

Manufacturer: **Jakob Hatteland Display AS**
 Product: **20.1 inch Military Display (MIL)**
 Type: **JH 20T03 MIL**

Last Revised: **03 Mar 2006**
 Revision#: **6**

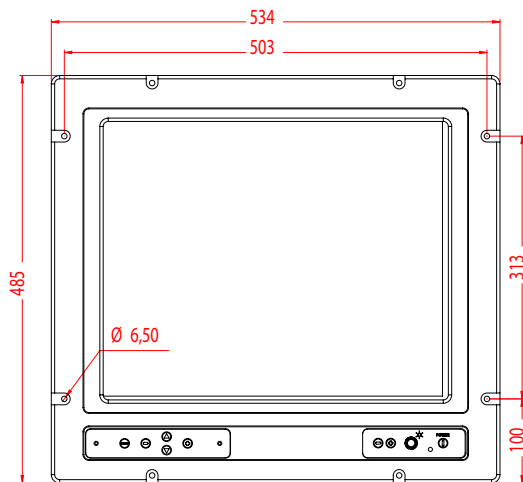
20.1 inch Military Display (MIL)

Features:

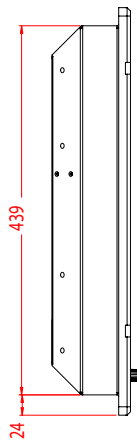
The color display described in this Data Sheet is an industrialized naval version of a high quality NEC TFT based display with XtraView TFT technology. The MIL allows you to display professional applications with clarity and enhanced color and image quality.

The controller and the high light intensity in combination with the high contrast and wide backlight adjustment control, allow the product to be used in many environments. The brightness is adjustable from 0 to 100%

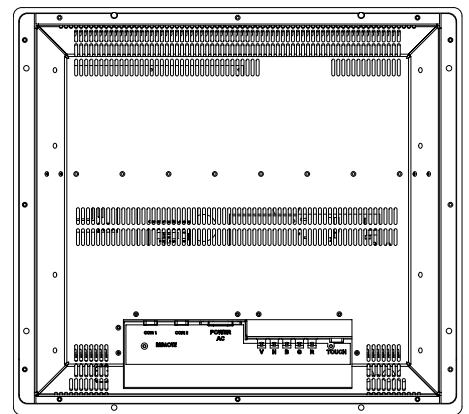
FRONT VIEW



SIDE VIEW

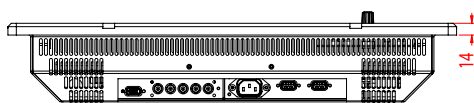


BACK VIEW

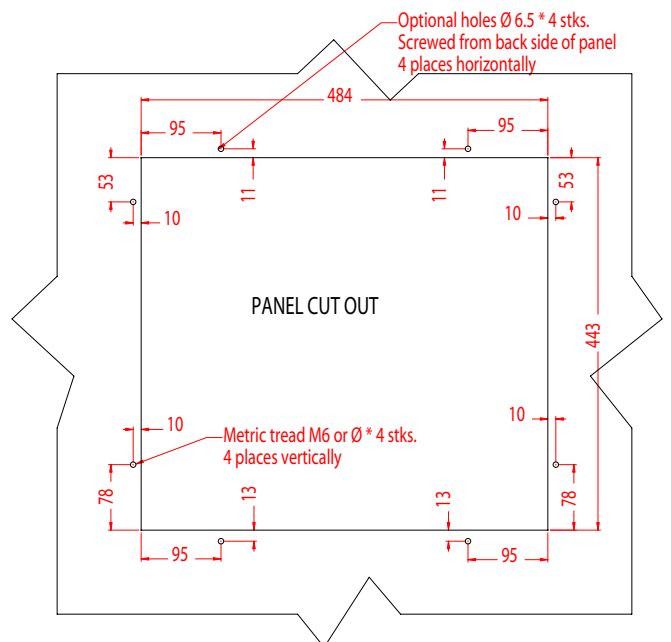
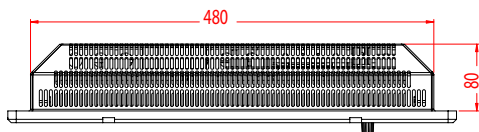


Due to dimensions without decimals, the tolerance on drawings is +/- 1mm (For accurate measurements, measure in AutoCAD)

BOTTOM VIEW



TOP VIEW



This information may not, in whole or in part, be copied, photocopied, reproduced, translated or reduced to any electronic medium or machine-readable form without the prior written consent of Jakob Hatteland Display AS. The products may not be copied or duplicated in any way.

Note: All specifications are subject to change without prior notice!

TECHNICAL DESCRIPTION:

TFT Technology:

- 20.1" viewable image size
- Active Matrix, Thin Film Transistor (TFT)

TFT Characteristics:

- Pixel Number : 1280 x 1024
- Pixel Pitch (RGB) : 0.312 (H) x 0.312 (V) mm
- Response Time : 25 ms (typical), "black" to "white"
- Contrast Ratio : 300:1 (typical)
- Light Intensity : 250 cd/m2 (typical)
- Viewable Angle : +/- 85 deg. (typical) (Up/Down/Left/Right)
- Active Display Area : 399.36 (H) x 319.49 (V) mm
- Max Colors : 16.7 millions (depending on graphics card)

Synchronisation:

- Digital separate synchronisation
- Composite synchronisation
- Synchronisation on green
- Auto detects VGA -> SXGA, interlaced and non interlaced
- Video Signal : Analog RGB 0,7Vp-p
: Input Impedance 75 Ohm
- Horizontal : 31,5 kHz to 91,1 kHz
- Vertical : 60 Hz * to 85 Hz

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 *

* Recommended for optimum picture quality

Power Supply Options / Consumption:

- 115 & 230VAC - 50 / 60Hz : Model JH 20T03 MIL E1
- Operating : 100 W (max)

MECHANICAL DESCRIPTION:

Physical Dimensions:

- 534 (W) x 485 (H) 79.50 (D)
- Weight: 14 kg (approx)

Input Signal Terminal:

- RGB (PC) signal : 5 x BNC Connectors (RGBHV)
- AC Power signal : Std IEC Inlet - Model JH 20T03 MIL E1

Accessories:

- Touchscreen : 1 x D-SUB 9P Connector (female)
- Remote Control : 2 x D-SUB 9P Connectors (female)

User Controls / On front bezel:

- Power On/Off (push button), Brightness Control, 2 x hotkeys, Mode Status LED

User Controls / Behind hatch:

- On Screen Display control (OSD/OSM)

Environmental Considerations:

- Operating : Temperature -15 deg. C to +55 deg. C
Humidity 30% to 90% (non condensing)
- Storage : Temperature -40 deg. C to +70 deg. C
Humidity 10% to 90% (non condensing)

Available Accessories:

- JH MMD BR = Bracket *
- JH MMDRO = Rotary Bracket *
- JH 20TSV = Sun Visor *
- JH VESA 20T03 = Vesa Bracket *
- Touch Screen **

* Option: Standard or custom logo and color

** Option: Factory mounted

EXTENDED TESTING (In addition to IEC 60945):

TEST	LEVEL	SPECIFICATION
Dry heat storage	70°	IEC 60068-2-2 (1974), Test Bd
Cold storage	-40°	IEC 60068-2-1 (1990), Test Ad
Resonance search	4-33 Hz @ 2g No resonance above 2	IEC 60068-2-6 (1995), Test Fc
Endurance Vibration	4-33 Hz @ +/-5mm, 2g	IEC 60068-2-6 (1995), Test Fc
Shock	50g / 11ms	IEC 60068-2-27 (1987), Test Ea
Transient Shock	2-280 Hz Designed to envelope sine shock pulse of 50g / 35ms	IEC 60068-2-57 (1999-11), Test Ff
Rain (drip proof)	280 l/m2/hour 15min pr. orientation	MIL-STD-810F *
Salt Fog	-	MIL-STD-810F *

* Console mounted.

EMI TESTING:

The unit has been tested according to the following:

MIL-STD 461D, 1993

MIL-STD 462D, 1993

- CE 101 - Conducted emission, 30 Hz - 10 kHz
- CE 102 - Conducted emissions, power leads, 10 kHz - 10 MHz
- CS 101 - Conducted susceptibility, 30 Hz - 50 kHz
- CS 114 - Conducted susceptibility, 10 kHz - 200 MHz
- CS 116 - Conducted susceptibility, damped oscillatory waves
- RE 101 - Radiated emission, magnetic field, 30 Hz - 100 kHz
- RE 102 - Radiated emissions, electric field, 10 kHz - 18 GHz
- RS 101 - Radiated susceptibility, H-field, 30 Hz - 100 kHz
- RS 103 - Radiated susceptibility, electric field, 2 MHz - 18 GHz

Other:

- Transient immunity, 100 ns risetime, 10 µs duration, 325 V_{PEAK}
- Supply voltage variation test, 98 -> 138 VAC, 56.4 -> 63.6 Hz
- Measurements of power consumption = 76W
- Measurements of inrush current = 4 A_{PEAK}

APPROVALS & CERTIFICATES

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

EN60945 3rd (IEC945 3rd)

BV - Bureau Veritas