DATA SHEET HATTELAND®

Manufacturer:	**Hatteland Display AS**
Product:	**19.0 inch Maritime Multi Display (MMD)**
Type:	**JH 19T02 MMD**

Last Revised:	**11 Jun 2008**
Revision#:	**18**

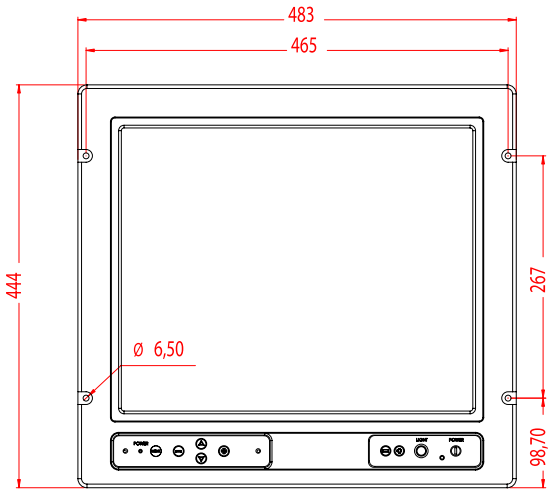
19.0 inch Maritime Multi Display (MMD)

Features:

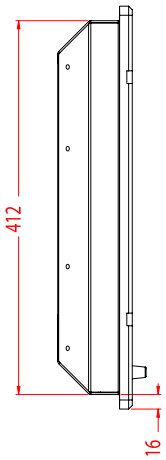
The color display described in this Data Sheet is an industrialized version of a high quality SHARP TFT based display with MVA Premium™ technology. The MMD allows you to display professional applications with clarity and enhanced color and image quality. The MMD have DVI-D Input, RGB Input, Video Input (Composite/SVHS) and PiP (Picture in Picture) functions.

The controller and the high light intensity in combination with the high contrast and wide backlight adjustment control, allow the product to be used in many environments. The brightness is adjustable from 0 to 100%

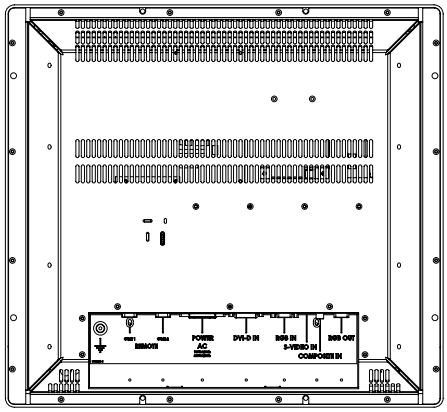
FRONT VIEW



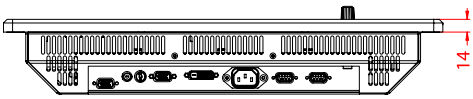
SIDE VIEW



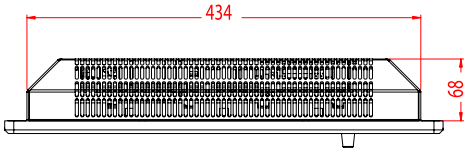
BACK VIEW

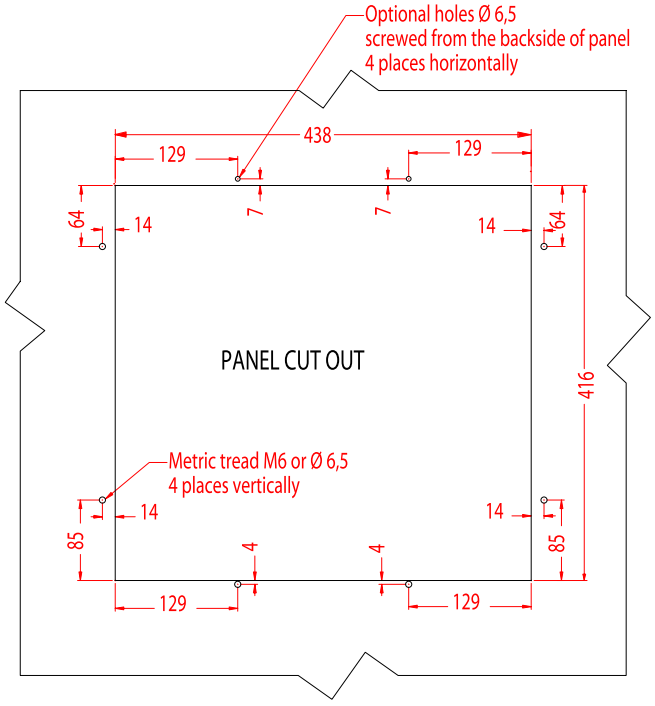


BOTTOM VIEW



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.

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PRODUCT SPECIFICATIONS - JH 19T02 MMD

HATTELAND®

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

TECHNICAL DESCRIPTION

TFT Technology:

- 19.0 inch viewable image size
- Active Matrix, Thin Film Transistor (TFT)
- MVA Premium™ Technology

TFT Characteristics:

- Pixel Number : 1280 x 1024
- Pixel Pitch (RGB) : 0.294 (H) x 0.294 (V) mm
- Response Time : 15 ms (typical), "black" to "white"
- Contrast Ratio : 700:1 (typical)
- Light Intensity : 300 cd/m2 (typical)
- Viewable Angle : +/- 85 deg. (typical) (Up/Down/Left/Right)
- Active Display Area : 376.32 (H) x 301.056 (V) mm
- Max Colors : 16.7 millions (depending on graphics card)

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 Signal Inputs:

Resolutions:

- VGA : 640 x 480 (including 640 x 350)
- SVGA : 800 x 600 (including 720 x 400)
- XGA : 1024 x 768
- SXGA : 1280 x 1024 *

Video Signals:

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

** Recommended for optimum picture quality*

Power Specifications:

Power Supply Options:

- 115 & 230VAC - 50 / 60Hz : Model JH 19T02 MMD A1
- 24 VDC : Model JH 19T02 MMD A2

Power Consumption:

- Operating : 47,2W (typ) - Measured at 230Vrms
- Operating : TBD (typ) - Measured at 24VDC
- Operating : 100W (max)

MECHANICAL DESCRIPTION

Physical Dimensions:

- 483 (W) x 444 (H) x 82 (D) mm
- Weight: 12 kg (approx w/bracket)

Input Signal Terminal:

- DVI-D (PC) signal : DVI-D Input 24pin Connector
- RGB (PC) signal : 15pin mini D-SUB (female - Input)
- Composite Video : RCA Phono plug
- S-Video signal : S-Video (SVHS) plug
- AC Power signal : Std IEC Inlet Model JH 19T02 MMD A1
- DC Power signal : Screw terminal Model JH 19T02 MMD A2

Accessories:

- Touchscreen : 1 x D-SUB 9P Connector (female)
- Remote Control : 2 x D-SUB 9P Connectors (female)

User Controls:

On front bezel:

- Power On/Off (push button)
- Brightness Control
- 2 x hotkeys
- Mode Status LED

Behind hatch:

- On Screen Display control (OSD/OSM)

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 : 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.

Available Options:

- JH MMD BR = Bracket *
- JH MMDRO = Rotary Bracket *
- JH 19TSV = Sun Visor *
- JH VESA 18T04 = Vesa Bracket *
- JH VBUF = Video Buffer (1)
- JH SCOM = Remote Control
- JH XPR = External Power Relay
- ECDIS Version = JH 19T02 MMD E1/E2 (E1=AC / E2=DC)
- ECDIS w/buzzer= JH 19T02 MMD E11/E12 (E11=AC / E12=DC)
- JH 19TAP STD = 19" adapter frame/plate to 21" CRT
- Touch Screen = Factory mounted

**Option: Standard or custom logo and color*
**Option: See separate datasheet for specifications on bracket options.*

(1) The JHVBUF is tested at resolutions up to 1600 x 1200. 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)

Compass Safe Distance:	JH 19T02 MMD-E1	Standard: 90cm	Steering: 65cm
	JH 19T02 MMD-E4	Standard: 125cm	Steering: 85cm

APPROVALS & CERTIFICATES

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

EN60945 4th (IEC945 4th)
ClassNK - Nippon Kaiji Kyokai (1,2)
BV - Bureau Veritas (1,2)
DNV - Det Norske Veritas (1,2)
ABS - American Bureau of Shipping (1,2)
LRS - Lloyd's Register of Shipping(1,2)
GL - Germanischer Lloyd(1,2)
KR - Korean Register Of Shipping (1,2)
RS - Russian Maritime Register of Shipping (1,2)
EN61174 (IEC1174) - Bundesamt für Seeschiffahrt und Hydrographie (BSH)