DATASHEET

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HATTELAND TECHNOLOGY
an EMBRON Company

Manufacturer: **Hatteland Technology AS**
Product: **19.0 inch Maritime Multi Display (MMD)**
Type: **JH 19T27 MMD-MRx-AyzwqA**
Where x=1 (No ECDIS) or 4 (ECDIS). y=A (No Bonding) or O (Bonding). z=B (Potmeter IP66 Buzzer) or A (Buttons IP66). w=A (No Touch) or P (Touch). q=Expansion Board option.

Last Revised: **18 Feb 2025**
Revision#: **02**

19.0 inch Maritime Multi Display (MMD) - Series 1 G3

Features:

The Series 1 Generation 3 (G3) 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 DP, HDMI, USB-C for touch and DP, as well as VGA, RS-232/422/485, USB Type A for Firmware, SCOM Ethernet and Potmeter/user connection for access to display settings.

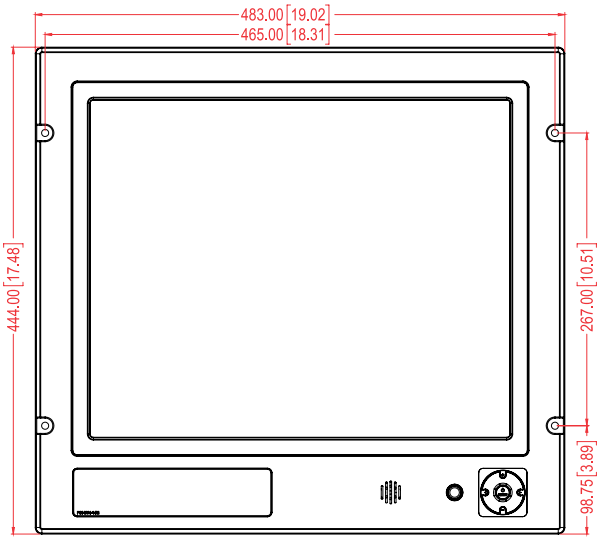
The Series 1 Generation 3 (G3) MMD models are available in a wide range of display size and format, making them suitable for a multitude of shipboard applications, where combining data and video inputs to a single unit provides maximum flexibility. Be it for ship navigation, automation or safety and 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.

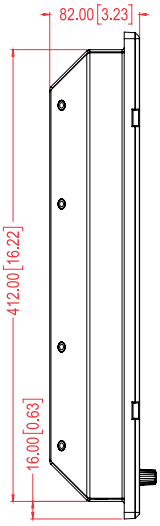
The Series 1 Generation 3 (G3) Maritime Multi Display (MMD) feature control buttons on the front of the monitor (keypad control) as well as an potentiometer knob, providing fast and easy user access to the displays OSD features and settings. An Keypad Control only (no potmeter) model is also available.



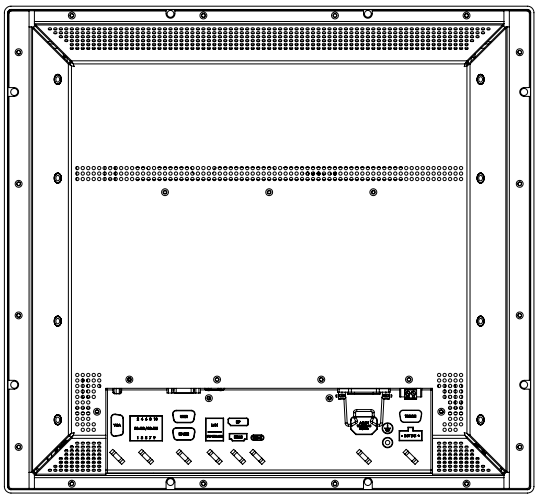
FRONT VIEW



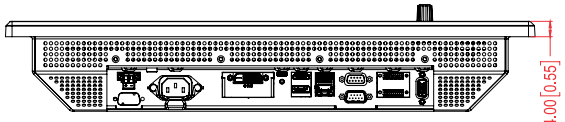
SIDE VIEW



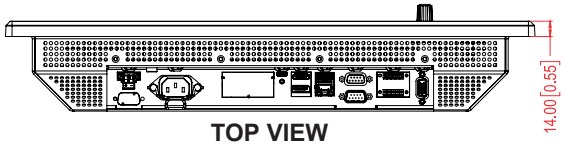
BACK VIEW



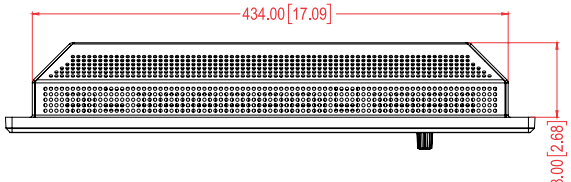
BOTTOM VIEW (with DVI Expansion Board)

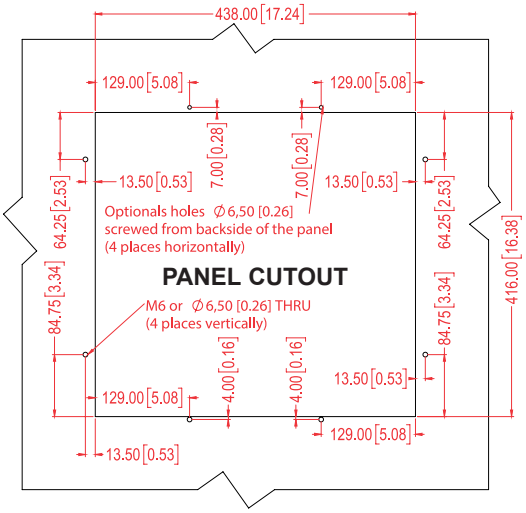


BOTTOM VIEW (without Expansion Board)



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.

SPECIFICATIONS

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

HATTELAND TECHNOLOGY
an EMBRON Company

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 : 35ms (typical), "black" to "white"
- Contrast Ratio : 1500:1 (typical)
- Light Intensity : 350 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 million

Supported Signals:

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*

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

Power Specifications:

Power Supply Options:

- Multi-Power : 100-240V AC - 50/60Hz + 24 VDC*
- Single Power : 100-240V AC - 50/60Hz

*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: 23W (Typ) 33W (Max)

User Controls:

On front bezel - Keypad control (IP66) xRx-xxAxxx models:

- Power On/Off and On Screen Display Menu (OSD)*
- 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-xxBxxx models:

- Power On/Off and On Screen Display Menu (OSD)*
- Brightness Control (rotary control)
- Hotkeys (left/right - push buttons)
- Mode Status Red/Green Illuminated LED-Ring Indicator
- Buzzer (75-85dB)

*OSD Key Codes: 321=Get access to OSD, 362=Advanced Mode

Physical Considerations:

Product Dimensions and Weight:

- W:483.00 [19.02"] x H:444.00 [17.48"] x D:82.00 [3.23"] mm [inch]
- Weight: Approx. 8kg / 18lbs

Product Carton Size and Weight:

- L:690.00 [27.17"] x W:240.00 [9.45"] x H:655.00 [25.79"] mm [inch]
- Approx. 11.0 kg / 25.0 lbs

Signal Terminals:

- DP 1.4 IN : 1 x 20p DisplayPort (female)*
- HDMI 2.0 IN : 1 x 19p HDMI (female)*
- USB-C : 1 x USB-C Female with DP 1.2 IN and USB2.0 (SCOM, touch and uC Firmware Update)*
- VGA/RGB IN : 1 x 15p D-SUB (female)*
- SCOM RS-422/485 : 2 x 5-pin Terminal Block 3.81, non-isolated+Buzzer
- SCOM Ethernet : 1 x RJ45 Connector
- SCOM RS-232 : 1 x 9p D-SUB (female)
- VS Firmware Update : 1 x USB TYPE A Connector (female)
- Potmeter/User : 1 x 9p D-SUB (male) (Potentiometer IN, +5VDC OUT, BRT +/- IN)
- AC Power IN : 1 x Std IEC Inlet
- DC Power IN : 1 x 2-pin Terminal Block 5.08

Note: Max Cable length: <2m*

Environmental Considerations:

• Operating	: Temperature -15°C to +55°C
• Storage	: Temperature -20°C to +60°C
• Humidity	: Up to 95% (Operating / Storage)
• Shock - Vibration	: 5g/11ms - 0.7g (IEC 60945 / IACS E10)
• Air Pressure Maximum Altitude	: Operating: 4000m - Storage: 12912m
• Air Pressure Maximum Altitude (Bonded)	: Operating: 3000m - Storage: 3000m
• IP-Rating Protection	: IP66 front - IP20 rear (EN60529).
• Compass Safe Distance	: Standard: 90cm - Steering: 45cm

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 MMDBR STD-A1	: Mounting Bracket
• HD TMB STD-A1	: Mounting Bracket EN60945 Tested
• JH MMDRO STD-A1	: Rotary Bracket
• JH 19TSV STD-A1	: Sun Visor
• JH 19VED STD-A1	: VESA Adapter 75/100mm. Not EN60945 Tested.
• 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
• HD REM SX1-A1	: External Remote Control, EN60945 Tested
• HT DPUSB-2-USBC-A1	: 1 x DP & USB2.0 (Male) to USB-C (Male) Adapter, 2m (not IP67)
• HT HDMIUSB-2-USBC-A1	: 1 x HDMI & USB2.0 (Female) to USB-C (Male) Adapter, 2m (not IP67)
• HT DVI-2-HDMI-A1	: 1 x DVI to HDMI Cable 2 meters
• HT DVI-2-HDMI-A2	: 1 x DVI to HDMI Cable 5 meters
• HT DVI-2-HDMI-A3	: 1 x DVI to HDMI adapter 0.2 meters

Factory Options:

- Resistive Touch Screen*
- Color Calibrated models (ECDIS)
- Optical Bonding Technology
- Expension board (DVI EXPcard 1xDVI IN)
- Keypad only (MR1-xxAxxx) or Keypad+Potmeter+Buzzer model (MR1-xxBxxx)

*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** **EU RO MR** - Mutual Recognition by DNV* **ClassNK** - Nippon Kaiji Kyokai*
CCS - China Classification Society* **BV** - Bureau Veritas* **KR** - Korean Register of Shipping* **ABS** - American Bureau of Shipping*