Hatteland displays (FTI)

Hardware Installation Manual

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References

Hatteland website:
www.hatteland-display.com

Introduction

The hardware installation manual provides instructions for installing and mounting the Hatteland displays as used within FT NavVision®. The chapters and sections are organized in chronological order in which the specific components must be installed and monitored (where applicable).

NOTE:
This section provides only a summary of the most important safety requirements and notes, which will be mentioned in the individual sections. To protect your health and prevent damage to the devices, it is essential to read and carefully follow the safety instructions.

About the installation manual

The installation manual contains the following chapters:

- Chapter “Safety instructions” presents warning, caution and note information, which the user should pay attention to.
- Chapter “Receiving, unpacking and checking” contains instructions on how to receive, unpack or check the displays.
- Chapter “Installation and mounting” contains instructions on how to install and/or mount the displays.
- Chapter “Technical specifications” contains an overview of the main features and technical data.

Abbreviations list

AC	Alternating Current
API	Application Programming Interface
AWG	American Wire Gauge
CAN	Controller Area Network
COM	Communication
CPU	Central Processing Unit
CTS	Clear To Send
DC	Direct Current
DCD	Data Carrier Detect
DIN	Deutsches Institut für Normung
DSR	Data Set Ready
DTR	Data Terminal Ready
EEPROM	Electrically Erasable Programmable Read-only Memory
EMC	Electromagnetic Compatibility
EN	Europese Norm
ESD	Electrostatic Discharge
GND	Ground
ID	Identifier
IEC	International Electrotechnical Commission
IM	Installation Manual
I/O	Input/Output
IP	Ingress Protection / Internet Protocol
LED	Light Emitting Diode
MDIX	Medium-Dependent Interface Crossover
PLC	Programmable Logic Controller
RISC	Reduced Instruction Set Computer
RMS	Root Mean Square
RTC	Real Time Clock
RxD	Received Data
SRAM	Static Random Access Memory
TCP	Transmission Control Protocol
TxD	Transmitted Data

Revision history

Revisions issued since publication.

Issue	Date	Revision	Reason
1.0	24 August 2010		First release

Safety instructions

The indications NOTE, CAUTION and WARNING have the following significance:

NOTE:
An operating procedure, practice or condition etc., which it is essential to emphasize.

CAUTION

An operating procedure, practise or condition etc., which, if not strictly observed, may damage or destroy equipment.

WARNING

An operating procedure, practise or condition etc., which, if not carefully observed may result in personal injury or loss of life.

1. Receiving, unpacking and checking

1.1 Procedure

NOTE:
Notify your sales representative if any of the items mentioned below is missing or damaged.

1. Remove the transport casing

2. Visually inspect the respective parts

3. Check that all items are included in accordance with the delivery documents.

4. Check for transport damages.
   In case of transport damage appropriate action must be taken against the latest carrier and the nearest certified dealer or representative should be informed.

5. Store the part in the original transport package in a dry and dust free place, if the unit is not to be installed immediately. Observe the environmental requirements stated in the specifications

2. Installation and mounting

Most of the units are intended for various methods of installation or mounting (panel mounting, bracket mounting, ceiling/wall mounting etc.); for details, please see the relevant mechanical drawings (see http://www.hatteland-display.com/frontpage_yacht_market.php).

2.1 Ventilation instructions

- Adequate ventilation is a necessary prerequisite for the life of the unit. The ventilation apertures must definitely be kept clear
- Suggested and a safe minimum air distance between the ventilation apertures and other panels near the unit should be 5 cm. However, this can be lower or higher depending on the installation space and design. If in question, please contact your local installation technician or qualified personnel for advise
- Generally, do not install the unit in a horizontal position (laying down), as this will cause heat to build up inside the display which will damage the LCD Panel. To prevent this problem we recommend installing the unit in a vertical position (± 40 degrees) to improve the airflow through the unit
- To further improve the cooling of the unit we recommend installing Cooling Fans underneath blowing upwards going past the ventilation apertures. This may be required in high temperature applications and also when there is reason to expect temperature problems due to non-optimal way of mounting
- Exposure to extreme direct sunlight condition over longer periods can cause a considerable increase in the temperature of the unit, and might under certain circumstances lead to over temperature. This point should already be taken into consideration when the bridge equipment is being planned (sun shades, distance from the windows, ventilation, etc.).

2.2 General mounting instructions

- The useful life of the components of all electronics units generally decreases with increasing ambient temperature; it is therefore advisable to install such units in air-conditioned rooms. If there are no such facilities these rooms must at least be dry, adequately ventilated and kept at a suitable temperature
- With most electronic units, cooling takes place via the surface of the casing
- In the area of the wheel house, the distance of each electronics unit from the magnetic standard compass or the magnetic steering compass must not be less than the permitted magnetic protection distance. This distance is measured from the centre of the magnetic system of the compass to the nearest point on the corresponding unit concerned
- Units which are to be used on the bridge wing must be installed inside the “wing control console” protected against the weather. In order to avoid misting of the viewing screen, a 25 ... 50 W console-heating (power depending on the volume) is recommended
- When selecting the site of a display unit, the maximum cable lengths have to be considered
- Transportation damage, even if apparently insignificant at first glance, must immediately be examined and be reported to the freight carrier.

The moment of setting-to-work of the equipment is too late, not only for reporting the damage but also for the supply of replacements.

2.3 Cables

2.3.1 Maximum cable length

NOTE:
Use only high quality shielded signal cables for RGB / DVI signals.

The signal cables should generally be kept as short as possible to provide a high quality output on the display.
The maximum cable length will depend on the signal resolution and frequency, but also on the quality of the signal output from the computer.
Recommended refresh rate is 60 Hz. Cables up to 10 meters generally provide good picture quality even with a 1600 x 1200 (UXGA) 60 Hz signal.
In most cases (especially with lower resolutions) even longer cables will provide a satisfactory result. This should however be tested in advance before making the decision on how far the unit can be placed from the signal source.

2.4 Connections

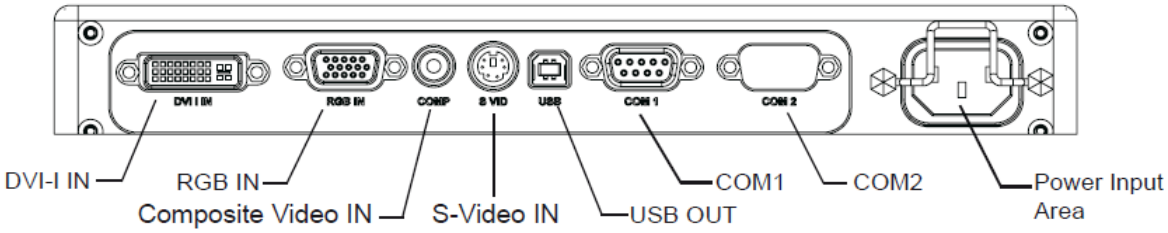

Figure 2-1: Display connections (where fitted)

2.4.1 Cable tension

To reduce the tension of the cables you connect, secure them with a cable tie to the base mounted clamp (see Figure 2-2 left side) or to the chassis hinges (see Figure 2-2 right side). For certain models a base mounted clamp is available. For other models a hinge in the chassis is available.

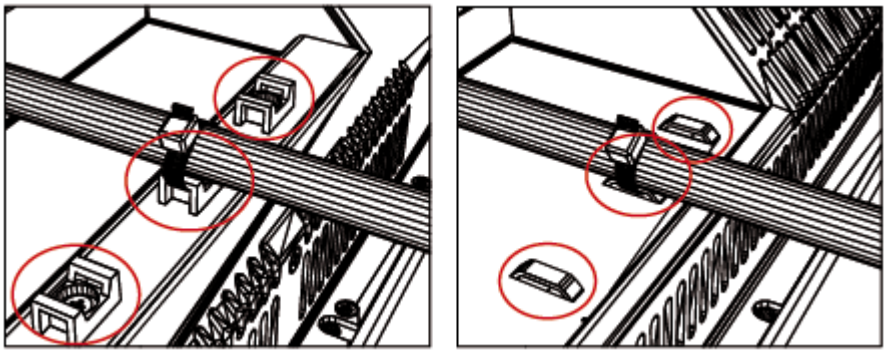

Figure 2-2: Cable ties

2.4.2 DVI-I IN / RGB2 IN (supports both DVI & analog RGB)

Connect the DVI cable to the DVI-I 24 + 5P connector (female) on the rear side of the TFT display. Screw the DVI cable to the connector spacers and make sure you don't bend any of the pins inside the DVI cable connector. Connect the other end to your computer equipment.
This DVI-I connector can also be converted to function as RGB IN by using the provided DVI/ RGB adapter plug.

2.4.3 RGB1 IN

Connect the VGA cable to this D-SUB 15P connector (female) on the rear side of the TFT display. Screw the VGA cable to the D-SUB connector spacers and make sure you don't bend any of the pins inside the VGA cable connector. Connect the other end to your computer equipment.

2.4.4 COMPOSITE IN (PAL/NTSC/SECAM VIDEO)

NOTE:
Composite video must be selected as the incoming video source in the OSD menu.

Connect your composite video signal cable into this RCA jack plug. To activate the Picture-In-Picture function, the TFT display must be configured via the OSD menus.

2.4.5 S-VIDEO IN

NOTE:
S-Video must be selected as the incoming video source in the OSD menu.

Connect your S-Video (SVHS) video signal cable into this mini 4-way DIN plug. It can only be inserted one way and make sure you don't bend any of the pins inside your cable. To activate the Picture-In-Picture function, the TFT display must be configured via the OSD menus.

2.4.6 USB OUT

This USB TYPE B connector is used as a loop-through from the front connector on a Series 2 TFT compatible display. It allows you to connect peripherals in the front of your display unit and

connect them further to your computer equipment. The signal is transferred without any conversion and is a direct 1-1 cable connection. Composite Video IN S-Video IN USB OUT

2.4.7 COM1 Serial control interface

This serial remote control connector D-SUB 9 pin female (RS232) allows to control various parameters on the TFT display such as brightness via customized software.
For in-depth information, see www.hatteland-display.com: “Support/Accessories/HATTELAND® SCOM/Technical Manual” as PDF file.

2.4.8 COM2 - Touch/Feature connector

On touch screen versions of the backpack a USB type B connector is factory mounted here which should be connected to a computer with touch screen drivers installed. See the touch screen chapter in this manual for more information. This space/connector area is also reserved for future applications or custom models.

2.4.9 Power input (AC version)

The internal AC power module supports both 115 VAC & 230 VAC - 50/60 Hz power input. You may secure the connector further by using the clamp mounted on the connector base.

2.4.10 Power input (DC version)

Secure the cables (check polarity on your model, marked on the label) to the screw terminal. The internal DC power module supports 24 VDC nominal (18 - 36 VDC).

3. Technical specifications

The technical specifications are product specific. For more detailed information please refer to: http://www.hatteland-display.com/frontpage_yacht_market.php

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