

Manufacturer: **Hatteland Display AS**

Product: **15.0 inch Maritime Multi Display (MMD)**

Type: **JH 15T15 MMD**

PRELIMINARY

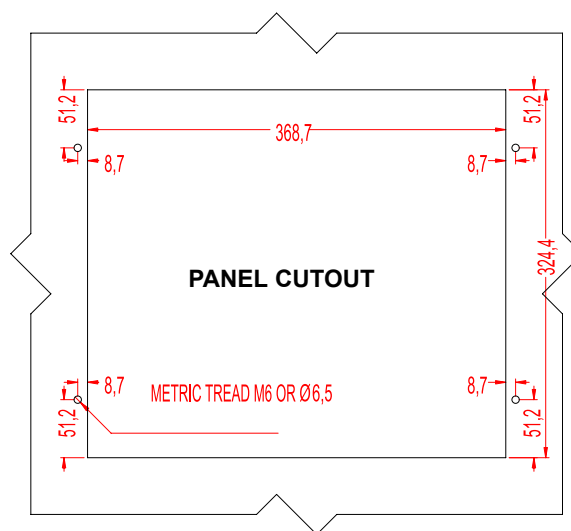
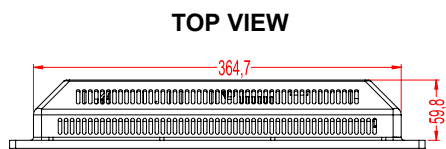
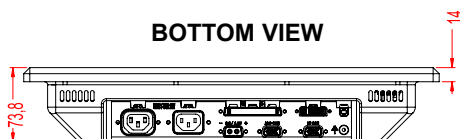
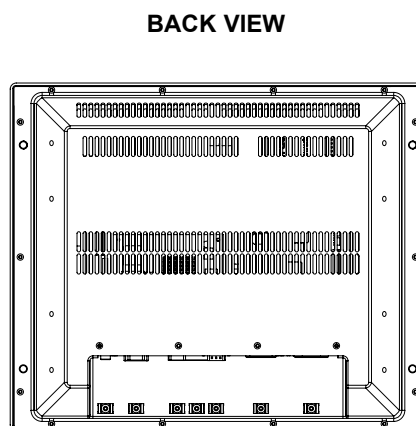
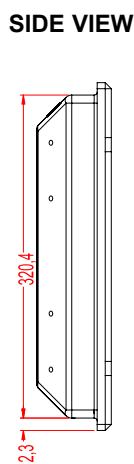
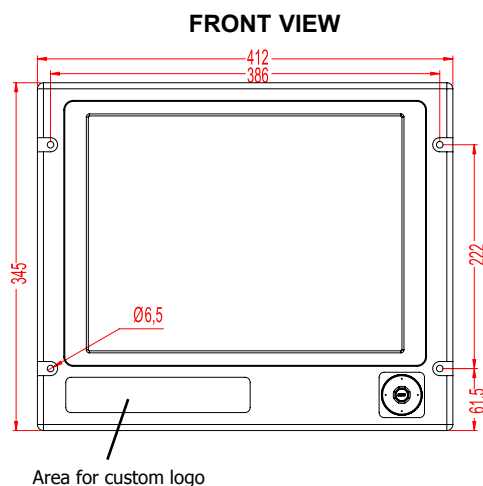
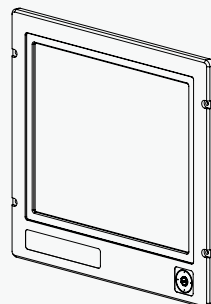
Last Revised: **03 Oct 2007**
Revision#: **01**

15.0 inch Maritime Multi Display (MMD) - Series 1

Features:

The Series 1 Maritime Multi Display (MMD) models uses fewer cable connections than its predecessors, increasing reliability and reducing component costs. The models can be delivered with either AC or DC input as standard, but it also offers future support for combined AC and DC power input built in ensuring that they are compatible with all power systems on all vessels. Those models will automatically switch to whatever power is connected, making them highly flexible for shipbuilders and system integrators alike. Connections include DVI-I in, RGB out, RGB in, IEC inlet, IEC outlet and USB I/O.

The models can offer more signal input/outputs upon request with the HATTELAND® 160 pin I/O connector which allows the connection of many common signal types using just one cable connection for common signals such as; Composite Video Input, S-VHS Video Input, Touch Screen and Serial Communication. ECDIS Compliant models is also available. Further, all models and variations can be offered with Optical Technology bonding and IP22 or IP65 user controls solution.



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:

- High Quality SHARP TFT
- 15.0 inch viewable image size
- Color Active Matrix LCD Module
- a-Si Thin Film Transistor (TFT)

TFT Characteristics:

- Pixel Number : 1024 x 768
- Pixel Pitch (RGB) : 0.297 (H) x 0.297 (V) mm
- Response Time : 25 ms (typical), "black" to "white"
- Contrast Ratio : 400:1 (typical)
- Light Intensity : 250 cd/m2 (typical)
- Viewable Angle : +/- 85 deg. (typical) (Up/Down/Left/Right)
- Active Display Area : 304.1 (H) x 228.1 (V) mm
- Max Colors : 16.7 millions

Synchronisation:

Sync Signal:

- Digital separate synchronisation
- Composite synchronisation
- Synchronisation on green.
- Auto detects VGA -> SXGA, interlaced and non interlaced
- Video Signal : Analog RGB 0,7Vp-p
- Input Impedance 75 Ohm

Synchronisation Range:

- Horizontal : 31,5 kHz to 91,1 kHz
- Vertical : 60 Hz* to 85 Hz

* Recommended for optimum picture quality

Supported Signals:

Resolutions:

- VGA : 640 x 480 (including 640 x 350)
- SVGA : 800 x 600 (including 720 x 400)
- XGA : 1024 x 768*

* Recommended for optimum picture quality. (60 Hz only)

Video Signals:

- Interlaced NTSC and PAL/SECAM video
- Composite video
- S-Video

Power Specifications:

Power Supply:

- 115 & 230VAC - 50 / 60Hz - JH 15T15 MMD-Axx-xxxx
- 24 VDC - JH 15T15 MMD-Dxx-xxxx

Power Consumption:

- Operating : 100 W (max)

Common Type Numbers:

- JH 15T15 MMD-xxx-xxxA = Standard version (Also ECDIS + Buzzer Options)
- JH 15T15 MMD-xxx-xxxC = With Capacitive Touch Screen Option
- JH 15T15 MMD-xxx-xxxR = With Resistive Touch Screen Option
- For more options, please review our typenumber datasheet found on our website.

PRELIMINARY

MECHANICAL DESCRIPTION

Physical Considerations:

- 412 (W) x 345 (H) x 73.8 (D) mm - Weight: 7 kg (approx)

Input Signal Terminals:

- DVI-I Signal IN : 1 x 29p DVI Female (or as RGB IN with adapter)
- RGB Signal IN : 1 x 15p HD D-SUB (female)
- RGB Signal OUT : 1 x 15p HD D-SUB (female)*
- HATTELAND I/O : 1 x 160p D-SUB (female) - Also see table below
- USB I/O : 1 x TYPE B Connector (female)
- AC Power IN : 1 x Std IEC Inlet
- AC Power OUT : 1 x Std IEC Outlet
- DC Power IN : 1 x 2p D-SUB Connector (male) - Amphenol FCC17

*Tested at resolutions up to 1024 x 768. Both separate sync and composite sync is supported. The VGA output signal is at same resolution and sync as the input. The output is working even if the main display is turned off. (Power supply must be connected though)

HATTELAND I/O Cable:

The factory standard HATTELAND® I/O cable is delivered with the following connectors. Cable length is TBD meters. Custom cable solutions is possible.

- Remote Control : 2 x 9p D-SUB (female) - RS232/422/485
- Composite Video IN : 3 x BNC (female)
- S-Video/S-VHS IN : 1 x 4p S-Video (female)
- COM1 : 1 x 9p D-SUB (female) - For Touch Screen
- USB : 1 x Type B USB (female)

User Controls:

On front bezel - Button control (IP65) xxx-xxAx models:

- Power On/Off and On Screen Display Menu (push button)
- Brightness Control (up/down - push buttons)
- Hotkeys (left/right - push buttons)
- Mode Status Red/Green LED-Ring Indicator

On front bezel - Potmeter control (IP22) xxx-xxBx models:

- Power On/Off and On Screen Display Menu (push button)
- Brightness Control (rotary control)
- Hotkeys (left/right - push buttons)
- Mode Status Red/Green LED-Ring Indicator

Environmental Considerations:

- Operating : Temperature -15 deg. C to +55 deg. C
- Storage : Humidity 30% to 90% (non condensing)
- Storage : Temperature -20 deg. C to +60 deg. C
- Storage : Humidity 10% to 90% (non condensing)
- IP Rating : EN60529 (IP65) (Applies for flush mount)
- Compass Safe Dist. : JH 15T15 MMD - Std: TBD Steering: TBD

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.

Available Accessories:

- I/O Cable = Customized I/O Cable to support more signals
- JH 15TBR = Bracket (Review bracket datasheet/user manual)
- JH XXTRO = Rotary Bracket (Review bracket datasheet/manual)
- JH 15TSV = Sun Visor (Review user manual)
- JH VESA 15T03 = Vesa Bracket (Review user manual)
- JH 15TAP STD = 15" Adapter Plate/Frame to 19" Rack

TESTING / APPROVALS & CERTIFICATES

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