POLARIS®
by Lowrance

LOWRANCE®

HDS Gen3 Polaris
Installation manual

ENGLISH

polaris.com

Preface

Governing Language: This statement, any instruction manuals, user guides and other information relating to the product (Documentation) may be translated to, or has been translated from, another language (Translation). In the event of any conflict between any Translation of the Documentation, the English language version of the Documentation will be the official version of the Documentation. This manual represents the product as at the time of printing. Navico Holding AS and its subsidiaries, branches and affiliates reserve the right to make changes to specifications without notice.

Copyright

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Warranty

The warranty card is supplied as a separate document.

In case of any queries, refer to the brand web site of your display or system:

www.polaris.com

Compliance Statements

HDS Gen3 Polaris:

- complies with CE under R&TTE directive 1999/5/EC
- complies with the requirements of level 2 devices of the Radio-communications (Electromagnetic Compatibility) standard 2008
- This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The relevant Declaration of Conformity is available on the following website, under the model documentation section: www.polaris.com

Industry Canada

IC RSS-GEN, Sec 7.1.3 Warning Statement- (Required for license-exempt devices)

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Warning

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that of the receiver
- Consult the dealer or an experienced technician for help

About this manual

This manual is a reference guide for installing the HDS Gen3 Polaris displays.

Important text that requires special attention from the reader is emphasized as follows:

→ *Note:* Used to draw the reader's attention to a comment or some important information.

> ⚠ **Warning:** Used when it is necessary to warn personnel that they should proceed carefully to prevent risk of injury and/or damage to equipment/personnel.

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- Polaris® is a registered trademark of Polaris Industries, Inc.
- NMEA 2000® is a registered trademark of the National Marine Electronics Association
- SiriusXM® is a registered trademark of Sirius XM Radio Inc.

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1 HDS Gen3 Polaris overview

The ability to network over NMEA 2000 and Ethernet allows access to data as well as control of numerous optional devices that can provide audio entertainment and weather.

All displays are charting ready, with built-in high speed GPS receiver (10Hz) and support for Polaris embedded Topo base map or Polaris Regional HD mapping card.

The displays may be mounted to the vehicle with the appropriate optional Polaris vehicle dash mounting kit.

The displays are intended for 12 V DC operation, though will accept the moderate fluctuations commonly seen in DC systems.

Front - controls
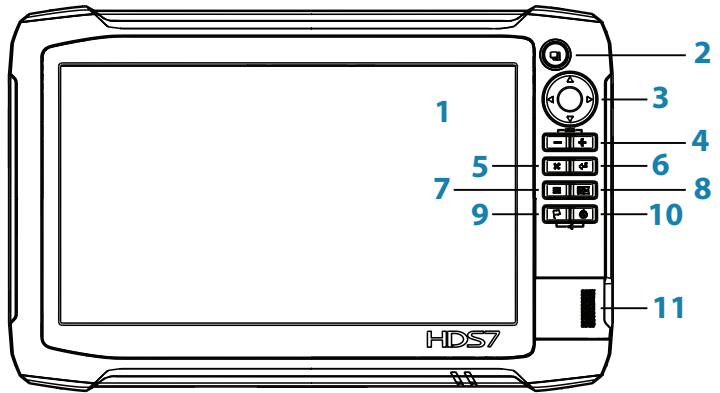
1 **Multi-touch touchscreen**

2 **Pages**

3 **Cursor (8-way)**

4 **Zoom out / Zoom in (combined press = MOB)**

5 **Exit (X)**

6 **Enter**

7 **Menu (short press = menu, long press = hide menu bar, double press = Settings menu)**

8 **Active panel**

9 **New waypoint (long press = find dialogue)**

10 **Power key (short press = system controls, long press = power off)**

11 **Card reader door**

Rear - connectors
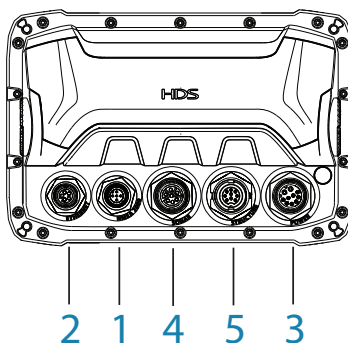
1 **NMEA 2000 - data input / output**

2 **ETHERNET - high bandwidth data (Optional connection for SiriusXM weather)**

3 **POWER - 12 V input & NMEA 0183. Optional video-in via adaptor**

4 **SONAR - CHIRP and Broadband Sonar (Feature disabled by default)**

5 **STRUCTURE - StructureScan HD sonar (Feature disabled by default)**

MicroSD card slot

Used for detailed chart data, software updates, transfer of user data and system backup. All size displays have two card reader slots.
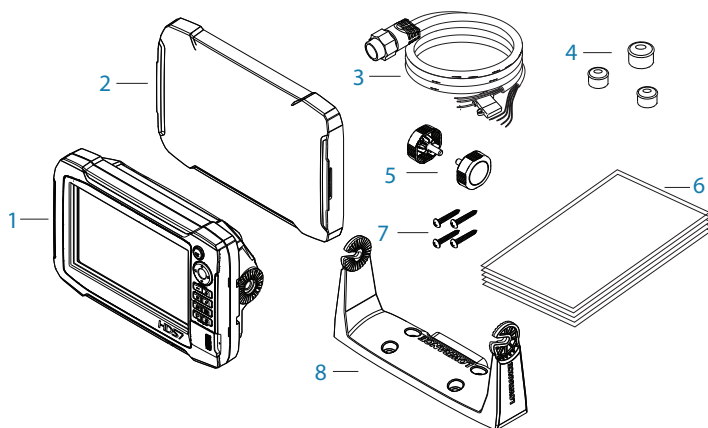
The card reader door is opened by sliding the door to the right (1) using your fingernail, then hinging forward (2) from the right hand side.
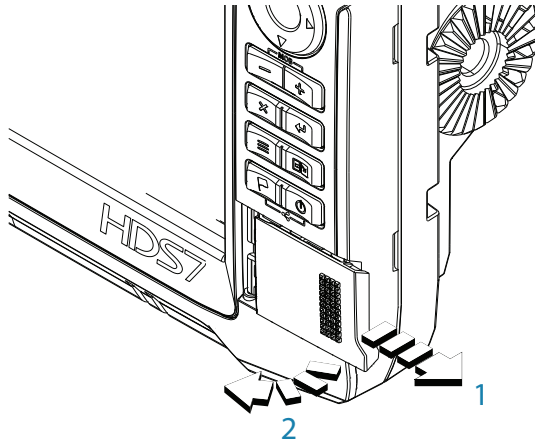
The card reader door should always be shut immediately after inserting or removing a card, in order to prevent possible water and dust ingress.

2 Check the contents

1 HDS Gen3 Polaris display

2 Suncover

3 Power cable

4 Caps

5 Knobs

6 Documentation pack (Operator & Installation manual, Quick guide, warranty card)

7 Fasteners (4 x 6G x 1.5 panhead PH1)

8 Gimbal bracket

3

Display Installation

Mounting location

Choose the mounting locations carefully before you drill. The display should be mounted so that the operator can easily use the controls and clearly see the display screen.

For more information refer to the separate Polaris Installation instructions.

> ⚠️ **Warning:** When installing the displays, ensure appropriate safety equipment is used, eg. ear muffs, protective glasses, gloves and a dust mask.
>
> Power tools may exceed safe noise levels, and can cast off dangerous projectiles.
>
> The dust from many materials commonly used in vehicle construction may cause irritation or damage to eyes, skin, and lungs.

Bracket mounting

1. Place the bracket in the desired mounting location, and use a pencil or permanent marker to mark drilling locations.

→ *Note:* Ensure that the chosen location has enough height to accomodate the display fitted in the bracket, and allows tilting of the display. Also adequate space is required on both sides to allow tightening and loosening of the knobs.

2. Use fasteners suited to the mounting surface material. If the material is too thin for self tappers, reinforce it, or mount the bracket with machine screws and large washers. Use only 304 or 316 stainless steel fasteners. Mark the screw locations using the bracket as a template, and drill pilot holes.
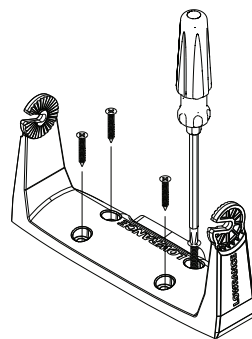
3. Screw down the bracket.

4. Mount the display to the bracket using the knobs. Hand tighten only. The ratchet teeth in the bracket and display case ensure a positive grip and prevent the unit changing from the desired angle.
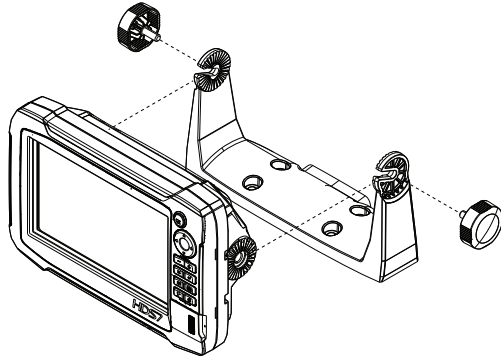
→ *Note:* For mounting in Polaris, vehicle specific dash mount kits, follow the instructions provided.

4

Wiring

Guidelines

Do not do this	Do this
Do not make sharp bends in the cables	Do make drip and service loops
Do not run cables in a way that allows water to flow down into the connectors	Do cable tie all cables to keep them secure
Do not route the data cables in areas adjacent to radar, transmitter, or large current carrying cables	Do solder/crimp and insulate all wiring connections, if extending or shortening power or NMEA 0183 cables
	Do leave room at the back to install and remove cables

⚠ **Warning:** Before starting the installation, be sure to turn electrical power off. If power is left on or turned on during the installation, fire, electrical shock, or other serious injury may occur. Be sure that the voltage of the power supply is compatible with the HDS Gen3 Polaris display

⚠ **Warning:** The HDS Gen3 Polaris has a voltage rating of 12 V DC, it is not suited for use with 24V DC systems.

⚠ **Warning:** The positive supply wire (red) should always be connected to (+) DC with the supplied fuse or a circuit breaker (closest available to fuse rating).

Power connection

The plug of the supplied power cable has two discrete cables exiting from it. The thickest of the two cables provides the following:

• power into the system (Red and Black wires)

• remote turn-on for certain Navico expansion modules (Yellow wire)
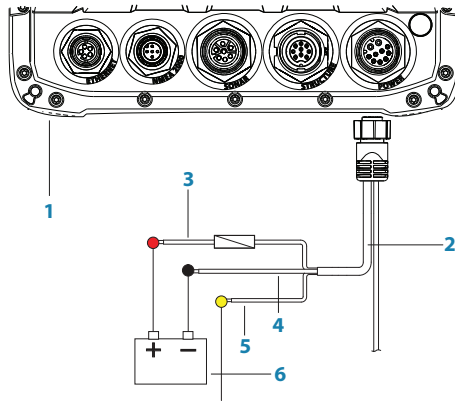
1 HDS-7 Gen3 Polaris display rear

2 Power cable

3 12 V positive wire (red) shown with fuse holder installed inline

4 12 V negative wire (black)

5 Accessory Wake Up wire (yellow)

6 12 V DC supply

Accessory wake up

The yellow colored accessory wake up line may be used to control the power state of Navico modules such as SonicHub or WM-3 SiriusXM weather receiver. This means that the modules are turned on the moment the display is powered up. For connection, simply combine all yellow wires on a common bus or to a single termination point.

Ethernet device connection

Ethernet is used to connect high bandwidth devices such as Sirius Weather Module.

NMEA 2000 device connection

HDS Gen3 Polaris models are equiped with a NMEA 2000 connector, which allows the receiving and sharing of a multitude of data from various sources.

Essential network information

- A network consists of a linear **backbone** from which **drop cables** connect to NMEA 2000 compliant devices.
- A single drop cable has a maximum length of 6 m (20 ft). The total length of all drop cables combined should not exceed 78m (256 ft).
- A NMEA 2000 network, using standard cabling, has a maximum cable length of 100 m (328 ft), between any two points.
- A NMEA 2000 network needs to have a terminator at each end of the backbone.

Power the network

The network requires its own 12 V DC power supply protected by a 3 amp fuse or breaker.

Connect power at any location in the backbone for smaller systems.

For larger systems, introduce power at central point in the backbone to 'balance' the voltage drop of the network.

→ *Note:* If joining to an existing NMEA 2000 network that already has its own power supply, do not make another power connection elsewhere in the network.

→ *Note:* Do not connect the NMEA 2000 power cable to the same terminals as the engine start batterie or other high current devices.

The following diagram demonstrates a typical small NMEA 2000 network:
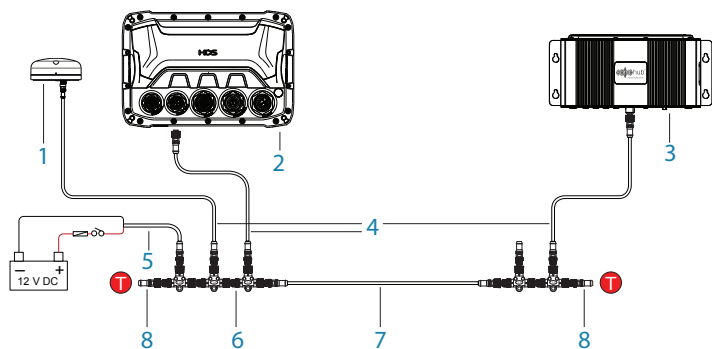
1. **GPS antenna**

2. **HDS Gen3 Polaris Display**

3. **SonicHub**

4. **'Drop' cables (should not exceed 6m (20') each)**

5. **Power cable**

6. **Micro-C T-connectors**

7. **Backbone**

8. **Terminators (one male, one female)**

NMEA 0183 device connection

The HDS Gen3 Polaris display has an NMEA 0183 serial port, providing both an input and an output. The port uses the NMEA 0183 (serial balanced) standard, and can be configured in the software for different baud rates up to 38,400 baud. The NMEA 0183 cable shares the same plug as the power cable.
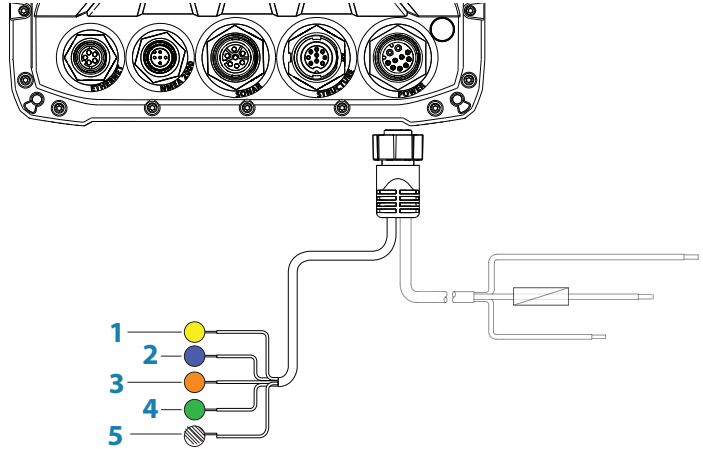
1 **NMEA 0183 TX_A (yellow)**

2 **NMEA 0183 TX_B (blue)**

3 **NMEA 0183 RX_A (orange)**

4 **NMEA 0183 RX_B (green)**

5 **ground (shield)**

Talkers and Listeners

Do not connect multiple devices outputing data (Talkers) on to the input (Rx) of the unit. The protocol is not intended for this type of connection, and data will be corrupted if more than one device transmits simultaneously. The output however may drive multiple receivers (Listeners). The number of receivers is finite, and depends on the receiving hardware. Typically three devices is possible.

Video In

A video camera may be added by installing the optional video adaptor cable between the power socket on the unit, and the plug on the power/data cable.

➔ *Note:* The video images will not be shared with another unit via the network. It is only possible to view video on the unit connected to the video source.
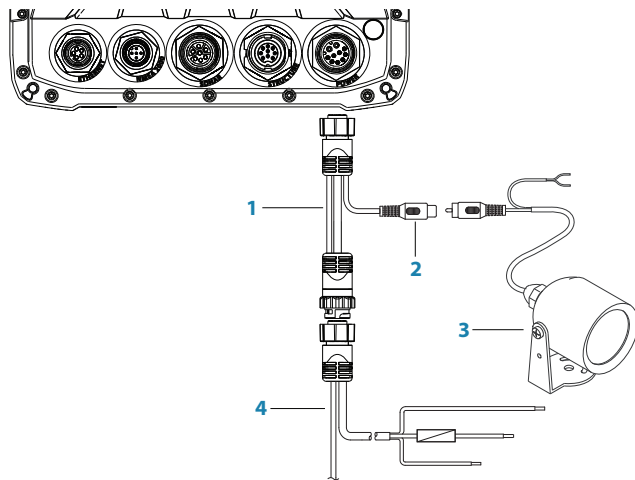
1 **Video input adaptor cable (optional part, see "Display accessories" on page 34)**

2 **RCA plug**

3 **12 V camera (3rd party. Requires seperate power source)**

4 **HDS Gen3 Polaris power/data cable**

➔ *Note:* Only connect NTSC and PAL video sources.

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Software setup

The HDS Gen3 Polaris requires some initial configuration before use, in order to get the most out of the product.

The following sections focus on settings that typically will not require change once configured. User preference settings and operation are covered in the operator manual.

Pressing the Pages key brings up the home page, which has three distinct areas.

The scrollable left column of icons access most settings that require configuration;
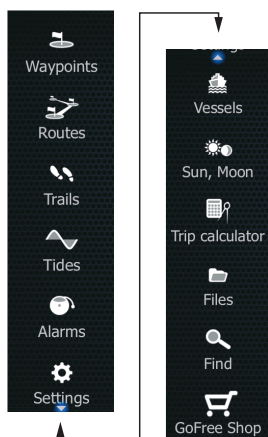
First time startup

When the HDS Gen3 Polaris is started for the first time, or after restoring factory defaults, the unit will raise prompts requesting the user to select some fundamental setup options. Follow the on-screen instructions.

System

Time and Date

Configure local time offset to suit location. UTC time is provided via satellite, and does not need manual setting. Set time and date format to preference.

Source selection

Data sources provide live data such as GPS position, heading, wind speed, and temperature. The data may originate from modules internal to the device (eg internal GPS on some products), or external modules connected via NMEA 2000 or NMEA 0183. Internal sources presented on NMEA 2000 as 'virtual' devices may include MFD and iGPS. When a device is connected to more than one source providing the same data, the user has the flexibility to choose the prefered source. Before commencing with source selection make sure all external devices and the NMEA 2000 bus are connected and are turned on. If NMEA 0183 is used, complete "NMEA 0183 setup" on page 23 prior to doing source selection.

Device name

Assigning a name is useful in systems using more than one display of the same type and size. When viewing data sources or the device list, the assigned name will append the default product name + virtual device function for easy identification. Using the Gofree app on a tablet or phone will show available devices for connection using only the assigned name.

Auto configure

The Auto configure option will look for all sources connected to the device. If more than one source is available for each data type, selection will be made from an internal priority list. This option will be suitable for the majority of installations.

→ *Note:* Auto data source selection may already have been selected at first time startup, however it should be redone if any new devices have been added to the network since.

Data sources - manual source selection

Manual selection is generally only required where there is more than one source for the same data, and the **Auto configure** selected source is not the one desired. Pressing the menu key when the desired source is highlighted provides additional options:

Configure device

Additional device options can be configured from both the **Data sources** menu or from the **Device list**, see "Device list" on page 21 for further information.

Scope

The active data source under any given category, can be set to be Global or Local.

When a source is set as Global, it will be used by all displays on the network. When a source is set as Local, it will only be used by the display that selected it as the source.

➔ *Note:* If changing a display from a Global source to a different Local source, change the Scope setting to Local *before* changing the selected source, otherwise all other displays will be changed over to the new source.

➔ *Note:* Local and Global data settings apply to the selected data source only. It is not possible to discretely set whether a data source is Global or Local if it is not the active source on the display being operated.

Reset Global/Local

Selecting **Reset Global** will run an Auto data source selection, and override all previous manual source selections made on all networked devices. **Reset Local** will revert all data source selections on the display being used to the Global source settings available from other networked displays.
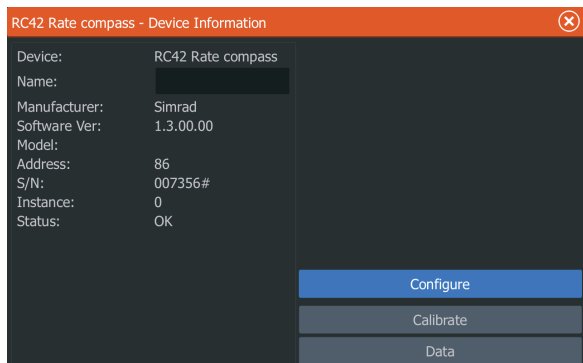
🖧 Network

Device list

The device list shows the physical and virtual devices that provide data. This may include a module inside the HDS Gen3 Polaris, the NMEA 0183 port, or any external NMEA 2000 device.

Selecting a device in this list will bring up additional details and possible actions:

All devices allow allocation of an instance number via the **Configure** option. Set unique instance numbers on any identical devices on the network to allow for HDS to distinguish between them. Some devices will have additional options on the configure page, such as selecting a device location, or reseting calibration applied. The **Data** option shows all data being output by the device. Some devices will show additional option(s) specific to the device - the RC42 illustrated above has a **Calibrate** option, to allow easy setup of this device.

→ *Note:* Setting the instance number on a 3rd party product is typically not possible.

Diagnostics

The NMEA 2000 tab on the diagnostics page can provide information useful for identifying an issue with the network.

Bus state: This simply indicates whether the bus is powered, but not necessarily connected to any data sources. However if bus shows as **off**, but power is present along with an increasing error count, it is possible that termination or cable topology is incorrect.

Rx Overflows: The CAN driver got too many messages for its buffer before the application could read them.

Rx Overruns: The CAN hardware got too many messages for its buffer before the CAN driver could read them.

Rx/Tx Errors: These two numbers increase when there are error messages, and decrease when messages are received successfully. These (unlike the other values) are not a cumulative count. Under normal operation these should be at 0. Values around 96 upwards indicate a heavily error prone network. If these numbers go too high for a given device, it will automatically drop off the bus.

Rx/Tx Messages: Shows actual traffic in and out of device.

Bus Load: A high value here indicates network is near full capacity. Some devices automatically adjust rate of transmition, if network traffic is heavy.

Fast Packet Errors: Cumulative counter of any fast packet error. This could be missed frame, or frame out of sequence etc. NMEA 2000 PGNs are made of up to 32 frames. The entire message will be discarded when a frame is missed.

→ *Note:* The above information may not always indicate an issue that can be simply resolved with minor adjustment to network layout or connected devices and their activity on the network. However

Rx and Tx errors are most likely indicating issues with the physical network, which may be resolved by correcting termination, reducing backbone or drop lengths, or reducing the number of network nodes (devices).

Network
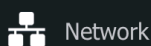
Damping

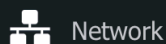If data appears erratic or changes too rapidly, damping may be applied to make the information appear more stable. With damping set at MIN, the data is presented in raw form with no damping applied. This is available for speed over ground, course over ground, and heading.

Network

NMEA 0183 setup

The NMEA 0183 port must be set to suit the speed of connected devices, and can be configured to output only the sentences required by listening devices.

Receive waypoint

Select this option to allow a device capable of creating and exporting waypoints via NMEA 0183 to transfer directly to the HDS Gen3 Polaris.

Receive waypoint	ON
Serial ports...	
Serial output	OFF
Serial output sentences...	
Ethernet	
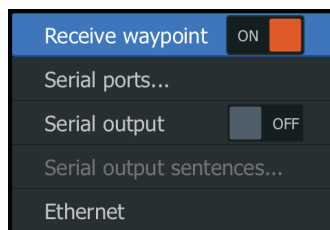
Baud rate

This should be set to correspond with devices connected to the NMEA 0183 input and output. The input and output (Tx, Rx) use the same baud rate setting.

Serial Ports	⊗
Protocol	RS-422 ⌄
Communication port 1	4800 ⌄
OK	4800
	4800
	9600
	19200
	38400
	Default
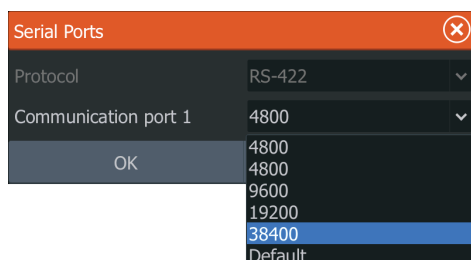
Serial Output

Selection will determine whether the data is output via Tx lines, and will enable editing of the output sentences list.

Serial Output Sentences

This list allows control over which sentences need to be transmit to other devices from the NMEA 0183 port. Due to the limited bandwidth of NMEA 0183 it is desirable to only enable the data that is required. The less sentences are selected, the higher the output rate of the enabled sentences.

Commonly used sentences are enabled by default.

NMEA 0183 over Ethernet

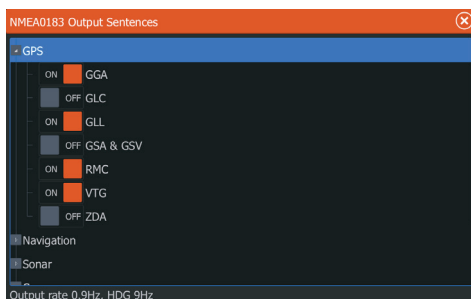The NMEA 0183 data stream is also output over ethernet, which is made available to tablet devices and PCs, using the WIFI-1 wireless adaptor.

The **Ethernet** dialogue provides IP and port data typically required for configuring the application on the third party device.

→ *Note:* Other MFDs cannot decode this information back to NMEA 0183, to use the data as a source. To share data a physical NMEA 2000 or NMEA 0183 connection is still required.

Network

## Ethernet setup

No special setup is required for establishing an ethernet network, it is all 'plug and play'. An optional NEP-2 connected between the HDS Gen3 Polaris and another network module will automatically start working, and relay data between the two devices.

Diagnostics

The UDB (User Data Base) tab on the diagnostics page, provides information on Ethernet activity, as shown below.
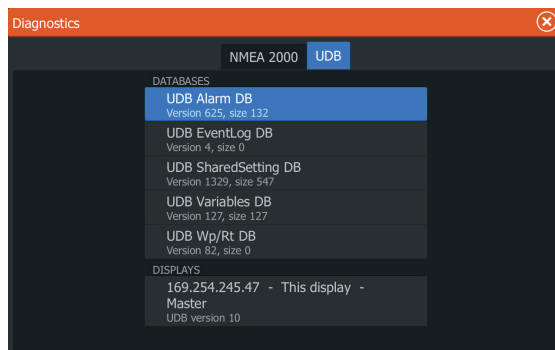
The **Reset Display List** can be used to refresh the list of connected displays and their UDB version.

Databases

The upper table on the diagnostics page gives an account of the various automatically synchronised databases that ensure all Lowrance displays are using the same user settings and data. Each unit stores the database locally, so that all information is available if the device is run in standalone. Databases can become unsynchronized when one or more displays in a multi display network are not powered up while other displays are being operated. Creation of waypoints, routes, and altering global settings all affect databases. When **Dirty** is displayed, the unit has identified that its database is older than that of another device on the network. Dirty should clear within seconds of both devices being powered up, and the databases synchronizing. If it does not clear, it is recommended that all devices have the power cycled.

If any database will not synchronize, it may be necessary to use the **Restore Defaults** option found under the System menu. Backup any user settings if required - see "Backing up and Importing user data" on page 30. The **Restore Defaults** operation should be done one device at a time, with all other devices powered off. Once a device is defaulted, it should be turned off until all other devices have also been defaulted.

IP addresses

The lower table shows the IP address of the display being viewed at the top, and is identified with **This display** next to it. Other connected displays are shown below it. The function of the display labeled as **Master** is invisible to the end user - It manages database synchronization, however this task automatically shifts to another

display if the current master is shut down. The IP address list only refreshes after all devices on the network have been powered down - a single device that is shutdown on the network will not be removed from the table shown on other devices. When powering up a system that has been completely shutdown, a network connectivity issue can be identified if a display does not show any other IP addresses than its own.

The **UDB version** is dependant on the software version installed on the display. It will never change on its own, unlike the **Version** of the Databases on the upper table. It is preferable to have all UDB versions the same. This can usually be acheived by loading the latest software on to your display - refer to "HDS Gen3 Polaris software upgrades" on page 32.

Module network light

The network LED on modules such as WM-3 and WIFI-1, can be useful for determining if the network is communicating. No light indicates no connection. A rapidly blinking green LED means the network module is communicating with another device.
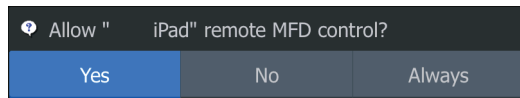
 Wireless

Wifi setup

The HDS Gen3 Polaris can be veiwed and controlled via an Android or Apple tablet, using the internal wireless AP (or a WIFI-1 module) and the GoFree application. The GoFree application should be downloaded from Google Play, or Apple Store. Various 3rd party applications can also use the data stream.

Connecting the tablet

Navigate to the wifi network connection page on the tablet, and find the **HDS-x Gen3 xxxx**, or **GoFree Wifi xxxx** network. If more than one is in range, check the **Wireless Devices** page on the HDS Gen3 Polaris to confirm which wireless device is connected to the display. Select a device on this page to show its network key. Enter the eight character (or longer) **Network Key** in to the tablet to connect to the network. Open the GoFree application - the HDS Gen3 Polaris should be automatically detected. The name displayed will be either the default, or that assigned in the Device Name setting. If the HDS Gen3 Polaris does not appear, follow on screen instructions to manually find the device. The screen shot below shows an automatically detected HDS on the GoFree screen on Ipad.
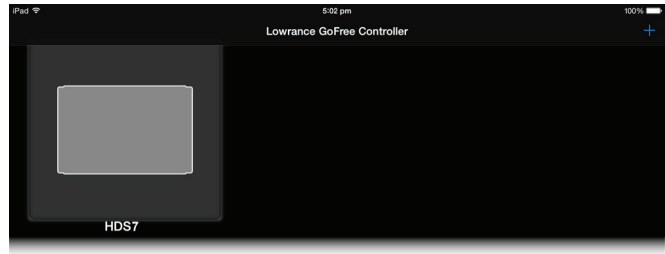
The HDS Gen3 Polaris to which connection is attempted will raise a prompt.

Select **Yes** for one-time connection, or **Always** if device is to be remembered for regular connection. This setting can be changed later if required.

→ *Note:* The HDS Gen3 Polaris internal wireless module only supports GoFree connection to its own display. Other displays connected via ethernet are not visible.

→ *Note:* If it's required to show all displays available for control/viewing via one wireless connection, use the external WIFI-1 module.

Connect to a wireless hotspot

Displays the Wireless device dialog that you can use to connect the wireless functionality to a wireless hotspot.

Remote controllers

When a wifi device is connected, it should appear in the **Remote controllers** list.
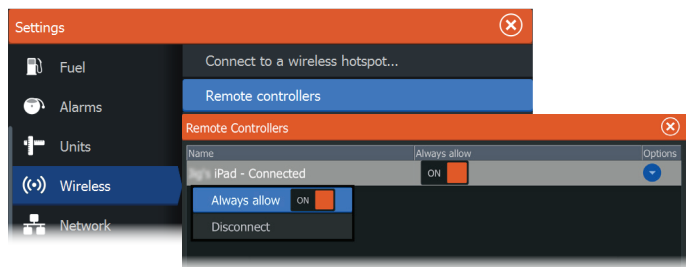
Selecting **Always allow** will mean the device can automatically connect without needing a password each time. This menu also allows disconnection of devices that no longer require access.

Wireless devices

Shows the internal wireless module and any connected WIFI-1 devices, as well as their IP and channel number. If a WIFI-1 is connected, and the system detects the software is out of date, an option to update will also be displayed. WIFI-1 updates, when required, are included with the display updates.

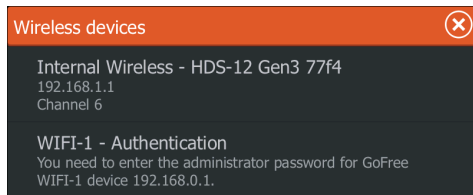Selecting a device will provide additional detail. **Network Name** and **Network Key** may be edited for security, and **Channel** can be changed where connection to unit is compromised due to interference. **Mode** can be changed on WIFI-1 device only. Restore defaults will return unit to factory settings.

Mode (WIFI-1 only)

When more than one WIFI-1 device is connected (i.e. on large installations), only one may operate as **Primary**. Primary mode determines that the device is acting as DHCP server - only one DHCP server may exist on a network at a time.

To set a device as secondary, the HDS Gen3 Polaris must initially be connected to only one WIFI-1 module, which should be set to **secondary**. Once completed, a second module may be plugged in, which will automatically default to primary.
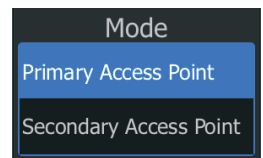
→ *Note:* Use of multiple devices is solely for range extension purposes.

Channel

Channel setting is available in order to overcome potential interference to the GoFree device by another RF device transmitting in the same frequency band.

Channel
Channel 1 (2412MHz)
Channel 2 (2417MHz)
Channel 3 (2422MHz)
Channel 4 (2427MHz)
Channel 5 (2432MHz)
Channel 6 (2437MHz)

Client settings

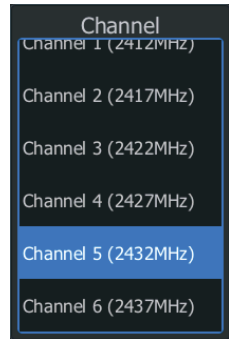Displays information about the wireless hotspot your unit is connected to or the last one your unit was connected to. You can select the hotspot in the dialog to set it as a hotspot you want to always connect to when in range or you can select to delete it.

Advanced

Tools are available within the HDS Gen3 Polaris software to assist in fault-finding and setting up the wifi network.

Iperf

Iperf is a commonly used network performance tool. It's provided for testing wireless network performance around the vehicle so weak spots or problem areas can be identified. The application must be installed on and run from the tablet device. The HDS must be running Iperf server before initiating the test from the tablet. On exiting the page, Iperf will automatically stop running.

DHCP Probe

The wireless module contains a DHCP server that will allocate IP addresses for all the MFDs in a network. If integrating with other devices, such as a 3G modem or satellite phone, other devices in the network may also be acting as DHCP servers. To make it easy to find all DHCP servers on a network, dhcp_probe may be run from the HDS.

Only one DHCP device may be operational on the same network at a time. If a second device is found, turn off its DHCP feature if possible. Refer to the device's own instructions for further assistance.

→ *Note:* Iperf and DHCP Probe are tools provided for diagnostic purposes by users familiar with network terminology and configuration. Navico is not the original developer of these tools, and can not provide support related to their use.
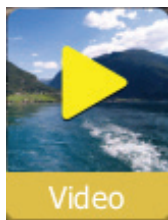
Video In configuration

Press the menu key when on the video page or panel to highlight the setup dialogue.

Enable PAL or NTSC depending on the video ouput standard of the selected camera.

You can optimize the video display by adjusting the video image settings (brightness, saturation, etc.). The settings are applied individually for each video source.

Mirror image may be applied where the camera is providing a rear view, and the user wishes to see objects as they would appear in a vehicle rearview mirror, ie, on the same side as they actually are.

Video standard
NTSC
Brightness
50%
Saturation
50%
Contrast
50%
Hue
50%
Mirror image
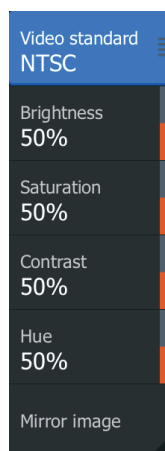
Software updates and data backup

From time to time Lowrance releases software updates to its existing products. Updates are created for a variety of reasons; to add or improve features, to add support for new external devices, or to fix software bugs.

Updates can be found on the Lowrance website: http://www.lowrance.com

The HDS Gen3 Polaris may be used to apply software updates to itself, and to supported NMEA 2000 and ethernet devices, with files read off a microSD card.

Before initiating an update to the HDS Gen3 Polaris itself, be sure to back up any potentially valuable user data.
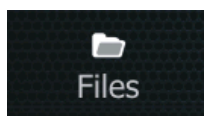
Backing up and Importing user data

There are two files that can be backed up that relate to user changes made to the system:

- **Waypoints, Routes, and Trails database**
- **Settings database** (includes preferences such as unit settings, custom pages, data overlays, and Czone configuration files)

Files	
My files	
Waypoints, Routes, and Trails database	
Settings database	
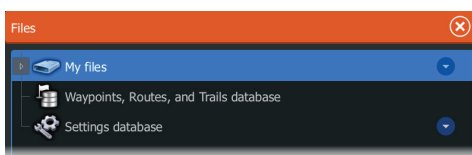
Insert a microSD card in to unit as storage location for backup data.

Waypoints, Routes, and Trails database backup

The user has the option of exporting all waypoints/routes/trails, or exporting only those contained within a specific region.

If Export Region is selected, the chart page will be displayed, centered on vehicle location. Using the touch screen, adjust the red boundry box to outline the area to be exported.

The export option offers different file formats to save as:

- **User data file version 5**: Use with current Navico displays (NSO evo2, NSS evo2, NSS, NSO, NSE, Zeus, Zeus Touch, HDS Gen2, HDS Gen2 Touch, HDS Gen3). Offers most detail

- **User data file version 4**: Use with current Navico displays (NSO evo2, NSS evo2, NSS, NSO, NSE, Zeus, Zeus Touch, HDS Gen2, HDS Gen2 Touch, HDS Gen3).

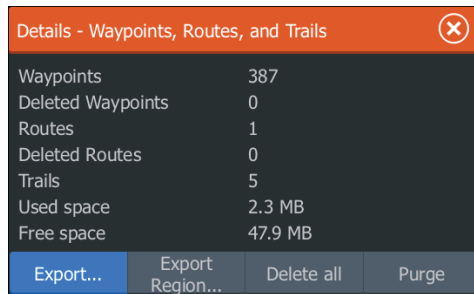- **User data file version 3 (with depth)**: Use with legacy Lowrance GPS chartplotters

- **User data file version 2 (no depth)**: Use with legacy Lowrance GPS chartplotters

- **GPX (GPS Exchange, no depth)**: Use with some other manufacturers' GPS products, and PC applications

Once filetype is selected, choose **export**, and select destination SD card.

The **Serial port** option outputs the waypoints over NMEA 0183. The receiving GPS/PC will typically need to be set to allow import of waypoints.

Settings database export

Pressing the menu key when Setting database is highlighted will give the option to export the Settings database, or Export Czone config (Czone installation dependant). Choose desired option and select destination microSD card.

Importing a database

Later, if the HDS Gen3 Polaris has been restored to factory defaults or user data is accidentally deleted, simply return to the files page, highlight the backed up file, and select **Import**. View file details for creation date.

HDS Gen3 Polaris software upgrades

The update file must be loaded to the root directory of a microSD card.

Update may be initiated at boot up - simply insert the microSD card before turning unit on, boot unit, and follow on-screen instructions. Alternatively, in the files menu, locate the update file on the microSD card and select **Upgrade**, followed by **This Display**. Accept the prompt to reboot the unit, and wait a few moments as the unit restarts. Do not remove the microSD card or repower the HDS Gen3 Polaris until the process is completed (this will typically take no more than a couple of minutes).

6 Dimensional drawing

HDS-7 Gen3 Polaris

215.4mm (8.48″)

146.3mm (5.76″)

238.4mm (9.39″)

HDS7

83.7mm (3.3″)

32.3mm (1.27″)

165.6mm (6.52″)

69.2mm (2.72″)

96.5mm (3.8″)
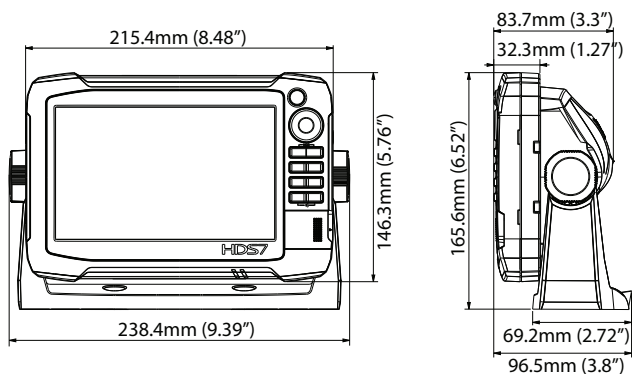
7

Accessories

Refer to the website for the full range of available accessories:
www.lowrance.com

NMEA 2000

Part number	Description
000-0124-69	NMEA 2000 STARTER KIT
000-11047-001	POINT-1 HIGH SPEED GPS AND HEADING

Display accessories

Part Number	Description
000-11010-001	HDS GEN2/3 VIDEO ADAPTER CABLE
000-12241-001	HDS-7 TOUCH BEZEL AND CARD DOOR
000-11019-001	HDS-7 TOUCH GIMBAL BRACKET
000-0124-70	HDS CONNECTOR CAPS

Other accessories

Part Number	Description
000-11076-001	WM-3 SIRIUS® WEATHER MODULE

8 Supported data

NMEA 2000 compliant PGN List

NMEA 2000 PGN (receive)

59392	ISO Acknowledgement
59904	ISO Request
60928	ISO Address Claim
61184	Parameter Request/Command
65285	Temperature with Instance
65289	Trim Tab Insect Configuration
65291	Backlight Control
65292	Clear Fluid Level Warnings
65293	LGC-2000 Configuration
65323	Data User Group Request
65325	Reprogram Status
65341	Autopilot Mode
65480	Autopilot Mode
126208	ISO Command Group Function
126992	System Time
126996	Product Info
127237	Heading/Track Control
127245	Rudder
127250	Vehicle Heading
127251	Rate of Turn
127257	Attitude
127258	Magnetic Variation
127488	Engine Parameters, Rapid Update
127489	Engine Parameters, Dynamic
127493	Transmission Parameters, Dynamic
127503	AC input status
127504	AC Output Status
127505	Fluid Level
127506	DC Detailed Status
127507	Charger Status

127508	Battery Status
127509	Inverter Status
128259	Speed, Water referenced
128267	Water Depth
128275	DistanceLog
129025	Position, Rapid Update
129026	COG & SOG, Rapid Update
129029	GNSS Position Data
129033	Time & Date
129038	AIS Class A Position Report
129039	AIS Class B Position Report
129040	AIS Class B Extended Position Report
129283	Cross Track Error
129284	Navigation Data
129539	GNSS DOPs
129540	GNSS Sats in View
129794	AIS Class A Static and Voyage Related Data
129801	AIS Addressed Safety Related Message
129802	AIS Safety Related Broadcast Message
129808	DSC Call Information
129809	AIS Class B "CS" Static Data Report, Part A
129810	AIS Class B "CS" Static Data Report, Part B
130074	Route and WP Service - WP List - WP Name & Position
130306	Wind Data
130310	Environmental Parameters
130311	Environmental Parameters
130312	Temperature
130313	Humidity
130314	Actual Pressure
130576	Small Craft Status
130577	Direction Data
130840	Data User Group Configuration
130842	SimNet DSC Message
130845	Parameter Handle
130850	Event Command
130851	Event Reply

130817   Product Info
130820   Reprogram Status
130831   Suzuki Engine and Storage Device Config
130832   Fuel Used - High Reolution
130834   Engine and Tank Configuration
130835   SetEngineAndTankConfiguration
130838   Fluid Level Warning
130839   Pressure Insect Configuration
130843   Sonar Status, Frequency and DSP Voltage

NMEA 2000 PGN (transmit)

61184	Parameter Request/Command
65287	Configure Temperature Insects
65289	Trim Tab Insect Calibration
65290	Paddle Wheel Speed Configuration
65291	Backlight Control
65292	Clear Fluid Level Warnings
65293	LGC-2000 Configuration
126208	ISO Command Group Function
126992	System Time
126996	Product Info
127237	Heading/Track Control
127250	Vehicle Heading
127258	Magnetic Variation
128259	Speed, Water referenced
128267	Water Depth
128275	DistanceLog
129025	Position, Rapid Update
129026	COG & SOG, Rapid Update
129029	GNSS Position Data
129283	Cross Track Error
129284	Navigation Data
129285	Route/Waypoint Data
129539	GNSS DOPs
129540	GNSS Sats in View
130074	Route and WP Service - WP List - WP Name & Position
130306	Wind Data
130310	Environmental Parameters
130311	Environmental Parameters
130312	Temperature
130577	Direction Data
130840	Data User Group Configuration
130845	Parameter Handle
130850	Event Command
130818	Reprogram Data

NMEA 0183 supported sentences

TX / RX	GPS								
Receive	GGA	GLL	GSA	GSV	VTG	ZDA			
Transmit	GGA	GLL	GSA	GSV	VTG	ZDA	GLC		
	Navigation								
Receive	RMC								
Transmit	AAM	APB	BOD	BWC	BWR	RMC	RMB	XTE	XDR
	Sonar								
Receive	DBT	DPT	MTW	VLW	VHW				
Transmit	DBT	DPT	MTW	VLW	VHW				
	Compass								
Receive	HDG	HDT	HDM						
Transmit	HDG								
	Wind								
Receive	MWV	MWD							
Transmit	MWV	MWD							
	AIS / DSC								
Receive	DSC	DSE	VDM						
	MARPA								
Transmit	TLL	TTM	T						

9 Specifications

Refer to website for updates to specifications:
www.polaris.com

Multi Function Display	HDS-7
Display	
Display resolution	800x480
Display type	7 inch WVGA color TFT LCD
Display brightness	>1200 nits
Touch screen	Multi-touch P-CAP
Viewing angle in degrees (typical value @ contrast ratio = 10)	L/R: 60deg top: 40deg bottom: 50deg
Power	
Power supply	12 V DC (10.8 - 17.0 V DC min - max)
Power consumption	12 W (0.9 A @ 13.8 V DC)
Low power standby	<650mA
Technical / Environmental	
Housing	Plastic
Temperature	-15° C to + 55° C (+5° F to +131° F)
Waterproof standard	IPx7
Declaration of conformity	CE RTTE directive 1999/5/EC
Interface	
Ethernet	1 Port
NMEA 2000	Micro-C (1)
NMEA 0183	input/output. 4800, 9600, 19200, 38400 baud
Video input	Composite video RCA - single channel via optional adaptor
Data card slot	2x microSD
Wireless	802.11b/g/n
GPS	10Hz high speed update. GPS & GLONASS. WAAS, MSAS, EGNOS

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