8500 / E8600 (2.93 to 3.33 GHz, 3 to 6 MB L2 cache, 1066 to 1333 MHz FSB); Intel® Pentium® E5300 / E5400 / E6300 / E6500 (2.60 to 2.93 GHz, 2 MB L2 cache, 800 to 1066 MHz FSB)
<b>Memory</b>	1 to 8 GB DDR3 SDRAM PC3-10600 (1,333 MHz) Non ECC
<b>Hard Drive</b>	160 GB to 1 TB Serial ATA 3.0 GB/s (7200 rpm)
<b>Keyboard</b>	HP Standard (PS/2 or USB); HP Washable (USB/PS/2)
<b>Mouse</b>	HP 2-Button Optical Scroll (PS/2 or USB); HP Laser (USB)
<b>Network Card</b>	Integrated Intel® 82567LM Gigabit Ethernet
<b>Graphics</b>	Intel® Media Accelerator 4500 Graphics (integrated with Intel® Q45 Express chipset)
<b>Optical Storage</b>	HP SATA DVD-ROM; HP SATA SuperMulti LightScribe DVD Writer
<b>Audio</b>	Integrated HD audio with Realtek ALC261 codec
<b>Operating System</b>	Genuine Windows® 7 Professional 32 or 64-bit; Genuine Windows® 7 Home Premium 32 or 64-bit; Genuine Windows® 7 Home Basic 32-bit; Genuine Windows® Vista Business 32-bit; Genuine Windows® Vista Home Basic 32-bit; Genuine Windows® 7 Professional with downgrade to Windows® XP Professional; FreeDOS
<b>Slots</b>	3 full-height PCI; 2 full-height PCI Express x16; 1 full-height PCI Express x1
<b>USB support</b>	10 x USB 2.0 ports - 4 front and 6 rear
<b>Interfaces</b>	1 x Serial port (2nd optional); 1 x Parallel port (optional)