DATA SHEET

HATTELAND®
DISPLAY
an EMBRON Company

Manufacturer:	**Hatteland Display AS**
Product:	**24 inch Maritime Multi Computer (MMC)** Rose Point - Customized Model
Type:	**HD 24T22 PMC-MG3-4GF11A**

Last Revised:	**05 Dec 2017**
Revision#:	**02**

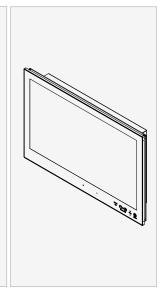## 24.0 inch Maritime Multi Computer - Series X G2
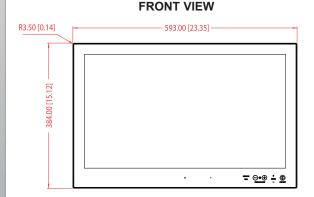
Features:

Series X Generation 2 (G2) Panel Computers offer the ultimate in performance, convenience, state of the art design and enduring quality for system integrators and boat builders. Series X Generation 2 (G2) products offer a range of feature sets optimized for varying requirements and applications.
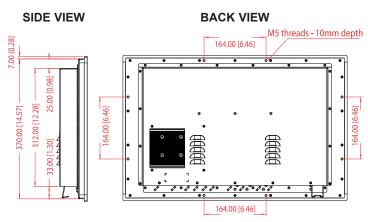
The Series X Generation 2 (G2) Panel Computer range is a flexible all in one monitor & PC solution, designed and type approved for the professional marine segment, where reliability and long life time are key-pre requisites for the industry. The product range combines state of the art display and computer technology with innovative features and options, making it all that the integrator needs for top class type-approved marine systems.
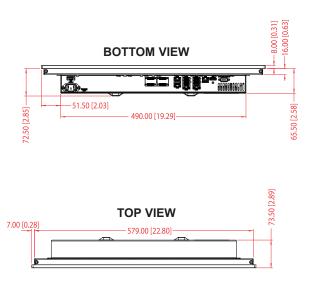
The high performance MMC Panel Computer models provide a wide choice of display size and format, along with various processor and storage options. The compact, all-in-one MMC solution is the ideal one for all ship navigation or automation installations. This range with all it's versitility and capability provides a robust and cost effective platform from which to run multiple applications and display and manage data.
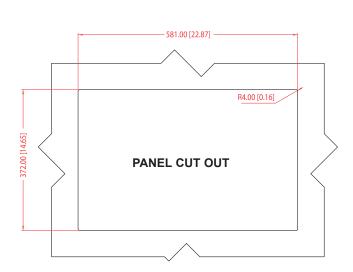
Series X Generation 2 (G2) Panel Computer feature Glass Display Control™, LED Backlight Technology, full dimming and multipower all as standard. In addition there are options such as SSD storage mediums, Multiple interface configurations and several OS options. The product range can also accomodate and combine multi-touch screen, optical bonding and ECDIS calibration. By factory standards the 24 inch unit is ECDIS Compliant.

FRONT VIEW

R3.50 [0.14] — 593.00 [23.35] — 384.00 [15.12]

SIDE VIEW

7.00 [0.28] — 370.00 [14.57] — 312.00 [12.28] — 25.00 [0.98] — 33.00 [1.30]

BACK VIEW

M5 threads - 10mm depth
164.00 [6.46] — 164.00 [6.46] — 164.00 [6.46] — 164.00 [6.46]

BOTTOM VIEW

8.00 [0.31] — 16.00 [0.63]
72.50 [2.85] — 51.50 [2.03] — 490.00 [19.29] — 65.50 [2.58]

TOP VIEW

7.00 [0.28] — 579.00 [22.80] — 73.50 [2.89]

PANEL CUT OUT

581.00 [22.87] — R4.00 [0.16] — 372.00 [14.65]

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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SPECIFICATIONS

Note: All specifications are subject to change without prior notice!
Please visit www.hatteland-display.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)	: 0.276 (H) x 0.276 (V) mm
• Response Time	: 25 ms (typical), "black" to "white"
• Contrast Ratio	: 3000:1 (typical)
• Light Intensity	: 300 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)

Computer Specifications:

• Installed OS	: Windows® 10 IoT Enterprise 2016 LTSB, 64bit Product Distribution End Date November 2025.
• Internal Storage	: Internal 1 x 240GB SSD MLC SATA, Type m.2. >599TBW, Enterprise 24/7, (according to JESD218 standard with JESD219 workload). Power loss protection.
• CPU/Processor	: Intel® Quad Core™ i5-6500TE, 2.3/3.3GHz 6MB Cache
• Memory	: Dual Channel, 2x4GB (Total 8GB) SO-DIMM, 204-pin, DDR4-1866/2133
• System Chipset	: Intel® GL82Q170 PCH
• Graphics Chipset	: Intel® HD Graphics 530, 350Mhz Max Dynamic Freq: 1 GHz (384GFLOPS) Video Max Memory: 1.7 GB Supports: DirectX 12, OpenGL 4.4, OpenCL 2.0
• Ethernet LAN #1	: Intel® I219LM Gigabit LAN 10/100/1000Mbps Supports Intel® Teaming
• Ethernet LAN #2/#3	: Intel® I211AT Gigabit LAN 10/100/1000Mbps Supports Intel® Teaming
• Ethernet LAN #4/#5	: Realtek RTL8111G-CG Gigabit LAN 10/100/1000Mbps
• Audio Chipsets	: Realtek HD AUDIO ALC662 (on-board)
• BIOS	: EFI, ACPI Support. Preconfigured by factory.
• PC-Beeper / Buzzer	: Onboard PC-Beeper 3500Hz Buzzer (according to IEC60945/IACS-E10)
• Watchdog Timer	: 256 Segments, 0, 1, 2...255 sec/min
• Power Manager	: AT, ACPI (S3/S4)
• Monitoring	: Temperature, Fan and voltages status
• Other Features	: GPIO, LAN Wakeup, USB Boot and Wakeup
• DP++ Out Max Res.	: 640 x 480 to 4096 x 2304 @ 60Hz

Power Specifications:

Power Supply option:
- 115&230VAC - 50/60Hz or Multipower: 115&230VAC - 50/60Hz + 24VDC
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 88W (typ) - 106W (max+max additional load)

Physical Considerations:

- W:593.00 [23.35"] x H:384.00 [15.12"] x D:73.50 [2.89"] mm [inch]
- 9.5kg / 20.9lbs

User Controls:

Behind front bezel - Glass Display Control™ (GDC) IP66:
- Power On/Off, Brightness Control (-/+)
- Power LED, Mode Status Indicators (ECDIS, HDD, Service)
- Buzzer (through glass), Light Sensor (behind glass)

Environmental Considerations:

• Operating	: Temperature -15 deg. C to +55 deg. C
• Storage	: Temperature -20 deg. C to +60 deg. C
• Humidity	: Up to 95% (Operating / Storage)
• IP-Rating Protection	: IP66 front - IP20 rear (EN60529). IP22=option
• Compass Safe Distance	: Standard: 140cm - Steering: 85cm
• CPU Fan Cooler/Heatsink	: Rear external air flow. FAN speed temp. controlled

Lifetime 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.

Input/Output Connectors:

Connector	Rear
• Ethernet GBLan	: 5 x RJ-45
• COM RS-232 & 422/485	: 1 x DB9M non-isolated (Change RS mode in BIOS)
• USB2.0 (<5m)	: 2 x USB Type A (4-pin)
• USB3.0 (<3m)	: 2 x USB Type A (9-pin)
• DP++ 1.2 OUT	: 1 x DisplayPort Female (Dual-Mode DP++)
• AC Power IN	: 1 x Std IEC inlet
• DC Power IN	: 1 x 2-pin Terminal Block 5.08
• COM RS-422/485 NMEA (PCA100293-1)	: 4 x 5-pin Terminal Block 3.81 (4 channel, isolated)

Available Accessories:

• HD VED SX2-H1	: 1 x VESA Adapter (75/75, 100/100 & 200/100mm) Not EN60945 Tested
• HD TMB SX1-C1	: 1 x Table Mount Bracket. EN60945 Tested
• HD CMB SX2-E1	: 1 x Console Mount Kit. EN60945 Tested (Q4/2017)
• HD CMB SX1-B1	: 1 x Console Mount Kit. EN60945 Tested
• HD 24COV SX1-A1	: 1 x UV Sun Cover
• P007032-1	: 1 x IP66 Mount Gasket (EPDM), for Flush/Console mount

Factory Defaults:

- Projected Capacitive Touch Screen (Multitouch,USB,Pen/Glove support)
- Enhanced touch response
- Optical Bonding Technology

APPROVALS & CERTIFICATES

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

IEC 60945 4th (EN 60945:2002)   **IACS E10**   **IP66**   **EU RO MR** - Mutual Recognition (covers DNV, BV, ABS, GL, NK and LRS certificates)