

Manufacturer: **Hatteland Display AS**

Product: **23.1 inch Maritime Multi Computer (MMC)**

Type: **JH 23T02 MMC**

Last Revised: **12 Feb 2008**
Revision#: **18**

23.1 inch Maritime Multi Computer (MMC)

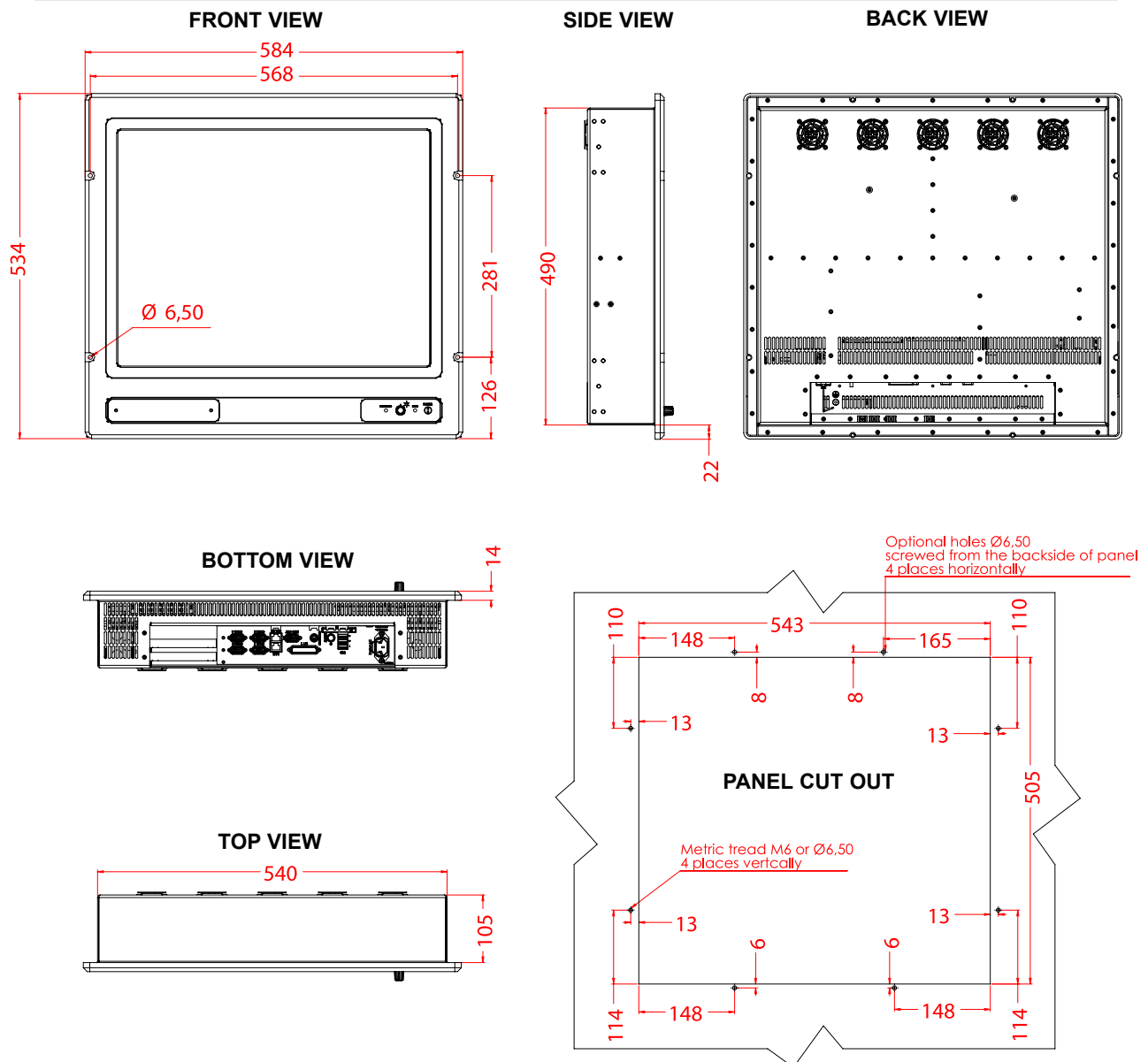
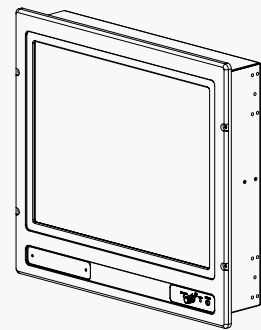
Features:

The combination of the reliable design of the marine TFT-LCD modules, together with industrial computer boards make this product suitable for customer applications where space is critical, and full function is desired in a single unit.

In particular, the mainboard allows full flexibility when it comes to processor choice. With multiple useful standard components this is an highly attractive commercial package.

This unit is equipped with a 1,1GHz Intel® Pentium®M processor as standard (up to 2.0Ghz possible) and accepts up to 1 GB RAM and features RGB OUT.

Brightness is adjustable from 0 to 100%.



Dimensions might be shown with or without decimals. Tolerance on drawings is +/- 1mm. For accurate measurements, use relevant DWG file available from Hatteland Display AS

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Note: All specifications are subject to change without prior notice!

TECHNICAL DESCRIPTION

TFT Technology:

- 23.1 inch viewable image size, High Quality SHARP TFT
- TFT active-matrix liquid crystal panel
- MVA (Multi-domain Vertical Alignment) LCD Technology

TFT Characteristics:

- Pixel number : 1600 x 1200
- Pixel pitch (RGB) : 0.294 (H) x 0.294 (V) mm
- Response Time : 20 ms (typical), "black" to "white"
- Contrast Ratio : 500:1 (typ)
- Light Intensity : 250 cd/m2 (typical)
- Viewable Angle : +/- 85 deg. (min) (Up/Down/Left/Right) (@ CR > 10)
- Active Display Area : 470.4 (H) x 352.8 (V) mm
- Max Colors : 16.7 millions (depending on graphics card)

Computer Specifications:

- Installed OS : None, please specify when ordering
- Processor : Intel® Pentium®M 1.1GHz, Low Voltage
- Cache / PCI Clock : 1MB Level 2 Cache / 400 MHz BUS
- System Chipset : Intel® 82855GME
- BIOS : Phoenix 2Mbit Flash, Supports ACPI
- PCI Slot (Limited height) : 2 x Short Length, STD Profile, 32Bit PCI
- PC/104 Slot : 1 x PC/104 with ISA Support
- Memory Slot : 1 x SODIMM with ECC, from 256MB->1GB
- Graphics Chip : Intel® 82855GME (Integrated/250MHz)
- IDE Controller : 1 x IDE Ports, Ultra DMA33/66/100
- Storage : 1 x Automotive 40GB, 2.5" IDE, 4200 RPM
- Compact Flash : 1 x CF Socket with Eject (Type I & II)
- Parallel Port (LPT) : 1 x EPP/ECP Port
- Primary Ethernet : 1 x 10/100 Mbps
- Secondary Ethernet : 1 x 10/100/1000 Mbps
- Serial Ports : 4 x RS232/RS422/RS485 (fully isolated)*
- USB Ports : 4 x USB (2.0 compliant, 480Mbps)
- Keyboard/Mouse : 2 x PS/2
- Supported TFT Res.: From 640 x 480 up to 2048 x 1536**
- RGB OUT Res : From 640 x 480 up to 1600 x 1200

* only in RS422/485 mode

** Optimal 1:1 resolution and recommended is 1600 x 1200 @ 60 Hz.

** If resolutions is set above 1:1, desktop scrolling mode will be used.

Power Specifications:

Power Supply Options:

- 115 & 230VAC - 50 / 60Hz : Model JH 23T02 MMC A1
- 24 VDC : Model JH 23T02 MMC A2*

*(tests pending)

Power Consumption:

- Operating : 100W (max) (Configuration depending)
- : 75W (typ) (Max backlight & high CPU load)

Available Technical Options:

Miscellaneous Options:

- Audio AC97 Compliant : Line In/Out, Mic In, Speaker Out
- TV-Out : 1 x Composite (Depends on model)
- Processor : Up to 2.0 GHZ
- Memory : Up to 1GB

MECHANICAL DESCRIPTION

Physical Dimensions:

- 584 (W), 534 (H), 105 (D) mm
- Weight: 18 kg (approx)

User Controls:

On front bezel:

- Power On/Off (push button)
- Brightness Control
- Power LED and Reset button

Behind hatch:

- USB 2.0 connector

Environmental Considerations:

- Operating : Temperature -15 deg. C to +55 deg. C
Humidity 30% to 90% (non condensing)
- Storage : Temperature -20 deg. C to +70 deg. C
Humidity 10% to 90% (non condensing)
- IP Rating : EN60529 (IP66) (Applies for flush mounting)

Safety Considerations:

Even although the test conditions for bridge units provide for a maximum operating temperature of 55°C, continuous operation of all electronic components should, if possible, take place at ambient temperatures of only 25°C. This is a necessary prerequisite for long life and low service costs.

Input/Output Connectors:

Function	Back side	Inside	Front
Ethernet Lan/GBLan	2 x RJ-45		
PCI Slot		2 x Short/STD	
PC/104 Slot		1 x PC/104 Slot	
Keyboard	1 x PS/2		
Mouse	1 x PS/2		
Compact Flash	1 x CF Socket		
COM 1	1 x DB9M		
COM 2	1 x DB9M		
COM 3	1 x DB9M		
COM 4	1 x DB9M		
LPT1	1 x DB25F		
USB2.0	3 x USB		1 x USB
AC Power	Std IEC inlet (Odd version models)		
DC Power	DC Screw terminal (Even version models)		
RGB Out	1 x HD-15F		
TV Out	Composite RCA (depends on model)		
Line In/Out	3.5mm mini jack (depends on model)		
Mic In	3.5mm mini jack (depends on model)		

Available Mechanical Options:

Accessories:

- JH 23TSV : Sun visor *
- JH 23TBMMMC-B1 : Bracket*
- Touch Screen **

* Option: Standard or custom logo and color

* Option: See separate datasheet for bracket specifications.

** Option: Factory mounted

Compass Safe Distance: JH 23T02 MMC

Standard: 175cm

Steering: 140cm

APPROVALS & CERTIFICATES

This product have been tested / type approved by the following classification societies: (1=AC Version, 2=DC Version)

EN60945 4th (IEC945 4th)

IACS E10

ClassNK - Nippon Kaiji Kyokai (1,2)

DNV - Det Norske Veritas (1)

RS - Russian Maritime Register of Shipping (1,2)

GL - Germanischer Lloyd (1,2)

BV - Bureau Veritas (1,2)

ABS - American Bureau of Shipping (1,2)