

Manufacturer: **Hatteland Display AS**

Product: **19.0 inch Maritime Multi Computer (MMC)**

Type: **JH 19T14 MMC-xxx-Axxx**

Last Revised: **04 Aug 2014**

Revision#: **08**

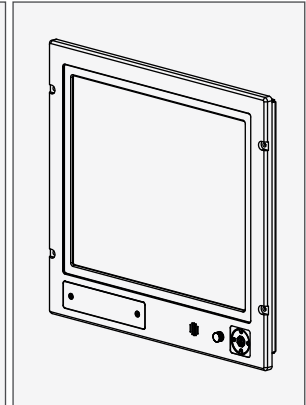
## 19.0 inch Maritime Multi Computer - Series 1

### Features:

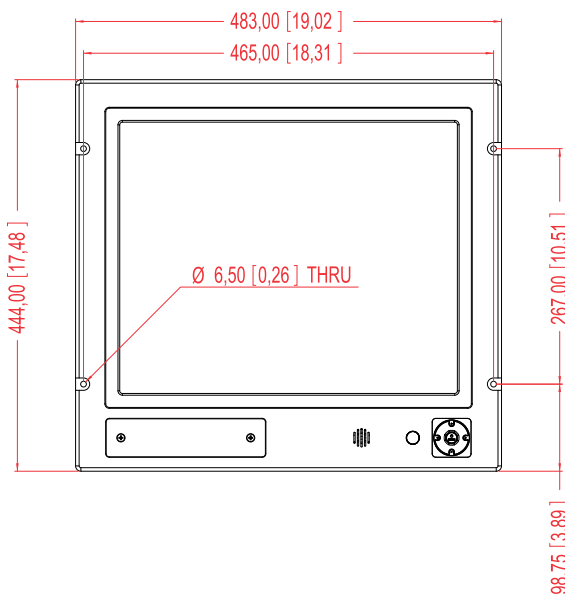
Series 1 panel computers offer the ultimate in convenience for systems integrators and boat builders. This is backed up by the inherent qualities of Series 1 displays and the flexibility of the powerful integrated computer. Series 1 panel computers are a single flexible solution, designed only for the marine environment and built to last.

The computer itself is specified to ensure that it is capable of running all marine applications, from ECDIS software through to engine monitoring and automation applications. It has power to spare too, so software developers can be sure that Hatteland Display Series 1 panel computers can handle the latest applications being designed for bridge and engine room systems in addition to other, more custom uses.

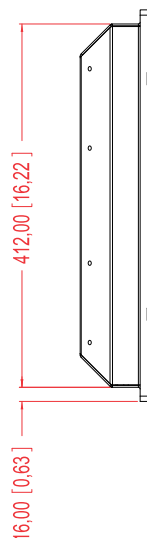
The unit features LED Backlight Technology instead of traditional CCFL Backlighting which increases the light intensity life time. Further, all models and variations can be offered with Optical Bonding Technology that mitigates screen misting. Brightness is adjustable from 0 to 100%. AC or DC model available.



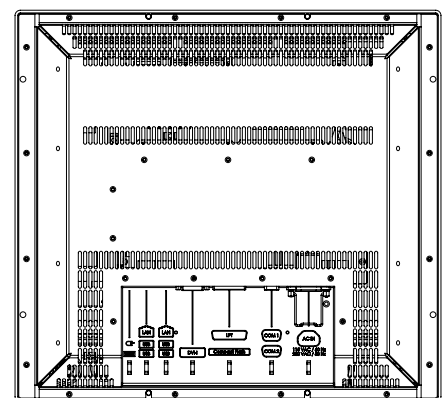
FRONT VIEW



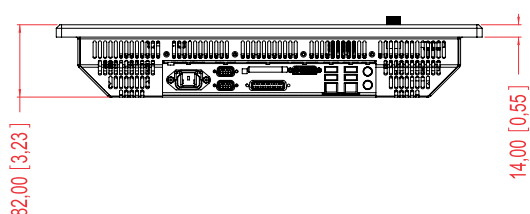
SIDE VIEW



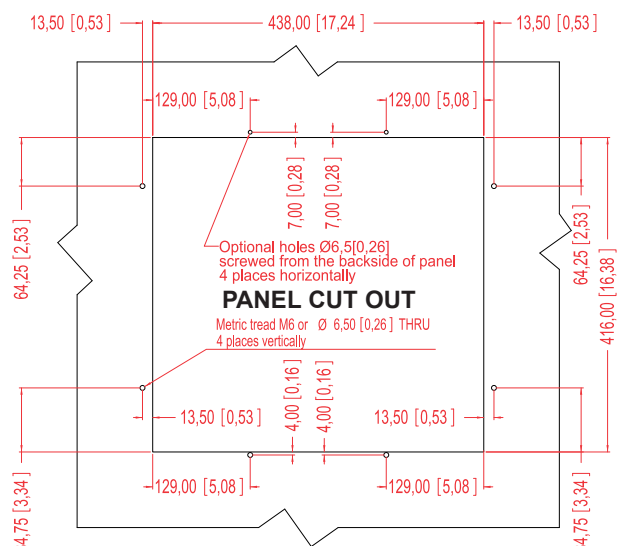
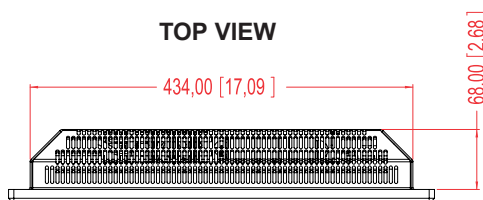
BACK VIEW



BOTTOM VIEW



TOP VIEW



Dimensions might be shown with or without decimals and indicated as mm [inches]. Tolerance on drawings is +/- 1mm. For accurate measurements, check relevant DWG file.

## TFT Technology:

- High Quality TFT with LED Backlight Technology
- 19.0 inch viewable image size, Aspect Ratio 5:4
- TFT active-matrix liquid crystal panel
- MVA (Multi-domain Vertical Alignment) LCD Technology

## TFT Characteristics:

- Native Resolution : 1280 x 1024
- Pixel Pitch (RGB) : 0.294 (H) x 0.294 (V) mm
- Response Time : 20ms (typical), "black" to "white"
- Contrast Ratio : 1000:1 (typical)
- Light Intensity Standard : 300 cd/m<sup>2</sup> (typical)
- Viewable Angle : +/- 89 deg. (typical) (Up/Down/Left/Right)
- Active Display Area : 376.32 (H) x 301.056 (V) mm
- Max Colors : 16.7 million

## Computer Specifications:

- Installed OS : None or Microsoft® Windows® Embedded Enterprise (XP Professional Eng w/SP2c, 32bit)  
See also Accessories (HT 00300 MSOS) options
- Storage : 40GB, 80GB, 120GB or 300GB SSD (SATA 2.5")
- Processor : See "Processor Options" below
- Installed Memory : 2 x 1 GB 667MHz DDR2 Non-ECC CL5 DIMM
- System Chipset : Intel® 82945GME
- Graphics Chipset : Intel® 945GME Integrated
- BIOS : Award BIOS, supports ACPI
- Speaker : None
- Buzzer : Yes, 3500Hz
- Power Manager : ACPI
- Monitoring : Temperature, voltage and fan monitoring
- Resolution Range : From 640 x 480 up to 2048 x 1536 @ 85 Hz\*
- RGB OUT Resolution : From 640 x 480 up to 1600 x 1200

\* Native 1:1 resolution recommended is 1280 x 1024 @ 60 Hz.

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

## Power Specifications:

### Power Supply Options:

- 115&230VAC - 50/60Hz : Model JH 19T14 MMC-Axx-xxxx
- 24 VDC : Model JH 19T14 MMC-Dxx-xxxx

### Power Consumption:

- Operating AC/DC : 100W (max)
- : 60W (typ) at max backlight+high CPU (Core2) load
- : 50W (typ) at max backlight+high CPU (Celeron) load

## Processor Options:

CPU #1 - Intel® Core™2 Duo L7400 - 1.5GHz, 4MB Cache, 667MHz FSB  
CPU #2 - Intel® Celeron® M ULV 423 - 1.06GHz, 1MB Cache, 533MHz FSB

Note: CPU #1 needs additional fan inside MMC unit.

## Physical Considerations:

- 483.00 (W) x 444.00 (H) x 82.00 (D) mm
- 19.02" (W) x 17.48" (H) x 3.23" (D)
- Weight: 11 kg (approx)

## User Controls:

### On front bezel - Potmeter control (IP66) xxx-xxBx models:

- Power On/Off (push button)
- Brightness Control (rotary control)
- Mode Status Red/Green/Orange Illuminated LED-Ring Indicator
- Buzzer

### Behind IP66 Rated hatch:

- 1 x USB Type A connector(s)

## Environmental Considerations:

- Operating : Temperature -15 deg. C to +55 deg. C  
- Humidity up to 95%
- Storage : Temperature -20 deg. C to +60 deg. C  
- Humidity up to 95%
- IP Rating : Protection (EN60529): IP66 front - IP20 rear
- Compass Safe Dist. : JH19T14MMC-xxx-Axxx - Std: 1.15m Steering: 75cm

### Lifetime 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:

Connector	Rear	Internal	Front
Ethernet GB LAN	: 2 x RJ-45		
Keyboard	: 1 x PS/2		
Mouse	: 1 x PS/2		
COM	: 2 x DB9M (RS-232/422/485 opto-isolated)		
LPT1	: 1 x DB25F (Bi-directional/ECP/EPP)		
USB 2.0 Type A	: 4 x USB		1 x USB
DVI/RGB OUT	: 1 x 29P DVI-I or as RGB with adapter (DDC on RGB as default)		
Compact Flash	: 1 x CF Socket (Type I/II)		
If AC Power	: Std IEC inlet and/or Std IEC outlet (5A Max)		
If DC Power	: 1 x 2p D-SUB Connector (male) - Amphenol FCC17		

## Available Accessories:

- JH MMDBR STD-A1= Bracket
  - JH 19BRD STD-A1 = Mounting Bracket EN60945 Tested
  - JH MMDRO STD-A1= Rotary Bracket
  - JH 19TSV STD-A1 = Sun Visor
  - JH 19VED STD-A1 = Vesa Bracket
  - JH 19TAP STD-A1 = 21" CRT Adapter frame
  - JH 19TAP STD-B1 = 21" CRT Custom Adapter frame
  - JH 19TAP STD-A2 = 20" TFT Adapter frame
  - JH 19TWC STD-B1 = Water Cover
  - JH C01MF A-A = USB Cable 1m, Type A to Chassis mount receptacle
  - HT 00300 MSOS = OS options -> <http://www.hatteland-display.com/os>
- \*Please see user manual/datasheet for more information

## Factory Options:

- Capacitive or Resistive\* Touchscreen
- Optical Bonding\* Technology
- Up to 4GB of memory

\*Note that 19 inch with resistive touch screen can not be combined with bonding.

## Capabilities / Prepared for:

- 1 x miniPCI (Require modification of terminal plate)

For a full overview of model typenumbers, please review the following link:  
[www.hatteland-display.com/pdflink/ind100780-2.php](http://www.hatteland-display.com/pdflink/ind100780-2.php)

# APPROVALS & CERTIFICATES

This product have been tested / type approved by the following classification societies:

**IEC 60945 4th** (EN 60945:2002)

**GL** - Germanischer Lloyd

**BV** - Bureau Veritas

**IACS E10**

**DNV** - Det Norske Veritas

**LRS** - Lloyd's Register of Shipping

**IP66**

**ABS** - American Bureau of Shipping

**EU RO MR** - Mutual Recognition

**ClassNK** - Nippon Kaiji Kyokai