

**e7 / e7D / e95 / e97 / e125 /
e127 / c95 / c97 / c125 / c127**

Mounting and Getting Started

English

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Raymarine®

Important information



Warning: Read the expanded handbook

This document is an abbreviated ("quick start") handbook, containing only the basic information required to get you started with your new product. For the complete documentation and safety information for your product, please refer to the expanded handbook, available on the documentation CD (if supplied), or the Raymarine website (www.raymarine.com).



Warning: Product installation and operation

This product must be installed and operated in accordance with the instructions provided. Failure to do so could result in personal injury, damage to your vessel and/or poor product performance.



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).



Warning: High voltages

This product contains high voltages. Do NOT remove any covers or otherwise attempt to access internal components, unless specifically instructed in this document.



Warning: Product grounding

Before applying power to this product, ensure it has been correctly grounded, in accordance with the instructions in this guide.



Warning: Switch off power supply

Ensure the vessel's power supply is switched OFF before starting to install this product. Do NOT connect or disconnect equipment with the power switched on, unless instructed in this document.



Warning: FCC Warning (Part 15.21)

Changes or modifications to this equipment not expressly approved in writing by Raymarine Incorporated could violate compliance with FCC rules and void the user's authority to operate the equipment.



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.



Warning: Sonar operation

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



Warning: Touchscreen display

When exposed to prolonged periods of direct sunlight, the touchscreen display can get very hot. In such conditions, avoid using the touchscreen display and use the unit's physical keys and buttons instead.

Caution: Transducer cable

Do NOT cut, shorten, splice the transducer cable or remove the connector. If the cable is cut, it cannot be repaired. Cutting the cable will also void the warranty.

Caution: Power supply protection

When installing this product ensure the power source is adequately protected by means of a suitably-rated fuse or automatic circuit breaker.

Caution: Care of chart and memory cards

To avoid irreparable damage to and / or loss of data from chart and memory cards:

- Ensure that chart and memory cards are fitted the correct way around. DO NOT try to force a card into position.
- DO NOT save data (waypoints, routes, and so on) to a chart card, as the charts may be overwritten.
- DO NOT use a metallic instrument such as a screwdriver or pliers to insert or remove a chart or memory card.
- Safe removal. Always power the unit off before inserting or removing a chart or memory card.

Caution: Ensure chart card door is securely closed

To prevent water ingress and consequent damage to the display, ensure that the chart card door is firmly closed. This can be confirmed by an audible click.

Caution: Cleaning

When cleaning this product:

- Do NOT wipe the display screen with a dry cloth, as this could scratch the screen coating.
- Do NOT use abrasive, or acid or ammonia based products.
- Do NOT use a jet wash.

TFT Displays

The colors of the display may seem to vary when viewed against a colored background or in colored light. This is a perfectly normal effect that can be seen with all color Thin Film Transistor (TFT) displays.

Water ingress

Water ingress disclaimer

Although the waterproof rating capacity of this product meets the IPX6 standard, water intrusion and subsequent equipment failure may occur if the product is subjected to commercial high-pressure washing. Raymarine will not warrant products subjected to high-pressure washing.

Disclaimers

This product (including the electronic charts) is intended to be used only as an aid to navigation. It is designed to facilitate use of official government charts, not replace them. Only official government charts and notices to mariners contain all the current information needed for safe navigation, and the captain is responsible for their prudent use. It is the user's responsibility to use official government charts, notices to mariners, caution and proper navigational skill when operating this or any other Raymarine product. This product supports electronic charts provided by third party data suppliers which may be embedded or stored on memory card. Use of such charts is subject to the supplier's End-User Licence Agreement included in the documentation for this product or supplied with the memory card (as applicable).

Raymarine does not warrant that this product is error-free or that it is compatible with products manufactured by any person or entity other than Raymarine.

This product uses digital chart data, and electronic information from the Global Positioning System (GPS) which may contain errors. Raymarine does not warrant the accuracy of such information and you are advised that errors in such information may cause the product to malfunction. Raymarine is not responsible for damages or injuries caused by your use or inability to use the product, by the interaction of the product with products manufactured by others, or by errors in chart data or information utilized by the product and supplied by third parties.

Chart cards and memory cards

Memory cards are used for archiving data and chart cards provide additional or upgraded charts.

Compatible cards

The following types of memory or chart card are compatible with your Raymarine product:

- micro Secure Digital Standard-Capacity (microSDSC)
- micro Secure Digital High-Capacity (microSDHC)

Note: The maximum card capacity supported is 32 GB.

Chart cards

Your product is pre-loaded with electronic charts (worldwide base map). If you wish to use different chart data, you can insert compatible chart cards into the unit's card slot.

Use branded chart cards and memory cards

When archiving data, Raymarine recommends the use of quality branded memory cards. Some brands of memory card may not work in your unit. Please contact customer support for a list of recommended cards.

EMC installation guidelines

Raymarine equipment and accessories conform to the appropriate Electromagnetic Compatibility (EMC) regulations, to minimize electromagnetic interference between equipment and minimize the effect such interference could have on the performance of your system

Correct installation is required to ensure that EMC performance is not compromised.

For **optimum** EMC performance we recommend that wherever possible:

- Raymarine equipment and cables connected to it are:
 - At least 1 m (3 ft) from any equipment transmitting or cables carrying radio signals e.g. VHF radios, cables and antennas. In the case of SSB radios, the distance should be increased to 7 ft (2 m).
 - More than 2 m (7 ft) from the path of a radar beam. A radar beam can normally be assumed to spread 20 degrees above and below the radiating element.

- The product is supplied from a separate battery from that used for engine start. This is important to prevent erratic behavior and data loss which can occur if the engine start does not have a separate battery.
- Raymarine specified cables are used.
- Cables are not cut or extended, unless doing so is detailed in the installation manual.

Note: Where constraints on the installation prevent any of the above recommendations, always ensure the maximum possible separation between different items of electrical equipment, to provide the best conditions for EMC performance throughout the installation

RF exposure

This transmitter with its antenna is designed to comply with FCC / IC RF exposure limits for general population / uncontrolled exposure. The WiFi / Bluetooth antenna is mounted behind the front fascia on the left hand side of the screen. It is recommended to maintain a safe distance of at least 1 cm from the left hand side of the screen.

FCC

Compliance Statement (Part 15.19)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

FCC Interference Statement (Part 15.105 (b))

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio / TV technician for help.

Industry Canada

This device complies with Industry Canada License-exempt RSS standard(s).

Operation is subject to the following two conditions:

1. This device may not cause interference; and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

This Class B digital apparatus complies with Canadian ICES-003.

Industry Canada (Français)

Cet appareil est conforme aux normes d'exemption de licence RSS d'Industry Canada.

Son fonctionnement est soumis aux deux conditions suivantes:

1. cet appareil ne doit pas causer d'interférence, et
2. cet appareil doit accepter toute interférence, notamment les interférences qui peuvent affecter son fonctionnement.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Suppression ferrites

Raymarine cables may be fitted with suppression ferrites. These are important for correct EMC performance. If a ferrite has to be removed for any purpose (e.g. installation or maintenance), it must be replaced in the original position before the product is used.

Use only ferrites of the correct type, supplied by Raymarine authorized dealers.

Connections to other equipment

Requirement for ferrites on non-Raymarine cables
If your Raymarine equipment is to be connected to other equipment using a cable not supplied by Raymarine, a suppression ferrite **MUST** always be attached to the cable near the Raymarine unit.

Declaration of conformity

Raymarine Ltd. declares that this product is compliant with the essential requirements of EMC directive 2004/108/EC.

The original Declaration of Conformity certificate may be viewed on the relevant product page at www.raymarine.com.

Product disposal

Dispose of this product in accordance with the WEEE Directive.



The Waste Electrical and Electronic Equipment (WEEE) Directive requires the recycling of waste electrical and electronic equipment. Whilst the WEEE Directive does not apply to some Raymarine products, we support its policy and ask you to be aware of how to dispose of this product.

Pixel defect policy

In common with all TFT units, the screen may exhibit a few wrongly-illuminated ("dead") pixels. These may appear as black pixels in a light area of the screen or as colored pixels in black areas.

If your display exhibits MORE than the number of wrongly-illuminated pixels stated below, please contact your local Raymarine service center for further advice.

	e7 / e7D	c95 / c97 / c125 / c127 / e95 / e97 / e125 / e127
Maximum acceptable wrongly-illuminated pixels	7	8

Warranty registration

To register your Raymarine product ownership, please visit www.raymarine.com and register online.

It is important that you register your product to receive full warranty benefits. Your unit package includes a bar code label indicating the serial number of the unit. You will need this serial number when registering your product online. You should retain the label for future reference.

IMO and SOLAS

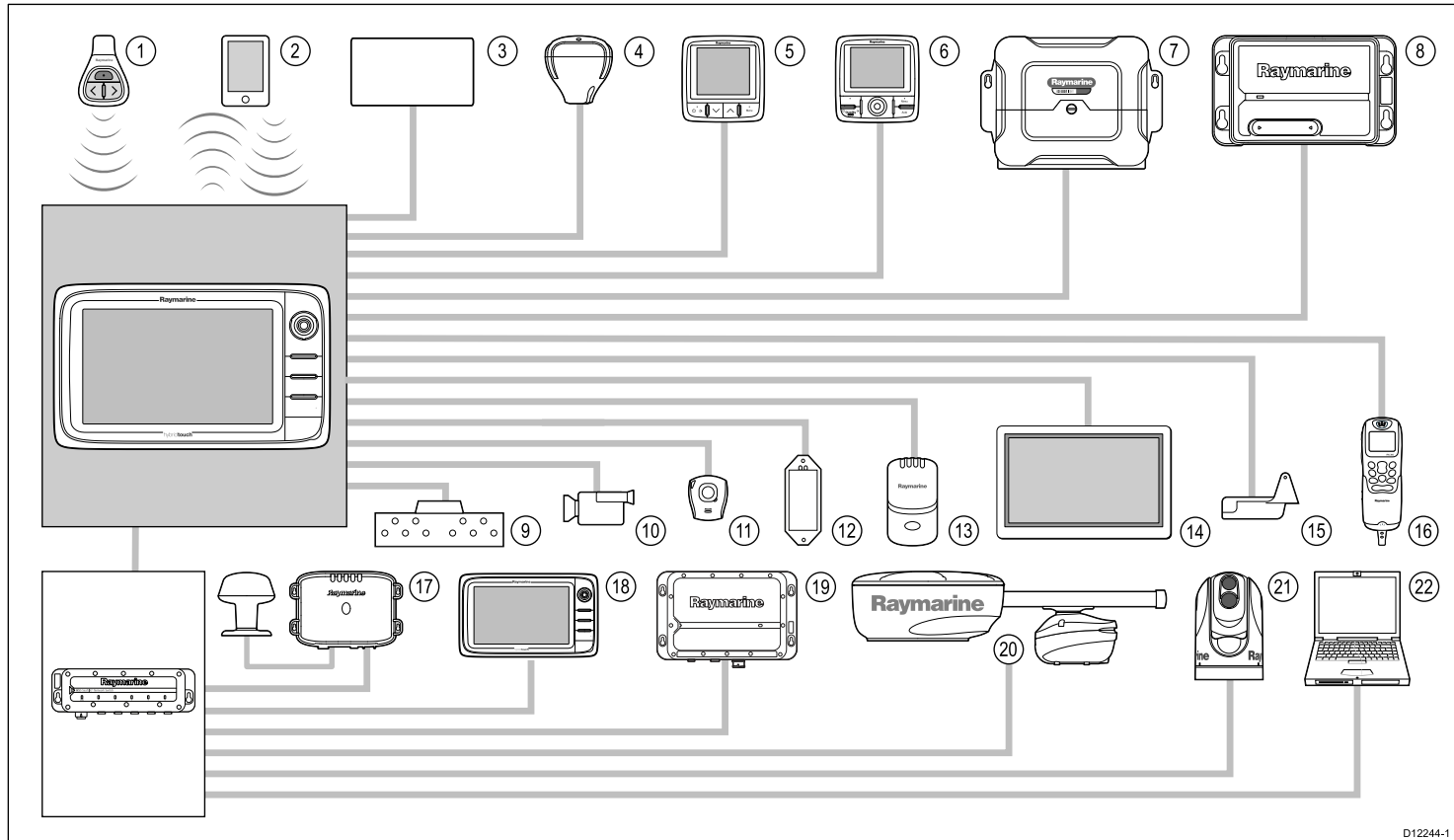
The equipment described within this document is intended for use on leisure marine boats and workboats not covered by International Maritime Organization (IMO) and Safety of Life at Sea (SOLAS) Carriage Regulations.

Technical accuracy

To the best of our knowledge, the information in this document was correct at the time it was produced. However, Raymarine cannot accept liability for any inaccuracies or omissions it may contain. In addition, our policy of continuous product improvement may change specifications without notice. As a result, Raymarine cannot accept liability for any differences between the product and this document. Please check the Raymarine website (www.raymarine.com) to ensure you have the most up-to-date version(s) of the documentation for your product.

System integration

Your multifunction display is compatible with a wide range of marine electronics devices.



D12244-1

The display uses a number of protocols to transfer data between the various devices in your system. The following table details which devices may be connected to your display, and the type of connections (in terms of protocols and physical interfaces):

Item	Device Type	Maximum quantity	Suitable Devices	Connections
1	Remote control	1 per multifunction display.	Raymarine RCU-3	Bluetooth
2	Smartphone	1 per multifunction display.	<p>For chartplotter sync with Navionics Marine app:</p> <ul style="list-style-type: none"> • Apple iPhone or iPad. • Android-compatible smartphone. <p>For smartphone media player control:</p> <ul style="list-style-type: none"> • Any Bluetooth-enabled smartphone supporting Bluetooth AVRCP version 2.1 or higher. <p>For wireless video streaming:</p> <ul style="list-style-type: none"> • Apple iPhone 4 (or later) or iPad (requires the “Raymarine Viewer” video streaming app, available from the Apple App Store). 	<ul style="list-style-type: none"> • Chartplotter sync with Navionics Marine app: WiFi. • Video streaming: WiFi. • Media player control: Bluetooth AVRCP 2.1 or later.
3	Vessel tank sensors — third-party	<ul style="list-style-type: none"> • Up to 3 x fuel. • 1 x fresh water. • 1 x waste water. • 1 x sewage. • 1 x bait / fish. 	Third-party NMEA 2000 interfaces.	NMEA 2000 (via optional DeviceNet adaptor cables).
4	GPS (external) — Raymarine	1	<p>Any combination of the following:</p> <ul style="list-style-type: none"> • Raystar125 GPS. • Raystar125+ GPS (via optional SeaTalk to SeaTalk[®] converter). 	SeaTalk, SeaTalk [®] , or NMEA 0183.

Item	Device Type	Maximum quantity	Suitable Devices	Connections
5	Instruments — Raymarine	As determined by SeaTalk ^{ng} bus bandwidth and power loading.	SeaTalk (via optional SeaTalk to SeaTalk ^{ng} converter): <ul style="list-style-type: none"> • ST40 Wind, Speed, Depth, Rudder, or Compass. • ST60 Wind, Speed, Depth, Rudder, or Compass. SeaTalk ^{ng} : <ul style="list-style-type: none"> • ST70. • ST70+. • ST70+ keypads. • i70. 	SeaTalk, SeaTalk ^{ng} .
5	Instruments — third-party	<ul style="list-style-type: none"> • Connections to multifunction display NMEA outputs: 4. • Connections to multifunction display NMEA inputs: 2 	NMEA 0183-compatible instruments.	NMEA 0183
6	Pilot control heads — Raymarine	As determined by SeaTalk or SeaTalk ^{ng} bus bandwidth and power loading, as appropriate.	SeaTalk (via optional SeaTalk to SeaTalk ^{ng} converter):: <ul style="list-style-type: none"> • ST6002. • ST7002. • ST8002. SeaTalk ^{ng} : <ul style="list-style-type: none"> • ST70. • ST70+. • p70. • p70R. 	SeaTalk, SeaTalk ^{ng} .
6	Pilot control heads — third-party	1	NMEA 0183-compatible instruments.	NMEA 0183

Item	Device Type	Maximum quantity	Suitable Devices	Connections
7	Course computer — Raymarine	1	SeaTalk (via optional SeaTalk to SeaTalk ^{ng} converter): <ul style="list-style-type: none"> • ST1000. • ST2000. • S1000. • S1. • S2. • S3. SeaTalk ^{ng} : <ul style="list-style-type: none"> • All SPX course computers. 	SeaTalk, SeaTalk ^{ng} , or NMEA 0183.
7	Course computer — third-party	1	NMEA 0183 or NMEA 2000 compatible course computer.	NMEA 0183 or NMEA 2000 (via optional DeviceNet adaptor cables).
8	AIS — Raymarine	1	<ul style="list-style-type: none"> • AIS 250. • AIS 500. • AIS 350. • AIS 650. • AIS 950 	SeaTalk ^{ng} , or NMEA 0183.
8	AIS — third-party	1	Third-party NMEA 0183-compatible AIS Class A or Class B receiver / transceiver.	NMEA 0183
9	Vessel trim tabs — third-party	1 pair	Third-party NMEA 2000 interfaces.	NMEA 2000 (via optional DeviceNet adaptor cables).
10	Video / camera	<ul style="list-style-type: none"> • e7 / e7D / c95 / c97 / c125 / c127 = 1 • e95 / e97 / e125 / e127 = 2 	Composite PAL or NTSC video source.	BNC connectors.
11	Lifetag (Man overboard alert)	1 basestation	All Raymarine Lifetag basestations.	SeaTalk (via optional SeaTalk to SeaTalk ^{ng} converter)
12	Engine interface — third-party	1	Third-party NMEA 2000 interfaces.	NMEA 2000 (via optional DeviceNet adaptor cables).

Item	Device Type	Maximum quantity	Suitable Devices	Connections
13	Transducers and sensors — Raymarine	1	Analog transducers: <ul style="list-style-type: none"> • Wind. • Speed. • Depth. 	SeaTalk ^{ng} (via optional transducer pods).
13	Transducers and sensors — Airmar	1	<ul style="list-style-type: none"> • DT800 Smart Sensor. • DST800 Smart Sensor. • PB200 weather station. 	SeaTalk ^{ng} (via optional transducer pods).
14	Video out	e95 / e97 / e125 / e127 = 1	External display.	Component
15	Sonar transducer	1	<p>Direct connection to display (Sonar variant displays only):</p> <ul style="list-style-type: none"> • Raymarine P48. • Raymarine P58. • Raymarine P74. • Raymarine B60 20° • Raymarine B60 12° • Raymarine B744V <p>; OR:</p> <ul style="list-style-type: none"> • Any 600 watt / 1Kw compatible transducer (via optional E66066 adaptor cable). <p>; OR:</p> <ul style="list-style-type: none"> • Any Minn Kota transducer (via optional A62363 adaptor cable). <p>Connection via external Raymarine Sonar Module:</p> <ul style="list-style-type: none"> • Any sonar module-compatible transducer. 	Raymarine transducer connection, OR Minn Kota transducer connection.
16	VHF radio — Raymarine	1	All Raymarine DSC VHF radios.	NMEA 0183 only (No SeaTalk support).

Item	Device Type	Maximum quantity	Suitable Devices	Connections
17	Sirius Weather receiver — Raymarine	1	SeaTalk ^{hs} : <ul style="list-style-type: none"> • SR100. • SR6. SeaTalk ^{ng} : <ul style="list-style-type: none"> • SR50. 	SeaTalk ^{hs} , SeaTalk ^{ng} .
18	Additional multifunction display(s) — Raymarine	5	SeaTalk ^{hs} (recommended): <ul style="list-style-type: none"> • e7 / e7D / e95 / e97 / e125 / e127 / c95 / c97 / c125 / c127 multifunction display. <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Note: You can connect Raymarine multifunction displays using NMEA 0183 or SeaTalk^{ng} but not all functions are supported.</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Note: Visit www.raymarine.com to download the latest software version for your display.</p> </div>	SeaTalk ^{hs} .
18	Additional multifunction display(s) — third-party	<ul style="list-style-type: none"> • Connections to multifunction display NMEA outputs: 4. • Connections to multifunction display NMEA inputs: 2 	NMEA 0183-compatible chartplotters and multifunction displays.	NMEA 0183
19	Fishfinder (Sonarr Module) — Raymarine	1	<ul style="list-style-type: none"> • CP450C • DSM 30. • DSM 300. 	SeaTalk ^{hs} .
20	Radar — Raymarine	1	All Raymarine Digital Radomes and HD or SuperHD radar scanners. <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>Note: Please ensure your radar scanner is using the latest software version.</p> </div>	SeaTalk ^{hs} .
21	Thermal camera — Raymarine	1	All Raymarine thermal cameras.	SeaTalk ^{hs} (for control), BNC connector (for video).
22	PC / laptop	1	Windows-compatible PC or laptop running Raymarine Voyager planning software.	SeaTalk ^{hs}

Item	Device Type	Maximum quantity	Suitable Devices	Connections
	Cartography — included		Embedded (internal) Navionics world base map.	Internal storage.
	Cartography — optional		External MicroSD, or MicroSDHC chart cards: <ul style="list-style-type: none"> • Navionics Ready to Navigate. • Navionics Silver • Navionics Gold • Navionics Gold+ • Navionics Platinum • Navionics Platinum+ • Navionics Fish'N Chip • Navionics Hotmaps Refer to the Raymarine website (www.raymarine.com) for the latest list of supported chart cards.	Card slot.

Location and mounting

Selecting a location

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.

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.

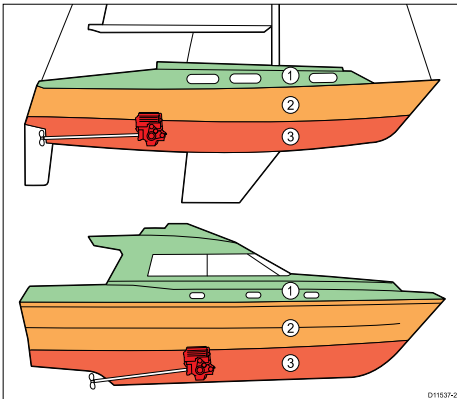
Mounting location




- **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.

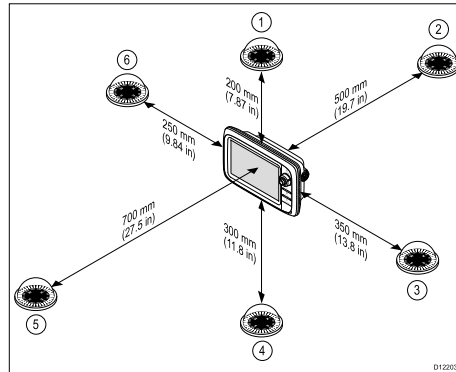
Prevailing conditions

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.

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.



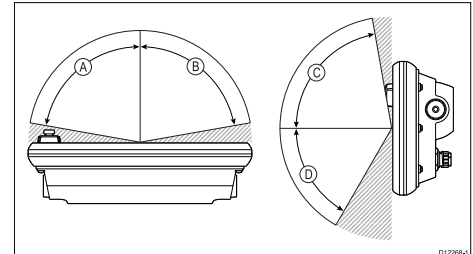
Item	Compass position in relation to display	Minimum safe distance from display
1	Top	200 mm (7.87 in.)
2	Rear	500 mm (19.7 in.)
3	Right-hand side	350 mm (13.8 in.)
4	Underside	300 mm (11.8 in.)

Item	Compass position in relation to display	Minimum safe distance from display
5	Front	700 mm (27.5 in.)
6	Left-hand side	250 mm (9.84 in.)

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.

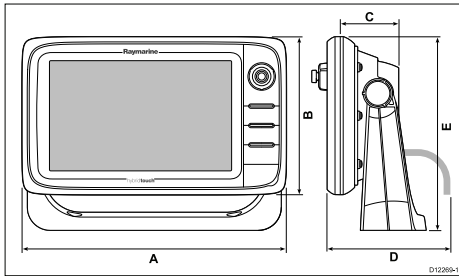
Viewing angle



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A	70°	80°	80°
B	70°	80°	80°
C	70°	80°	80°
D	50°	60°	60°

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

Product dimensions

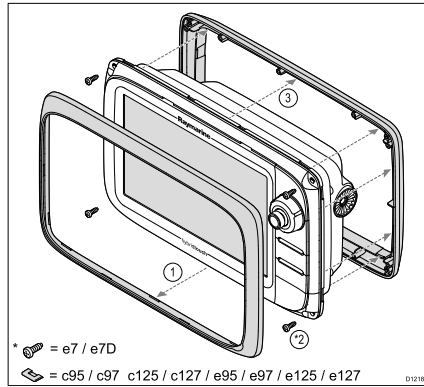


Item	e7 / e7D	e95 / e97 / c95 / c97	e125 / e127 / c125 / c127
A	233 mm (9.17 in.)	290 mm (11.42 in.)	354 mm (13.94 in.)
B	144 mm (5.67 in.)	173 mm (6.81 in.)	222 mm (8.74 in.)
C	64 mm (2.52 in.)	64 mm (2.52 in.)	69 mm (2.72 in.)
D	160 mm (6.29 in.)	160 mm (6.29 in.)	160 mm (6.29 in.)
E	180 mm (7.09 in.)	212 mm (8.35 in.)	256 mm (10.08 in.)

Removing the rear bezel

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

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



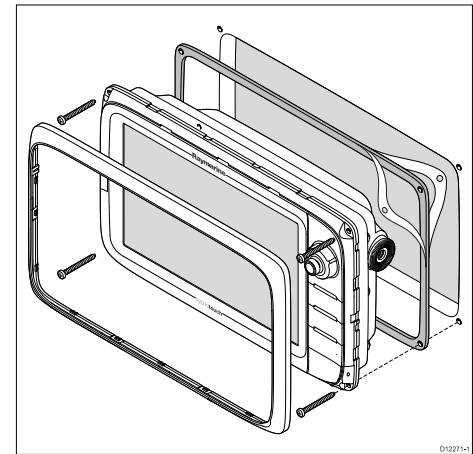
2. Remove the screws that secure the bezel to the display.
3. Carefully remove the bezel from the rear of the display, pulling the bezel gently along the:
 - i. Outer edges - work from the sides upwards and then along the top edge, ensuring that the clips are fully released from the display.
 - ii. Inner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

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.

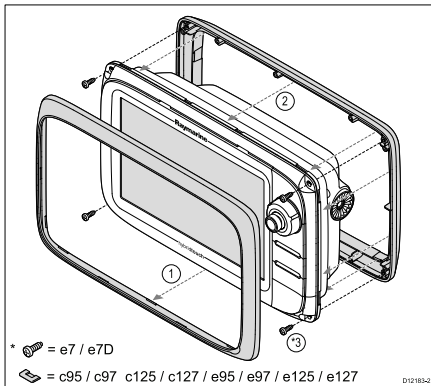
Note: The appropriate torque to use when drilling depends on the thickness of the mounting surface and the type of material.

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 before mounting the unit on the supplied trunnion bracket.

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.



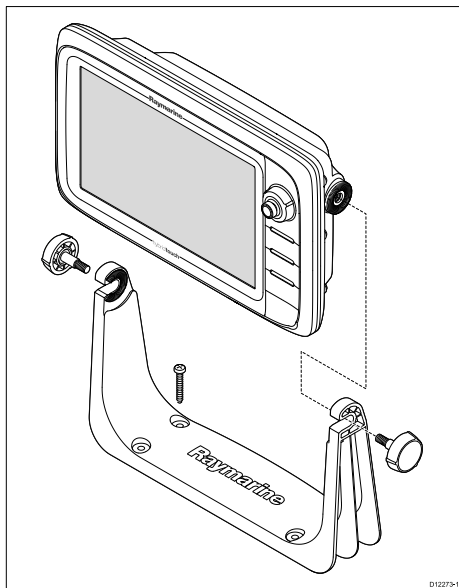
3. Use the supplied screws to secure the bezel to the display.

Bracket (trunnion) mounting

The display can be mounted on a bracket.

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 supplied screws to attach the mounting bracket securely.
4. Attach the display unit to the mounting bracket.

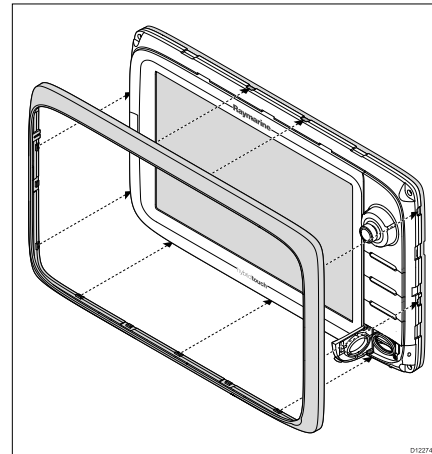
Note: The appropriate torque to use when drilling depends on the thickness of the mounting surface and the type of material.

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.

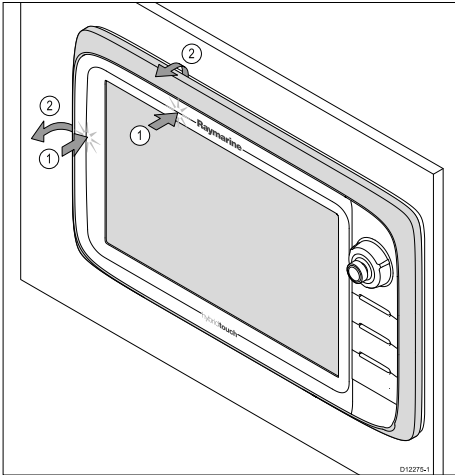


4. Ensure the bezel is correctly aligned with the display, as shown.
 5. Apply firm but even pressure to the bezel along the:
 - i. Outer edges - work from the sides upwards and then along the top edge, to ensure that it clips securely into position.
 - ii. Inner edges - particularly along the chart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

Removing the front bezel

Before proceeding ensure the memory card slot door is open.

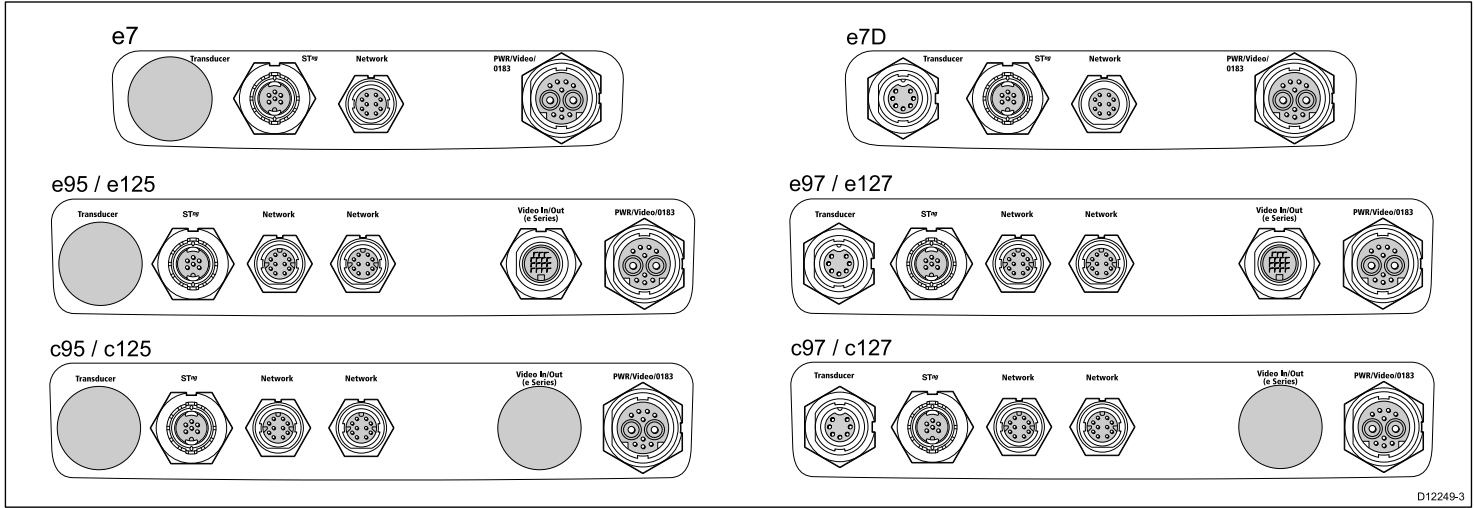


Important: Use care when removing the bezel. Do not use any tools to lever the bezel; doing so may cause damage.

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.

Connections overview

The connections for all multifunction display variants are listed below.

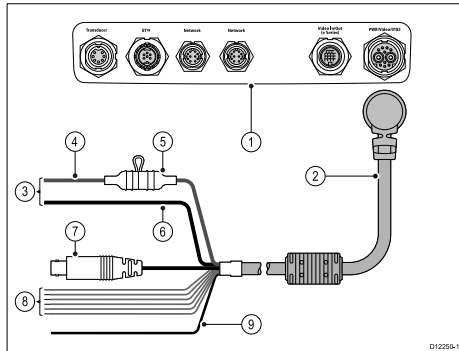


D12249-3

	Transducer	SeaTalk ^{ng}	SeaTalk ^{hs} / RayNet Network 1	SeaTalk ^{hs} / RayNet Network 2	Video in / out	Power / Video / NMEA 0183
e7	✗	✓	✓	✗	✗	✓
e7D	✓	✓	✓	✗	✗	✓
e95	✗	✓	✓	✓	✓	✓
e97	✓	✓	✓	✓	✓	✓
e125	✗	✓	✓	✓	✓	✓

	Transducer	SeaTalk ^{ng}	SeaTalk ^{hs} / RayNet Network 1	SeaTalk ^{hs} / RayNet Network 2	Video in / out	Power / Video / NMEA 0183
e127	✓	✓	✓	✓	✓	✓
c95	✗	✓	✓	✓	✗	✓
c97	✓	✓	✓	✓	✗	✓
c125	✗	✓	✓	✓	✗	✓
c127	✓	✓	✓	✓	✗	✓

Power connection



1. Multifunction display connections.
2. Power and data cable.
3. Connection to 12/24 V power supply (e7/e7D is 12V only).
4. Red cable (positive).
5. Fuse.
6. Black cable (negative).

7. Video input cable.
8. NMEA 0183 data cables.
9. Shield (drain) wire (thin black wire; must be connected to RF ground point).

Power distribution

Raymarine recommends that all power connections are made via a distribution panel.

- All equipment must be powered from a breaker or switch, with appropriate circuit protection.
- All equipment should be wired to individual breakers if possible.



Warning: Product grounding

Before applying power to this product, ensure it has been correctly grounded, in accordance with the instructions in this guide.

Grounding — Dedicated drain wire

The power cable supplied with this product includes a dedicated shield (drain) wire for connection to a vessel's RF ground point.

It is important that an effective RF ground is connected to the system. A single ground point should be used for all equipment. The unit can be grounded by connecting the shield (drain) wire of the power cable to the vessel's RF ground point. On vessels without an RF ground system the shield (drain) wire should be connected directly to the negative battery terminal.

The dc power system should be either:

- Negative grounded, with the negative battery terminal connected to the vessel's ground.
- Floating, with neither battery terminal connected to the vessel's ground



Warning: Positive ground systems

Do not connect this unit to a system which has positive grounding.

Power cable

The display is supplied with a combined power and data multi cable, this can be extended if required.

Power cables available

Cable	Part number	Notes
1.5 m (4.9 ft) Straight power and data cable	R62379	
1.5 m (4.9 ft) Right angled power and data cable	R70029	

Cable extension

The following restrictions apply to any extension to the power cable:

- Cable must be of a suitable gauge for the circuit load.
- Each unit should have its own dedicated power cable wired back to the distribution panel.

Total length (max)	Supply voltage	Cable gauge (AWG)
0–5 m (0–16.4 ft)	12 V	18
	24 V	20
5–10 m (16.4–32.8 ft)	12 V	14
	24 V	18
10–15 m (32.8–49.2 ft)	12 V	12
	24 V	16
15–20 m (49.2–65.5 ft)	12 V	12
	24 V	14

Note: These distances are for a 2 wire power cable run from the battery to the display (approximately the distance from the battery to the display). To calculate the round trip length, double the figure stated here.

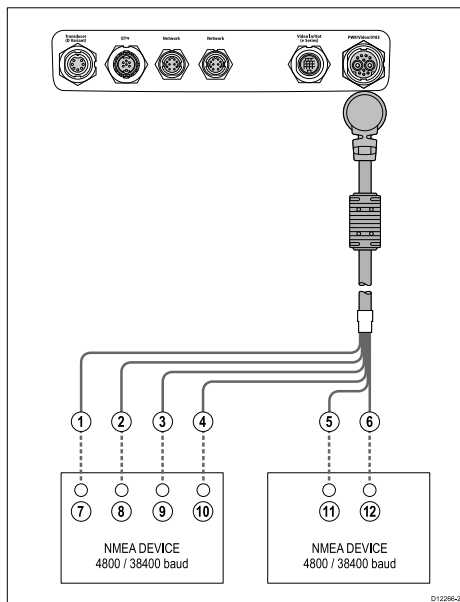
Breakers, fuses and circuit protection

The power cable includes an in-line fuse. It is recommended that you fit an additional thermal breaker or fuse at the distribution panel.

Fuse rating	Thermal breaker rating
7 A in-line fuse fitted within power cable.	5 A (if only connecting one device)

Note: The suitable fuse rating for the thermal breaker is dependent on the number of devices you are connecting. If in doubt consult an authorised Raymarine dealer.

NMEA 0183 connection



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	Multi-function 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.

Powering the display on

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

Adjusting the display brightness

1. Press the **POWER** button once.
The Backlight Level control is displayed.
2. Using the rotary control, adjust the brightness level as appropriate.

3. To switch the color palette, from the homescreen select **Customize**→**Display Preferences**→**Color Palette**.

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 simulator mode

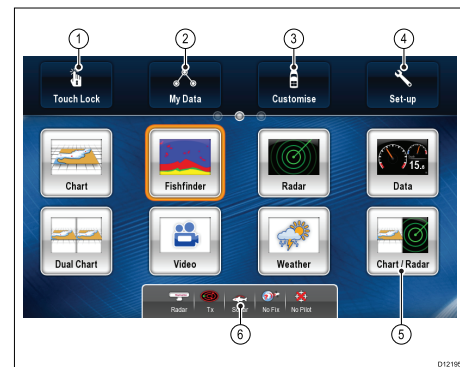
With the homescreen displayed:

1. Select **Set-Up**.
2. Select **System Settings**.
3. Select **Simulator**.

Homescreen overview

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).
- To access the homescreen, hold the **MENU** button for 3 seconds. Alternatively, select the on-screen **Home** icon.
- 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 to scroll the homescreen and access additional application pages.



Screen item	Description
1	Touch Lock — select this icon to lock the touchscreen, preventing accidental use. To unlock, use the UniControl to deselect the Touch Lock icon (HybridTouch displays only).
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 and 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.


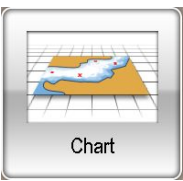

Pages

Pages are used to display applications.

Pages are displayed and accessed on the homescreen. Each page can display up to 4 applications (depending on multifunction display variant).

Note: The e7 and e7D can only configure up to 2 applications per page. The e7/e7D can only display 4 applications per page if connected and to a e9/c9 or e12/c12 which has been configured to show 4 applications per page..

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:

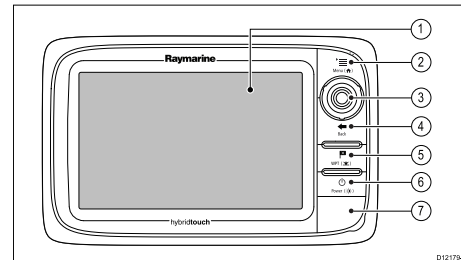
1. Select **Customize**.
2. Select **Homescreen**.
3. Select **Edit Page**.
4. Select the page icon that you want to change.
The Customize menu options are displayed.
5. Select the appropriate page layout (for example, "Splitscreen").
6. Select the application(s) you want to display on the page, either by selecting the relevant menu item or dragging it over to the displayed page.

7. Select **Finish**.

The Rename Page dialog is displayed.

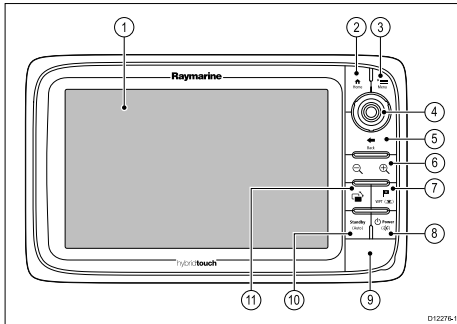
8. Use the on-screen keyboard to name the page, then select **Save**.

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.

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




- Touchscreen** — you can touch the screen to operate many common functions, including all menu operations (HybridTouch multifunction displays only).
- Home** — Press to return to the homescreen.
- Menu** — accesses menus. Press again to close menus.
- UniControl** — provides a joystick and rotary control and an OK button for using menus and applications.
- Back** — press to return to a previous menu or dialog level.
- Range In/Out** — Press minus (-) to range out and plus (+) to range in
- 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.
- 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.
- 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.

- Standby (Auto)** — Press to disengage integrated autopilot, press and hold to activate Auto mode on integrated autopilot.
- Switch Active Pane** — Press to switch the active pane.

Hybridtouch overview


Your multifunction display features Hybridtouch, which enables you to operate the unit using the touchscreen and the physical keys.

 This only applies to HybridTouch displays.

Many common 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.

Touchscreen overview

The touchscreen provides a quick way of performing many common functions.

 This only applies to HybridTouch displays.


Some of the functions you can operate with the touchscreen include:

- Accessing applications.
- Adding and editing applications pages.
- Placing and editing waypoints.
- Building routes.
- Panning the chart display.
- Placing and moving the cursor.

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.


Basic touchscreen operations

Placing and moving the cursor using touch

 This only applies to HybridTouch displays.

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


Selecting the active window using touch

 This only applies to HybridTouch displays.

With a page featuring multiple applications displayed:

- Tap anywhere inside the application you want to make active.
A border appears around the application, indicating that it is active.


Locking the touchscreen

 This only applies to HybridTouch displays.

With the homescreen displayed:

- 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.

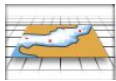
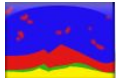



Unlocking the touchscreen



 This only applies to HybridTouch displays.

With the homescreen displayed:

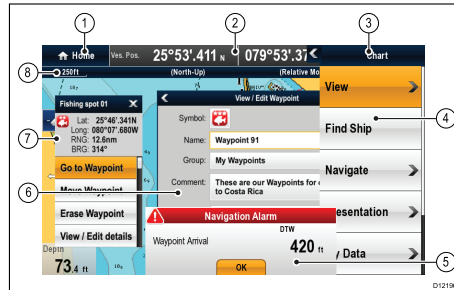
- Use the UniControl to highlight the **Touch Lock** icon.
- Press the **OK** button.
The Touchscreen is enabled.

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.
	Video application — view a video or camera source on your multifunction display.

Screen overview



Screen item	Description
1	Home — select this icon 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 — select this icon to access the menu. The menu options are specific to the application that you are currently using. Use the touchscreen (HybridTouch displays only) or use the Rotary control to select menu items and scroll long menus.

Screen item	Description
4	Pop-up menu — menu options are displayed when you select the Menu icon.
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.

Alarms

Alarms alert you to a situation or hazard requiring your attention.

You can set up alarms to alert you to certain conditions, such as collision warnings and temperature limits.

Alarms are raised by system functions, and also external equipment connected to your multifunction display.

When an alarm sounds a message dialog is displayed on your multifunction display and any networked displays. The dialog states the reason for the alarm.

You can configure the behavior of certain alarms by selecting the Edit option on the message dialog or by using the **Alarms** menu, accessible from the homescreen via the **Set-Up** icon.

Man overboard

If you lose a person or object overboard, you can use the Man Overboard (MOB) function to mark the position that the vessel was at when the MOB function was activated.

The MOB function is available at all times, regardless of which application is running. MOB can be set to Dead Reckoning or Position mode. Dead Reckoning mode will take into consideration the effects of wind and tides. This usually provides a more accurate course. Position mode does not take these factors into account.

To obtain a MOB position, your multifunction display must have a GPS position fix. If you're using dead reckoning, heading and speed data must also be available.

When MOB is **activated**:

- An audible MOB alarm is sounded.
- An MOB alarm dialog box is displayed.
- The system sends MOB alarms to other Raymarine equipment.
- The active chart application is changed to a low-detail 2D view, with an initial range of 15 m (50 ft). Motion mode is set to Auto Range.
- The active radar application range is changed to 230 m (760 ft).
- All Goto and Follow functions are disabled in all applications. Navigation to any active waypoint is stopped and any existing navigation function is cancelled.
- If position or heading and speed information is available a MOB waypoint is placed at the current vessel position in any application that is capable of showing waypoints and vessel position.
- MOB data is displayed in the databar, replacing the existing data.
- MOB data is displayed on the homescreen, replacing the status icons.
- As the vessel moves away from the MOB position a dotted line is displayed, joining the MOB position with the vessel's position.

When the MOB alarm is **cancelled**:

- MOB data is removed from the relevant applications.
- The chart application motion mode is reset.
- The chart is centered on the vessel and pitch / rotation set to default.
- GOTO and route functions are restored.
- The databar mode is reset.
- A MOB normal mode signal is sent to any instrument on SeaTalk.

Activating the man overboard (MOB) alarm

1. Press and hold the **WPTS / MOB** button for 3 seconds.

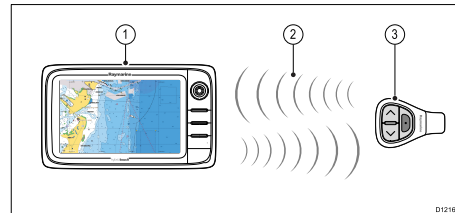
Cancelling the man overboard (MOB) alarm

1. Select **OK** on the MOB alarm dialog.
The MOB alarm remains active.
2. To cancel the alarm, press and hold the **WPTS / MOB** button for 4 seconds.

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).

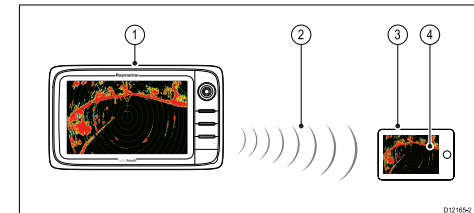
To use the remote control you must first:

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

Video streaming connection

You can use compatible tablet and smartphone devices as a wireless repeat display.

This feature enables you to stream what you see on your multifunction display to compatible device, using a WiFi connection.



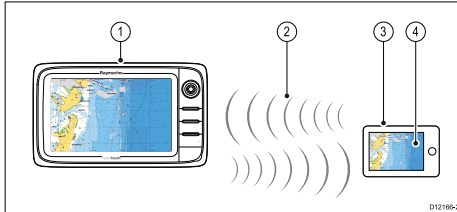
1. Multifunction display.
2. Wi-Fi connection.
3. Compatible device.
4. "Raymarine Viewer" video streaming app.

To use this feature you must first:

- Download and install the "Raymarine Viewer" video streaming 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 Device Streaming in the System Settings on the multifunction display.

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.

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