DATASHEET

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HATTELAND TECHNOLOGY
an EMBRON Company

Manufacturer:	**Hatteland Technology AS**
Product:	**27.0 inch Maritime Multi Computer (MMC)**
Type:	**HD 27T30 MMC-xxx-xxxxxx** Where x=configuration

Last Revised:	**03 Dec 2019**
Revision#:	**09**

27.0 inch Maritime Multi Computer - Series E

Features:

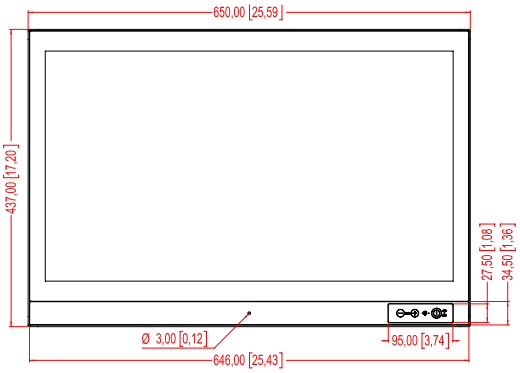
Series E is the new cost effective Panel Computers portfolio from Hatteland Technology. Designed for 10 years manufacturing, all Series E Panel Computers integrate Intel® Apollo Lake processor-based computers, high quality display technology, fan-less design and low power consumption to deliver a fast, reliable all-in-one solution for diverse maritime applications.

The integrated nature of Series E Panel Computers enables tangible cost savings for maritime technology and equipment manufacturers as well as systems integrators. The portfolio features a range of display sizes, new data storage technology and a number of IO options, providing full flexibility to integrate the highest quality displays in a wider range of maritime technology. Especially suited to developing new bridge solutions, Series E Panel Computers make it possible to continue improving safety and efficiency through safe navigation, while still retaining focus on quality and cost.

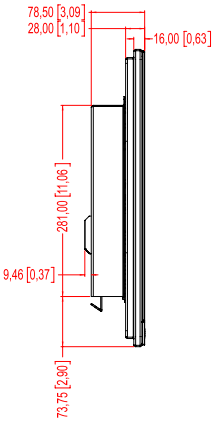
Series E Panel Computers also meet the same extreme quality standards as the proven Series X Panel Computer range and feature LED Backlight Technology, full dimming (0-100%) all as standard. In addition there are options such as Multi-Power (AC/DC) inputs or Single AC input, SSD and m.2 storage mediums and Multiple interface configurations. The product range can also accommodate and combine multi-touch screen and optical bonding.



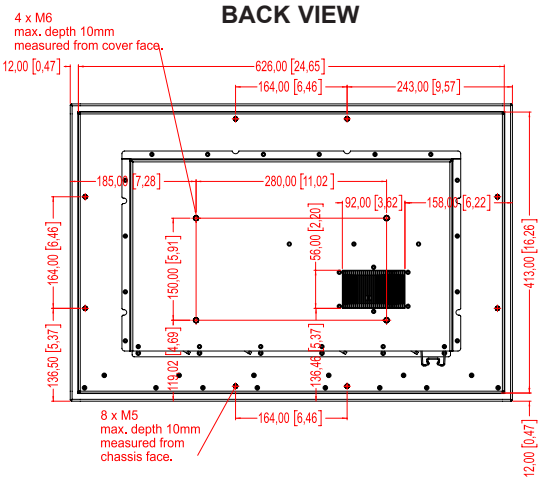
FRONT VIEW



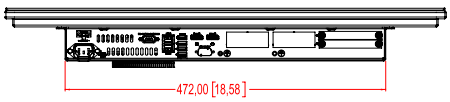
SIDE VIEW



BACK VIEW

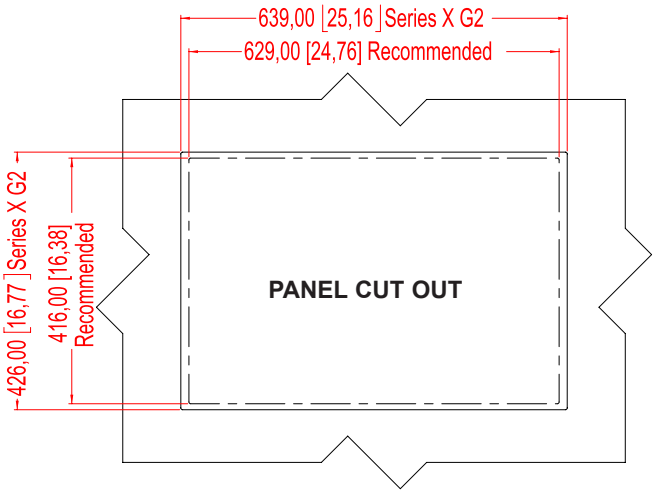


BOTTOM VIEW



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.

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, Color Active Matrix
- 27.0 inch viewable image size, Widescreen, Aspect Ratio 16:9
- a-SI (amorphous silicon) Thin Film Transistor (TFT)

TFT Characteristics:

- Native Resolution : 1920 x 1080 (FHD)
- Pixel Pitch (RGB) : 0.31125 (H) x 0.31125 (V) mm
- Response Time : 12 ms (typical) (on/off)
- Contrast Ratio : 3000:1 (typical)
- Light Intensity : 300 cd/m² (typical)
- Viewable Angle : +/- 89 deg. (typical) (Up/Down/Left/Right)
- Active Display Area : 597.6 (H) x 336.15 (V) mm
- Max Colors : 16.7 million

Computer Specifications:

- Supported OS : See table below
- CPU/Processor : 1 x Intel Atom® x7-E3950 Processor, 2M Cache, 1.60GHz / 2.00GHz
- Installed Storage : 32GB eMMC (Default). See table below
- Installed Memory : 2GB DDR3L single channel. See table below
- System Chipset : Intel® SOC
- Graphics Chipset : Intel® HD Graphics 505 (CPU dependent)
- Ethernet LAN #1 : Realtek Gigabit LAN 10/100/1000Mbps
- Ethernet LAN #2 : Intel Gigabit LAN 10/100/1000Mbps
- BIOS : AMI BIOS, supports ACPI
- Buzzer : Yes (according to EN60945)
- Speaker : None
- WatchDog Timer : Yes (256 segments, 0, 1, 2...255 sec/min)
- Other features : RTC (0.5s/day), Battery Alarm, WakeOnLan, Fast Boot, AT mode, USB Boot, TPM2.0 (option)
- DP++ Out Max Res. : 640 x 480 to 4096 x 2304 @ 60Hz

Power Specifications:

Power Supply Options:

- Multi-Power option : 100-240V AC - 50/60Hz + 24VDC (MMC-Mxx)
- Single AC Power Option : 100-240V AC - 50/60Hz (MMC-Axx)

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 : 43,2W (typ) - 60W (max)

Available Computer Configurations:

Type	Description	Size/Specification
Memory/RAM	DDR3L, 1600MHz, SO-DIMM	- 2GB Single Channel - 4GB (2x2GB) - Dual Channel - 8GB (2x4GB) - Dual Channel
Additional Internal Storage	m.2	- 240GB->
Software Support	Application Programming Interface (API) - as defined in associated documents	- SCOM
OS Options, 32/64 bit where applicable	**Windows® 10 IoT Enterprise 2016 LTSB (64bit)** - Product Distribution End Date November 2025 or **Linux:** Please contact us for more information	

Physical Dimensions:

- W:650.00 [25.59"] x H:437.00 [17.20"] x D:88.50 [3.48"] mm [inch]
- Weight: Approx. 10.7kg / 23.59lbs

User Controls:

On front bezel IP66:

- Power On/Off, Brightness Control (-/+), Power LED, ECDIS LED
- Buzzer (through glass), Light Sensor (behind glass)

Environmental Considerations:

- Operating Temperature : -15°C to +55°C
- Storage Temperature : -20°C to +60°C
- Humidity : Humidity up to 95% (Operating / Storage)
- IP-Rating Protection : IP66 front - IP20 rear (EN60529).
- Compass Safe Distance : Standard: 80cm - Steering: 60cm

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.

Input/Output Connectors:

Connector	Rear
• DisplayPort (DP++)	: 2 x 20p DisplayPort (female)
• USB2.0	: 4 x USB Type A
• Ethernet GBLan	: 2 x RJ-45
• COM RS-232 & 422/485	: 1 x DB9M non-isolated (Change RS mode in BIOS)
• AC Power IN	: 1 x Std IEC inlet
• If DC Power IN	: 1 x 2-pin Terminal Block 5.08

Factory Options:

- Projected Capacitive Touch Screen (Multitouch,USB,Pen/Glove support)
- Optical Bonding Technology
- TPM2.0 (Trusted Platform Module)
- Variations of Storage, RAM Memory and Operating Systems.
- 1 x HT 00235 OPT-A1: 2W Amplified Audio out via DB9F
- 1 x Diskbay with support for 2 x 2.5"

or HD USB module installed as:

- 1 or 2 x PCA100293-1: 4xCOM RS-422/485 isolated NMEA 4 channel

or 1 or 2 x PCA100309-1: Dual Isolated RS-232, connector 2xDB9
or 1 x ZIA0001310-B: CAN isolated 2 channel or 2 x 4 channel
or 1 x ZIA0001310-SLCAN (1 x CAN isolated, 2 channel, socketCAN) module
or 1 x PCA100297-1: Isolated Digital IO module,4 x OUT/4 x IN
or 1 x PCA100298-1: LAN 10/100Mbps, 2 ports RJ45

Accessories:

- HD CMB SX1-B1 : 1 x Console Mount Kit. EN60945 Tested
- HD TMB SE1-B1 : 1 x Table Mount Bracket. EN60945 Tested - PENDING
- HD VED SX1-A1 : 1 x VESA Adapter, not EN60945 Tested
- JH C01MF A-A : 1 x USB Cable 1m, TypeA-Chassis mount receptacle
- HT 00262 OPT-A1 : 4 x RS-422/RS-485 isolated, USB ext. module
- HT 00263 OPT-A1 : 4 x RS-232 COM non-isolated, USB ext. module
- HT 00264 OPT-A1 : 1 x CAN isolated, 2 channel, USB ext. module
- HT 00273 OPT-A1 : 4 x Digital IN/OUT isolated, USB ext. module
- HT 00274 OPT-A1 : 2 x LAN 10/100Mbps, RJ45, USB ext. module
- HT 00300 MSOS : OS options -> http://www.hatteland-display.com/os
- HD 000TR SX2-A2 : 1 x Removable Front Tray 2.5" Empty
- HD xxxyy SX1-z1 : 1 x Removable Front Tray 2.5" w/Storage Device*

APPROVALS & CERTIFICATES

This product have been tested / type approved by the following classification societies:

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