

SeaTalk^{ng} cabling components

SeaTalk^{ng} cabling components and their purposes.

Connection / Cable	Notes
Backbone cable (various lengths)	The main cable carrying data. Spurs from the backbone are used to connect SeaTalk ^{ng} devices.
T-piece connector	Used to make junctions in the backbone to which devices can then be connected.
Terminator	Required at either end of the backbone.
Inline terminator	Used to connect a spur cable directly to the end of a backbone; useful for longer cable runs.
Spur cable	Used to connect devices to the backbone. Devices may be daisy chained or connected directly to the T-pieces.
SeaTalk ^{ng} 5-way connector	Used to branch, split, or make additional connections in SeaTalk or SeaTalk ^{ng} networks.
Blanking plug	Inserted into unused spur connector positions in a 5-way connector or T-piece.

SeaTalk^{ng} cables and accessories

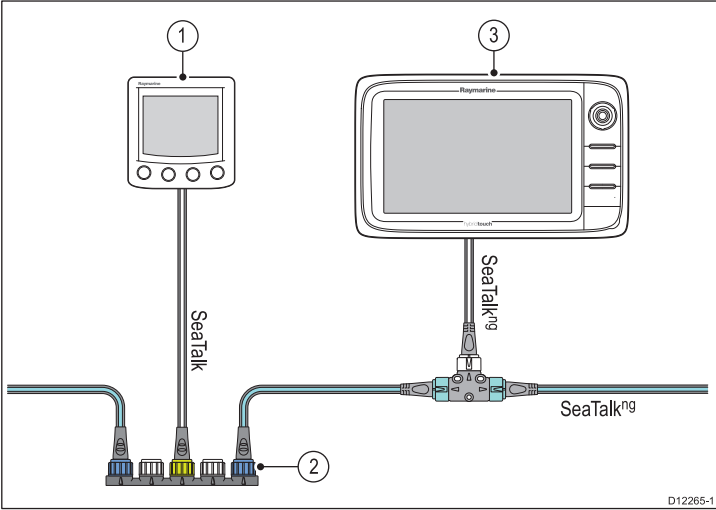
SeaTalk^{ng} cables and accessories for use with compatible products.

Description	Part No	Notes
Backbone Kit	A25062	Includes: • 2 x 5 m (16.4 ft) Backbone cable • 1 x 20 m (65.6 ft) Backbone cable • 4 x T-piece • 2 x Backbone terminator • 1 x Power cable
SeaTalk ^{ng} 0.4 m (1.3 ft) spur	A06038	
SeaTalk ^{ng} 1 m (3.3 ft) spur	A06039	
SeaTalk ^{ng} 3 m (9.8 ft) spur	A06040	
SeaTalk ^{ng} 5 m (16.4 ft) spur	A06041	
SeaTalk ^{ng} 0.4 m (1.3 ft) backbone	A06033	
SeaTalk ^{ng} 1 m (3.3 ft) backbone	A06034	
SeaTalk ^{ng} 3 m (9.8 ft) backbone	A06035	
SeaTalk ^{ng} 5 m (16.4 ft) backbone	A06036	
SeaTalk ^{ng} 9 m (29.5 ft) backbone	A06068	
SeaTalk ^{ng} 20 m (65.6 ft) backbone	A06037	
SeaTalk ^{ng} to bare ends 1 m (3.3 ft) spur	A06043	

Description	Part No	Notes
SeaTalk ^{ng} to bare ends 3 m (9.8 ft) spur	A06044	
SeaTalk ^{ng} Power cable	A06049	
SeaTalk ^{ng} Terminator	A06031	
SeaTalk ^{ng} T-piece	A06028	Provides 1 x spur connection
SeaTalk ^{ng} 5-way connector	A06064	Provides 3 x spur connections
SeaTalk to SeaTalk ^{ng} converter	E22158	Allows the connection of SeaTalk devices to a SeaTalk ^{ng} system.
SeaTalk ^{ng} Inline terminator	A80001	Provides direct connection of a spur cable to the end of a backbone cable. No T-piece required.
SeaTalk ^{ng} Blanking plug	A06032	
SeaTalk (3 pin) to SeaTalk ^{ng} adaptor cable 0.4 m (1.3 ft)	A06047	
SeaTalk2 (5 pin) to SeaTalk ^{ng} adaptor cable 0.4 m (1.3 ft)	A06048	
DeviceNet adaptor cable (Female)	A06045	Allows the connection of NMEA 2000 devices to a SeaTalk ^{ng} system.
DeviceNet adaptor cable (Male)	A06046	Allows the connection of NMEA 2000 devices to a SeaTalk ^{ng} system.
DeviceNet adaptor cable (Female) to bare ends.	E05026	Allows the connection of NMEA 2000 devices to a SeaTalk ^{ng} system.
DeviceNet adaptor cable (Male) to bare ends.	E52027	Allows the connection of NMEA 2000 devices to a SeaTalk ^{ng} system.

4.10 SeaTalk connection

You can connect SeaTalk devices to your multifunction display using the optional SeaTalk to SeaTalk^{ng} converter.



- 1. SeaTalk device.
- 2. SeaTalk to SeaTalk^{ng} converter.
- 3. Multifunction display.

SeaTalk accessories

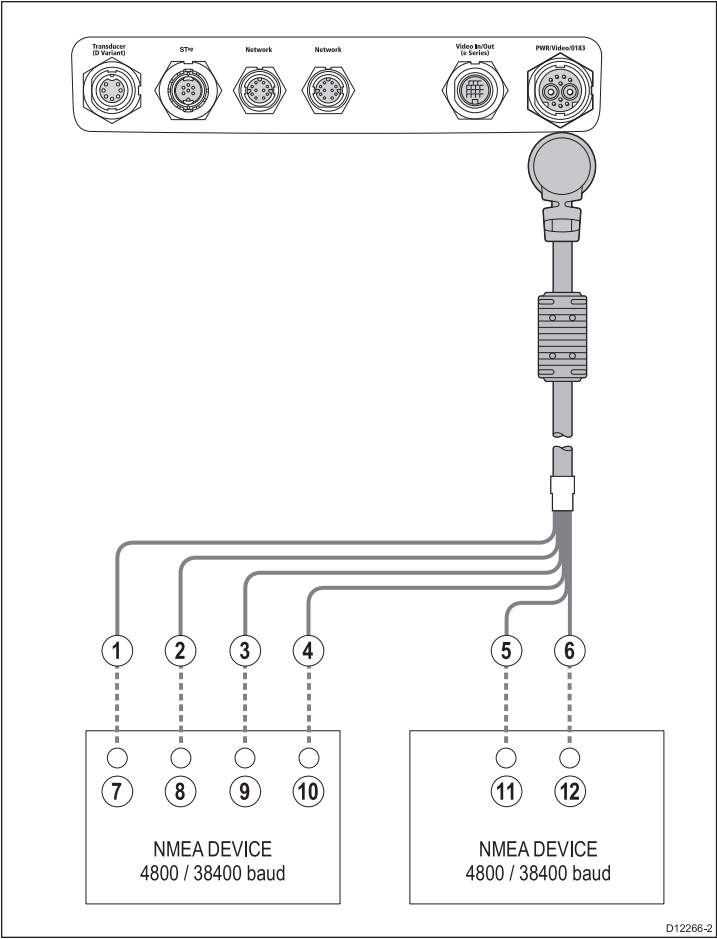
SeaTalk cables and accessories for use with compatible products.

Description	Part No	Notes
3-way SeaTalk junction box	D244	
1 m (3.28 ft) SeaTalk extension cable	D284	
3 m (9.8 ft) SeaTalk extension cable	D285	
5 m (16.4 ft) SeaTalk extension cable	D286	
9 m (29.5 ft) SeaTalk extension cable	D287	
12 m (39.4 ft) SeaTalk extension cable	E25051	
20 m (65.6 ft) SeaTalk extension cable	D288	

4.11 NMEA 0183 connection

NMEA 0183 devices can be connected to New c Series and New e Series multifunction displays using the power and data cable.

Note: New a Series does not support connection of NMEA 0183 devices.



NMEA 0183 devices are connected using the supplied power and data cable.

The display has 2 NMEA 0183 ports:

- **Port 1:** Input and output, 4800 or 38400 baud rate.
- **Port 2:** Input only, 4800 or 38400 baud rate.

Note: The baud rate you want to use for each port input must be specified in the System Settings menu (**Homescreen: > Set-up > System Settings > NMEA Set-up > NMEA Input Port**).

Note: For Port 1, both the input and output communicate at the same baud rate. For example, if you have one NMEA 0183 device connected to the display's Port 1 INPUT, and another NMEA 0183 device connected to the display's Port 1 OUTPUT, both NMEA devices must be using the same baud rate.

You can connect up to 4 NMEA 0183 devices to the display's NMEA 0183 OUTPUT (Port 1). You can connect a total of 2 NMEA 0183 devices to the display's NMEA 0183 INPUT ports.

Item	Device	Cable color	Port	Input / output	Positive (+) / negative (-)
1	Multifunction display	White	1	Input	Positive
2		Green	1	Input	Negative
3		Yellow	1	Output	Positive
4		Brown	1	Output	Negative
5		Orange / white	2	Input	Positive
6		Orange / green	2	Input	Negative

Item	Device	Cable color	Port	Input / output	Positive (+) / negative (-)
7	NMEA device	*	*	Output	Positive
8		*	*	Output	Negative
9		*	*	Input	Positive
10		*	*	Input	Negative
11	NMEA device	*	*	Output	Positive
12		*	*	Output	Negative

Note: *Refer to instructions provided with NMEA device.

NMEA 0183 cable

You can extend the NMEA 0183 wires within the supplied power and data cable.

Data cable extension

Total length (max)	Cable
Up to 5 m	High quality data cable: • 2 x twisted pair with overall shield. • 50 to 75 pF/m capacitance core to core.

4.12 NMEA 2000 connection

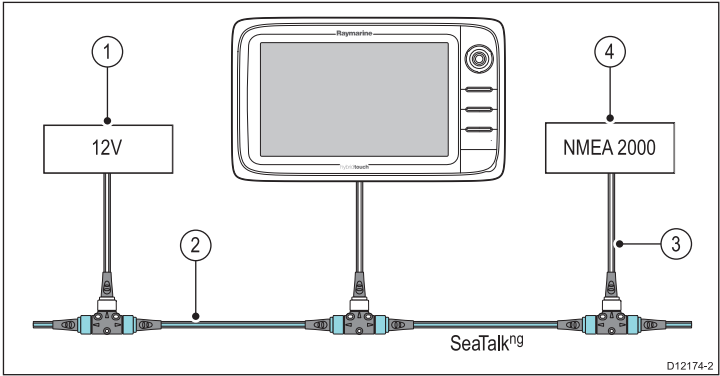
The display can receive data from NMEA 2000 devices (e.g. data from compatible engines). The NMEA 2000 connection is made using SeaTalk^{ng} and appropriate adaptor cables.

You can EITHER:

- Use your SeaTalk^{ng} backbone and connect each NMEA 2000 device on a spur, OR
- connect the display on a spur into an existing NMEA 2000 backbone.

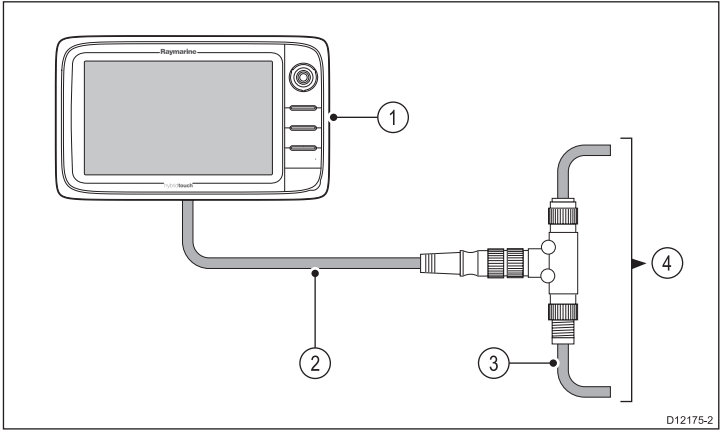
Important: You cannot have 2 backbones connected together.

Connecting NMEA 2000 equipment to the SeaTalk^{ng} backbone



1. 12 V supply into backbone.
2. SeaTalk^{ng} backbone.
3. SeaTalk^{ng} to DeviceNet adaptor cable.
4. NMEA 2000 equipment.

Connecting the display to an existing NMEA 2000 (DeviceNet) backbone



1. Multifunction display.
2. SeaTalk^{ng} to DeviceNet adaptor cable.
3. DeviceNet backbone.
4. NMEA 2000 equipment.

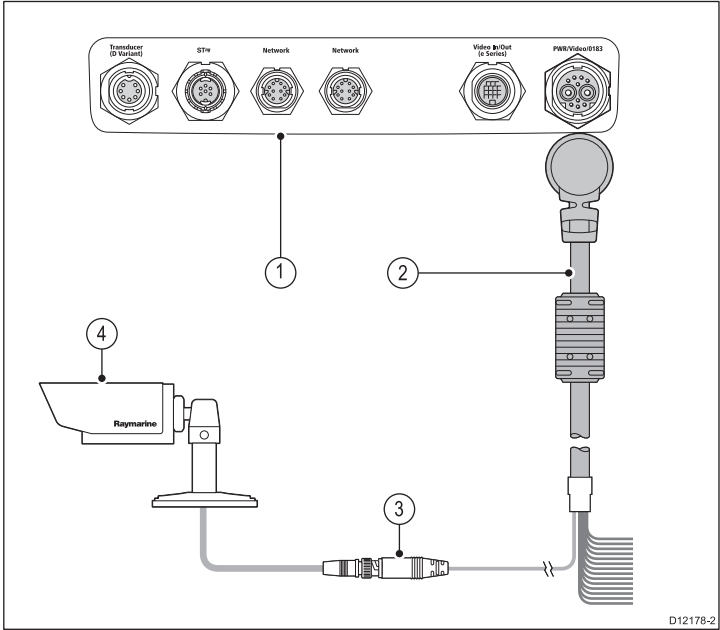
4.13 Camera / Video connection

A camera or a video device can be connected directly to New c Series and New e Series multifunction displays using the video connector on the power and data cable.

Note: Video devices cannot be directly connected to New a Series multifunction displays. For camera connections to a New a Series display please refer to the *IP camera connection* section.

Examples of video sources that you can connect to the display include:

- Video camera.
- Thermal camera.
- DVD player.
- Portable digital video player.



1. Rear connector panel of multifunction display.
2. Power and data cable.
3. BNC video connector (input 1).
4. Video source — for example, video camera.

Note: To listen to a movie's audio track, any connected DVD or digital video player will require speakers to be connected to the players audio output.

4.14 Camera / video in-out connection

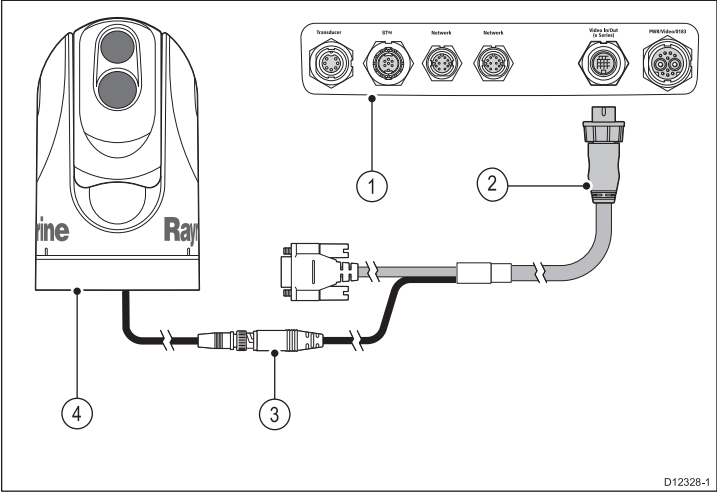
A camera / video device or external display can be connected to New e Series multifunction displays (excluding the e7 / e7D) using the dedicated video in/out connector.

Note: New a Series and New c Series multifunction displays do not have a dedicated video in/out connector.

Video In

Examples of video input sources that you can connect to the display include:

- Video camera.
- Thermal camera.
- DVD player.
- Portable digital video player.



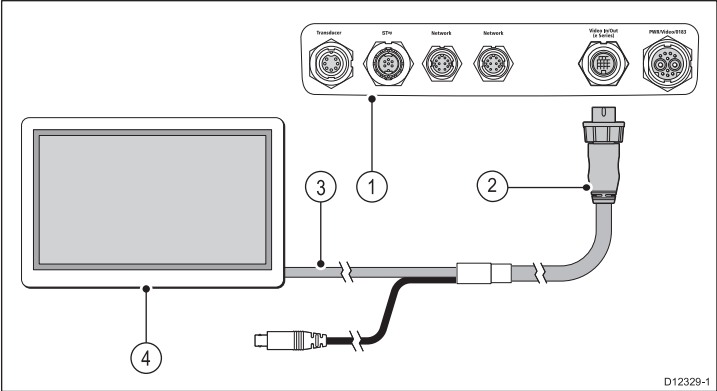
1. Rear connector panel of multifunction display.
2. Video accessory cable.
3. BNC video connector (input 2).
4. Thermal camera.

Note: To listen to a movie's audio track, any connected DVD or digital video player will require speakers to be connected to the players audio output.

Video out

Examples of video output devices that you can connect to the display include:

- HDTV with VGA input.
- VGA monitor.



1. Rear connector panel of multifunction display.
2. Video accessory cable.
3. VGA cable to external display.
4. External display.

Video specification

Signal type	Composite
Format	PAL or NTSC

Connector type	BNC (female)
Output resolution	720p

Video cables

The following video cable is required for the video in / out connector on the e95 / e97 / e125 / e127 variant multifunction displays.

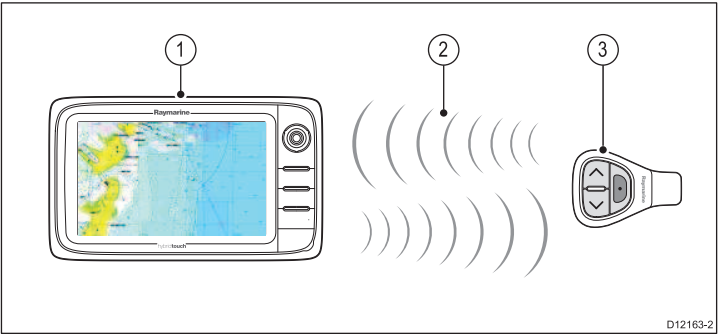
Part number	Description	Notes
R70003	e-series accessory video cable	

4.15 Bluetooth connections

Remote control connection

You can control the multifunction display wirelessly using a Raymarine remote control unit.

The remote control uses a Bluetooth wireless connection.



1. Multifunction display.
2. Bluetooth connection.
3. Raymarine Bluetooth remote control (for example, RCU-3).

To use the remote control you must first:

- Enable Bluetooth in the System Settings on the multifunction display.
- Pair the remote control unit with the multifunction display.

Pairing the remote and configuring the UP and DOWN buttons

The remote control unit must be “paired” with the multifunction display that you want to control. On your multifunction display, with the homescreen displayed:

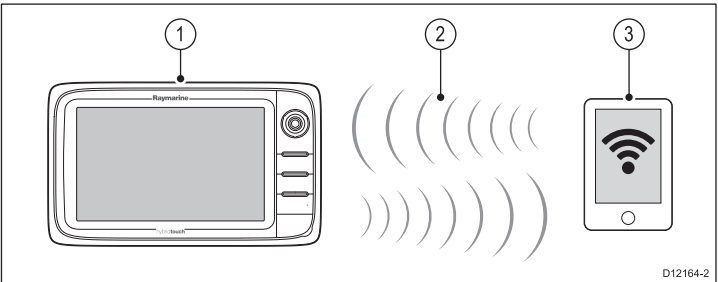
1. Select **Set-up**.
2. Select **System Settings**.
3. Select **Wireless Connections**.
4. Select **Bluetooth > On**.
5. Select **New Bluetooth Connection**.
A pop-up message will be displayed to confirm that the device you are connecting to is discoverable.
6. Select **Ok** to confirm.
A list of discovered devices is displayed.
7. On your **remote control unit**, hold down the UP and DOWN buttons together for 10 seconds.
8. Select the remote control unit in the list of devices.
9. When prompted, press the arrow button on your remote that you wish to be configured as the UP button. The other arrow button will automatically be configured as the DOWN button.

If the pairing was successful a “Pairing Success” message will be displayed. If a “Pairing Failure” or “Pairing Timeout” message is displayed, repeat steps 1 to 8.

Media player connection

You can use your multifunction display to wirelessly control a Bluetooth-compatible media player (such as a smartphone).

The media player must be compatible with the Bluetooth AVRCP protocol (version 2.1 or higher).



1. Multifunction display.
2. Bluetooth connection.
3. Bluetooth-compatible media player.

To use this feature you must first:

- Enable Bluetooth in the System Settings on the multifunction display.
- Enable Bluetooth on the media player device.
- Pair the media player device with the multifunction display.
- Enable Audio Control in the System Settings on the multifunction display.
- Connect an RCU-3 remote and assign the shortcut key to Start/Stop audio playback (Only required on a New c Series display).

Note: If your media player does not include built-in speakers it may be necessary to connect the media player's audio output to an external audio system or a pair of headphones. For more information refer to the instructions that accompany the media player device.

4.16 Wi-Fi connections

Raymarine mobile app connection

You can use compatible tablet and smartphone devices as a wireless repeat display or remote control for your multifunction display.

Raymarine apps allow you to stream and / or control, remotely what you see on your multifunction display to a compatible device, using a Wi-Fi connection.

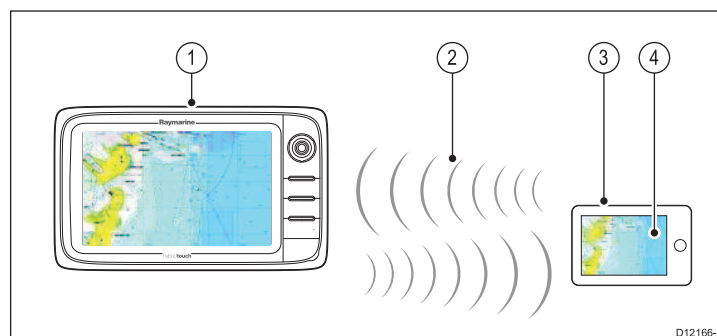
To use this feature you must first:

- Ensure your device is compatible with the app you wish to use.
- Download and install the relevant Raymarine app, available from the relevant market store.
- Enable Wi-Fi in the System Settings on the multifunction display.
- Enable Wi-Fi on your compatible device.
- Select the Raymarine Wi-Fi connection from the list of available Wi-Fi networks on your compatible device.
- Enable the relevant Mobile app in the System Settings menu on the multifunction display.

Note: The multifunction display acts as a Wi-Fi access point. If your device already connects to an access point for e-mail and internet you must revert your access point back to regain access to e-mails and internet.

Navionics chartplotter sync connection

You can wirelessly synchronize waypoints and routes between the multifunction display and a tablet or smartphone device.



1. Multifunction display.
2. Wi-Fi connection.
3. Tablet / smartphone.
4. Navionics Marine app.

To use this feature you must first:

- Download and install the Navionics Marine app, available from the relevant app store.
- Enable Wi-Fi in the System Settings on the multifunction display.
- Enable Wi-Fi on your tablet / smartphone.
- Select the Raymarine Wi-Fi connection from the list of available Wi-Fi networks on your tablet / smartphone.

Chapter 5: Location and mounting

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5.1 Selecting a location



Warning: Potential ignition source

This product is NOT approved for use in hazardous/flammable atmospheres. Do NOT install in a hazardous/flammable atmosphere (such as in an engine room or near fuel tanks).

General location requirements

When selecting a location for your display it is important to consider a number of factors.

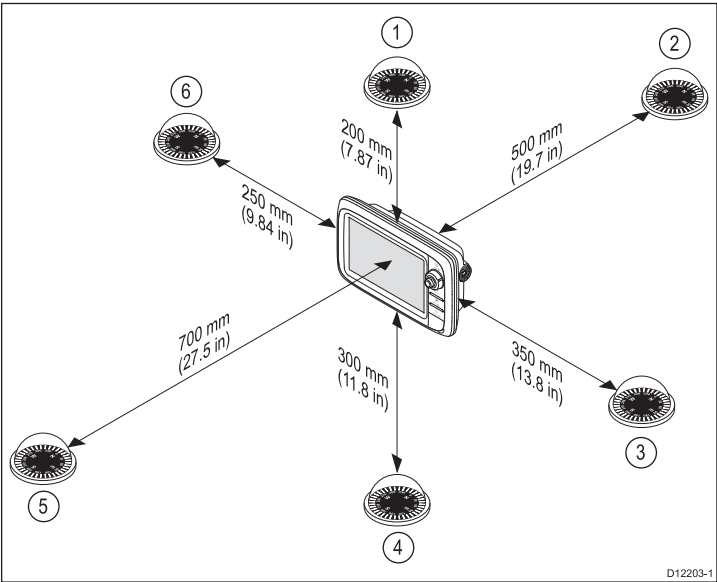
Key factors which can affect product performance are:

- Ventilation**
To ensure adequate airflow:
 - Ensure that equipment is mounted in a compartment of suitable size.
 - Ensure that ventilation holes are not obstructed. Allow adequate separation of equipment.Any specific requirements for each system component are provided later in this chapter.
- Mounting surface**
Ensure equipment is adequately supported on a secure surface. Do not mount units or cut holes in places which may damage the structure of the vessel.
- Cable entry**
Ensure the unit is mounted in a location which allows proper routing and connection of cables:
 - Minimum bend radius of 100 mm (3.94 in) unless otherwise stated.
 - Use cable supports to prevent stress on connectors.
- Water ingress**
The display is suitable for mounting both above and below decks. It is waterproof to IPX6 standard. Although the unit is waterproof, it is good practice to locate it in a protected area away from prolonged and direct exposure to rain and salt spray.
- Electrical interference**
Select a location that is far enough away from devices that may cause interference, such as motors, generators and radio transmitters / receivers.
- Power supply**
Select a location that is as close as possible to the vessel's DC power source. This will help to keep cable runs to a minimum.

Compass safe distance

To prevent potential interference with the vessel's magnetic compasses, ensure an adequate distance is maintained from the display.

When choosing a suitable location for the multifunction display you should aim to maintain the maximum possible distance between the display and any compasses. Typically this distance should be at least 1 m (3 ft) in all directions. However for some smaller vessels it may not be possible to locate the display this far away from a compass. In this situation, the following figures provide the minimum safe distance that should be maintained between the display and any compasses.



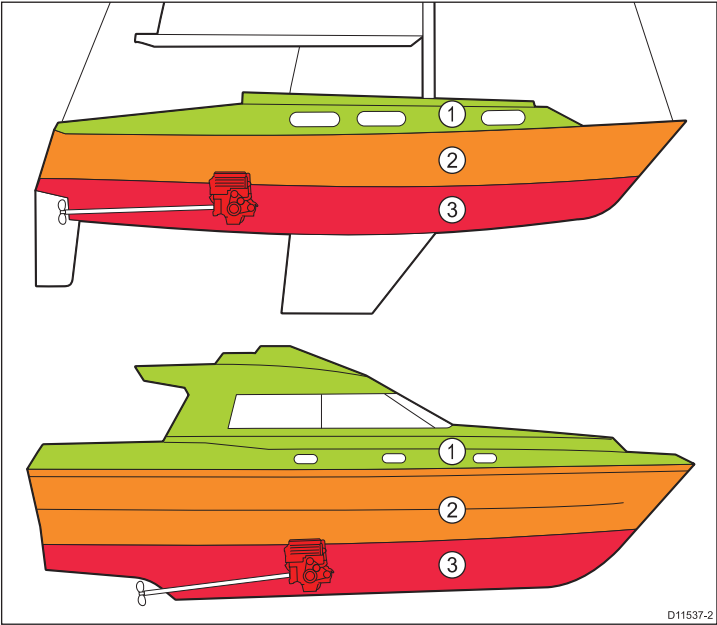
Item	Compass position in relation to display	Minimum safe distance from display
1	Top	200 mm (7.87 in.)
2	Rear	500 mm (19.7 in.)
3	Right-hand side	350 mm (13.8 in.)
4	Underside	300 mm (11.8 in.)
5	Front	700 mm (27.5 in.)
6	Left-hand side	250 mm (9.84 in.)

GPS location requirements

In addition to general guidelines concerning the location of marine electronics, there are a number of environmental factors to consider when installing equipment with an internal GPS antenna.

Mounting location

- Above Decks mounting:**
Provides optimal GPS performance. (For equipment with appropriate waterproof rating.)
- Below Decks mounting:**
GPS performance may be less effective and may require an external GPS antenna mounted above decks.



1.		This location provides optimal GPS performance (above decks).
2.		In this location, GPS performance may be less effective.
3.		This location is NOT recommended for GPS antenna.

Vessel construction

The construction of your vessel can have an impact on GPS performance. For example, the proximity of heavy structure such as a structural bulkhead, or the interior of larger vessels may result in a reduced GPS signal. Before locating equipment with an internal GPS antenna below decks, seek professional assistance and consider use of an external GPS antenna mounted above decks.

Prevailing conditions

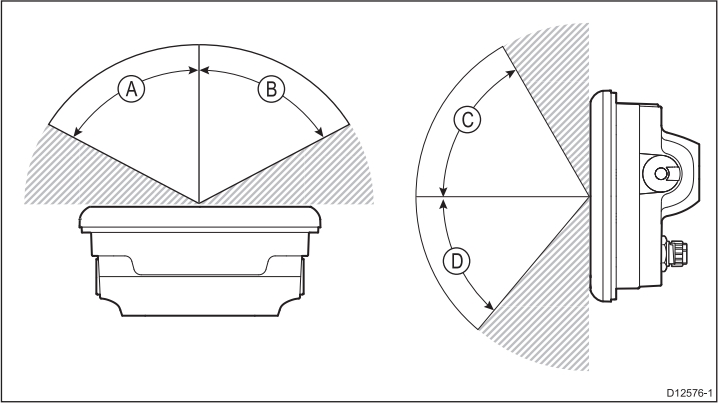
The weather and location of the vessel can affect the GPS performance. Typically calm clear conditions provide for a more accurate GPS fix. Vessels at extreme northerly or southerly latitudes may also receive a weaker GPS signal. GPS antenna mounted below decks will be more susceptible to performance issues related to the prevailing conditions.

Viewing angle considerations

As display contrast, color and night mode performance are all affected by the viewing angle, Raymarine recommends you temporarily power up the display when planning the installation, to enable you to best judge which location gives the optimum viewing angle.

5.2 Mounting - New a Series

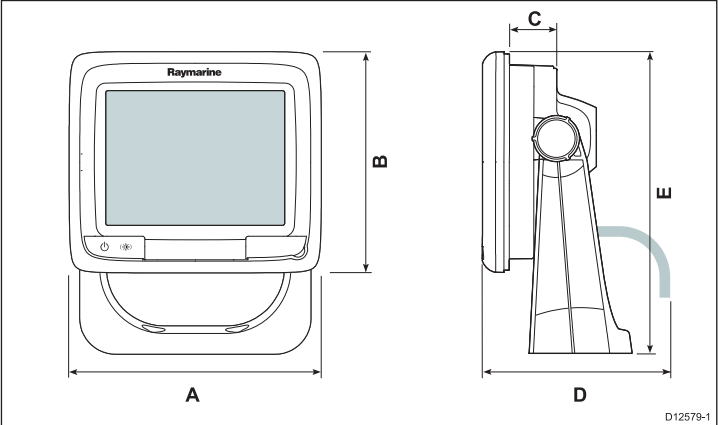
Viewing angle



	a65 / a67
A	60°
B	60°
C	60°
D	50°

Note: The angles stated are for a contrast ratio of equal to or greater than 10.

Product dimensions

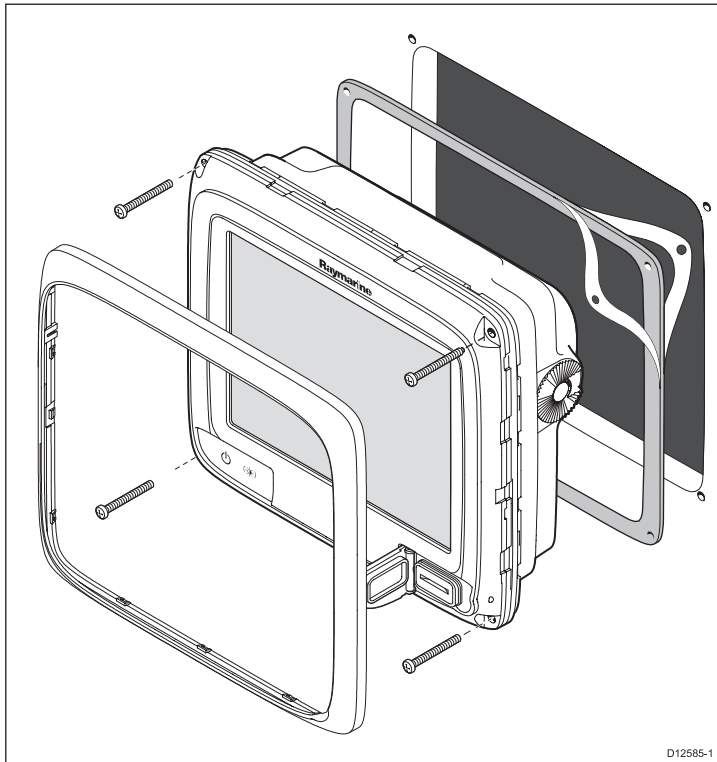


Item	a65 / a67
A	163.57 mm (6.44 in)
B	143.47 mm (5.65 in)
C	56.6 mm (2.23 in)
D	167.5 mm (6.6 in)
E	162.72 mm (6.41 in)

Flush mounting

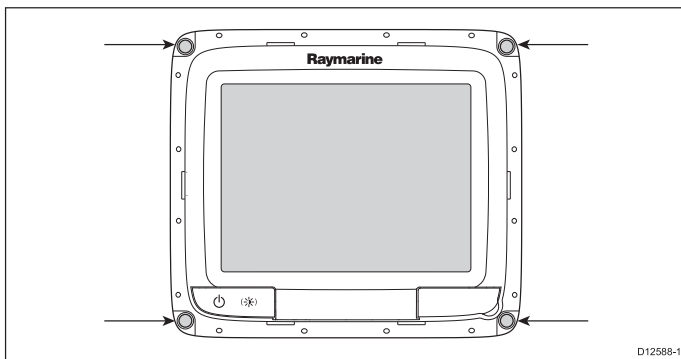
You can mount the display in a flush or panel mounting arrangement. Before mounting the unit, ensure that you have:

- Selected a suitable location.
- Identified the cable connections and route that the cables will take.
- Detached the front bezel.



D12585-1

1. Check the selected location for the unit. A clear, flat area with suitable clearance behind the panel is required.
2. Drill or knock out the 4 mounting holes on the unit



D12588-1

3. Fix the appropriate cutting template supplied with the product, to the selected location, using masking or self-adhesive tape.
4. Using a suitable hole saw (the size is indicated on the template), make a hole in each corner of the cut-out area.
5. Using a suitable saw, cut along the inside edge of the cut-out line.
6. Ensure that the unit fits into the removed area and then file around the rough edge until smooth.
7. Drill 4 holes as indicated on the template to accept the securing screws.
8. Place the gasket onto the display unit and press firmly onto the flange.
9. Connect the power, data and other cables to the unit.
10. Slide the unit into place and secure using the 4 mounting screws.

Note: The appropriate torque to use when drilling depends on the thickness of the mounting surface and the type of material.

Note: The supplied gasket provides a seal between the unit and a suitably flat and stiff mounting surface or binnacle. The gasket should be used in all installations. It may also be necessary to use a marine-grade sealant if the mounting surface or binnacle is not entirely flat and stiff or has a rough surface finish.

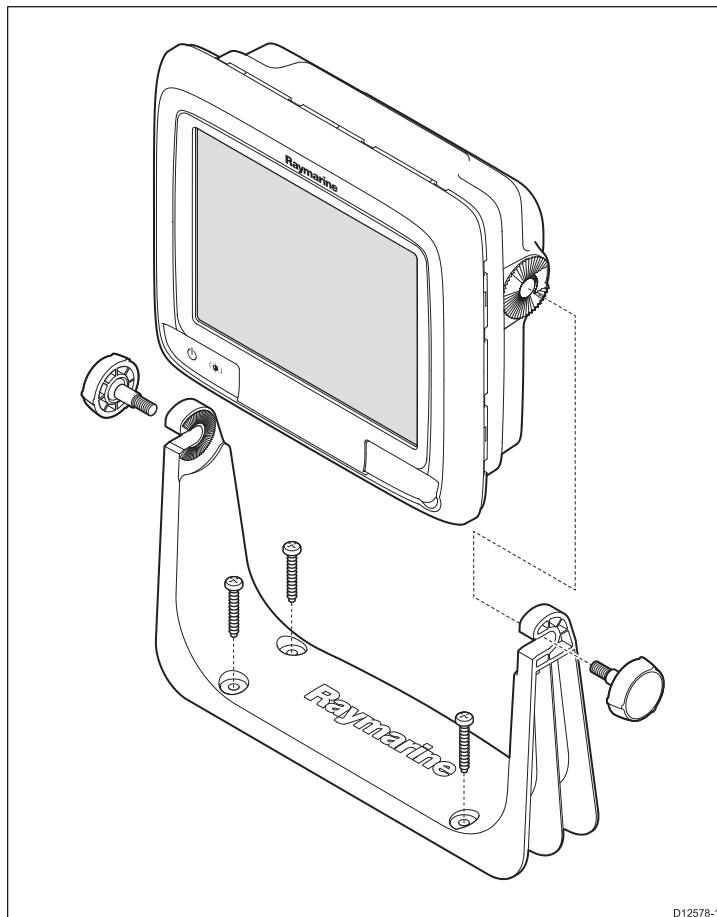
Bracket (trunnion) mounting

The display can be mounted on a trunnion bracket.

Before mounting the unit ensure that you have:

- Selected a suitable location.
- Identified the cable connections and route that the cables will take.

- Attached the front bezel.



D12578-1

1. Mark the location of the mounting bracket screw holes on the chosen mounting surface.
2. Drill holes for the screws using a suitable drill, ensuring there is nothing behind the surface that may be damaged.
3. Use the screws supplied with the mounting bracket to attach securely.
4. Attach the display unit to the mounting bracket.

Note: The appropriate torque to use when drilling depends on the thickness of the mounting surface and the type of material.

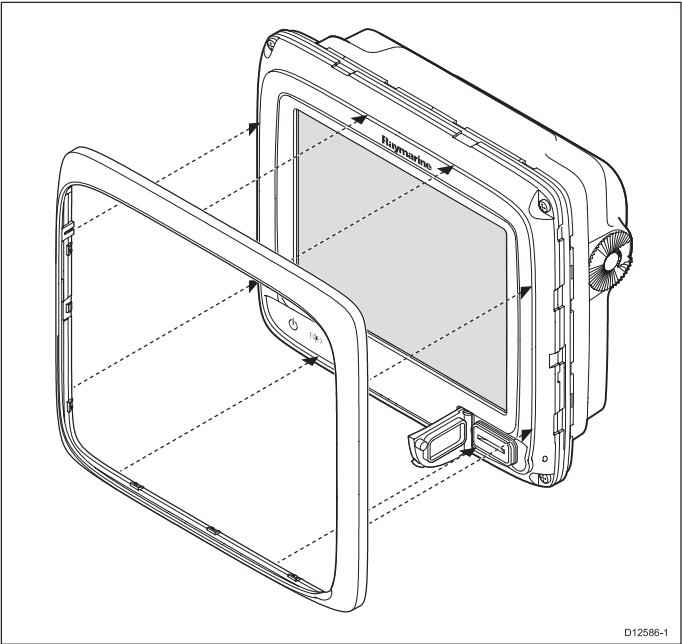
Front bezel

Attaching the front bezel

The following procedure assumes that the unit has already been mounted in position.

1. Carefully lift one edge of the screen protection film, so that it is accessible for removing when unit installation is complete.
2. Ensure the memory card slot door is in the open position.
3. Orientate the bottom-right side of the bezel under the lip of the chart card door and place the bezel over the front of the display,

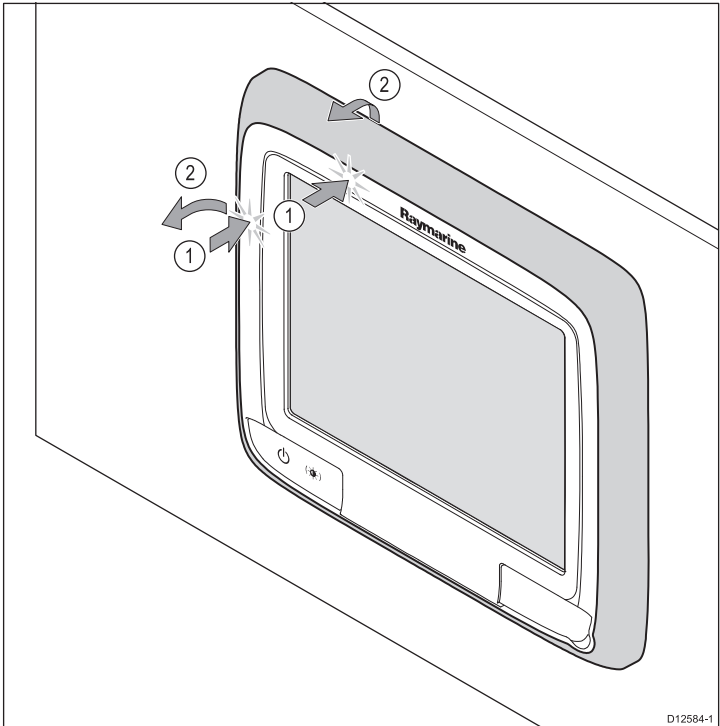
ensuring that the clips along the bottom edge of the bezel latch into position.



- 4. Ensure the bezel is correctly aligned with the display, as shown.
- 5. Apply firm but even pressure to the bezel along the:
 - i. Outer edges - work from the sides upwards and then along the top edge, to ensure that it clips securely into position.
 - ii. Inner edges - particularly along the chart card door edge, to ensure that the bezel sits flat.
- 6. Check that the **Power** button and chart card door are free to operate.

Removing the front bezel

Before proceeding ensure the memory card slot door is open.



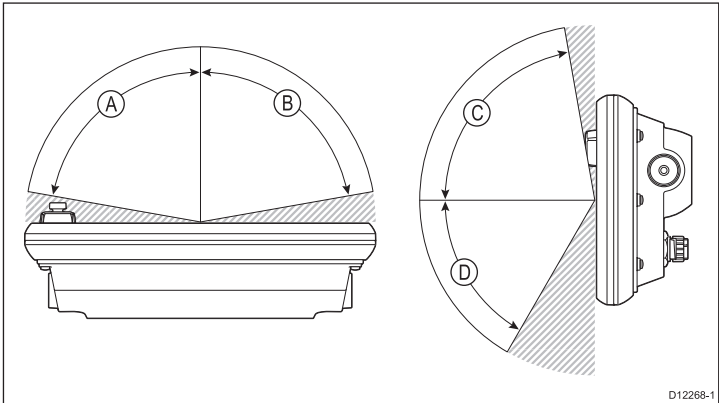
Important: Use care when removing the bezel. Do not use any tools to lever the bezel; doing so may cause damage.

- 1. Place both your thumbs on the upper left edge of the display, at the positions indicated in the diagram above.
- 2. Place your fingers underneath the bezel, at the positions indicated in the diagram above.
- 3. In a single firm motion, apply pressure to the outer edge of the display with your thumbs and pull the bezel towards you using your fingers.

The bezel should now come away from the display easily.

5.3 Mounting - New c Series and New e series

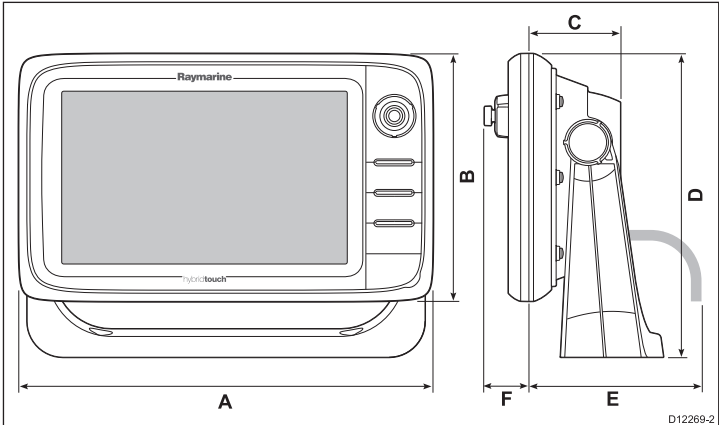
Viewing angle



	e7 / e7D	e95 / e97 / c95 / c97	e125 / e127 / c125 / c127	e165
A	70°	80°	80°	80°
B	70°	80°	80°	80°
C	70°	80°	80°	70°
D	50°	60°	60°	70°

Note: The angles stated are for a contrast ratio of equal to or greater than 10.

Product dimensions



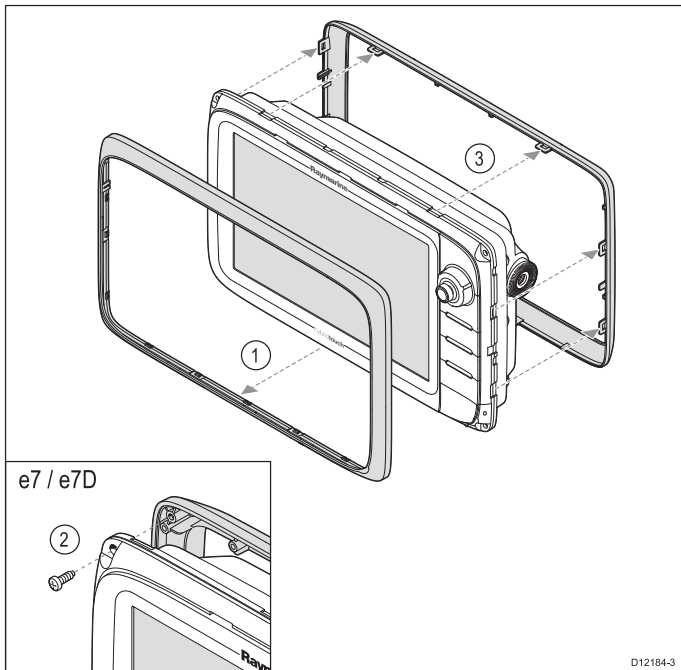
	e7 / e7D	e95 / e97 / c95 / c97	e125 / e127 / c125 / c127	e165
A	233 mm (9.17 in.)	290 mm (11.42 in.)	354 mm (13.94 in.)	426 mm (16.8 in.)
B	144 mm (5.67 in.)	173 mm (6.81 in.)	222 mm (8.74 in.)	281.4 mm (11.1 in.)
C	63.5 mm (2.5 in.)	64 mm (2.52 in.)	69 mm (2.72 in.)	68.4 mm (2.7 in.)
D	180 mm (7.09 in.)	212 mm (8.35 in.)	256.5 mm (10.1 in.)	295 mm (11.6 in.)
E	160 mm (6.29 in.)	160 mm (6.29 in.)	160 mm (6.29 in.)	176.6 mm (7 in.)
F	30 mm (1.18 in.)	31.4 mm (1.24 in.)	32 mm (1.26 in.)	33 mm (1.3 in.)

Removing the rear bezel

You must remove the rear bezel before flush-mounting the display.

Note: These steps do not apply to the e165 as it does not require a rear bezel.

1. Remove the front bezel. Refer to the separate instructions provided for that procedure.



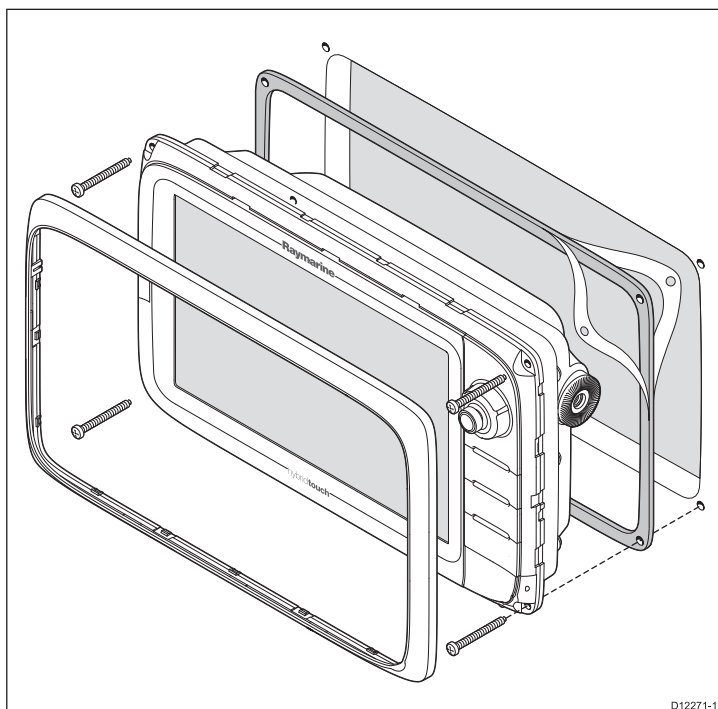
2. Remove the screws that secure the bezel to the display (only required for e7 and e7D).
3. Carefully remove the bezel from the rear of the display, pulling the bezel gently along the:
 - i. Outer edges - work from the sides upwards and then along the top edge, ensuring that the clips are fully released from the display.
 - ii. Inner edges - ensure that the bezel is completely removed from the display.

Note: Only the e7 and e7D have fixing screws for the rear bezel, other multifunction display variants have clips which hold the rear bezel in place.

Flush mounting

You can mount the display in a flush or panel mounting arrangement. Before mounting the unit, ensure that you have:

- Selected a suitable location.
- Identified the cable connections and route that the cables will take.
- Detached the front bezel.



1. Check the selected location for the unit. A clear, flat area with suitable clearance behind the panel is required.
2. Fix the appropriate cutting template supplied with the product, to the selected location, using masking or self-adhesive tape.
3. Using a suitable hole saw (the size is indicated on the template), make a hole in each corner of the cut-out area.
4. Using a suitable saw, cut along the inside edge of the cut-out line.
5. Ensure that the unit fits into the removed area and then file around the rough edge until smooth.
6. Drill 4 holes as indicated on the template to accept the securing screws.
7. Place the gasket onto the display unit and press firmly onto the flange.
8. Connect the power, data and other cables to the unit.
9. Slide the unit into place and secure using the provided screws.

Note: The appropriate torque to use when drilling depends on the thickness of the mounting surface and the type of material.

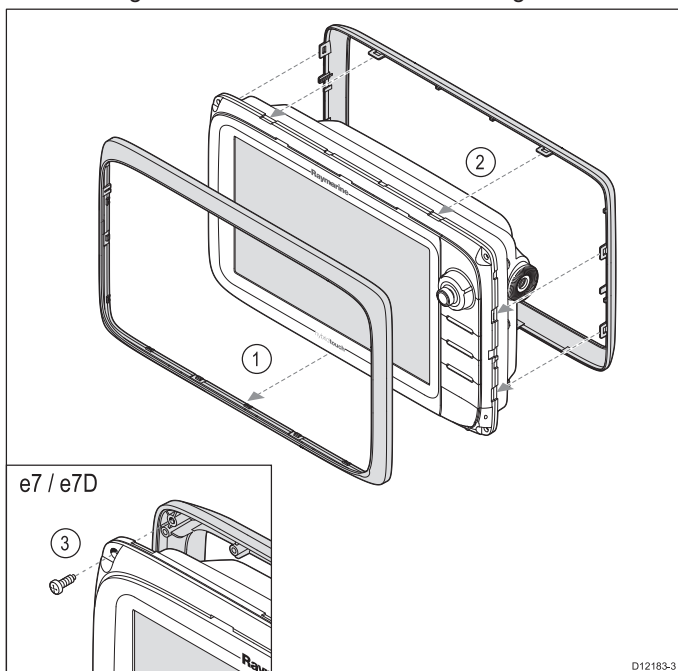
Note: The supplied gasket provides a seal between the unit and a suitably flat and stiff mounting surface or binnacle. The gasket should be used in all installations. It may also be necessary to use a marine-grade sealant if the mounting surface or binnacle is not entirely flat and stiff or has a rough surface finish.

Attaching the rear bezel

The rear bezel must be fitted if you wish to use a mounting bracket to mount the unit.

Note: These steps do not apply to the e165 as it does not require a rear bezel.

1. Remove the front bezel. Refer to the separate instructions provided for that procedure.
2. Place the bezel over the rear of the display, ensuring that it is correctly aligned with the display. Apply firm but even pressure to the bezel along the:
 - i. Outer edges - work from the sides upwards and then along the top edge, to ensure that it clips securely into position.
 - ii. Inner edges - ensure that the bezel sits flat against the unit.



3. Use the supplied screws to secure the bezel to the display (e7 and e7D only).

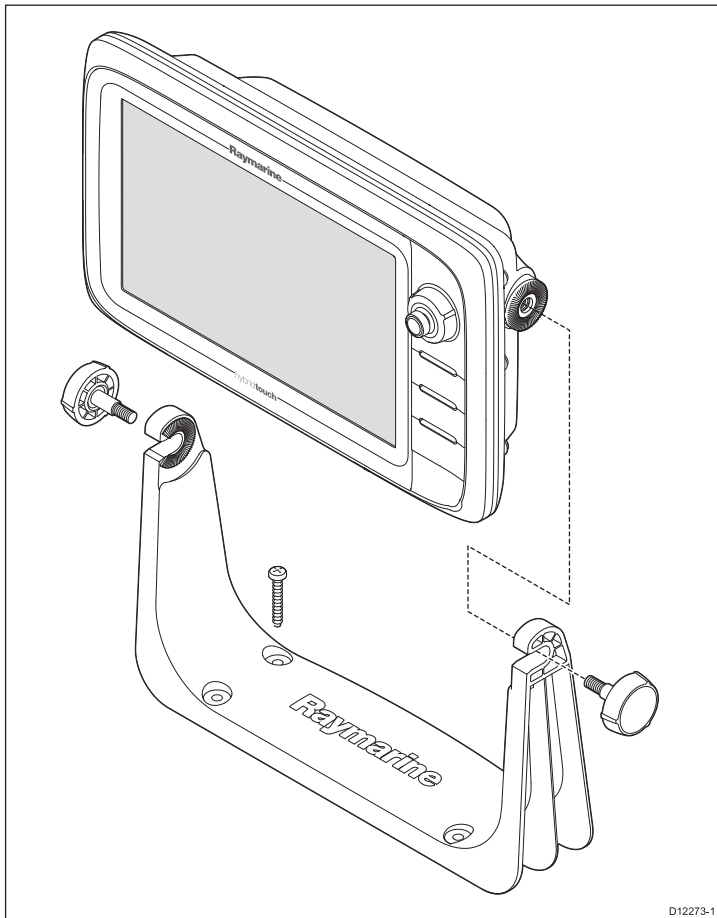
Bracket (trunnion) mounting

The display can be mounted on a trunnion bracket.

Note: The mounting bracket is supplied with the e7 and e7D display variants, for all other display variants the mounting bracket is an optional accessory. See the *Spares and Accessories* section of this manual for details.

Before mounting the unit ensure that you have:

- Selected a suitable location.
- Identified the cable connections and route that the cables will take.
- Attach the front bezel.



1. Mark the location of the mounting bracket screw holes on the chosen mounting surface.
2. Drill holes for the screws using a suitable drill, ensuring there is nothing behind the surface that may be damaged.
3. Use the screws supplied with the mounting bracket to attach securely.
4. Attach the display unit to the mounting bracket.

Note: The appropriate torque to use when drilling depends on the thickness of the mounting surface and the type of material.

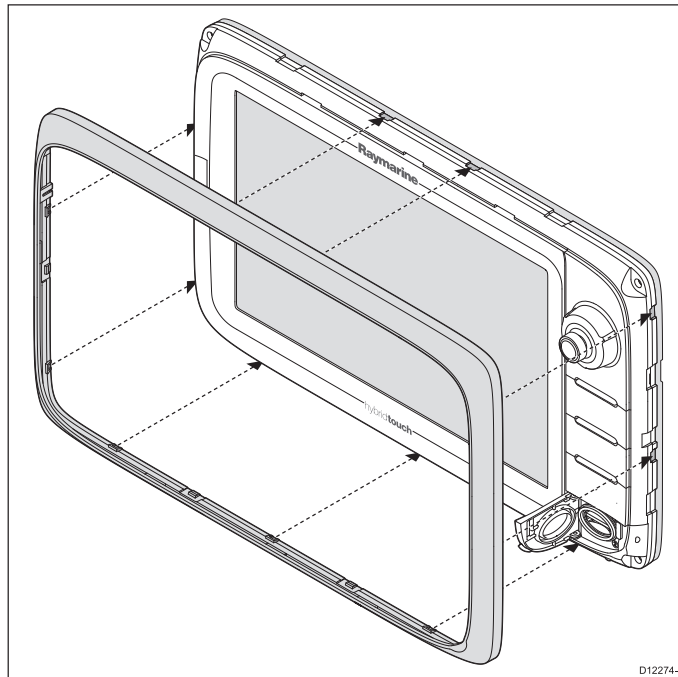
Front bezel

Attaching the front bezel

The following procedure assumes that the unit has already been mounted in position.

1. Carefully lift one edge of the screen protection film, so that it is accessible for removing when unit installation is complete.
2. Ensure the memory card slot door is in the open position.
3. Orientate the bottom-right side of the bezel under the lip of the chart card door and place the bezel over the front of the display,

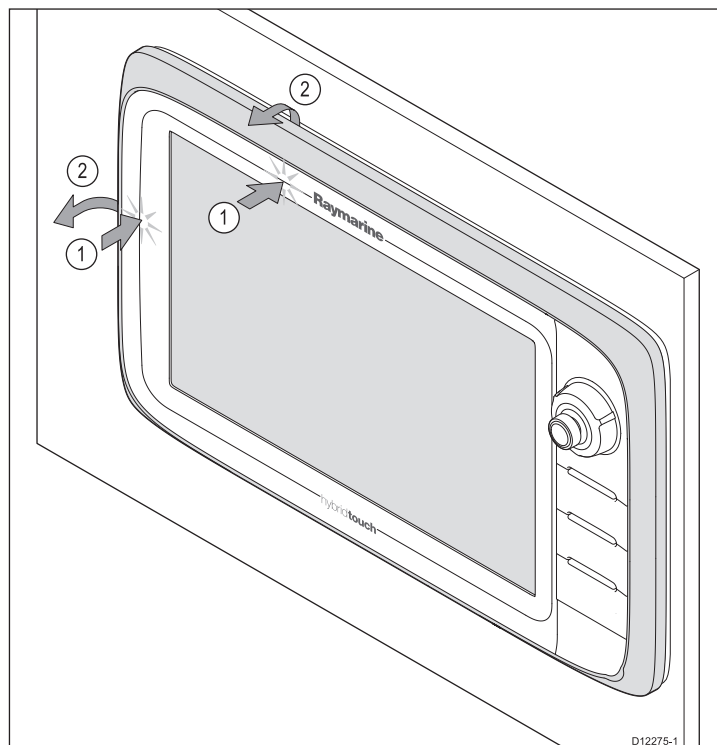
ensuring that the clips along the bottom edge of the bezel latch into position.



4. Ensure the bezel is correctly aligned with the display, as shown.
5. Apply firm but even pressure to the bezel along the:
 - i. Outer edges - work from the sides upwards and then along the top edge, to ensure that it clips securely into position.
 - ii. Inner edges - particularly along the chart card door edge, to ensure that the bezel sits flat.
6. Check that all control buttons are free to operate.

Removing the front bezel

Before proceeding ensure the memory card slot door is open.



Important: Use care when removing the bezel. Do not use any tools to lever the bezel; doing so may cause damage.

1. Place both your thumbs on the upper left edge of the display, at the positions indicated in the diagram above.
2. Place your fingers underneath the bezel, at the positions indicated in the diagram above.
3. In a single firm motion, apply pressure to the outer edge of the display with your thumbs and pull the bezel towards you using your fingers.

The bezel should now come away from the display easily.

Chapter 6: Getting started

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6.1 Display power



Powering the display on

1. Press and hold the **POWER** button until the Raymarine logo appears.
2. Select **Accept** to acknowledge the disclaimer message.



Powering the display on

1. Press and hold the **POWER** button until the Raymarine logo appears.
2. Press the **OK** button to accept the disclaimer message.

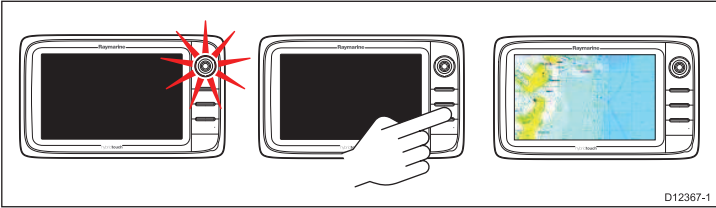
Powering the display off

1. Press and hold the **POWER** button until the countdown reaches zero.

Note: If the **POWER** button is released before the countdown reaches zero, the power off is cancelled.

Standby (PowerSave) mode

In PowerSave mode all functions of the multifunction display remain active, but the unit is placed into a low power state. The LED lights around the Rotary controller will blink once every 1.5 seconds to indicate that the unit is in PowerSave mode. PowerSave mode is cancelled by pressing a physical button or when an alarm event occurs.



Note: To ensure user safety the PowerSave feature will not be available if any connected radars are switched on.

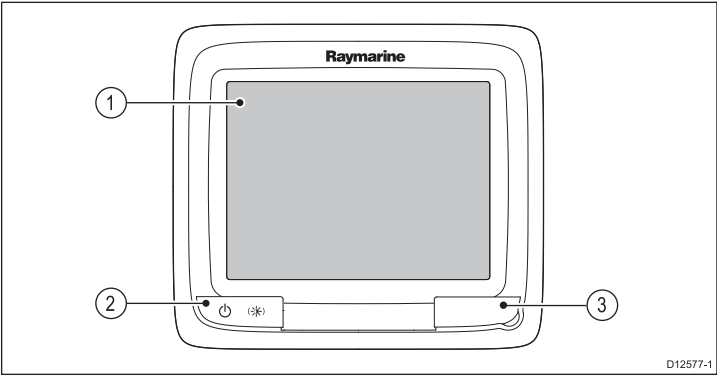
Enabling PowerSave mode

To enable PowerSave mode follow the steps below.

1. Ensure any radars connected to the system are switched off.
2. Press the **POWER** button.
The shortcuts menu is displayed.
3. Select **PowerSave Mode**.
The multifunction displays is now in PowerSave mode.
4. You can wake the unit from PowerSave mode at anytime by pressing a physical button on the multifunction display.

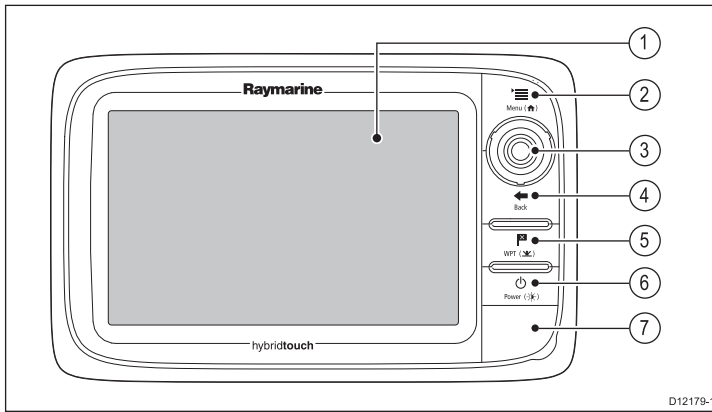
Note: PowerSave mode is automatically cancelled if an alarm event occurs.

6.2 New a Series Controls



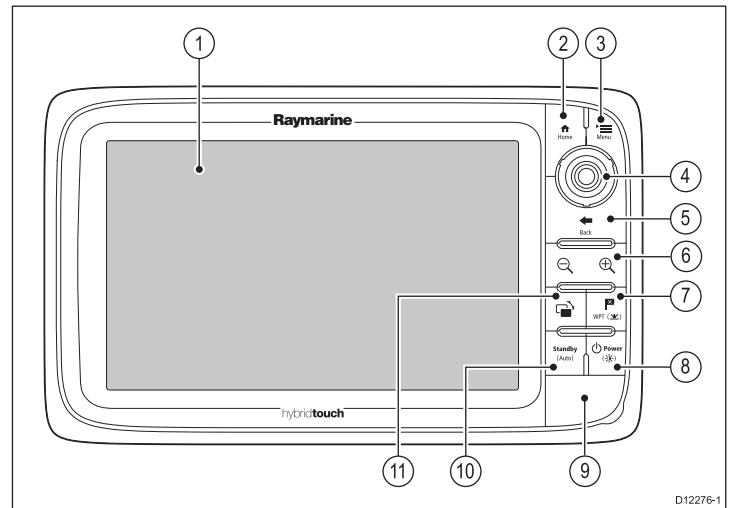
1. **Touchscreen** — touch the screen to operate functions, including all menu operations.
2. **Power** — press once to switch the unit ON. Once powered on, press the Power button again to adjust the brightness, perform a screen capture, access Powersave mode or access the power controls for external devices. Press and hold to switch the unit OFF.
3. **Chart card slot** — open the card door to insert or remove an MicroSD card. There is 1 card slot, used for electronic charts and archiving waypoint, route and track data.

6.3 e7 / e7D Controls



1. **Touchscreen** — you can touch the screen to operate many common functions, including all menu operations (HybridTouch multifunction displays only).
2. **Menu** — accesses menus. Press again to close menus.
3. **UniControl** — provides a joystick and rotary control and an OK button for using menus and applications.
4. **Back** — press to return to a previous menu or dialog level.
5. **WPT / MOB** — press and release to access the waypoint options. Press again to place a waypoint. Press and hold to place a Man Overboard (MOB) marker at your current position.
6. **Power** — press once to switch the unit ON. Once powered on, press the Power button again to adjust the brightness, access the power controls for external devices, and access the autopilot controls. Press and hold to switch the unit OFF.
7. **Chart card slots** — open the card door to insert or remove MicroSD cards. There are 2 card slots (labelled 1 and 2), used for electronic charts and archiving waypoint, route and track data.

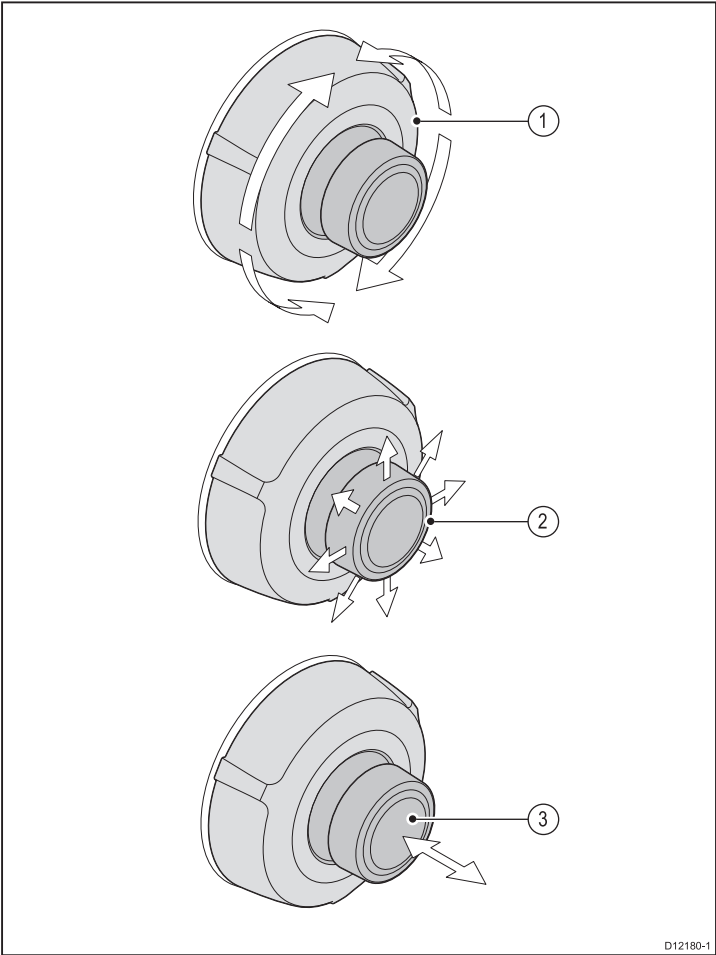
6.4 c95 / c97 / c125 / c127 / e95 / e97 / e125 / e127 / e165 Controls



1. **Touchscreen** — you can touch the screen to operate many common functions, including all menu operations (HybridTouch multifunction displays only).
2. **Home** — Press to return to the homescreen.
3. **Menu** — accesses menus. Press again to close menus.
4. **UniControl** — provides a joystick and rotary control and an OK button for using menus and applications.
5. **Back** — press to return to a previous menu or dialog level.
6. **Range In/Out** — Press minus (-) to range out and plus (+) to range in
7. **WPT / MOB** — press and release to access the waypoint options. Press again to place a waypoint. Press and hold to place a Man Overboard (MOB) marker at your current position.
8. **Power** — press once to switch the unit ON. Once powered on, press the Power button again to adjust the brightness, access the power controls for external devices, and access the autopilot controls. Press and hold to switch the unit OFF.
9. **Chart card slots** — open the card door to insert or remove MicroSD cards. There are 2 card slots (labelled 1 and 2), used for electronic charts and archiving waypoint, route and track data.
10. **Standby (Auto)** — Press to disengage integrated autopilot, press and hold to activate Auto mode on integrated autopilot.
11. **Switch Active Pane** — Press to switch the active pane.

UniControl

New c Series and New e Series display include a UniControl which consists of Rotary, Joystick and push button controls.



1. **Rotary** — use this to select menu items, move the on-screen cursor, and adjust the range in the chart and radar applications.
2. **Joystick** — use this to move the cursor position in applications, pan up, down, left and right in the chart, weather and fishfinder applications or to cycle through datapages in the data application.
3. **OK button** — push the end of the joystick to confirm a selection or entry.

Touch icons

Touchscreen multifunction displays can use the **BACK** and **CLOSE** icons to move between the different levels of menus available in each application.

	Back — go back one level (same effect as pressing the BACK button).
	Close — close all open menus (same effect as pressing the MENU button).

Using the cursor

The cursor is used to move around the screen.

	The cursor appears on the screen as a white cross.
	If the cursor has not been moved for a short period of time, it changes to a circle with a cross in it, to make it easier to locate on the screen.
	The cursor is context-sensitive. When it is placed over an object such as a waypoint or chart feature, it changes color and a label or information associated with the object is displayed.

List of cursor labels

Label	Feature	Application
A/B	Ruler line	Chart
AIS	AIS target	Chart
COG	Course Over Ground vector	Chart
CTR	Center of radar	Radar
FLT	Floating EBL/VRM	Radar
GRD	Guard zone	Radar
HDG	Heading vector	Chart
MARPA	MARPA target	Radar
MOB	Man Over Board marker	Chart, Radar
POS	Vessel's position	Chart
RTE	Route leg	Chart
SHM	Ship's Heading Marker	Radar
TIDE	Tide indicator	Chart
TRACK	Track line	Chart
VRM/EBL	VRM and EBL, 1 or 2	Radar
WIND	Wind indicator	Chart
WPT	Waypoint	Chart, Radar

6.5 Hybridtouch overview

If your multifunction display features Hybridtouch, this enables you to operate the unit using the touchscreen and the physical keys.

All functions can be accessed using the touchscreen. However, there may be situations (such as rough sea conditions) when it is not appropriate to use the touchscreen. In these situations, Raymarine strongly recommends that you activate the touch lock and use the physical keys to operate your multifunction display.

6.6 Touchscreen overview

The touchscreen provides an alternative to using physical buttons to control your multifunction display.

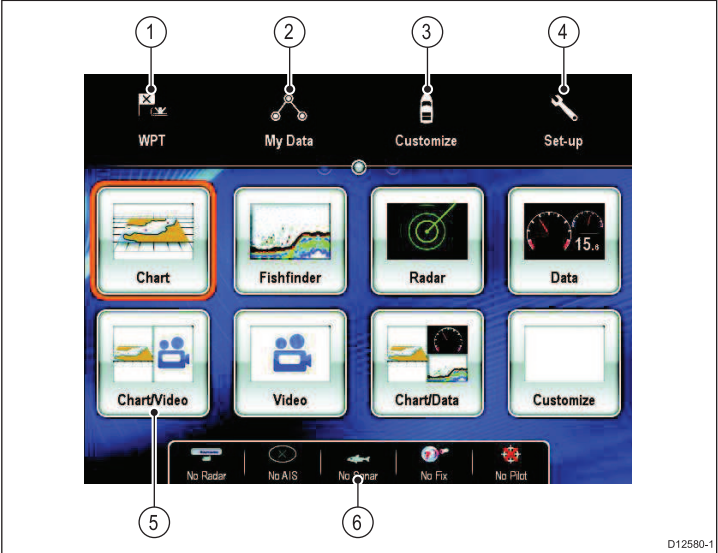
All functions can be accessed using the touchscreen

Note: Raymarine strongly recommends that you familiarize yourself with touch operations while your vessel is anchored or moored. You may find it helpful to use the simulator mode (accessible from **Homescreen > Set-up > System Settings**) in these situations.

6.7 Homescreen overview — New a Series

The homescreen provides a central point of access to your display's range of applications.

- The homescreen also provides quick access to your data (waypoints, routes, and tracks).
- The homescreen consists of a number of application "pages", each represented by an icon. Applications can be started by selecting the relevant page icon.
- Swipe the screen with your finger to scroll the homescreen and access additional application pages.

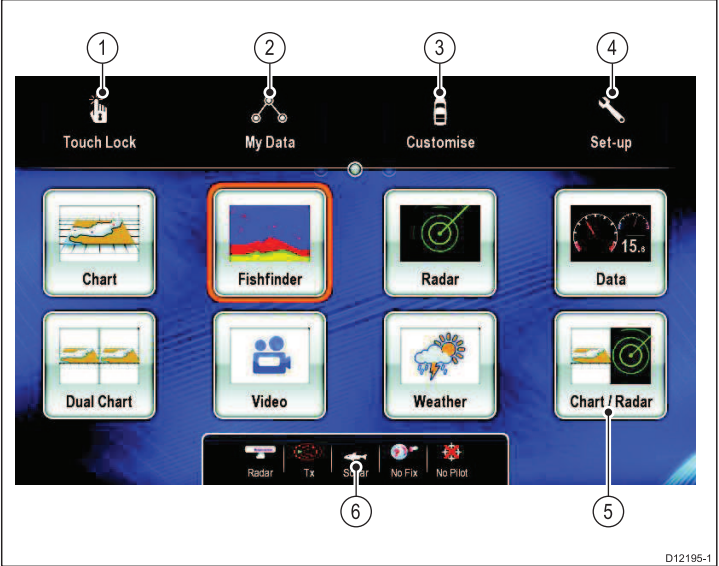


Screen item	Description
1	Waypoint — select icon to access the waypoint list. Select and hold on icon to place a Man Overboard (MOB) marker at your vessel's current position.
2	My Data — this icon enables you to centrally manage your lists of routes, tracks, and waypoints.
3	Customize — select this icon to configure application pages and select the display's language, units, date/time, boat details and display preferences.
4	Set-up — select this icon to access the system set-up menus.
5	Page — each icon represents an application page. A page can display up to 2 applications simultaneously.
6	Status bar — the status icons confirm the status of externally-connected equipment, including GPS, AIS, radar, and autopilot units.

6.8 Homescreen overview — New c Series / New e Series

The homescreen provides a central point of access to your display's range of applications.

- The homescreen also provides quick access to your data (waypoints, routes, and tracks).
- The homescreen consists of a number of application "pages", each represented by an icon. Applications can be started by selecting the relevant page icon.
- Use the joystick or swipe the screen with your finger (New e Series only) to scroll the homescreen and access additional application pages.



Screen item	Description
1	Touch Lock — (HybridTouch displays only) select this icon to lock the touchscreen, preventing accidental use. To unlock, use the UniControl to deselect the Touch Lock icon.
2	My Data — this icon enables you to centrally manage your lists of routes, tracks, and waypoints.
3	Customize — select this icon to configure application pages and select the display's language, units, date/time, boat details and display preferences.
4	Set-up — select this icon to access the system set-up menus.
5	Page — each icon represents an application page. A page can display up to 2 applications simultaneously.
6	Status bar — the status icons confirm the status of externally-connected equipment, including GPS, AIS, radar, and autopilot units.



Accessing the homescreen

The homescreen can be accessed from any application.

To access the homescreen follow the steps below:

1. Select the homescreen icon on-screen.



Accessing the homescreen

The homescreen can be accessed from any application.

To access the homescreen follow the steps below:

1. Press the **Home** button.

Note: The e7 and e7D have a combined Menu and Home button, to access the homescreen press and hold the **Menu / Home** button for 3 seconds.

6.9 System checks

GPS Check

GPS selection

You can use an internal (if available) or external GPS receiver.

- Your multifunction display may feature an internal GPS receiver.
- You can also connect an external GPS receiver using SeaTalk^{ng} or NMEA 0183.
- Where appropriate use the System Settings menu to enable or disable the internal GPS receiver.

Enabling or disabling the internal GPS

If your multifunction display features an internal GPS then this can be enabled and disabled by following the steps below.

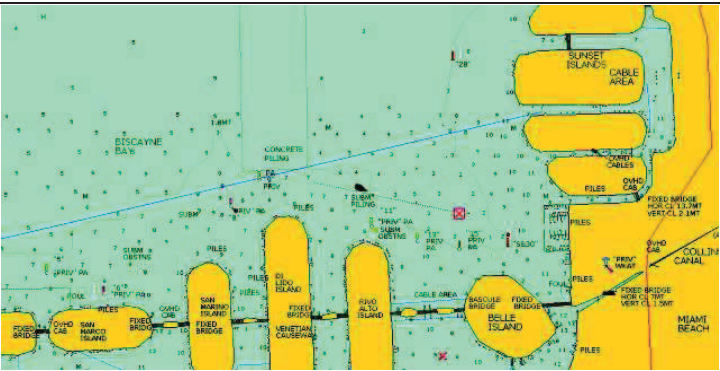
With the homescreen displayed:

1. Select **Set-Up**.
2. Select **System Settings**.
3. To enable the internal GPS, select **Internal GPS** so that On is highlighted.
4. To disable the internal GPS, select **Internal GPS** so that Off is highlighted.

Checking GPS operation

You can check that the GPS is functioning correctly using the chart application.

1. Select the Chart page.



2. Check the screen.

With the chart displayed, you should see:

Your boat position (indicates a GPS fix). Your current position is represented by a boat symbol or solid circle. Your position is also displayed in the data bar under VES POS.

A solid circle on the chart indicates that neither heading nor Course Over Ground (COG) data is available.

Note: Raymarine recommends that you check the displayed vessel position in the chart application against your actual proximity to a known charted object. GPS receivers typically have an accuracy of between 5 and 15 m.

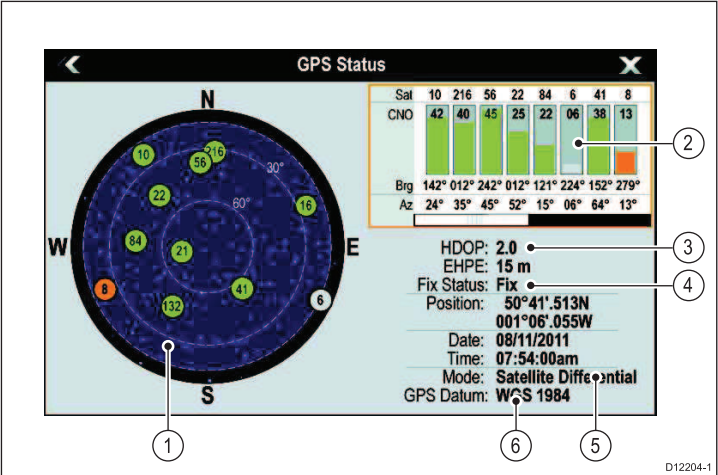
Note: A GPS Status screen is available within the Setup menu of Raymarine multifunction displays. This provides satellite signal strength and other relevant information.

GPS setup

The GPS setup options enable you to configure a connected GPS receiver.

The Global Positioning System (GPS) is used to position your vessel on the chart. You can set up your GPS receiver and check its status from the GPS Status option in the **System Settings** menu. For each tracked satellite, the screen provides the following information:

- Satellite number.
- Signal strength bar.
- Status.
- Azimuth angle.
- Elevation angle.
- A sky-view to show the position of tracked satellites.



Item	Description
1	Sky view — a visual representation of the position of tracked satellites.
2	Satellite status — displays the signal strength and status of each satellite identified in the sky view diagram on the left of the screen. The colored bars have the following meanings: • Grey = searching for satellite. • Green = satellite in use. • Orange = tracking satellite.
3	Horizontal Dilution of Position (HDOP) — a measure of GPS accuracy, calculated from a number of factors including satellite geometry, system errors in the data transmission and system errors in the GPS receiver. A higher figure signifies a greater positional error. A typical GPS receiver has an accuracy of between 5 and 15 m. As an example, assuming a GPS receiver error of 5 m, an HDOP of 2 would represent an error of approximately 15 m. Please remember that even a very low HDOP figure is NO guarantee that your GPS receiver is providing an accurate position. If in doubt, check the displayed vessel position in the chart application against your actual proximity to a known charted object.
4	Fix status — indicates the actual mode the GPS receiver is reporting (No Fix, Fix, D Fix or SD Fix).
5	Mode — the mode currently selected by the GPS receiver.
6	Datum — The GPS receiver's datum setting affects the accuracy of the vessel position information displayed in the chart application. In order for your GPS receiver and multifunction display to correlate accurately with your paper charts, they must be using the same datum.

The accuracy of the GPS receiver depends on the parameters detailed above, especially the azimuth and elevation angles which are used in triangulation to calculate your position.

Radar check



Warning: Radar scanner safety

Before rotating the radar scanner, ensure all personnel are clear.



Warning: Radar transmission safety

The radar scanner transmits electromagnetic energy. Ensure all personnel are clear of the scanner when the radar is transmitting.

Checking the radar

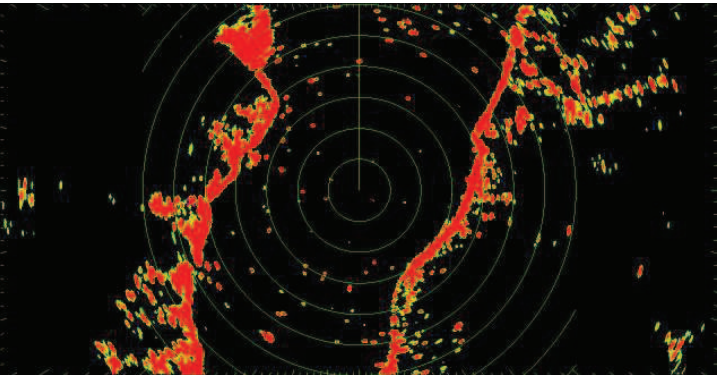
From the Radar application:

1. Select **Menu**.
2. Select **Power** so that On is highlighted.

The Radar scanner will now initialize in standby mode. This process will take approximately 70 seconds.

3. Select **Radar** so that Transmit is highlighted.
The radar scanner should now be transmitting and receiving.
4. Check that the radar screen is operating correctly.

Typical HD radar screen



Note: The example above is representative of the enhanced output provided by a HD radar scanner.

Points to check:

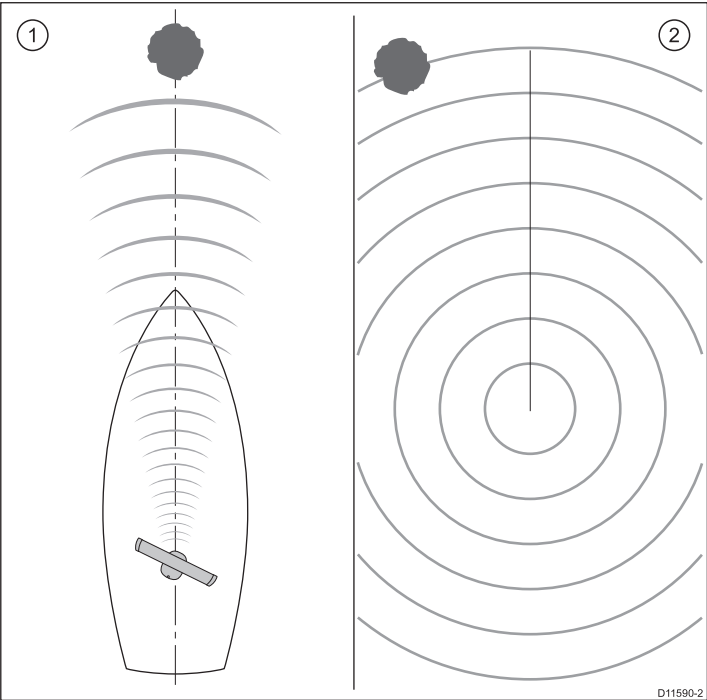
- Radar sweep with echo responses are shown on screen.
- Radar status icon rotating in top right hand corner of the status bar.

Check and adjust bearing alignment

Bearing alignment

The radar bearing alignment ensures that radar objects appear at the correct bearing relative to your boat's bow. You should check the bearing alignment for any new installation.

Example misaligned radar



Item	Description
1	Target object (such as a buoy) dead ahead.
2	Target displayed on the radar display is not aligned with the Ship's Heading Marker (SHM). Bearing alignment is required.

Checking the bearing alignment

1. With your vessel under way: Align the bow with a stationary object identified on the radar display An object between 1 & 2 NM distant is ideal.
2. Note the position of the object on the radar display. If the target is not under the ships heading marker (SHM), there is an alignment error and you will need to carry out bearing alignment adjustment.

Adjusting the bearing alignment

Once you have checked the bearing alignment you can proceed and make any required adjustments.

With the radar application displayed:

1. Select **Menu**.
2. Select **Scanner Set-up**.
3. Select **Advanced**.
4. Select **Bearing Alignment**.
Selecting Bearing Alignment displays the numeric adjust control.
5. Adjust the setting so that the selected target is under the Ship's Heading Marker.
6. Select **Back** or **Ok** when complete.

Sonar check



Warning: Sonar operation

- NEVER operate the sonar with the vessel out of the water.
- NEVER touch the transducer face when the sonar is powered on.
- SWITCH OFF the sonar if divers are likely to be within 7.6 m (25 ft) of the transducer.

Sonar transducer and sonar module selection

You must designate the sonar transducer and Sonar module that you want to use.

Sonar module selection

- Sonar variant displays are fitted with an internal sonar.
- All variants allow you to connect a compatible sonar module.
- If an external sonar module is connected to a sonar variant display and a power supply the internal sonar should be switched off.
- To use a displays internal sonar on a system containing an external sonar module, disconnect the network cable from the external sonar module and use the **Sounder Set-Up** menu in the fishfinder application to enable the internal sonar.

Transducer selection

- Sonar variant displays allow the direct connection of EITHER a Raymarine OR a Minn Kota sonar transducer.
- All variants allow the connection of a Raymarine sonar transducer via a compatible external sonar module.
- For all variants use the **Transducer Set-Up** menu in the fishfinder application to specify the sonar transducer you want to use.

Selecting the sonar module

Sonar variant multifunction displays can use either their internal sonar module or an external Raymarine sonar module.

Applicable only to sonar variant multifunction displays.

With the fishfinder application displayed:

1. Select **Menu**.
2. Select **Set-Up**.
3. Select **Sounder Set-Up**.
4. To use the internal sonar module select **Internal Sounder** so that On is highlighted.
5. To use a connected external Raymarine sonar module select **Internal Sounder** so that Off is highlighted.

Note: The Internal Sounder cannot be switched on if an external sonar module is connected to the system and switched on. Disconnect the network cable from the external sonar module to enable the display's internal sonar option.

Selecting the sonar transducer

With the fishfinder application displayed:

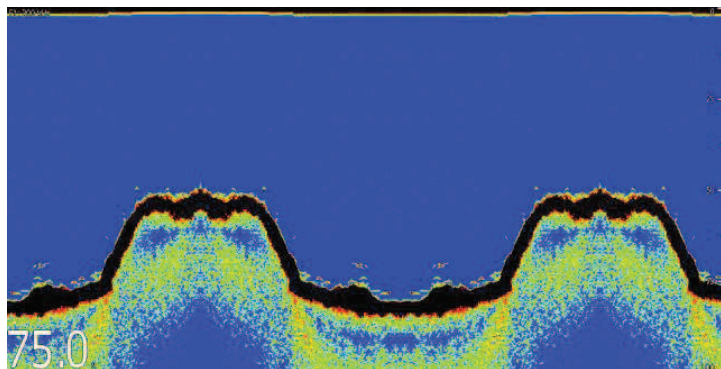
1. Select **Menu**.
2. Select **Set-Up**.

3. Select **Transducer Set-Up**.
4. Select **Transducer**.
A list of transducers is displayed.
5. Select the transducer you want to use.

Checking the sonar

Sonar checks are made using the fishfinder application.

1. Select the fishfinder page.



2. Check the fishfinder display.

With the fishfinder active you should see:

- Depth reading (indicates the transducer is working). The depth is shown in large white numbers at the bottom left of the screen.

Thermal camera setup and checks

To ensure correct operation of the thermal camera you should setup and check the camera's main functions.

Before proceeding ensure that the camera is connected correctly, according to the instructions provided. If your system includes the optional Joystick Control Unit (JCU) and PoE (Power over Ethernet) injector, ensure these units are also connected correctly.

Set up the camera

You will need to:

- Adjust the image (aspect ratio, contrast, brightness, and so on).

Check the camera

You will need to:

- Check the camera movement (pan, tilt, zoom).
- Check the camera "home" position is appropriate.

Adjusting the thermal camera image

With the thermal camera application displayed:

1. Select **Menu**.
2. Select **Adjust Contrast**.
3. Select the Contrast, Brightness, or Color option as appropriate.
The relevant numeric adjust control is displayed.
4. Adjust the value as required.
5. Select **Back** or **Ok** to confirm the new value.



Panning and tilting, and the thermal image

On a New e Series multifunction display you can pan and tilt the thermal camera image using the touchscreen.

	Move your finger up and down the screen to tilt the camera up or down.
	Move your finger left and right on the screen to rotate the camera left or right (panning).



Panning, Tilting and zooming the thermal image

On New c Series and New e Series multifunction displays you can pan, tilt and zoom the thermal camera image using the physical buttons.

In some circumstances it may be better to use just the UniControl's rotary and joystick controls to manipulate the thermal camera view. For example, this method is ideal for finer control over the camera and is particularly useful in rough sea conditions.

	UniControl joystick — is used for rotating the camera left or right (panning), or tilting the camera up or down.
	UniControl rotary — is used to zoom in and out.

Note: Only the Uni-control can be used on a New c Series display to pan, tilt and zoom the thermal image.

Resetting the thermal camera to the home position

In the thermal camera application:

1. Select **Menu**.
2. Select **Camera Home**.

The camera returns to its currently defined home position, and the "Home" icon appears on-screen momentarily.

6.10 Enabling autopilot functions

With the homescreen displayed:

1. Select **Set-up**.
2. Select **System Settings**.
3. Select **Autopilot Control** so that On is highlighted.
Selecting Autopilot Control switches the control On and Off.
4. Select **Back** to return to the **System Settings** menu.
5. Select **Pilot Controls**.
If this menu option is disabled, no autopilot has been found.
Check the physical connections, then repeat steps 1 to 5 above.
6. The Pilot Control dialog is displayed, indicating that pilot control is enabled and an autopilot is detected.

6.11 Enabling AIS functions

Before proceeding ensure your AIS unit is connected to NMEA Port 1.

With the homescreen displayed:

1. Select **Set-Up**.
2. Select **System Settings**.
3. Select **NMEA Set-Up**.
4. Select **NMEA Input Port 1**.
5. Select the AIS 38400 option.
6. Select **Back** to return to the **System Settings** menu.
7. Select **External Devices**.
8. Select **AIS Unit Set-up**.
The AIS Unit Set-up menu is displayed.
9. Adjust the AIS options as appropriate.

6.12 Language selection

The system can operate in the following languages:

English (US)	English (UK)	Arabic
Chinese	Croatian	Danish
Dutch	Finnish	French
German	Greek	Italian
Japanese	Korean	Norwegian
Polish	Portuguese (Brazilian)	Russian
Spanish	Swedish	Turkish

With the homescreen displayed:

1. Select **Customize**.
2. Select **Language**.
3. Select from the languages available.

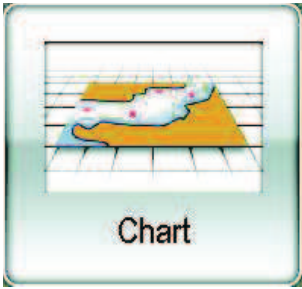
6.13 Pages

Pages are used to display applications.

Pages are displayed and accessed on the homescreen. Each page can display more than 1 application.

- You can set up and display up to 4 applications per page using a New c Series or New e Series (except for the e7 and e7D) multifunction display.
- The New a Series and the e7 / e7D multifunction displays can only set up and show up to 2 applications per page.
- ~The New a series and the e7 / e7D can however show up to 4 application per page if they are sharing the homescreen of a capable multifunction display which already has pages with up to 4 applications set up.

Any page on the homescreen can be customized, enabling you to group your applications into different pages, each designed for a specific purpose. For example, you could have a page that includes the chart and fishfinder applications, suitable for fishing, and another page that includes the chart and data applications, which would be suitable for general sailing.

	You can add any application(s) to any empty page.
	Page featuring a single application.
	Page featuring multiple applications.

You can also define a "layout" for each page, which determines how the applications are arranged on the screen.

Changing an existing page on the homescreen

With the homescreen displayed:

1. Select **Customize**.
2. Select **Homescreen**.
3. Select **Edit Page**.
4. Select the page icon that you want to change.
The Customize menu options are displayed.
5. Select the appropriate page layout (for example, "Splitscreen").
6. Select the application(s) you want to display on the page, either by selecting the relevant menu item or dragging it over to the displayed page.
7. Select **Finish**.
The Rename Page dialog is displayed.
8. Use the on-screen keyboard to name the page, then select **Save**.

Changing an empty page

With the homescreen displayed:

1. Select **Customize**.
2. Select **Homescreen**.
3. Select **Edit Page**.
4. Select an empty page icon (labelled "Customize").
The Customize menu options are displayed.
5. Select the appropriate page layout (for example, "Splitscreen").
6. Select the application(s) you want to display on the page, either by selecting the relevant menu item or dragging it over to the displayed page.
7. Select **Finish**.
The Rename Page dialog is displayed.
8. Use the on-screen keyboard to name the page, then select **Save**.

Moving a page on the homescreen

With the homescreen displayed:

1. Select the **Customize** icon.
2. Select **Homescreen**.
3. Select **Swap Page**.
4. Select the page icon that you want to move.
5. Select the page icon that you want to swap positions with.
The page icon is moved to the new position.

Renaming a page on the homescreen

With the homescreen displayed:

1. Select the **Customize** icon.
2. Select **Homescreen**.
3. Select **Rename Page**.
4. Select the page that you want to rename.
The on-screen keyboard is displayed.
5. Using the on-screen keyboard, enter the new name for the page.
6. Select **SAVE**.

Deleting a page from the homescreen

With the homescreen displayed:

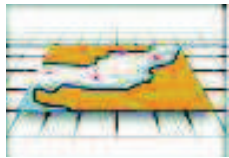
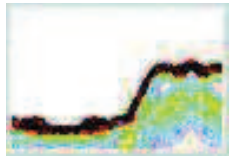
1. Select the **Customize** icon.
2. Select **Homescreen**.
3. Select **Delete Page**.
4. Select the page that you want to delete.
The page is deleted.

Resetting the homescreen to default settings

With the homescreen displayed:

1. Select the **Customize** icon.
2. Select **Homescreen**.
3. Select **Reset**.
A warning message is displayed asking for confirmation.
4. Select **Yes** to reset the homescreen to the default range of pages, or **No** to cancel the operation.

6.14 Applications

	Chart application — provides a 2D or 3D graphical view of your charts to help you navigate. Waypoint, route, and track functions enable you to navigate to a specific location, build and navigate routes, or record where you've been. Chart cards provide higher levels of detail and 3D views.
	Fishfinder application — with a transducer and a sonar variant multifunction display or compatible Sonar Module, you can use the fishfinder application to help you accurately distinguish between different sizes of fish, bottom structure, and underwater obstacles. You can also view sea depth and temperature data and mark points of interest such as fishing spots or wrecks.
	Radar application — with a suitable radar scanner, you can use the radar application to track targets and measure distances and bearings. A number of automatic gain presets and color modes are provided to help you get the best performance from your radar scanner.
	Data application — view system and instrument data on your multifunction display, for a range of compatible instruments. Use the joystick or touchscreen to scroll through the available data pages.
	Weather application — (North America only). With a suitable weather receiver connected to your system, the weather application overlays historical, live, and forecasted weather graphics on a world map.
	Thermal camera application — view and control a compatible thermal camera using your multifunction display. Note: The thermal camera application is not available on the New a Series multifunction displays.
	Video application — view a video or camera source on your multifunction display.
	Document Viewer — view pdf documents stored on an SD card.

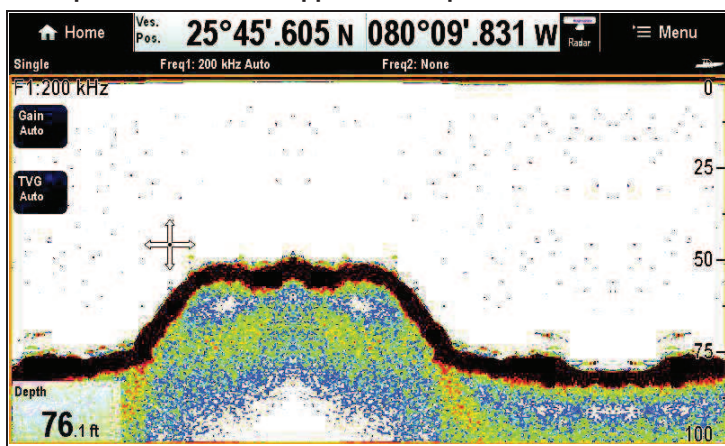
6.15 Splitscreen controls

When viewing a page with more than 1 application displayed you can switch applications from the splitscreen view to fullscreen view.

Example 1 — Splitscreen page



Example 2 — Fishfinder application expanded to Fullscreen



Selecting the active window — e7 / e7D

When viewing a splitscreen page you can select the active application and view it fullscreen on an e7 / e7D with the touch lock enabled by following the steps below.

With a page featuring multiple applications displayed:

1. Press the **Menu** button.
2. Select **Cycle application**.
Selecting cycle application cycles through the available applications.
3. Select **Fullscreen** to view the active application in fullscreen, or
4. Select **Splitscreen** to return to the splitscreen view.



Selecting the active window — New a Series and e7 / e7D

When viewing a splitscreen page you can select the active application and view it fullscreen on a New a Series or e7 / e7D by following the steps below.

With a page featuring multiple applications displayed:

1. Touch anywhere inside the application you want to make active.
A border appears around the application, indicating that it is active.
2. Select **Menu**.
3. Select **Fullscreen** to view the active application in fullscreen, or
4. Select **Splitscreen** to return to the splitscreen view.



Selecting the active window — New c Series and New e Series

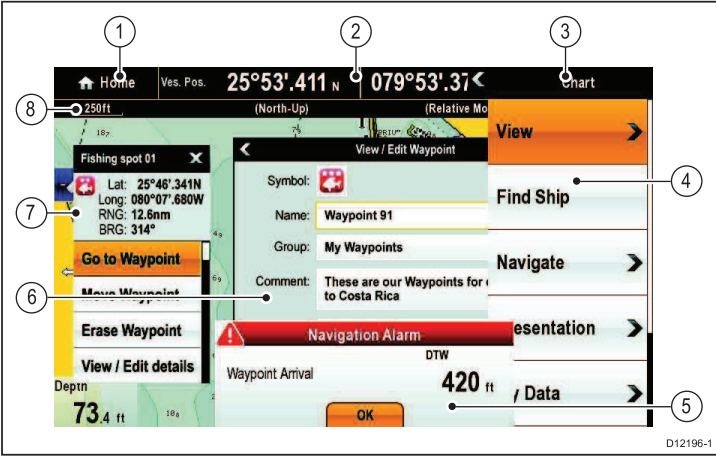
When viewing a splitscreen page you can select the active application and view it fullscreen on a New c Series or New e Series (excluding e7 / e7D) by following the steps below.

With a page featuring multiple applications displayed:



1. Press the **Switch Active Pane** button.
The active pane pop up is displayed:
2. Press the **Switch Active Pane** button or use the **Rotary control** to cycle the active application.
3. Press the **Range in** or **Range out** buttons to switch the active application between splitscreen and fullscreen views.

6.16 Screen overview



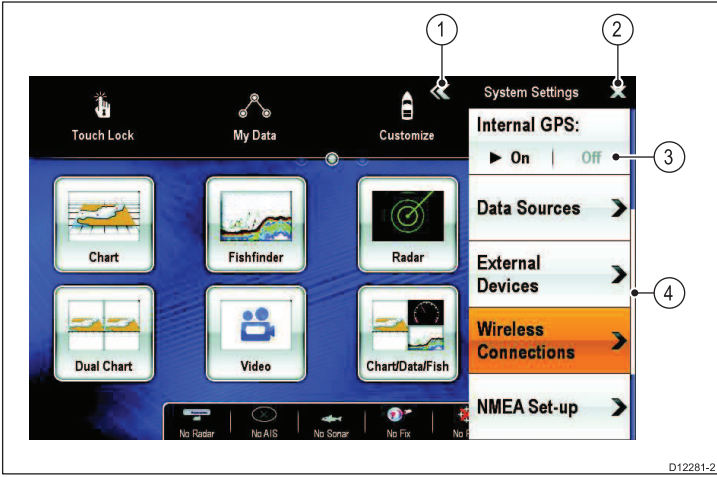
Screen item	Description
1	Home - New a Series — Select the on-screen Home icon to access the homescreen. - New c Series — Use the Home button to go back to the previous menu. - e7 / e7D — Press and hold the Menu button for 3 seconds to access the homescreen. - New e Series — Select the on-screen Home icon, or use the Home button to access the homescreen.
2	Databar — provides information about your vessel and its environment. The position and type of information in the databar can be customized from the Homescreen > Customize > Databar Set-up menu, if required.
3	Menu — The menu options are specific to the application that you are currently using.
4	Pop-up menu — menu options are displayed when the Menu is selected.
5	Pop-up messages — alert you to a situation (such as an alarm), or unavailable function. Pop-up messages may require a response from you — for example, select OK to silence alarms.
6	Dialogs — enable data to be selected, edited or entered. Use in many common functions — for example, editing a waypoint.
7	Context menu — provides information and options specific to each application.
8	Status bar — provides information specific to each application. This information cannot be edited or moved.

Using pop-up menus

Pop-up menus enable you configure settings and preferences. Menus are used in the:

- Homescreen** — to configure your multifunction display and externally-connected equipment.
- Applications** — to configure the settings for that particular application.

The following diagram shows the main features of a pop-up menu:

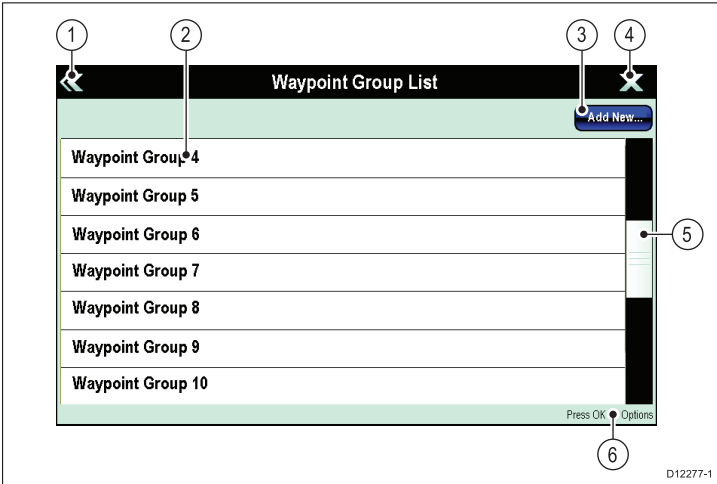


Screen item	Description
1	Back — On touchscreen displays (New e Series and New a series) you can press the on-screen << (back) icon to go back to a previous menu. (On New c Series displays use the Back button.
2	Close — On touchscreen displays (New e Series and New a series) you can press the on-screen X (close) icon to go back to a previous menu. (On New c Series displays use the Back button to back out of the menu structure.
3	On / Off switch — On touchscreen displays (New e Series and New a series) you can select on-screen menu items to switch features On or Off to enable or disable the function. (On New c Series displays use the OK button to switch the function On or Off.
4	Scroll bar — indicates that further menu items are available by scrolling the menu. On touchscreen displays (New e Series and New a series) to scroll through the available menu items, press and hold your finger on the menu and drag it up or down. (On New c Series displays use the Rotary control .

Using menu dialogs

Menu dialogs are full-screen menus that enable you to manage data items such as waypoints and routes.

The following diagram shows the main features of a standard menu:

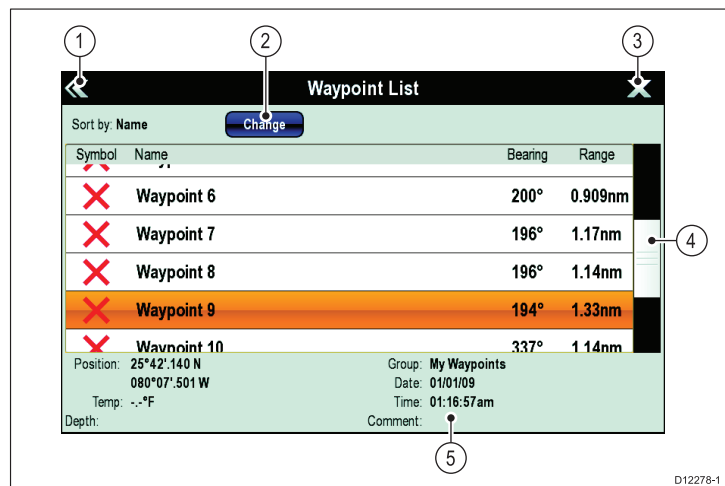


Screen item	Description
1	Back • Touchscreen — Select the on-screen Back icon to go back to the previous menu. • Non-touchscreen — Use the Back button to go back to the previous menu.
2	Menu item • Touchscreen — Momentarily touching a menu item highlights and automatically selects the item. To scroll a menu, touch a menu item and hold your finger down on the item while dragging your finger up or down • Non-touchscreen — Use the Rotary control to highlight an item, and the Ok button to select it. To scroll a menu, use the Rotary control.
3	Function icon — Some menu dialogs include an icon which can be selected to access additional functions. For example, in the Waypoint Group List menu dialog, the Add New icon can be used to add a new Waypoint group.
4	Close — On Touchscreen displays you can select this icon to close the menu(s). The close icon is not available on non-touchscreen displays.
5	Scroll bar • Touchscreen — To scroll through the available menu items, press and hold your finger on the menu to drag it up or down. • Non-touchscreen — To scroll through the available menu items, use the Rotary control.
6	Options — Select a menu item to access more options for that item. For example, in the Waypoint Group list you can select a menu item to view the waypoints in the group, edit the group name, or erase the group.

Using list dialogs

List dialogs are full-screen menus that display the details for specific types of data, such as Waypoints.

The following diagram shows the main features of a list dialog:



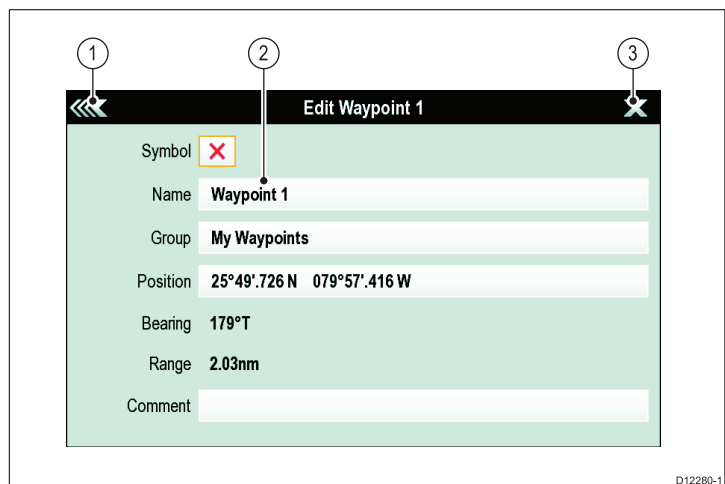
Screen item	Description
1	Back • Touchscreen — Select the on-screen Back icon to go back to the previous menu. • Non-touchscreen — Use the Back button to go back to the previous menu.
2	Sort icon — Some list dialogs include an icon which can be selected to sort the items in the list. For example, in the Waypoint List you can sort the list by name, range, group, symbol, and so on.

Screen item	Description
3	Close — On Touchscreen displays you can select this icon to close the menu(s). The close icon is not available on non-touchscreen displays.
4	Scroll bar • Touchscreen — To scroll through the available menu items, press and hold your finger on the menu to drag it up or down. • Non-touchscreen — To scroll through the available menu items, use the Rotary control.
5	Details — the details for a particular list item are displayed at the bottom of the dialog.

Using edit dialogs

Edit dialogs enable you to edit the details of data items stored on your multifunction display, such as waypoints, routes, and tracks.

The following diagram shows the main features of a typical edit dialog:

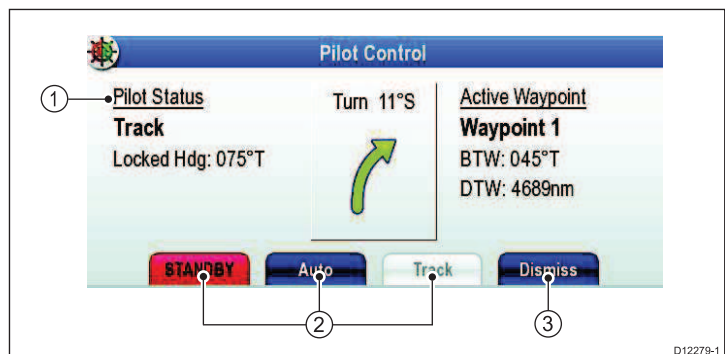


Screen item	Description
1	Back • Touchscreen — Select the on-screen Back icon to go back to the previous menu. • Non-touchscreen — Use the Back button to go back to the previous menu.
2	Field — Selecting a text field automatically displays the on-screen keyboard, which can be used to edit the details.
3	Close — On Touchscreen displays you can select this icon to close the menu(s). The close icon is not available on non-touchscreen displays.

Using control dialogs

Control dialogs enable you to control externally connected equipment, such as an autopilot unit.

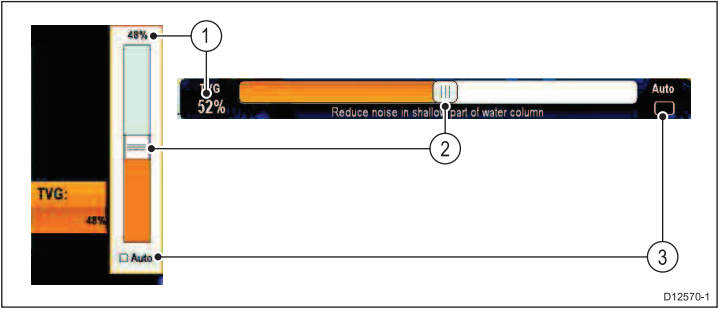
The following diagram shows the main features of a typical control dialog:



Screen item	Description
1	Status — provides status information for the connected equipment. For example, the Pilot Control dialog displays the locked heading and current navigation mode for a connected autopilot unit.
2	Control icons — provide direct control of the connected equipment. For example, the Pilot Control dialog Standby , Auto and Track icons enable you to instruct a connected autopilot unit to perform specific functions.
3	Dismiss — Closes the control dialog.

Using slider bar controls

Slider bar controls provide a graphical representation of numeric data and enables you to quickly change setting values.



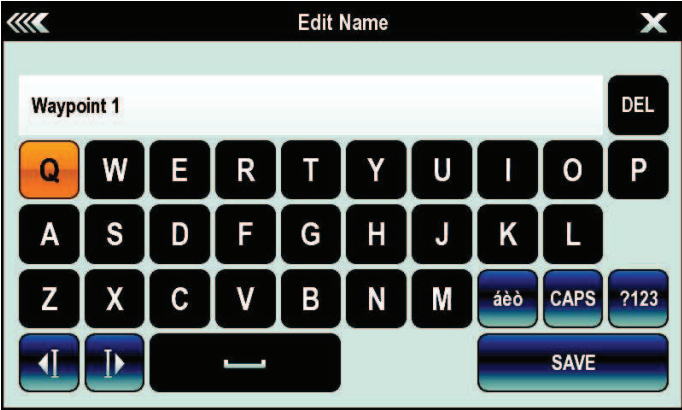
Item	Description	Non—Touch operation	Touch operation
1	Current value	N/A	N/A
2	Slider control	Use the Rotary control to adjust value	Slide the slider Up or Down to adjust value.
3	Auto	Press Ok button to switch between Auto and manual adjustment.	Select to switch between Auto and manual adjustment.

6.17 Editing information in dialogs

With the dialog displayed:

1. Select the field you want to edit.

The on-screen keyboard is displayed:



2. Use the on-screen keyboard to make the changes.
3. Use the on-screen keyboard's **SAVE** key to keep any changes.

Entering special or accented characters

With the on-screen keyboard displayed:

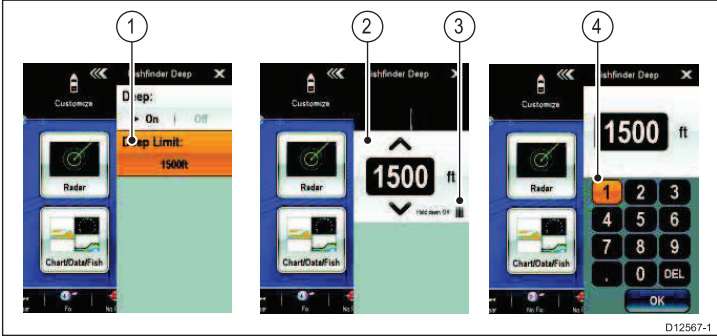
1. Select the on-screen keyboard's **àèò** key.
2. Select the character you want to accent.

The available accented characters are displayed above the text entry field.

3. For characters that have multiple available accents, use the character key to toggle between them.
4. Select the **àèò** key to enter the character.

6.18 Editing numerical settings

To edit numerical values in you can either use the **Rotary Control**, the on-screen numeric adjust control or on-screen numeric keypad to increase or decrease the value.



1. Select the numeric data field you want to edit.
The numeric adjust control is displayed.
2. Adjust the setting to the required value using:
 - i. The **Rotary control** — New c Series and New e Series, or
 - ii. The on-screen **Up** and **Down** arrows — New a Series and New e Series.
3. To access the on-screen numeric keypad:
 - New a Series — Select the on-screen keypad icon from the numeric adjust control.
 - New c Series — Press and hold the **Ok** button.
 - New e Series — Select the on-screen keypad icon from the numeric adjust control.The on-screen numeric keypad is displayed.
4. Enter the required value.
5. Select **Ok** to exit the numeric keypad and return to the menu.

6.19 Basic touchscreen operations



Placing and moving the cursor using touch

To place or move the cursor around the screen on a touchscreen multifunction display follow the steps below.

1. Touch the screen at any position on the screen to place the cursor there.

Touchscreen lock

You can lock the touchscreen to prevent accidental use.

	This only applies to HybridTouch displays.
--	--

For example, locking the touchscreen is particularly useful in rough water or weather conditions.

The touchscreen is locked from the home screen. An icon in the home screen indicates the lock status:

	Touchscreen is unlocked.
	Touchscreen is locked. All functions remain available using the buttons and softkeys.

You must use the UniControl to unlock the touchscreen.

Locking the touchscreen

	This only applies to HybridTouch displays.
--	--

With the homescreen displayed:

1. Select the **Touch Lock** icon.
It changes color to indicate that the touchscreen is disabled. All functions are still available using the buttons and UniControl.

Unlocking the touchscreen

	This only applies to HybridTouch displays.
--	--

With the homescreen displayed:

1. Use the UniControl to highlight the **Touch Lock** icon.
2. Press the **OK** button.
The Touchscreen is enabled.

6.20 Databar status symbols

The status symbols on the databar confirm whether the appropriate connections to your system have been made.

The symbols show the status for the following:

- Radar scanner.
- AIS receiver / transceiver.
- Sonar module.
- GPS receiver.
- Autopilot.

Radar scanner status symbols

The radar scanner power mode status is indicated in the databar.

Symbol	Radar power mode	Description
	Transmit (TX)	Rotating icon, signifying that the scanner is on and transmitting. When SCANNER is set to ON, select this mode to activate the scanner. This is the usual mode of operation.
	Standby (STBY)	Static icon, indicating that the scanner is on but not transmitting, and the antenna is not rotating. The scanner does not transmit and the radar data is removed from the screen. This is a power-save mode used when the radar is not needed for short time periods. When you return to transmit mode, the magnetron does not need to warm up again. This is the default mode.
	Off	Scanner powered off when radar not required, but display is in use for other applications, such as the chart. When selected, the system counts down. During this time you cannot re-power the scanner.
 	Timed Transmit	Scanner switches between on/transmitting, and standby mode. Scanner goes into power save mode when constant use of radar is not required.

AIS status symbols

AIS status is indicated by a symbol in the databar.

Symbol	Description
	AIS unit is switched on and operating.
	AIS currently unavailable.
	AIS unit is switched off, or not connected.
	AIS unit is in Silent Mode.
	AIS unit is in Silent Mode, with active alarms.

Symbol	Description
	AIS unit is connected and switched on, but has active alarms.
	AIS unit is connected and switched on, but the dangerous and lost alarm is disabled.

Sonar status symbols

The sonar status is indicated in the databar.

Symbol	Description
	Symbol animated: the sonar module is connected and transmitting.
	Symbol static: the sonar module is connected but not transmitting.
	Symbol greyed-out: the sonar module is not connected, or is not detected.

GPS status symbols

The GPS receiver status is indicated in the databar.

Symbol	Description
	A GPS receiver is connected and has obtained a fix.
	A GPS receiver is not connected, or cannot obtain a fix.

Autopilot status symbols

The autopilot status is indicated in the databar.

Symbol	Description
	Autopilot is in Standby mode.
	Autopilot is in Track mode.
	Autopilot is in Auto mode.
	No autopilot detected.
	Autopilot alarm active.
	Dodge mode is active.
	Fish mode is active.
	Autopilot calibration.

Symbol	Description
	Power steering active.
	Wind Vane mode is active.

6.21 Initial set up procedures

Once your display has been installed and commissioned, Raymarine recommends that you perform an initial set up procedure.

Startup wizard



D12968-1

When you power-up the display for the first time or after a system reset a Startup Wizard is displayed. The wizard guides you through the following initial settings:

1. Language selection
2. Vessel type selection
3. Configure units
4. Boat details (minimum safe depth, total fuel capacity and economy units.)
5. Finish

Note: These settings can also be set at any time using the menus accessible from **Homescreen > Customize**.

Additional settings

In addition to the settings covered by the Wizard, it is also recommended that the following initial set up tasks are completed:

- Set your date and time preferences.
- Adjust the display brightness (and set up a shared brightness scheme if appropriate).
- Align the touchscreen (HybridTouch displays only).
- Designate the data master.
- Select the GPS data source.
- Familiarize yourself with the Simulator Mode.

Setting the vessel minimum safe depth

With the homescreen displayed:

1. Select **Customize**.
2. Select **Boat Details**.
3. Select **Min. Safe Depth**.
4. Adjust the setting as appropriate.

Note: The units for the depth measurement are based on those specified in the **Homescreen > Customize > Units Set-up > Depth Units** menu.

Setting time and date preferences

With the homescreen displayed:

1. Select **Customize**.
2. Select **Time and Date Set-up**.
3. Use the **Date Format**, **Time Format**, and **Local Time: UTC** menu items to set your time and date preferences.



Adjusting the display brightness — New a Series and New e Series



1. Press the **POWER** button once.
The Shortcuts menu is displayed.
2. Adjust the brightness to the required level using the on-screen brightness slider bar control, or
3. Touch the Sun icon to increase the brightness level or the Moon icon to decrease the brightness level.

Note: The brightness level can also be increased by pressing the **Power** button multiple times.



Adjusting the display brightness

1. Press the **POWER** button once.
The Shortcuts menu is displayed.
2. Adjust the brightness to the required level using the **Rotary control**.

Note: The brightness level can also be increased by pressing the **Power** button multiple times.

Touchscreen alignment

If the touchscreen is misaligned to your touch, you can realign it to improve the accuracy.

Realignment involves a simple exercise to align an on-screen object with your touch. For best results, perform this exercise when your vessel is anchored or moored.

Note: This only applies to touchscreen multifunction displays.

Aligning the touchscreen

With the homescreen displayed:

1. Select **Set-up**.
2. Select **Maintenance**.
3. Select **Touchscreen Alignment**.
4. Place your finger over the on-screen object momentarily, then remove it.
5. Repeat the action a further 3 times.
6. If the operation was successful, an "Alignment Completed" message is displayed.
7. Select **Exit** to return to the Maintenance menu.
8. If the operation was unsuccessful at any point during the alignment exercise, an "Incorrect touch detected" message is displayed, the alignment exercise is repeated.

9. After 2 failed alignment exercises you may be asked to perform a precision alignment exercise.

Data master

Any system containing more than one networked multifunction display must have a designated data master.

The data master is the display which serves as a primary source of information. For example the displays may require heading information from the autopilot and GPS systems, usually received through a SeaTalk^{ng} or NMEA connection. The data master is the display to which the SeaTalk, NMEA and any other data connections are made, it then bridges the data to the SeaTalk^{hs} network and any compatible repeat displays. Information shared by the data master includes:

- Cartography
- Routes and waypoints
- Radar
- Sonar
- Data received from the autopilot, instruments, the engine and other external sources.

Your system may be wired for redundancy with data connections made to repeat displays. However these connections will only become active in the event of a fault and/or reassignment of the data master.

Designating the data master

For systems with 2 or more displays the following task must be performed on the multifunction display that you want to designate as the data master.

With the homescreen displayed:

1. Select **Set-up**.
2. Select **Maintenance**.
3. Select **Data Master**.
4. Select the display that you want to designate as the data master.

GPS selection

You can use an internal (if available) or external GPS receiver.

- Your multifunction display may feature an internal GPS receiver.
- You can also connect an external GPS receiver using SeaTalk^{ng} or NMEA 0183.
- Where appropriate use the System Settings menu to enable or disable the internal GPS receiver.

Enabling or disabling the internal GPS

If your multifunction display features an internal GPS then this can be enabled and disabled by following the steps below.

With the homescreen displayed:

1. Select **Set-Up**.
2. Select **System Settings**.
3. To enable the internal GPS, select **Internal GPS** so that On is highlighted.
4. To disable the internal GPS, select **Internal GPS** so that Off is highlighted.

Simulator mode

The Simulator mode enables you to practice operating your display without data from a GPS antenna, radar scanner, AIS unit, or fishfinder.

The simulator mode is switched on / off in the **System Setup Menu**.

Note: Raymarine recommends that you do NOT use the simulator mode whilst navigating.

Note: The simulator will NOT display any real data, including any safety messages (such as those received from AIS units).

Note: Any system settings made whilst in Simulator mode are NOT transmitted to other equipment.

Enabling and disabling simulator mode

You can enable and disable simulator mode by following the steps below.

With the homescreen displayed:

1. Select **Set-Up** .
2. Select **System Settings**.
3. Select **Simulator**:
4. Select On to turn simulator mode on, or
5. Select Off to turn simulator mode off.

Note: The Demo movie option is for retail demonstration purposes only.

Chapter 7: Managing display data

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- [7.2 Inserting a memory card or chart card on page 88](#)
- [7.3 Removing a memory card or chart card on page 89](#)
- [7.4 Saving user data and user settings on page 89](#)
- [7.5 Screenshots on page 92](#)
- [7.6 Resetting your system on page 92](#)

7.1 Memory cards overview

You can use memory cards to archive data such as waypoints, routes, and tracks.

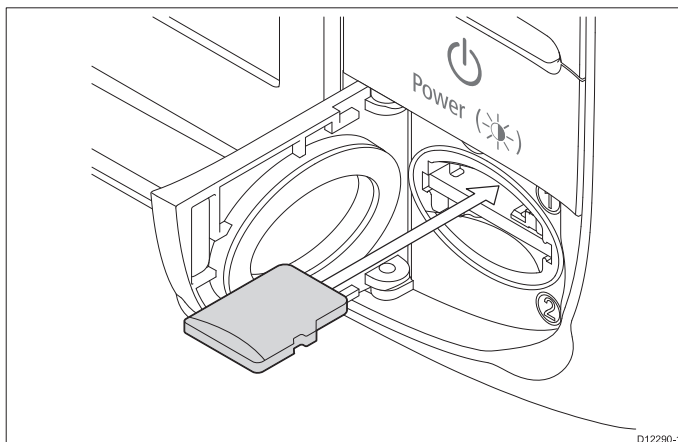
Memory cards can be used to archive your data when the system capacity is reached. You can then delete old data from your system, creating capacity for new data. The archived data can be retrieved at any time. You can also use memory cards to backup your data.

Note: Raymarine recommends that you backup your data to a memory card on a regular basis.

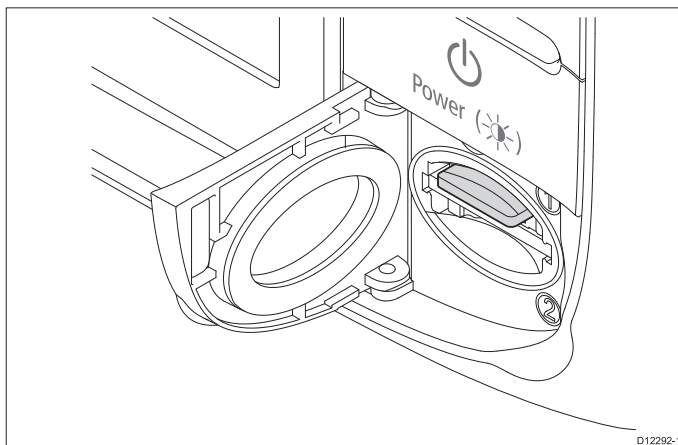
7.2 Inserting a memory card or chart card

Note: New a Series displays have 1 card slot, cards must be inserted into New a Series displays with the contacts facing up.

1. Open the chart card door, located on the front right of the display.
2. Insert the card, as shown in the diagram below. For slot 1, the card contacts should be facing DOWN. For slot 2, the card contacts should be facing UP. Do NOT force the card. If the card does not fit easily into the slot, check the orientation.



3. Gently press the card all the way in to the card slot, as shown in the diagram below. The card is secure when an audible click is heard.



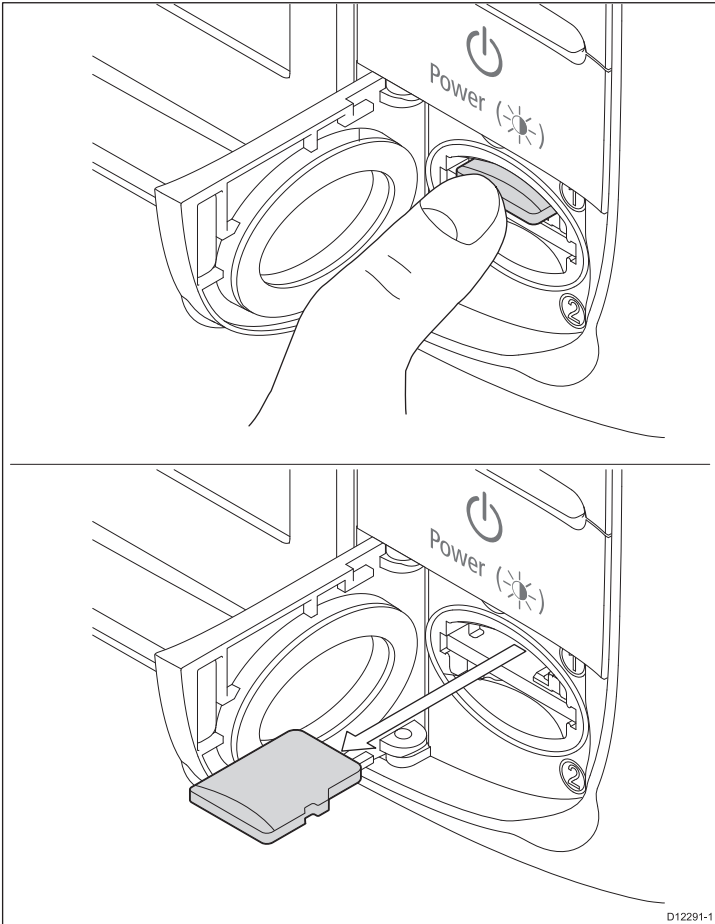
4. To prevent the ingress of water and consequent damage, close the chart card door.

7.3 Removing a memory card or chart card

From the homescreen:

1. Select **My Data**.
2. Select **Eject Card**.
A message is displayed prompting you to select the memory device you want to eject.
3. Select **SD1** for a memory card in the top card slot, or **SD2** for a memory card in the bottom card slot.
4. Open the chart card door, located on the front right of the display.
5. Push the edge of the card towards the unit, until an audible click is heard.

The card is released from the card slot mechanism, as shown in the following diagram:



6. Use your fingers to pull the card clear of the card slot, using the edge of the card.
7. To prevent the ingress of water and consequent damage, close the chart card door.

Note: You can also power off the multifunction display and follow steps 4 to 7 above.

7.4 Saving user data and user settings

You can save user data (waypoints, routes, and tracks) or user settings to a memory card for later retrieval.

Type of data	Description	Notes
User data (waypoints)	Saves all waypoints to a single archive file.	Only 1 waypoints archive file can be saved per memory card.
User data (routes)	Saves all routes to a single archive file.	Only 1 routes archive file can be saved per memory card.
User data (tracks)	Saves all tracks to a single archive file.	Only 1 tracks archive file can be saved per memory card.
User settings	Saves the settings you've made in the set-up menus to a single archive file.	Only 1 user settings archive file can be saved per memory card.

Note: Raymarine recommends that you save your user data and user settings to a memory card on a regular basis.

Note: Raymarine strongly recommends that you save settings to a separate memory card, and NOT to a chart card containing cartography.

Saving waypoints, routes, and tracks to a memory card

With the homescreen displayed:

1. Ensure you have a memory card (NOT a chart card) in one of the card slots.
2. Select **My Data**.
3. Select **Save Data to Card**.
If your display has more than 1 card slot then a message is displayed prompting you to select the memory device you want to save the data to, if your display only has 1 card slot then you will not be prompted.
4. Select **SD1** for a memory card in the top card slot, or **SD2** for a memory card in the bottom card slot.
5. Select **Save Waypoints to Card**, **Save Routes to Card**, or **Save Tracks to Card**, as appropriate.

Retrieving waypoints, routes, or tracks from a memory card

With the homescreen displayed:

1. Ensure you have a memory card containing the user data in one of the card slots.
2. Select **My Data**.
3. Select **Retrieve from Card**.
If your display has more than 1 card slot then a message is displayed prompting you to select the memory device you want to retrieve data from, if your display only has 1 card slot then you will not be prompted.
4. Select **SD1** for a memory card in the top card slot, or **SD2** for a memory card in the bottom card slot.
5. Select **Retrieve Waypoints**, **Retrieve Routes**, or **Retrieve Tracks**, as appropriate.

Erasing waypoints, routes, and tracks from a memory card

With the homescreen displayed:

1. Ensure you have the memory card containing the data in one of the card slots.
2. Select **My Data**.
3. Select **Erase from Card**.
If your display has more than 1 card slot then a message is displayed prompting you to select the memory device you want to erase data from, if your display only has 1 card slot then you will not be prompted.

- 4. Select **SD1** for a memory card in the top card slot, or **SD2** for a memory card in the bottom card slot.
- 5. Select **Erase Waypoints from Card**, **Erase Routes from Card**, or **Erase Tracks from Card**, as appropriate.

Erasing waypoints, routes, and tracks from the system

Note: The following procedure permanently erases selected or ALL waypoints, routes, or tracks stored on the display. BEFORE proceeding, ensure that you backup any data that you want to keep on to a memory card.

With the homescreen displayed:

- 1. Select **My Data**.
- 2. Select **Erase from System**.
- 3. Select **Erase Waypoints from System**, **Erase Routes from System**, or **Erase Tracks from System**, as appropriate.
- 4. Select the specific data items you want to erase, or select **Erase All**.
A message is displayed prompting you for confirmation.
- 5. Select **Yes** to proceed with the deletion, or **No** to cancel the operation.

Saving user settings to a memory card

With the homescreen displayed:

- 1. Ensure you have a memory card (NOT a chart card) in one of the card slots.
- 2. Select **My Data**.
- 3. Select **Backup and Restore Settings**.
- 4. Select **Backup Settings**.
If your display has more than 1 card slot then a message is displayed prompting you to select the memory device you want to save the settings to, if your display only has 1 card slot then you will not be prompted.
- 5. Select **SD1** for a memory card in the top card slot, or **SD2** for a memory card in the bottom card slot.

Retrieving user settings from a memory card

With the homescreen displayed:

- 1. Ensure you have the memory card containing the user data in one of the card slots.
- 2. Select **My Data**.
- 3. Select **Backup and Restore Settings**.
- 4. Select **Restore Settings**.
If your display has more than 1 card slot then a message is displayed prompting you to select the memory device you want to retrieve settings from, if your display only has 1 card slot then you will not be prompted.
- 5. Select **SD1** for a memory card in the top card slot, or **SD2** for a memory card in the bottom card slot.

Save and retrieve items

The table below details the data items and settings which will be saved to and retrieved from SD card on your multifunction display.

Homescreen and system settings

Application	Setting
Homescreen	Default page configuration
System settings	Position mode
	Text size
	Shared brightness
	Brightness group
	TD set-up
	Simulator
	Bearing mode

Application	Setting
	MOB Data type
	Variation source
	Manual variation
	Language
	Date format
	Time format
	Local time offset
	Distance units
	Distance subunits
	Speed units
	Depth units
	Temperature units
	Pressure units
	Volume units
System settings — integration	Autopilot control
	DSC message
	SeaTalk alarms
	Bridge NMEA heading
Multiple data sources	GPS position source
	Heading source
	Depth source
	Speed source
	Wind source
Databar set-up	Databar content (cell 1 to 6)
	Compassbar
	Status icon
GPS status	GPS screen

Alarms

Application	Setting
Alarms	Anchor alarm
	Timer
	Alarm clock
	Temperature alarm
	Arrival alarm
	Offtrack alarm
	Collision alarm
	Guard zone sensitivity
	Fish alarm
	Fish alarm depth limit
	Shallow depth alarm
	Deep depth alarm
	AIS dangerous target alarm

Chart application — Cartography settings

Application	Setting
Cartography	Data overlay cell 1 on / off
	Data overlay cell 1 content

Application	Setting
	Data overlay cell 2 on / off
	Data overlay cell 2 content
	Chart object menu
	Chart display
	Chart grid
	2D shading
	Community layer
	Chart text
	Chart boundaries
	Spot soundings
	Safety contour
	Depth contour
	Deep water color
	Hide rocks
	Nav marks
	Nav marks symbols
	Light sectors
	Routing systems
	Cautious areas
	Marine features
	Land features
	Business services
	Panoramic photos
	Roads
	Additional wrecks
	Aerial photo overlay
	colored seabed areas
	Vessel icon
	Vessel size

Radar application

Application	Setting
Radar	Select scanner
	Range rings

AIS Layer

Application	Setting
AIS Layer	Displayed target types
	AIS safety messages
	Buddy tracking
	Silent mode

Data application

Application	Setting
Data	Datapages and content
	Datapage order
	Color theme
	Dial color
	Number of engines
	Maximum tachometer range

Fishfinder application

Application	Setting
Fishfinder	Configure preset frequencies

Weather application

Application	Setting
	Wind symbol
	Watchbox alerts

Boat details

Application	Setting
	Economy units
	Low fuel threshold
	Fuel alarm on/off

7.5 Screenshots

You can take a screenshot of what is currently displayed on the screen.

Screenshots are saved to an SD card in .bmp (bitmap) format. The saved image can be viewed from the multifunction display or any device capable of viewing bitmap images.

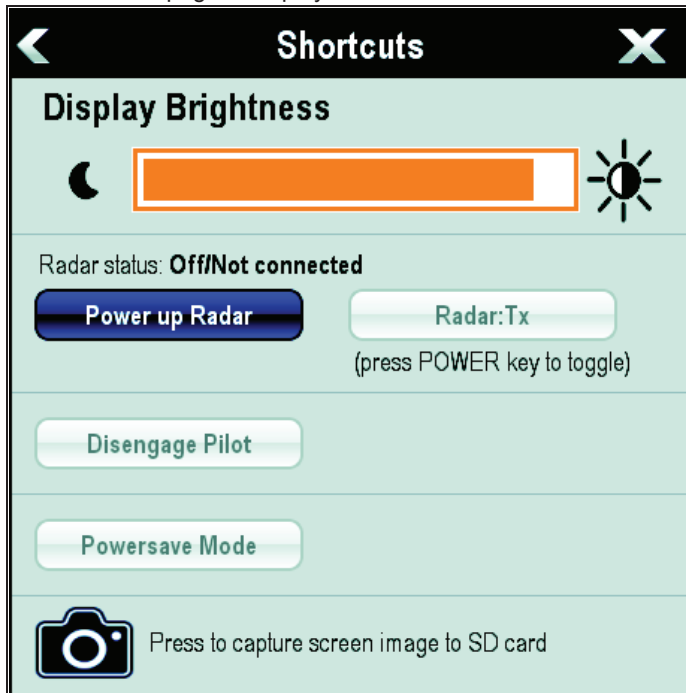
Taking a screenshot

You can take a screenshot by following the steps below.

1. Insert an SD card with suitable free space available into the SD card slot of your multifunction display.

Note: The SD card slot should be inserted into the card slot selected in the **Customize > Display Preferences > Screenshot File** menu option accessible from the homescreen.

2. Press the **Power** button.
The Shortcuts page is displayed:



3. Select the **Camera** icon.
A confirmation pop-up is displayed.
4. Select **Ok**.
The screenshot is now saved to the SD card.

Selecting the SD card slot for screenshots

New c Series and New e Series multifunction displays have 2 SD card slots. When performing a screenshot you must first select which card slot to save the screenshot too.

From the homescreen.

1. Select **Customize**.
2. Select **Display Preferences**.
3. Select **Screenshot File**.
4. Select either **MicroSD 1** or **MicroSD 2**.

Viewing a screenshot on the multifunction display

You can view images on the multifunction display

1. Insert an SD card with the screenshot or image saved to it, into the SD card slot of your multifunction display.
2. From the homescreen, select **My Data**.
3. Select **View Images**.
The file browser dialog is displayed.
4. Browse to the location on the SD card to where the image is saved.
5. Select the image you want to view.
The image will now open.
6. Select **Back** or **Close** to close the image.

7.6 Resetting your system

Your system may be reset to its factory default settings if required.

There are 2 types of reset operation, both of which affect the current display you are using, AND any networked displays.

- Settings reset.
- Settings and data reset.

Settings reset

This option resets your setup menus, page sets, and databar settings to factory default. It will NOT affect your waypoints, routes, or tracks data.

Settings and data reset

In addition to the settings reset detailed above, performing a settings and data reset will also remove ALL waypoints, routes, and tracks data.

Resetting system settings

With the homescreen displayed:

1. Select **Set-up**.
2. Select **Maintenance**.
3. Select **System Settings Reset**.
A message is displayed prompting you to confirm the action.
4. Select **Yes** to proceed with the settings reset, or **No** to cancel.

Resetting system settings and data

Note: Performing a settings and data reset erases ALL waypoints, routes, and track data from your system. BEFORE proceeding with a settings and data reset, ensure that you backup any data that you want to keep on to a memory card.

With the homescreen displayed:

1. Select **Set-up**.
2. Select **Maintenance**.
3. Select **System Settings and Data Reset**.
A message is displayed prompting you to confirm the action.
4. Select **Yes** to proceed with the settings and data reset, or **No** to cancel.

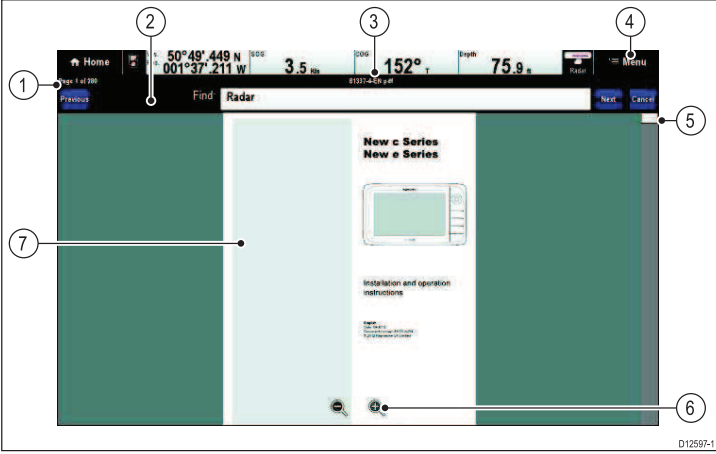
Chapter 8: Using the document viewer

Chapter contents

- [8.1 Document viewer overview on page 94](#)

8.1 Document viewer overview

Your multifunction display includes a pdf document viewer. The document viewer is available from the homescreen and is used to view and search pdf documents (such as product handbooks).



1	Current page number (page x of y)
2	Find (search) tool bar (only displayed when searching a document.)
3	Current pdf's filename
4	Document viewer menu
5	Scroll bar
6	On-screen zoom controls (Touchscreen displays only)
7	pdf document content

Note: The document viewer does not support password protected documents or documents containing security certificates. An error message will be displayed if you try to open such documents.

The following options are available from the document viewer menu:

- **Open File** — Allows you to browse for a pdf document to open.
- **Find** — Allows you to search the document for a specified words.
- **Go to page:** — Allows you to jump to a specified page number.

Opening a pdf document

You can open pdf documents stored on an SD card by following the steps below.

Note: When saving pdf documents to SD cards, ensure you do not overwrite important data.

1. Save the required pdf document to SD card.
2. Insert the SD card into the SD card slot of the multifunction display you wish to view the document on.
3. Select **Menu**.
4. Select **Open File**.
The file browser dialog is displayed.
5. Browse to the location on the SD card where you saved the document to.
6. Select the document you want to view.
The document will now open.
7. If the 'Cannot Open File' error message is displayed then select **Ok** to confirm and then try opening the document again or check that the pdf is not corrupted or whether it contains security which is not supported by the document viewer application.

Note: Large filesize pdf documents may take a while to open.

Browsing an open document

On touchscreen displays you can browse pdf documents as detailed below.

With a pdf document open:

	• Move your finger up to scroll down the document. • Move your finger down to scroll up the document.
	When the document width is greater than the width of the application window, move your finger left or right to pan the width of the document.

Note: You can also use the scroll bars to navigate through the document.

Browsing an open document

On HybridTouch and non-touch displays you can browse pdf documents by following the steps below.

With a pdf document open:

1. Move the Joystick **Up** or **Down** to move up and down through the document.
2. Move the Joystick **Left** or **Right** to pan left and right.

Changing the zoom factor

On touchscreen displays you can change the zoom factor of the open document by following the steps below.

With a pdf document open:

1. Select the on-screen **Zoom in** icon to zoom in, or
2. Select the on-screen **Zoom out** icon to zoom out.

Changing the zoom factor

On HybridTouch and non-touch displays (excluding the e7 and e7D) you can change the zoom factor of the open document by following the steps below.

With a pdf document open:

1. Use the **Range out** button to zoom out, or
2. Use the **Range in** button to zoom in.

Note: New a Series and e7 / e7D multifunction displays do not have Range in and Range out button.

Selecting a page

You can skip to the page you want to view by entering the page number.

With a pdf document open:

1. Select **Menu**.
2. Select **Go to page:**.
The numeric keypad is displayed.
3. Enter the page number of the page you want to view.
4. Select **Ok** to view the page.

Using document hyperlinks

On touchscreen displays you can use internal document hyperlinks.

With a pdf document opened on a page containing a hyperlink:

1. Momentarily touch your finger on the hyperlink.
You will be taken to the hyperlinked page.

Note: Document hyperlinks cannot be activated on a New c Series display.



Searching for text

On touchscreen displays you can use the find function to search for text in an open pdf document.

With a pdf document open:

1. Select **Menu**.
2. Select **Find**.
The on-screen keyboard is displayed.
3. Enter the keyword you want to find.
4. Select **SAVE**.
The document viewer will enter find mode and:
 - You may see a 'Searching' icon while all occurrences are found.
 - The find tool bar is displayed.
 - The first occurrence of the keyword is highlighted.
5. Select **Next** to find the next occurrence of the keyword, or
6. Select **Previous** to go back to the last occurrence of the keyword.
7. You can select **Cancel** at any time to close the find tool bar and return to the normal viewing.



Searching for text

On HybridTouch and non-touch displays you can use the find function to search for text in an open pdf document by following the steps below.

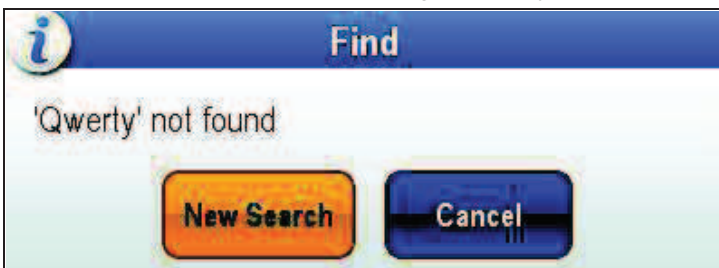
With a pdf document open:

1. Press the **Menu** button.
2. Select **Find**.
The on-screen keyboard is displayed.
3. Enter the keyword you want to find.
4. Select **SAVE**.
The document viewer will enter find mode and:
 - You may see a 'Searching' icon while all occurrences are found.
 - The find tool bar is displayed.
 - The first occurrence of the keyword is highlighted.
5. Move the **Joystick Down** to go to the next occurrence of the keyword, or
6. Move the **Joystick Up** to go to the previous occurrence of the keyword.
7. You can press the **Back** button at any time to close the find tool bar and return to the normal viewing.

Keyword not found

The document viewer will let you know if the keyword you have searched for does not appear in the document.

If the keyword is not found then the find tool bar will display an exclamation mark and a pop-up message is displayed on-screen.



Selecting **New Search** will take you back to the on-screen keyboard so that you can try a different keyword. Selecting **Cancel** will close the find tool bar and resume normal operation.

Chapter 9: Using autopilot control

Chapter contents

- [9.1 Autopilot control on page 98](#)
- [9.2 Autopilot status symbols on page 99](#)
- [9.3 Autopilot alarms on page 100](#)

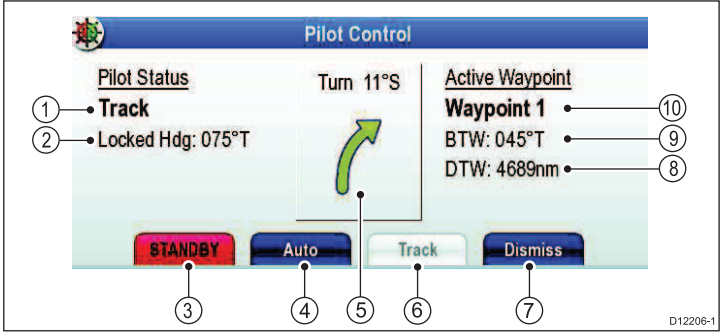
9.1 Autopilot control

You can use your multifunction display to control your autopilot.

Note: For information on connecting your multifunction display to a Raymarine autopilot system, refer to the documentation that accompanied your autopilot.

- With the Autopilot Control function enabled, you can use your multifunction display to:
- Engage the autopilot and instruct it to follow a route, or a waypoint.
 - Disengage the autopilot.
 - Silence the waypoint arrival alarm.

Pilot Control dialog



Item	Description
1	Pilot Mode.
2	Current Locked Heading.
3	STANDBY — Disengages the autopilot and return to manual vessel control.
4	Auto —Engages the autopilot.
5	Turn angle — The turn angle is only available for SPX autopilots connected using SeaTalk ^{ng} . This indicates the direction and severity of turns to be made under autopilot.
6	Track — Engages the autopilot in Track mode and automatically steers your vessel along a route plotted on your chartplotter.
7	Dismiss — Dismisses the Pilot Control dialog.
8	Distance to next waypoint.
9	Bearing to next waypoint.
10	Next waypoint name.

Note: The **Pilot Control** dialog will close if no action is taken for 10 seconds.

- The Pilot Control dialog is displayed in the following situations:
- When you select **Menu > Navigate > Goto Waypoint**, **Goto Cursor** or **Follow Route** option in the chart application.
 - When you select **Goto Waypoint** or **Goto Cursor** using the chart context menu.
 - When you place the cursor over an active route or waypoint on the chart and select **Stop Goto**, **Stop Follow** or **Advance Waypoint** from the context menu.
 - When you are following a route or going to a waypoint or cursor position, and select **Menu > Navigate > Stop Goto**, **Stop Follow**, or **Advance Waypoint**.
 - When you arrive at a target waypoint.

Note:
When arriving at a waypoint, the dialog title bar turns red to indicate waypoint arrival.

Enabling the autopilot control function

- From the homescreen:
- Select **Set-up**.
 - Select **System Settings**.

- Select **Autopilot Control** so that On is highlighted. Selecting Autopilot Control will switch the control between On and Off.

Disengaging the autopilot using the shortcuts menu

- On multifunction displays which do not have a dedicated pilot button (i.e. a65, a67, e7 and e7D) you can disengage the autopilot from the Shortcuts menu.
- With the autopilot engaged:
- Press and release the **POWER** button.
 - Select **Disengage Pilot**.
- The autopilot is disengaged, and put into standby mode.

 Disengaging the autopilot using the pilot button

- On multifunction displays which have a dedicated pilot button (i.e. New c Series and New e Series displays, excluding the e7 and e7D) you can disengage the autopilot using the dedicated Pilot button.
- With the autopilot engaged:
- Press the **Pilot** button.
- The autopilot is disengaged, and put into standby mode.

Disengaging the autopilot from the chart application

- On all multifunction display variants the autopilot can be disengaged from the chart application's menu.
- In the chart application with the autopilot engaged:
- Select **Menu > Navigate > Stop Goto** or **Stop Follow**. The Pilot Control dialog is displayed.
 - Select **STANDBY**. The autopilot is disengaged, and put in standby mode.

Engaging the autopilot using the shortcuts menu

- On multifunction displays which do not have a dedicated pilot button (i.e. a65, a67, e7 and e7D) you can engage the autopilot from the Shortcuts menu.
- With the autopilot disengaged:
- Press and release the **POWER** button.
 - Select **Engage Pilot**.
- The autopilot is engaged.

 Engaging the autopilot using the pilot button

- On multifunction displays which have a dedicated pilot button (i.e. New c Series and New e Series displays, excluding the e7 and e7D) you can engage the autopilot using the dedicated Pilot button.
- With the autopilot disengaged:
- Press the **Pilot** button. The pilot control dialog is displayed.
 - Select **Engage Pilot**.
- Note:** You can also automatically engage the autopilot by pressing and holding the **Pilot** button.

Engaging the autopilot from the chart application menu

- In the chart application:
- Select **Menu > Navigate > Goto Cursor**, **Goto Waypoint**, or **Follow Route** as appropriate. The Pilot Control dialog is displayed.
 - Select **Engage Pilot**. A confirmation pop-up message is displayed.
 - Select **Yes** to confirm and engage the autopilot, or
 - Select **No** to leave the autopilot in the current state.

Engaging the autopilot using the context menu

From the chart application context menu::

1. Select any of the following options from the Chart context menu:
 - **Goto Waypoint**
 - **Goto Cursor**
 - **Follow Route**
 - **Follow from Here**
 - **Follow Route in Reverse**

The pilot control dialog is displayed.

2. Select **Yes (Track)**.
A confirmation pop-up message is displayed.
3. Select **Yes** to confirm and engage the autopilot.

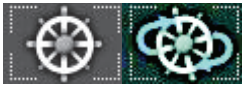
Manually displaying the pilot control dialog box

You can also open the Pilot Control dialog at any time from the homescreen or chart application.

1. From the homescreen:
 - i. Select **Set-up**.
 - ii. Select **Pilot Controls**.
2. From the chart application:
 - i. Select **Menu**.
 - ii. Select **Navigate**.
 - iii. Select **Pilots Controls**.

9.2 Autopilot status symbols

The autopilot status is indicated in the databar.

Symbol	Description
	Autopilot is in Standby mode.
	Autopilot is in Track mode.
	Autopilot is in Auto mode.
	No autopilot detected.
	Autopilot alarm active.
	Dodge mode is active.
	Fish mode is active.
	Autopilot calibration.
	Power steering active.
	Wind Vane mode is active.

9.3 Autopilot alarms

The autopilot function provides alarms to alert you to situations that require action.

Your multifunction display shows autopilot alarms, regardless of whether there is active navigation on the system. If autopilot control is enabled, and an alarm is raised by the autopilot, the multifunction display provides an audible alarm sound (providing that the alarm has not already been silenced). The **Pilot Control** dialog is displayed, indicating a new alarm. Additionally, the autopilot status icon is displayed in red, and remains red until the alarm is cleared.

Silencing autopilot alarms

1. Select **Dismiss**.

The alarm is silenced and the autopilot remains engaged in auto mode, continuing on the current locked heading.

2. Select **Auto**.

The alarm is silenced and the autopilot remains engaged in auto mode, continuing on the current locked heading.

3. Select **Track**.

The alarm is silenced and the autopilot 'tracks' to the next waypoint.

Silencing autopilot alarms and disengaging autopilot

1. Select **STANDBY**.

The alarm is silenced, and the autopilot is disengaged and put in standby mode.