DATASHEET

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HATTELAND TECHNOLOGY
an EMBRON Company

Manufacturer:	**Hatteland Technology AS**
Product:	**23.8 inch Smart Monitor (MPA)**
Type:	**HD 24T30 MxA-y0A-0zPJzI** where x = P (Standard) or E (ECDIS Calibrated) y = M (Multi-Power) or A (Single Power) and z = configuration

Last Revised:	**05 Sep 2025**
Revision#:	**17**

Smart Monitor (MPA) - Series E

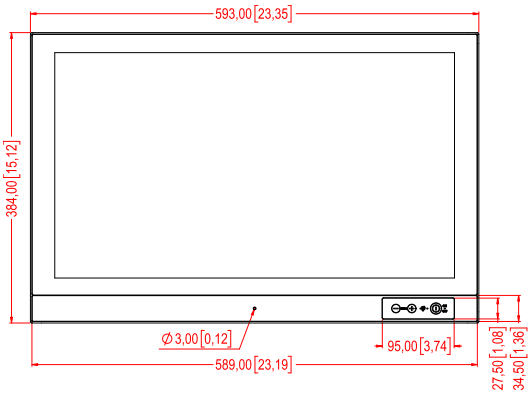
Features:

The HATTELAND® Smart Monitors have a cost-effective architecture with easy installation, which enables tangible cost savings for maritime technology manufacturers and systems integrators. It is an all-in-one solution for diverse maritime applications based on ARM CPU with an open Android™ platform where any app from Google Play can be installed. HATTELAND® Smart Monitors have a slim design and PoE support.

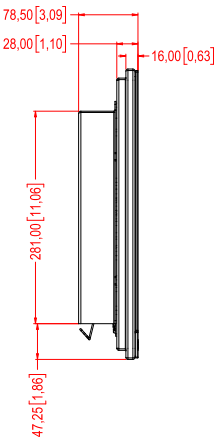
The HATTELAND® Smart Monitors are based on the Series E family and configured as a Marine Panel Computer (MPA). The unit also meet the same extreme quality standards as the proven Series X Panel Computer range and feature LED Backlight Technology, full dimming (0-100%) all as standard. This is a Solid State Fan-less Construction - No Moving Parts, Embedded light sensor, Buzzer and Aluminum Chassis. The unit supports multi-format video decoders including H.264/H.265/VP9 up to 4k & 2k @60fps (HW), H.264/MVC/VP8 encoders by 1080p@30fps and high-quality JPEG encoder/decoder (HW), typical use case such as running thin client app to control your VM's (like VMware Horizon Client) and VMS app to access your surveillance cameras.

In addition there are options such as Without Projected Capacitive Touch Screen (Multitouch, USB interface), Optical Bonding, variations of Storage Devices and prepared for WiFi and Bluetooth antennas. By factory default the unit is ECDIS Compliant.

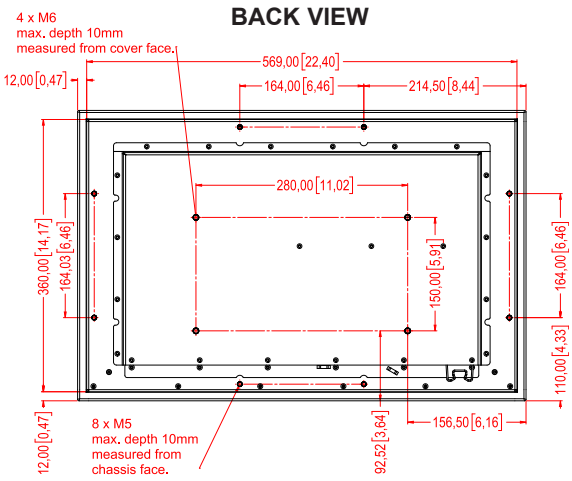
FRONT VIEW



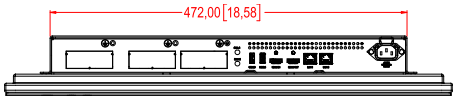
SIDE VIEW



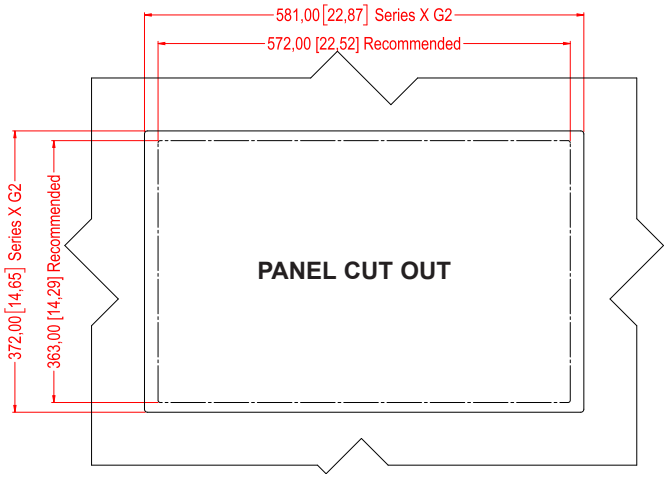
BACK VIEW



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, TFT Active-matrix
- 23.80 inch viewable image size, Widescreen, Aspect Ratio 16:9
- AHVA, Normally black, RGB vertical stripe

TFT Characteristics:

- Native Resolution : 1920 x 1080 (FHD)
- Pixel Pitch (RGB) : 0.274.5 (H) x 0.274.5 (V) mm
- Response Time : 14 ms (typ), G/G
- Contrast Ratio : 1000:1 (typical)
- Light Intensity : 250 cd/m² (typical)
- Viewable Angle : +/- 89 deg. (typical) (Up/Down/Left/Right)
- Active Display Area : 527.04 (H) x 296.46 (V) mm
- Max Colors : 16.7 millions (RGB 8-bit)

Computer Specifications:

- Supported OS : see table below for factory options
- CPU/Processor : Rockchip RK3399, Dual-core ARM Cortex-A72 +Quad-core ARM Cortex-A53
- Installed Storage : 32GB SSD eMMC, see table below for factory options
- Installed Memory : 4GB Dual channel DDR3L
- System Chipset : SoC
- Graphics Chipset : Mali-T864 GPU, supports OpenGL ES 1.1/2.0/3.0/3.1/3.2 OpenCL 1.2 and DirectX 11.1
- Ethernet LAN : 2 x GB LAN
- Buzzer : Yes (according to EN60945), 75-85dB.
- Speaker : None
- WatchDog Timer : 3 x Watchdogs in SoC w/32bits counter width
- Other features : Support Trustzone Technology, Temperature sensor, Light sensor, RTC, Battery alarm, WakeOnLan, TPM2.0 in Linux

Power Specifications:

Power Supply Options:

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

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: Estimated 35W (typ) - 156W (max)
- Operating AC: Estimated 35W (typ) - 125W (max)

Available Computer Configurations:

Type	Description	Description Size/Specification
Storage Options	1 x Micro SD	- Micro SD (internal)
	1 x SSD m.2	- 240GB, 480GB or 960GB
Software Support	Android™ - BSP 8.1 and later Linux - BSP Kernel 4.x and later OS None	- Native Android™ - SCOM

*Power Consumption: Numbers are specified as the unit is delivered from factory. All additional installed equipment like USB, PCIe and similar loads have to be added to power consumption. Note that total extra load have to be multiplied by 1.5 to compensate for efficiency in internal power converters. Typical power consumption varies a lot with computer load. We measure with 25% of max computer load.

Physical Dimensions:

Product Dimensions and Weight:

- W:593.00 [23.35"] x H:384.00 [15.12"] x D:78.50 [3.09"] mm [inch]
- VESA 280x150mm supported
- Approx weight: 7.7kg / 16.97lbs

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: 12.0 kg / 26.46 lbs

User Controls:

On front bezel IP66:

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

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). IP22=option
• Compass Safe Distance	: Standard: 50cm - Steering: 75cm

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
• HDMI IN (FHD 60Hz)	: 1 x 19p HDMI (female)[1]
• HDMI OUT (UHD 60Hz)	: 1 x 19p HDMI (female)[2]
• USB2.0	: 1 x USB Type A
• USB3.0	: 1 x USB Type A
• Ethernet GBLan	: 2 x RJ-45
• Wifi Antenna	: 1 x SMA Coaxial RF connector (SMA1)
• Bluetooth Antenna	: 1 x SMA Coaxial RF connector (SMA2)
• AC Power IN	: 1 x Std IEC inlet
• If DC Power IN	: 1 x 2-pin Terminal Block 5.08

[1] Controlled by an App in OS!
[2] Note, Android only support native resolution (FHD 60Hz)

Factory Options:

- Color Calibrated model (ECDIS)
- Optical Bonding Technology
- Without Projected Capacitive Touch Screen (Multitouch) model
- Android™ OS or Linux OS
- 2 x Factory mounted HT modules, with options of:
  - 1 or 2 x PCA200828-1: 4xCOM RS-422/485 isolated NMEA 4 channel
  - 1 or 2 x PCA100309-1: Dual Isolated RS-232, connector 2xDB9
  - 1 x HTA2020002-AD1033: CAN isolated 2 channel or 2 x 4 channel
  - 1 x HTA2020002-SLCAN (1xCAN isolated, 2 channel, socketCAN) module
  - 1 x PCA100297-1: Isolated Digital IO module,4 x OUT/4 x IN
  - 1 or 2 x PCA100298-1: LAN 10/100Mbps, 2 ports RJ45

Accessories:

- HD CMB SE1-B1 : 1 x Console Mount Kit. EN60945 Tested*
- HD TMB SE1-B1 : 1 x Table Mount Bracket. EN60945 Tested
- 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 00264 OPT-A2 : 1 x CAN isolated, 2 channel, socketCAN 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

*Included in delivery

Prepared for:

- Wifi/Bluetooth external antenna (via SMA1/SMA2 connectors)

Android is a trademark of Google LLC. Google Play are the property of Google LLC

APPROVALS & CERTIFICATES

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

IEC 60945 4th (EN 60945:2002)
ABS - American Bureau of Shipping
IACS E10
BV - Bureau Veritas
EU RO MR - Mutual Recognition by DNV
ClassNK - Nippon Kaiji Kyokai
KR - Korean Register
CCS - China Classification Society