DATASHEET

HATTELAND TECHNOLOGY
an EMBRON Company

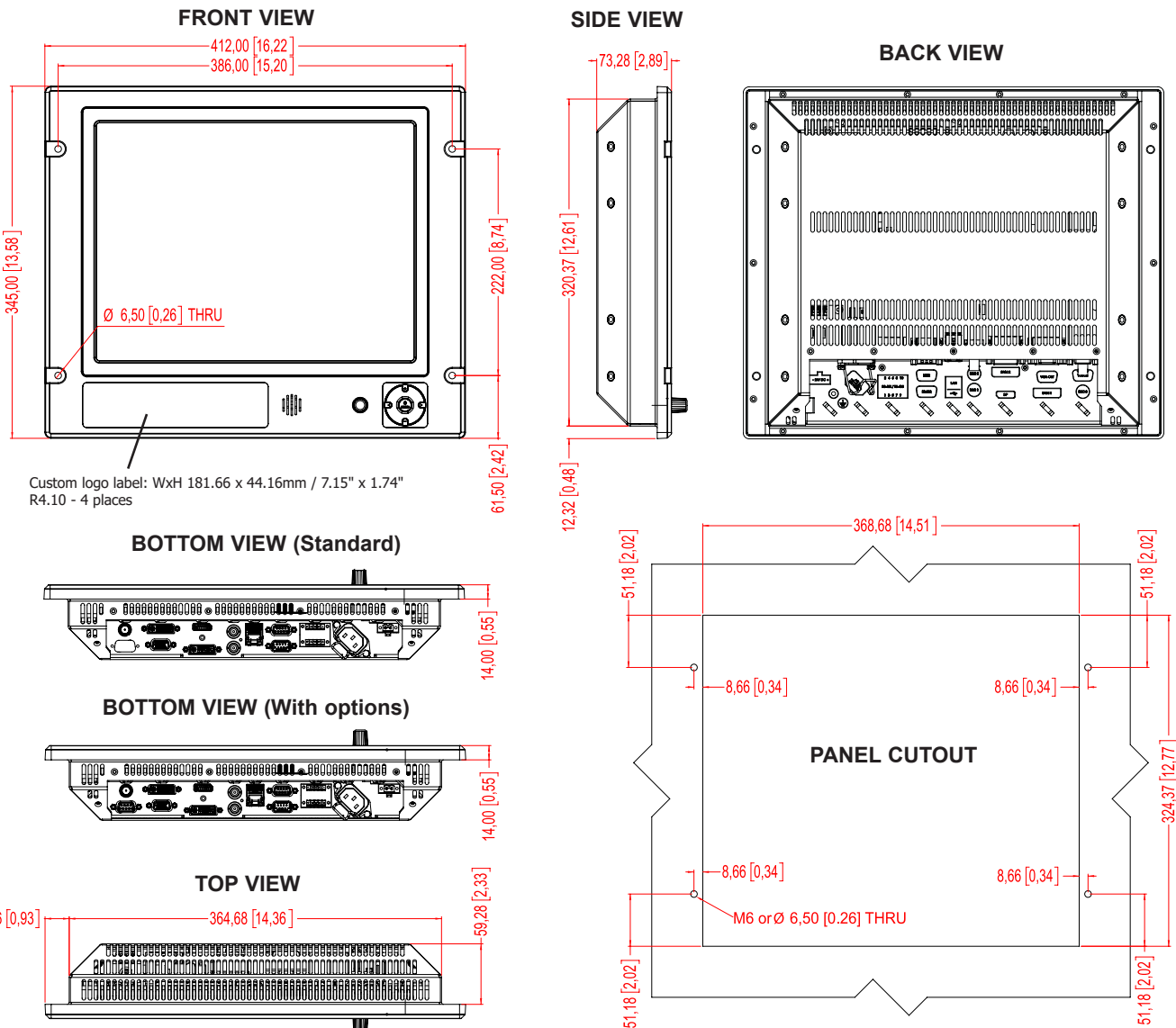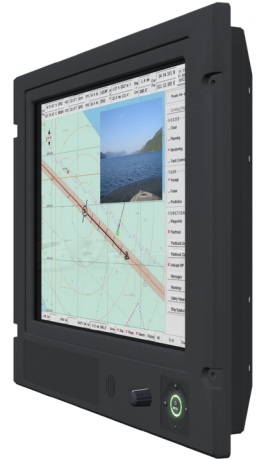|	
Manufacturer:	**Hatteland Technology AS**
Product:	**15.0 inch Maritime Multi Display (MMD)**
Type:	**JH 15T17 MMD-xRy-yyyy**
	where x=Power Input (M=AC+DC), y=configuration

15.0 inch Maritime Multi Display (MMD) - Series 1 G2

Features:

The Series 1 Generation 2 (G2) Maritime Multi Display (MMD) models are delivered with Multi-power (AC and DC built in) ensuring that they are compatible with all power systems on vessels. The displays will automatically switch to whatever power is connected, making it highly flexible for shipbuilders and system integrators alike. The onboard connections include DVI-I, DP, Composite Video, as well as VGA out, RS-232 for touch, RS-422/485, USB Type A for SCOM, SCOM Ethernet and Potmeter/user connection for access to display settings.

The Series 1 Generation 2 (G2) MMD models are available in a wide range of display size and format, making them suitable for a multitude of shipboard applications, where combining data and video inputs to a single unit provides maximum flexibility. Be it for ship navigation, automation or safety and security, this range with all it's possible options provides a robust and versatile platform from which to display and manage multisource data from all of a vessels systems.

All models and variations can be offered with Optical Technology bonding that mitigates screen misting.

The Series 1 Generation 2 (G2) Maritime Multi Display (MMD) feature control buttons on the front of the monitor (keypad control) as well as an potentiometer knob, providing fast and easy user access to the displays OSD features and settings. An Keypad Control only (no potmeter) model is also 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]

Custom logo label: WxH 181.66 x 44.16mm / 7.15" x 1.74"
R4.10 - 4 places

SIDE VIEW

73,28 [2,89]
320,37 [12,61]
12,32 [0,48]

BACK VIEW

BOTTOM VIEW (Standard)

14,00 [0,55]

BOTTOM VIEW (With options)

14,00 [0,55]

TOP VIEW

23,66 [0,93]
364,68 [14,36]
59,28 [2,33]

PANEL CUTOUT

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]
M6 or Ø 6,50 [0.26] THRU
51,18 [2,02]
51,18 [2,02]

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.

SPECIFICATIONS

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

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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 : 8ms (typical), black to white
- Contrast Ratio : 1500:1 (typical)
- Light Intensity : 400 cd/m² (typical)
- Viewable Angle : +/- 85 deg. (Up/Down/Left/Right) (typical)
- Active Display Area : 304.1 (H) x 228.1 (V) mm
- Max Colors : 16.7 million

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 optimal picture quality

Video Signals:
- Interlaced HDTV, NTSC, PAL and SECAM video
- Composite video

Power Specifications:

Multi-power Supply:
- 100-240V AC - 50/60Hz + 24 VDC

Note: You may connect either AC power or DC power or both. In case both sources are connected, power will be sourced from the AC input. If AC input is lost, there will be a uninterrupted switch-over to DC input.

Power Consumption:
- Operating AC/DC: 75W (max)

Physical Considerations:

- W:412.00 [16.22"] x H:345.00 [13.58"] x D:73.28 [2.89"] mm [inch]
- Weight: Approx. 5.5kg / 12.1lbs

Signal Terminals:

- DVI-I IN : 2 x 29p DVI Female (or as VGA IN with adapter)*
- DP1.2 IN : 1 x 20p DisplayPort (female)
- Comp. Video IN : 3 x BNC Connector (female)
- SCOM RS-422/485 : 2 x 5-pin Terminal Block 3.81, non-isolated+Buzzer
- SCOM USB : 1 x USB TYPE A Connector (female)
- SCOM Ethernet : 1 x RJ45 Connector
- SCOM RS-232 : 1 x 9p D-SUB (female)
- VGA OUT : 1 x 15p HD D-SUB (female) - Clone of VGA IN**
- Potmeter/User : 1 x 9p D-SUB (male)
  (Potentiometer IN, +5VDC OUT, BRT +/- IN)
- If Touch Screen : 1 x 9p D-SUB (female)
- AC Power IN : 1 x Std IEC Inlet
- DC Power IN : 1 x 2-pin Terminal Block 5.08

* DVI-I Port #1 as VGA IN also acts as clone to VGA Signal Out (buffered).
**Tested at recommended resolutions. The VGA output signal (buffered) is at same resolution and sync as the VGA input. The output is working even if the display unit is turned off, but power cable/supply must be connected/provided.

Note for DVI and VGA signal inputs:
DVI-I #1, DVI-D #1 and VGA #1 is Single Link.
DVI-I #2, DVI-D #2 and VGA #2 is Dual Link.

User Controls:

On front bezel - Keypad control (IP66) xRx-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 Illuminated LED-Ring Indicator

On front bezel - Potmeter control (IP66) xRx-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 Illuminated LED-Ring Indicator
- Buzzer

Environmental Considerations:

• Operating	: Temperature -15°C to +55°C
• Storage	: Temperature -20°C to +60°C
• Humidity	: Up to 95% (Operating / Storage)
• IP-Rating Protection	: IP66 front - IP20 rear (EN60529).
• Compass Safe Distance	: Standard: 110cm - Steering: 70cm

Lifetime Considerations:
Even though 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:

• JH 15TBR STD-B1	: Mounting Bracket
• JH 15TRO STD-A1	: Rotary Bracket
• JH 15TSV STD-A1	: Sun Visor
• JH 15VED STD-A1	: VESA Adapter 75/100mm
• 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

Factory Options:

- Resistive* or Capacitive Touch Screen
- Optical Bonding Technology
- Keypad only or Keypad+Potmeter+Buzzer controls

*Can not be combined with Optical Bonding Technology

APPROVALS & CERTIFICATES

These products have been tested / type approved by the following classification societies: *=PENDING

IEC 60945 4th (EN 60945:2002) **IACS E10** **EN55024** **EN55022, Class A** **EU RO MR** - Mutual Recognition
DNV GL - Det Norske Veritas / Germanischer Lloyd* **LRS** - Lloyd's Register of Shipping* **ABS** - American Bureau of Shipping*
CCS - China Classification Society **KR** - Korean Register of Shipping* **BV** - Bureau Veritas* **ClassNK** - Nippon Kaiji Kyokai*