

Manufacturer: **Jakob Hatteland Display AS**  
 Product: **19.0 inch Maritime Multi Display (MMD) - Series 2**  
**Console Models**  
 Type Numbers: **HD 19T03 COxx** (Display module)  
**HD MMD01-xxx** (Backpack module)

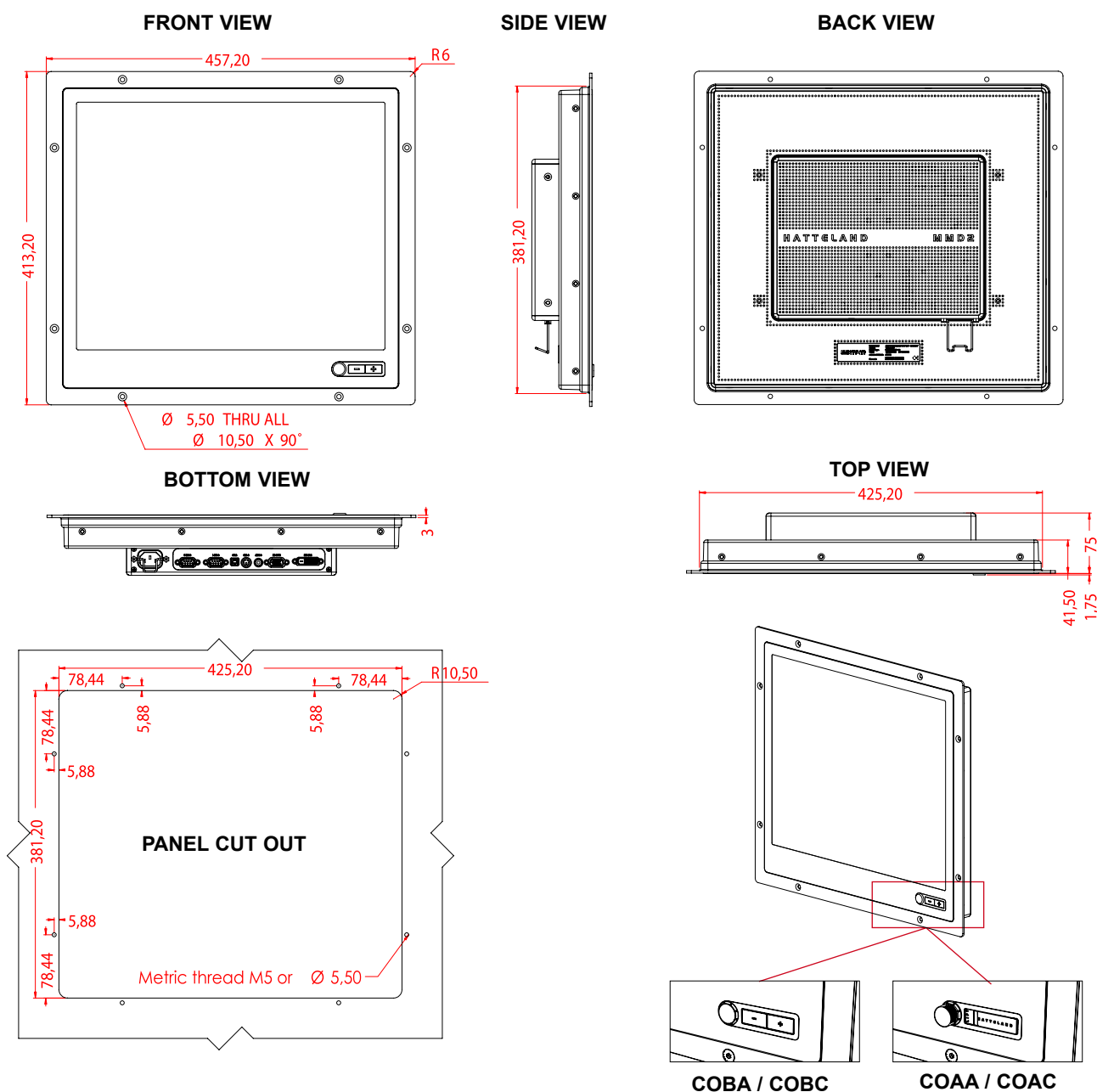
Last Revised: **14 Mar 2007**  
 Revision#: **5**

## 19.0 inch Maritime Multi Display (MMD) - Series 2

### Design meets Functionality:

The key features for the Maritime Multi Display (MMD) - Series 2 range are; optically bonded, modular backpacks, slimmest design possible, PIP (Picture-In-Picture) functionality, easy operation with either the IP66 3-button controls (COBA/COBC models) or the IP22 1-button user controls+USB Connector in front (COAA/COAC models) and touch screen optionally (COAC/COBC models).

These products fulfil the functional needs for marine and industrial applications combined with outstanding appearance to offer widest flexibility. The high light intensity with high contrast combined with the HATTELAND® fully adjustable backlight (0 – 100%) makes the product ideal for most applications. It comes with mounting flange as standard. COBA model is shown in this drawing, but measurements generally apply for all COxx models.



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## TECHNICAL DESCRIPTION

## TFT Characteristics:

- TFT Technology : Color Active Matrix LCD Module MVA Premium™ Technology (TFT)
- TFT Size : 19.0 inch
- Pixel number : 1280 x 1024
- Pixel pitch (RGB) : 0.294 (H) x 0.294 (V) mm
- Response Time : 12 ms (TYP) - black to white to black
- Contrast Ratio : 600:1 (TYP)
- Light Intensity : 450 cd/m<sup>2</sup> (TYP)
- Viewable Angle : 89° (Up/Down/Left/Right) (TYP)
- Active Display Area : 376.32 (H) x 301.056 (V) mm
- Max Colors : 16.7 millions

## Synchronisation &amp; Signals:

**Analog RGB1 & RGB2:**

- Separate, composite synchronisation & synchronisation on green.
- Interlaced and non interlaced
- Auto detects VGA -> UXGA
- 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 @ 60Hz)
- UXGA : 1600 x 1200
- Sync. Range Horizontal : Consult user manual.
- Sync. Range Vertical : Consult user manual.

**DVI:**

- Auto detects VGA -> XGA

**Composite & S-Video:**

- Interlaced PAL / NTSC / SECAM

## Power Specifications:

**Power Supply Options & Type Number:**

- 115&230VAC - 50/60Hz : HD 19T03 COxx + HD MMD01-xx1
- 24 VDC : HD 19T03 COxx + HD MMD01-xx2

**Power Consumption:**

- Operating : 66W (Max) (Brightness @ 100%)

## MECHANICAL DESCRIPTION

## Physical Dimensions:

- 457 (W) x 413 (H) x 75 (D) mm (with flange)
- Weight: 9kg (approx)

## User I/O Ports:

**Behind Rubber Hatch - Front (COAA / COAC only):**

- USB IN : 1 x USB TYPE A (for loopthrough)

**Backpack:**

- DVI-I Signal IN : 1 x 24Pin DVI-I (or as RGB IN with adapter)
- RGB Signal IN : 1 x 15Pin HD D-SUB (female)
- Comp. Video IN : 1 x RCA Phono (female)
- S-Video IN : 1 x SVHS S-Video (female)
- USB OUT : 1 x USB TYPE B (for loopthrough)
- COM1 RS232 : 1 x D-SUB 9P (female) (Serial Contr. Interface)
- If AC Power IN : 1 x Std IEC Inlet (female)
- If DC Power IN : 1 x Screw Terminals

**Optional Solutions:**

- COM2 : 1 x D-SUB 9P (female) (Feature Connector)

## User Controls - COBA / COBC:

- Navigator Push Function : On/Off, OSD Menu, Hotkey
- Navigator +/- Buttons Function : Brightness, Menu Navigator
- Navigator Indicator : Mode Status LEDs

## User Controls - COAA / COAC:

- Navigator Push Function : On/Off, OSD Menu, Hotkey
- Navigator Rotary Function : Brightness, Menu Navigator
- Navigator Indicator : Mode Status LEDs

## Environmental Considerations:

- Operating : Temperature -15 deg. C to +55 deg. C  
Humidity 20% to 85% (non condensing)
- Storage : Temperature -20 deg. C to +60 deg. C  
Humidity 5% to 85% (non condensing)

To prevent heat to build up inside the display we recommend installing the unit in a vertical position +/- 40 degrees maximum. We also recommend adding forced cooling in applications where; *Vertical mounting angle is above +/- 40 degrees -- Operating temperature is above 25C -- Ventilation area around unit is restricted.* Fans should be mounted to enhance natural airflow directed upwards through the unit.

**Safety 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.*

## Accessories / Options:

- VSD100507-1 Split Cable RS422/485 - MALE to 2 x FEMALE 9P D-SUB
- Resistive Factory Mounted Touchscreen (COAC/COBC+Cxx Backpack)4wire

Compass Safe Distance: HD 19T03 COxx + HD MMD01-xxx

Standard: 80cm

Steering: 50cm

## APPROVALS &amp; CERTIFICATES

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

**EN60945 4th** (IEC945 4th)  
**IACS E10**