DATA SHEET

HATTELAND® DISPLAY

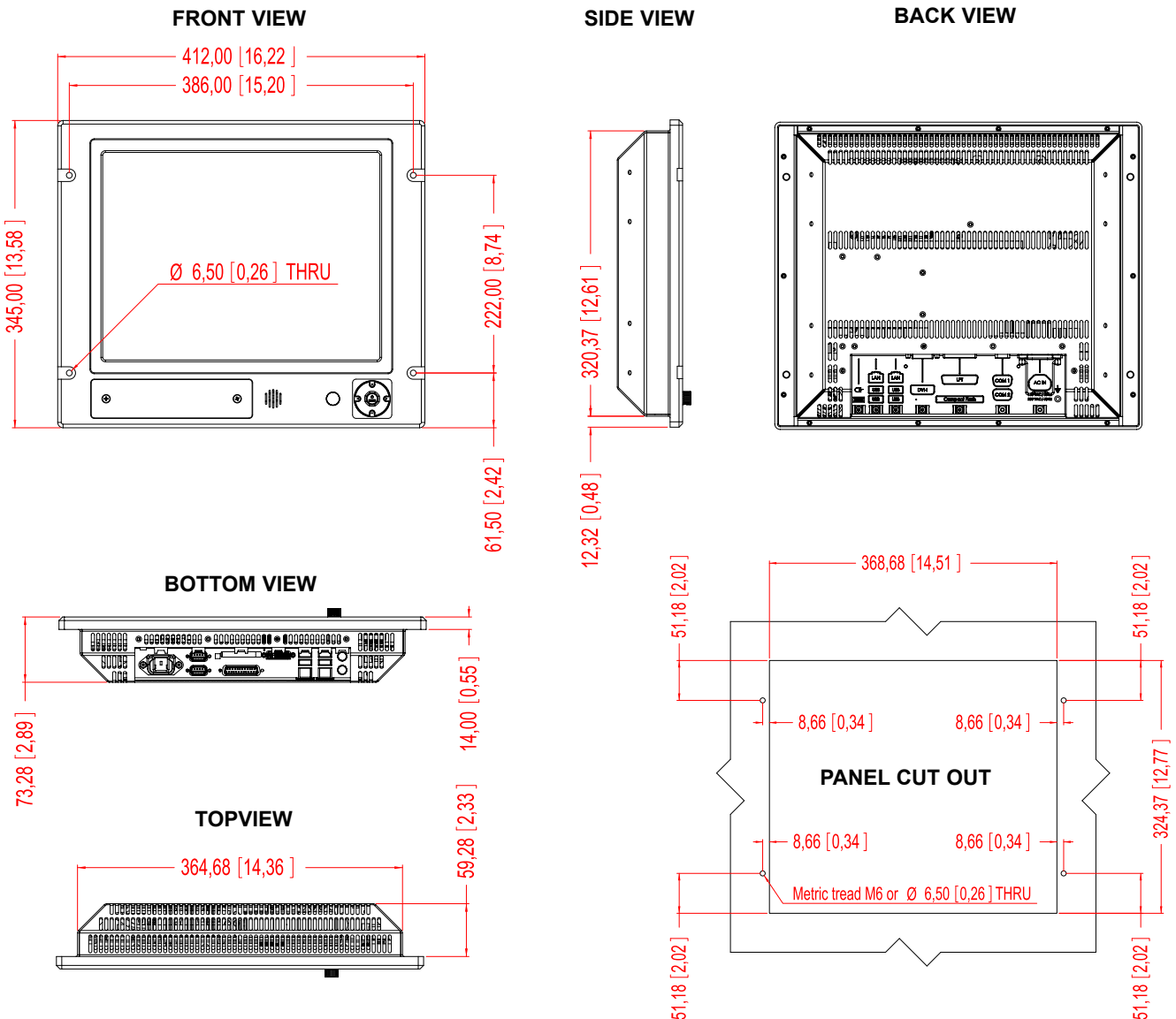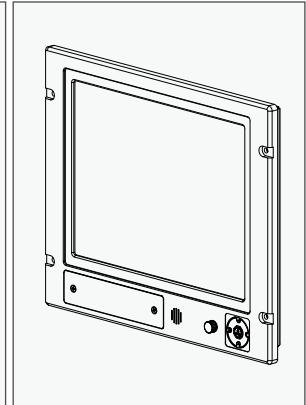| Manufacturer:	**Hatteland Display AS**
Product:	**15.0 inch Maritime Multi Computer (MMC)**
Type:	**JH 15T17 MMC-xxx-Axxx**

15.0 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 chart 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

- 412,00 [16,22]
- 386,00 [15,20]
- 345,00 [13,58]
- 222,00 [8,74]
- Ø 6,50 [0,26] THRU
- 61,50 [2,42]

SIDE VIEW

- 320,37 [12,61]
- 12,32 [0,48]

BACK VIEW

BOTTOM VIEW

- 73,28 [2,89]
- 14,00 [0,55]
- 59,28 [2,33]

TOPVIEW

- 364,68 [14,36]

PANEL CUT OUT

- 368,68 [14,51]
- 51,18 [2,02]
- 51,18 [2,02]
- 8,66 [0,34]
- 8,66 [0,34]
- 324,37 [12,77]
- 8,66 [0,34]
- 8,66 [0,34]
- 51,18 [2,02]
- 51,18 [2,02]
- Metric tread M6 or Ø 6,50 [0,26] THRU

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.

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SPECIFICATIONS

Note: All specifications are subject to change without prior notice!
Please visit www.hatteland-display.com for the latest electronic version.

HATTELAND® DISPLAY

TFT Technology:
- High Quality TFT with LED Backlight Technology
- 15.0 inch viewable image size, Aspect Ratio 4:3
- TFT active-matrix liquid crystal panel

TFT Characteristics:
- Native Resolution   : 1024 x 768
- Pixel Pitch (RGB)   : 0.297 (H) x 0.297 (V) mm
- Response Time Standard   : 8ms (typical), black to white
- Contrast Ratio Standard   : 700:1 (typical)
- Light Intensity Standard : 400 cd/m² (typical)
- Viewable Angle Standard   : +/- 80 deg. (Up/Down/Left/Right) (typical)
- Active Display Area   : 304.1 (H) x 228.1 (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   : 1 x 40GB, 80GB, 120GB or 300GB SSD (SATA 2.5")
  or 1 x 1TB HDD (SATA 2.5")
- Processor   : See option table 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 1024 x 768 @ 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 15T17 MMC-Axx-xxxx
- 24 VDC   : Model JH 15T17 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 Dimensions:
- 412.00 (W) x 345.00 (H) x 73.28 (D) mm
- 16.22" (W) x 13.58" (H) x 2.89" (D)
- Weight: 8 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

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:

Connector	Rear	Internal	Front
Ethernet GBLan	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		
If DC Power	1 x 2p D-SUB Connector (male) - Amphenol FCC17		

Available Accessories:
- JH 15TBR STD-B1 = Mounting Bracket
- JH 15TRO STD-A1 = Rotary Bracket
- JH 15TSV STD-A1 = Sun Visor
- JH 15VED STD-A1 = Vesa Bracket
- JH 15TAP STD-A1 = 15" Adapter Frame to 19" Rack
- JH 15TAP STD-B1 = 15" Adapter Frame to 17" CRT cut out
- JH 15TWC STD-A1= 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 Mounted Options:
- Resistive* or Capacitive Touchscreen
- Optical Bonding* Technology
- Up to 4GB of memory
- Storage Device, SSD or HDD
*Note that all 15 inch with resistive touch screens can not be combined with bonding.

Capabilities / Prepared for:
- 1 x miniPCI (Require modfication of terminal plate)

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

Compass Safe Distance: JH 15T17 MMC-Axx-Axxx	Standard: 55cm	Steering: 35cm
Compass Safe Distance: JH 15T17 MMC-Dxx-Axxx	Standard: 115cm	Steering: 75cm

APPROVALS & CERTIFICATES

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

IEC 60945 4th (EN 60945:2002)   **IACS E10**   **IP66**   **ClassNK** - Nippon Kaiji Kyokai
GL - Germanischer Lloyd   **DNV** - Det Norske Veritas   **ABS** - American Bureau of Shipping
BV - Bureau Veritas   **LRS** - Lloyd's Register of Shipping   **EU RO MR** - Mutual Recognition