DATASHEET

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HATTELAND TECHNOLOGY
an EMBRON Company

Manufacturer:	**Hatteland Technology AS**
Product:	**24.0 inch Maritime Multi Display (MMD)**
Type:	**HD 24T27 MMD-MAx-FyGz1A** x = (1 No ECDIS) or 4 (ECDIS), y = A (No Bonding) O (Bonding) H (HighBright Bonded), z = A (No Touch) or P (Touch).

Last Revised:	**27 Nov 2024**
Revision#:	**01**

24.0 inch Maritime Multi Display - Series X G3

Features:

Series X Generation 3 (G3) Displays offer the ultimate in performance, convenience, state of the art design and enduring quality for system integrators and boat builders. Series X products offer a range of feature sets optimized for varying requirements and applications.

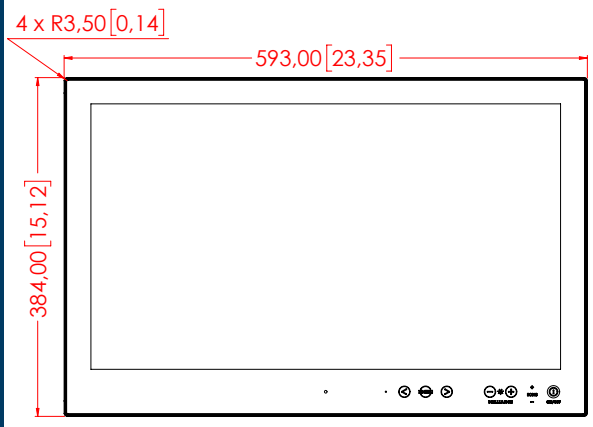
The Series X Generation 3 (G3) display range is a flexible monitor solution designed and type approved for the professional maritime segment, where reliability and long life time are key prerequisites for the industry. The product range combines stunning design and technology with innovative features and options, making it all that the integrator needs for top class type-approved marine systems.

The multi-input MMD models provide a wide choice of display size and format 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 security, this range with all it's possible options provides a robust and multipurpose platform from which to display and manage data and multiple camera or sensor videos.

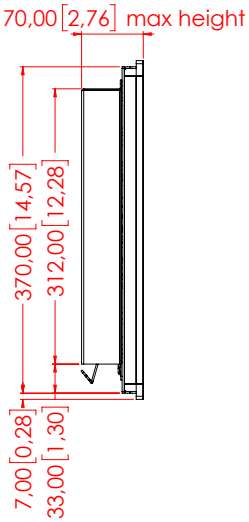
Series X Generation 3 (G3) displays feature Glass Display Control, LED Backlight Technology, full dimming and multipower as standard, and can also accomodate and combine a number of options such as multi-touch screen, optical bonding and ECDIS calibration. By factory standards the 24 inch unit is ECDIS Compliant.



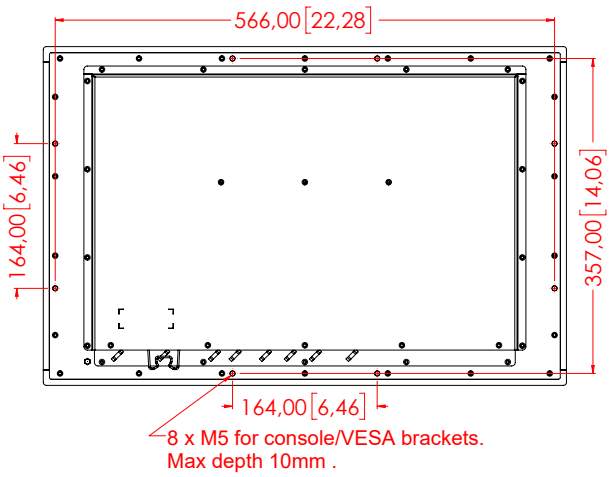
FRONT VIEW



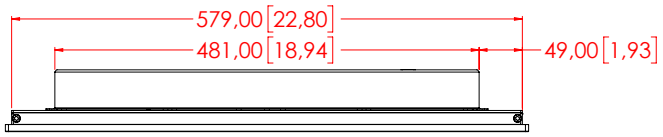
SIDE VIEW



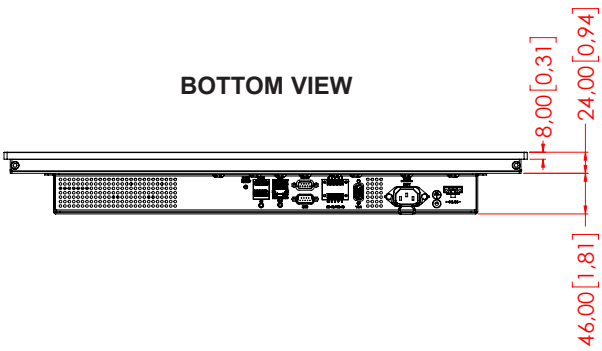
BACK VIEW

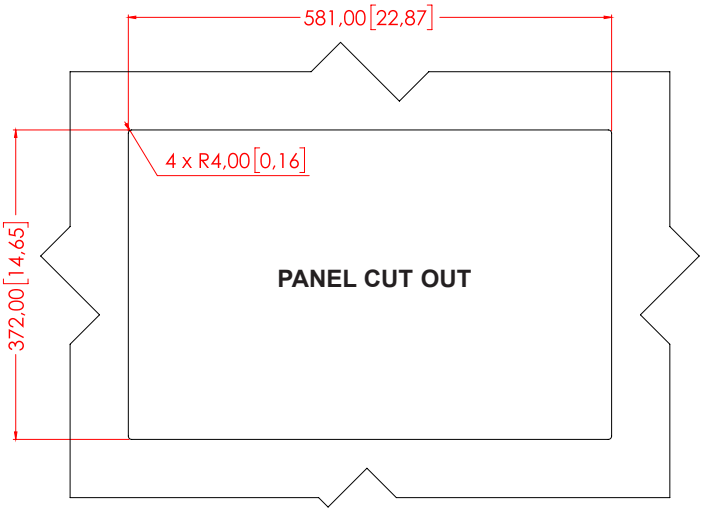


TOP VIEW



BOTTOM 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.

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TFT Technology:

- LED Backlight Technology, TFT Active-matrix
- 24.0 inch viewable image size, Widescreen, Aspect Ratio 16:9
- MVA (Multi-domain Vertical Alignment) LCD Technology, RGB vertical stripe

TFT Characteristics:

- Native Resolution : 1920 x 1080 (FHD)
- Pixel Pitch (RGB) : 0.27675 (H) x 0.27675 (V) mm
- Response Time : 25 ms (typical), "black" to "white"
- Contrast Ratio Standard : 3000:1 (typical)
- Contrast Ratio High Bright : 2300:1 (typical)
- Light Intensity Standard : 300 cd/m² (typical)
- Light Intensity High Bright : 1000 cd/m² (typical)
- Viewable Angle : +/- 89 deg. (typical) (Up/Down/Left/Right)
- Active Display Area : 531.36 (H) x 298.89 (V) mm
- Max Colors : 16.7 millions (RGB 8-bit)

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
- UXGA : 1600 x 1200
- FHD : 1920 x 1080*

** Recommended for optimal picture quality*

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: 22W (Typ) 29W (Max)

Physical Considerations:

Product Dimensions and Weight:

- W:593.00 [23.35"] x H:384.00 [15.12"] x D:70.00 [2.76"] mm [inch]
- Approx weight: 9.1kg / 20.0lbs

Product Carton Size and Weight (Shipping):

- L:700.00 [27.56"] x W:185.00 [7.28"] x H:585.00 [23.03"] mm [inch]
- Approx weight: 13.6kg / 29.9lbs

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 and touch)*
- 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)
- 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*

User Controls:

Behind front bezel - Glass Display Control™ (GDC) IP66:

- Power On/Off and On Screen Display Menu (OSD)*
- Brightness Control (-/+)
- Hotkeys (left/right), Mode Status Indicators (ECDIS, Service)
- Buzzer (through glass) (75-85dB), Light Sensor (behind glass)

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

Environmental Considerations:

• Operating	: Temperature -15°C to +55°C
• Storage	: Temperature -30°C to +70°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 – IP22 rear (EN60529)
• Compass Safe Distance	: Standard: 140cm - Steering: 85cm

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:

- HD CMB SX2-E1 : 1 x Console Mount Kit. EN60945 Tested
- HD TMB SX1-C1 : 1 x Table Mount Bracket. EN60945 Tested
- HD VED SX2-I1 : 1 x VESA Adapter Kit (100/100 & 200/100mm) Not EN60945 Tested
- HD REM SX1-A1 : 1 x External Remote Control, EN60945 Tested
- HD 24COV SX1-A1 : 1 x UV Sun Cover
- P022211 : 1 x IP66 Mount Gasket (EPDM), for Flush/Console mount
- HD CAK SX2-A1 : 1 x Front Console Mounting/Adapter Kit
- 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 (Male) 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:

- Projected Capacitive Touch Screen (Multitouch, USB, Pen/Glove supported)
- Sunlight Readable / High Bright (includes Optical Bonding)
- Color Calibrated models (ECDIS)
- Optical Bonding Technology
- Expension board (DVI EXPcard 1xDVI IN)

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*
LRS - Lloyd's Register of Shipping*