

GARMIN®

GPSMAP® 7400/7600 Series

Field Service Manual

Use this manual to identify and replace certain failed components of a GPSMAP 7400/7600 series chartplotter.

WARNING

Repairing and performing maintenance on Garmin electronics is complex work that can result in serious personal injury or product damage if not done correctly.

Components on the circuit boards hold a high-voltage charge. To be safe, disconnect the device from power before opening it for service. If you have power applied to the device while it is open, use caution when working around the circuit boards located on the inside of the front housing.

NOTICE

Follow the guidelines set forth by Garmin regarding static discharge protection and a dust-free repair environment to avoid damaging the chartplotter during repair.

Verify all gaskets are reinstalled or replaced correctly when repairing the chartplotter to maintain water-resistance.

Garmin is not responsible for, and does not warrant, the work that you or a non-authorized repair provider perform on your product.

Table of Contents

Tools Needed.....	2
Important Information Regarding the Field Repair of GPSMAP 7400/7600 Series Chartplotters.....	2
Troubleshooting	2
Important Troubleshooting Information.....	2
Loading the New Software on a Memory Card.....	2
Updating the Device Software	2
About the Test Mode Screen	2
Activating Test Mode.....	2
Testing	3
Testing the Display.....	3
Testing the Touchscreen	3
Calibrating the Touchscreen	3
Testing GPS.....	3
Testing the Power Button Board	4
Locating Problems.....	4
Testing NMEA 0183	4
Disassembly and Reassembly Procedures	5
Opening the Housing.....	5
Separating the Rear Housing from the Front Housing: 7 in. and 8 in. Models	5
Separating the Rear Housing from the Front Housing: 10 in. and 12 in. Models	7
Separating the Rear Housing from the Front Housing: 16 in. Models	8
Removing the Connector Board: 7 in. and 8 in. Models.....	9
Removing the Main Board: 7 in. and 8 in. Models.....	10
Removing the Main Board: 10 in. and 12 in. Models.....	11
Removing the Main Board: 16 in. Models.....	11
Reassembling the Housing.....	12
Repair Procedures.....	13
Replacing the SD Card Door.....	13
Replacing Weather Caps.....	13
Replacing the Rear Housing.....	14
Replacing the Front Case Assembly: 7 in. and 8 in. Models	14
Replacing the Front Case Assembly: 10 in. and 12 in. Models	15
Replacing the Connector Board: 7 in. and 8 in. Models	15
Replacing the Main Board: 7 in. and 8 in. Models	15
Replacing the Main Board: 10 in., 12 in., and 16 in. Models	16
Replacing the SD Card Port	16
Replacing the Power Button Board: 10 in., 12 in., and 16 in. Models	17
Replacing the Patch Antenna: 8 in., 10 in., and 12 in. Models	17
Replacing the Patch Antenna: 16 in. Models.....	17

Tools Needed

- A 1 GB or larger memory card (to update the chartplotter)
- A 10 to 35 Vdc 6 to 10 A power supply (for bench testing)
- #1 Phillips screwdriver (removing the case screws on a seven- or eight-inch chartplotter.)
- #0 Phillips screwdriver (SD card socket)
- T6 screwdriver (removing the case screws on a ten-, twelve-, or sixteen-inch chartplotter)
- 14 mm, 16 mm, 21 mm, and 29 mm wrenches or sockets (removing the nuts on each port)
- Torque wrench (pneumatic) with:
 - 14 mm, 16 mm, 21 mm, and 29 mm sockets (securing the nuts on each port)
 - T6 bit (securing the case screws on a ten-, twelve-, or sixteen-inch chartplotter)
 - #1 Phillips bit (securing the case screws on a seven- or eight-inch chartplotter)
- Replacement part kit (specified in the repair topic)
- Soldering iron and solder (patch antenna)
- Desoldering braid (patch antenna)
- Voltmeter
- GPSMAP 7400/7600 series NMEA 2000 cable (testing NMEA 2000 ports)
- Garmin Marine Network cable (testing Network ports)

Important Information Regarding the Field Repair of GPSMAP 7400/7600 Series Chartplotters

- This manual covers the repair of all GPSMAP 7400/7600 series chartplotters. In some procedures, the size of the chartplotter screen is used to differentiate the models:
 - Seven-inch chartplotters: GPSMAP 7407, 7407xsv, 7607, 7607xsv
 - Eight-inch chartplotters: GPSMAP 7408, 7408xsv, 7608, 7608xsv
 - Ten-inch chartplotters: GPSMAP 7410, 7410xsv, 7610, 7610xsv
 - Twelve-inch chartplotters: GPSMAP 7412, 7412xsv, 7612, 7612xsv
 - Sixteen-inch chartplotters: GPSMAP 7416, 7416xsv, 7616, 7616xsv
- Before performing any service to the chartplotter, ensure that the system software is up-to-date. If it is not, go to www.garmin.com to download the latest software version and use a 1 GB or larger SD card to update the chartplotter. Only proceed with the service if the software update does not resolve the issue.
- Record the serial number of your chartplotter. The serial number will be needed when you order replacement parts.
- Replacement parts are available through Garmin Product Support. Call 866-418-9438 to speak with a representative.
- Never use replacement parts from other chartplotters, even from the same model. Order all replacement parts from Garmin Product Support to ensure compatibility with your chartplotter.
- Although some replacement kits include cables, if the original cables are in good working condition, you should use them instead of the new ones supplied in the kit.
- Each time you remove copper tape from internal components, you must replace it. Copper tape is supplied with applicable parts kits.

Troubleshooting

Important Troubleshooting Information

If possible, you should perform troubleshooting procedures while on the boat to best determine the failed component. If the repair need is not readily apparent, such as a broken keypad or a broken power connector, you should boot the chartplotter in test mode to identify the failed components.

Before performing any service to the chartplotter, ensure the system software is up-to-date. If it is not, go to www.garmin.com to download the latest software version and use a 1 GB or larger memory card to update the chartplotter. You should perform the service only if the software update does not resolve the issue.

Loading the New Software on a Memory Card

- 1 Insert a memory card into the card slot on the computer.
- 2 Go to www.garmin.com/support/software/marine.html.
- 3 Select **Download** next to "GPSMAP Series with SD Card."
- 4 Read and agree to the terms.
- 5 Select **Download**.
- 6 Select **Run**.
- 7 Select the drive associated with the memory card, and select **Next > Finish**.

Updating the Device Software

Before you can update the software, you must obtain a software-update memory card or load the latest software onto a memory card.

- 1 Turn on the chartplotter, and wait for the home screen to appear.
NOTE: In order for the software update instructions to appear, the device must be fully booted before the card is inserted.
- 2 Open the memory card door.
- 3 Insert the memory card, and press it in until it clicks.
- 4 Close the door.
- 5 Follow the on-screen instructions.
- 6 Wait several minutes while the software update process completes.
The device returns to normal operation after the software update process is complete.
- 7 Remove the memory card.
NOTE: If the memory card is removed before the device restarts fully, the software update is not complete.

About the Test Mode Screen

The Test Mode screen provides hardware diagnostics and software information. Use the test mode screen to identify problems. Any failed tests could be problematic, and should be examined further.

NOTE: Testing the NMEA 2000 and Garmin Network functionality requires either a special cable or a known working Garmin Marine Network device.

Activating Test Mode

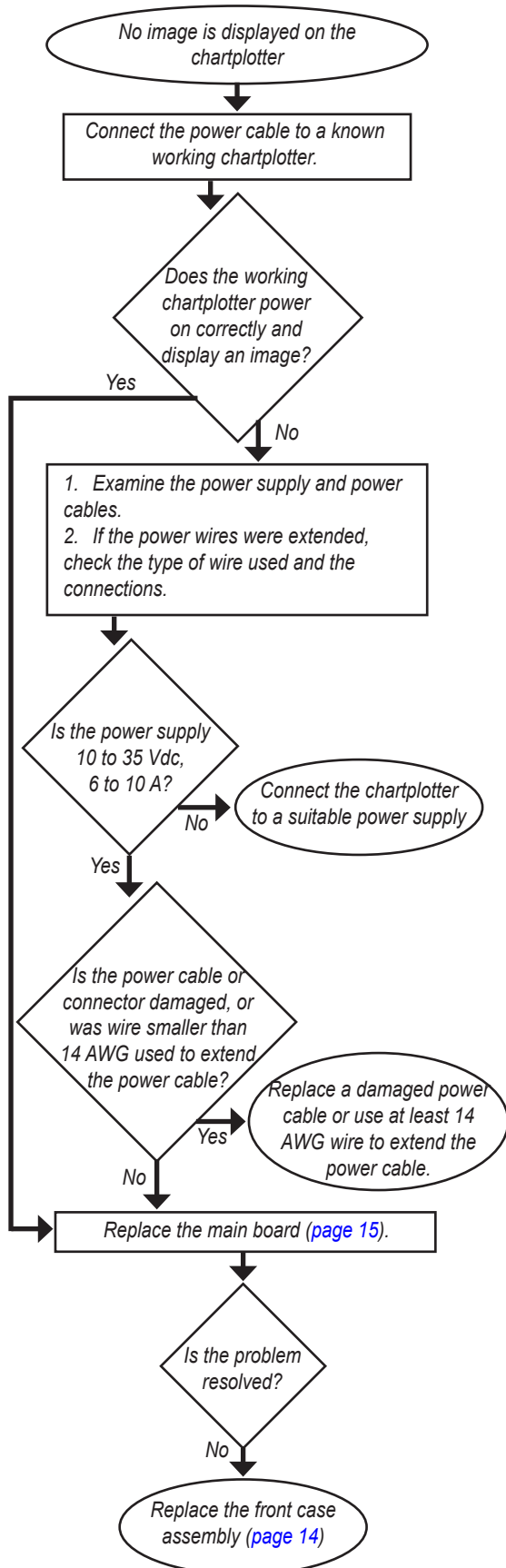
- 1 Select **Settings > System > System Information > Software Information**.
- 2 Hold above the software version number ① until the screen changes.



- 3 Select **Field Diagnostics > Test Mode**.
- 4 Wait 2–3 minutes for the self-tests to complete.
To navigate the Test Mode Screen, select a board or a test from the options on the right side of the screen.

Testing

Testing the Display



Testing the Display Output

You can test the display or troubleshoot the video output by using the test mode.

- 1 Turn on the device in test mode, and wait 2–3 minutes for the self-tests to complete.
- 2 Select **Color Pages**. The screen will appear to completely white.
- 3 Select **Next** or **Previous** to cycle through color pages.
- 4 Use the white, black, red, green, and blue screens to determine if the display or the video output is working correctly.
- 5 Select **Main Page** to exit the color page at any time.

Note: A screen failure requires replacement of the front case assembly (page 14).

Testing the Touchscreen

If the touchscreen on a GPSMAP 7400/7600 series chartplotter does not correctly recognize touch input, you can test it by using the test mode.

- 1 Turn on the device in test mode, and wait 2–3 minutes for the self-tests to complete.
- 2 Select **Touchscreen test**.
Red lines appear on the screen.
- 3 Swipe across each line and observe the behavior:
 - If each line changes from red to green when you swipe across it, then the touchscreen is calibrated correctly. You may have to swipe across the bars multiple times to get each bar to turn green.
 - If each line does not change from red to green, then the touchscreen is not calibrated correctly. Follow the procedures in the "Calibrating the Touchscreen" topic (page 3) to calibrate the touch screen.
- 4 Press the Power key to exit the touchscreen test at any time.

Calibrating the Touchscreen

If the touchscreen test (page 3) indicates that the touchscreen is not calibrated correctly, use the test mode to calibrate the touchscreen.

- 1 Turn on the device in test mode, and wait 2–3 minutes for the self-tests to complete.
- 2 Select **Display Page > Touch Cal**.
NOTE: When you are in test mode, you can also start touchscreen calibration by holding the power button and releasing after 5 seconds.
- 3 Follow the on-screen instructions to calibrate the touchscreen.
- 4 Test the touchscreen to determine the result of the calibration.
- 5 Repeat steps 1–4 if necessary.

NOTE: A touchscreen failure requires replacement of the front case assembly (page 14).

Testing GPS

- 1 Take the device outdoors to a location with a clear view of the sky, avoiding heavy tree cover and buildings.
- 2 Boot the device to Normal mode.
- 3 Select **Settings > System > GPS**.
- 4 Wait up to three minutes for the device to acquire satellites.

If the device does not acquire a satellite fix, there is a problem with the main board or with the internal antenna if it is separate from the main board on your model.

Testing the Power Button Board

- 1 Boot the device in normal mode.
- 2 Enable wireless networking and connect the device to a smartphone or tablet.
- 3 Activate test mode ([page 2](#)).
- 4 On the main page, observe the Push Button field. Confirm the field says UP when the power button is not pressed and DOWN when it is pressed.
- 5 Select the Display Page button and confirm you can hear the beeper.
- 6 On the Display page, observe the Light Sensor mV. Confirm the voltage is less than 500 mV while covering the sensor with a thumb and greater than 3000 mV while in full sunlight.

If a failure is detected during any step while testing the power button board, then replace the power button board.

Locating Problems

Use the following table to locate the source of problems with specific systems.

Unit Size	Board	System Name
7 in. 8 in.	Main Board 012-02579-xx	System Power Display Backlight GPS Wifi / BlueTooth Video Ethernet NMEA 2000
7 in. 8 in.	Connector Board 012-02580-xx	Sonar NMEA 2000 NMEA 0183 Connectors
10 in. 12 in. 16 in.	Main Board 012-02581-xx	System Power Display Backlight GPS Video Ethernet NMEA 2000 NMEA 0183 Connectors
10 in. 12 in. 16 in.	Power Button Board 012-02438-xx	Wifi / Bluetooth Power Key Beeper Photocell

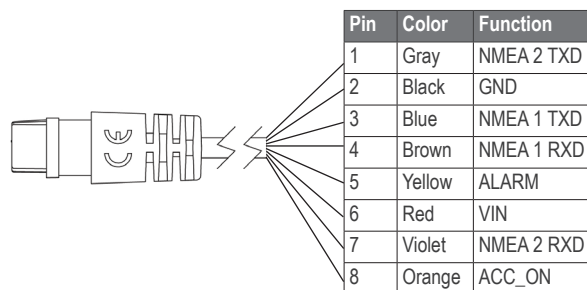
Testing NMEA 0183

If you are experiencing problems with NMEA 0183 data transmission, you will need to create and connect a custom power cable before you can identify NMEA 0183 problems on the Test Mode screen.

- 1 Create a test power cable (see below).
- 2 Connect the test power cable to POWER on the back of the chartplotter.
- 3 Turn on the chartplotter in test mode, and wait 2–3 minutes for the self-tests to complete.
- 4 On the test page, examine the results on the Extern UART Ipbk fields for Port 1 and Port 2.
 - If the fields read “Pass”, then no problems were detected.
 - If either field reads “Fail”, then there is a problem with NMEA 0183. See [Locating Problems](#) for more information ([page 4](#)).

Creating a Test Power Cable

GPSMAP 7400/7600 Series
Power Cable



- 1 Connect NMEA 1 RXD (Brown) to NMEA 1 TXD (Blue).
- 2 Connect NMEA 2 RXD (Violet) to NMEA 2 TXD (Gray).

Disassembly and Reassembly Procedures

NOTICE

Observe the cable connections during all parts of the following repair procedures. If at any point during this procedure you notice a cable is disconnected, connect the cable and repeat any applicable test procedures.

Opening the Housing

NOTICE

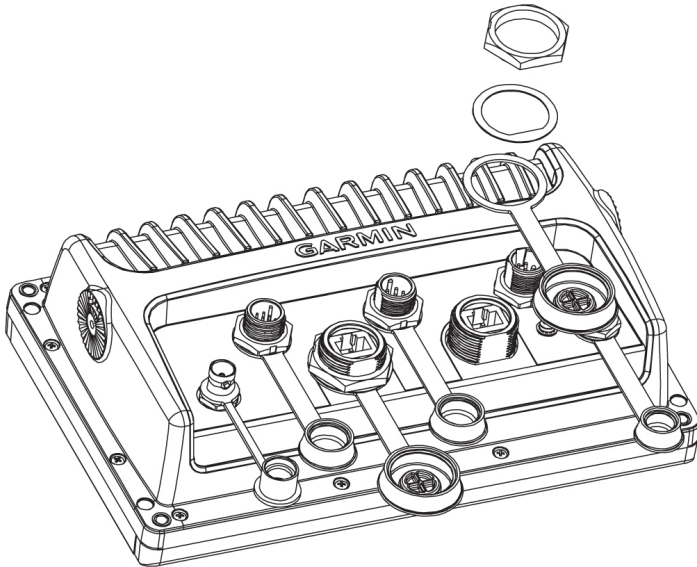
Before opening the housing, ensure you have static discharge equipment in place.

Before you can access the main CPU board, you must first open the rear housing.

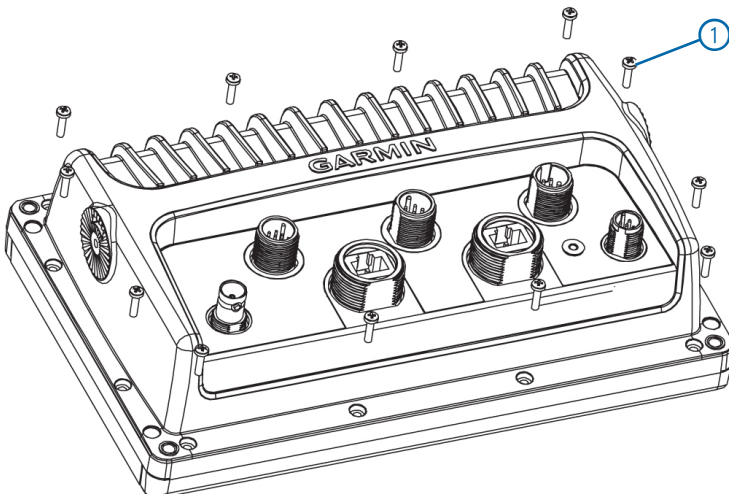
Separating the Rear Housing from the Front Housing: 7 in. and 8 in. Models

- 1 With the chartplotter face down, remove the large nuts, washers, and weathercaps from the ports, using the appropriate socket for each nut.

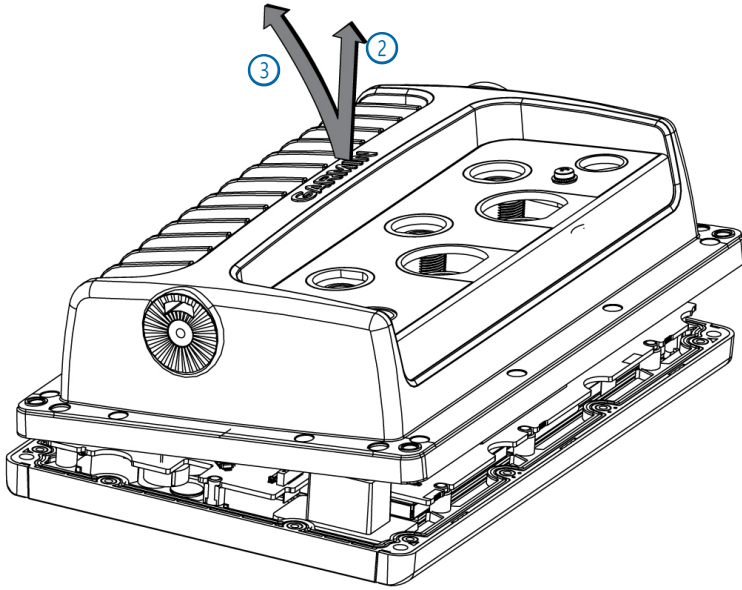
Screw or Nut	Socket or Bit Size	Torque Measurement
Garmin Marine Network port	29 mm socket	15 kgf/cm
Power/data and transducer ports	21 mm socket	11 kgf/cm
NMEA 2000 port	16 mm socket	7 kgf/cm
BNC port	14 mm socket	11 kgf/cm



- 2 Remove the screws ① that fasten the rear housing to the front housing.

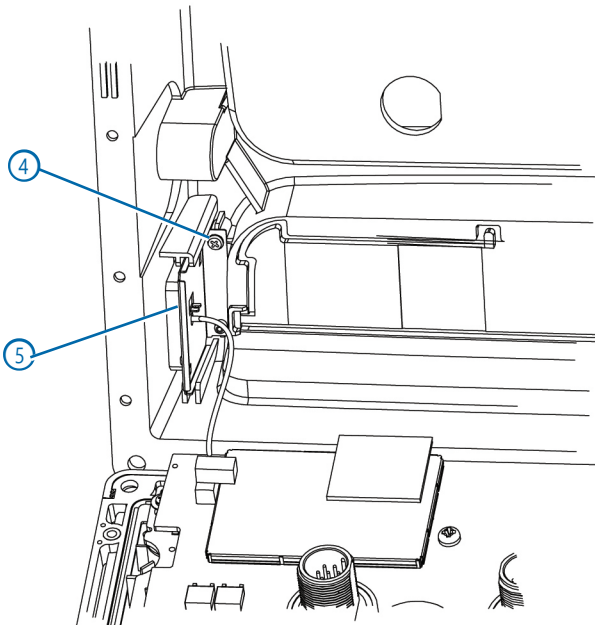


- 3 Press down on the connectors and lift the rear housing straight up ② to separate it from the front housing, and tip up the rear housing ③ to expose the components without placing stress on the internal cables.



NOTE: Step 4 and step 5 apply to 8 in. models only. Antennas on 7 in. models are integrated with the main board.

- 4 Remove the screw ④ securing the antenna patch assembly ⑤ to the rear case housing.

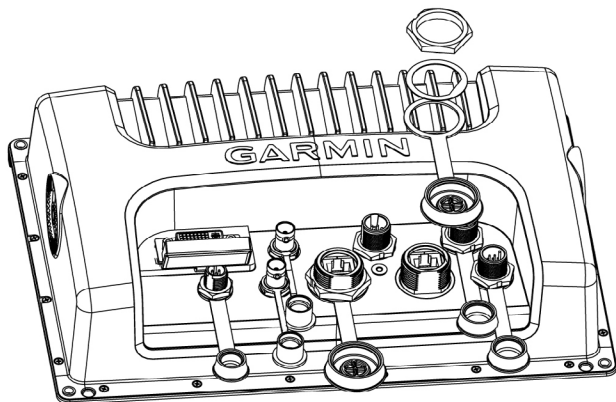


- 5 Slide the antenna patch assembly out of the rear case assembly.
The back of the housing is now separate from the front of the housing.

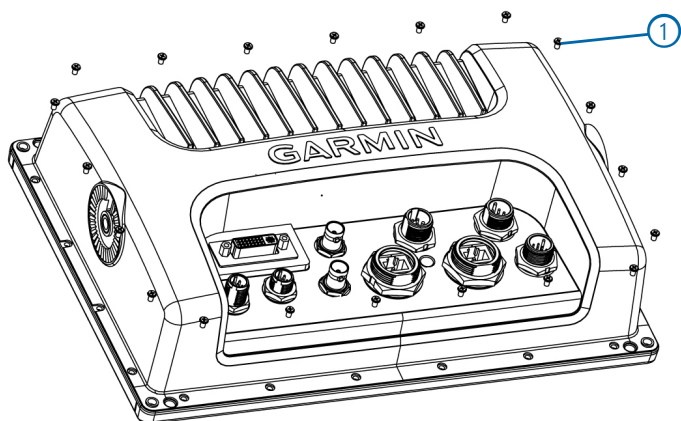
Separating the Rear Housing from the Front Housing: 10 in. and 12 in. Models

- 1 With the chartplotter face down, remove the large nuts, washers, and weathercaps from the ports, using the appropriate socket for each nut.

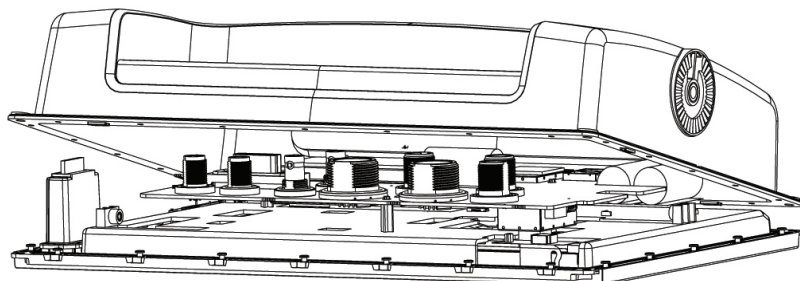
Screw or Nut	Socket or Bit Size	Torque Measurement
Garmin Marine Network port	29 mm socket	15 kgf/cm
Power/data and transducer ports	21 mm socket	11 kgf/cm
NMEA 2000 port	16 mm socket	7 kgf/cm
BNC port	14 mm socket	11 kgf/cm



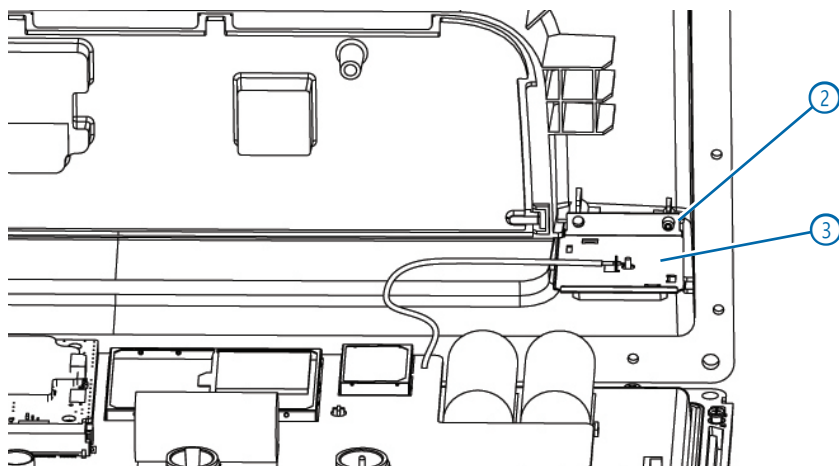
- 2 Remove the T6 screws ① that fasten the rear housing to the front housing.



- 3 Press down on the connectors and lift the rear housing straight up to separate it from the front housing, and tip up the rear housing to expose the components without placing stress on the internal cables.



- 4 Remove the screw ② securing the antenna patch assembly ③ to the rear case housing.

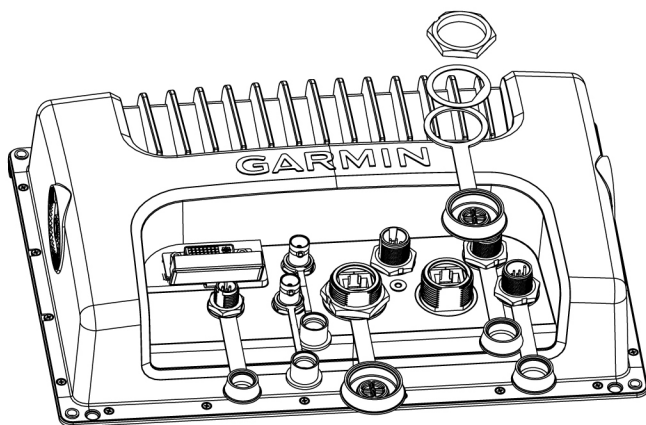


- 5 Slide the antenna patch assembly out of the rear case assembly.
The back of the housing is now separate from the front of the housing.

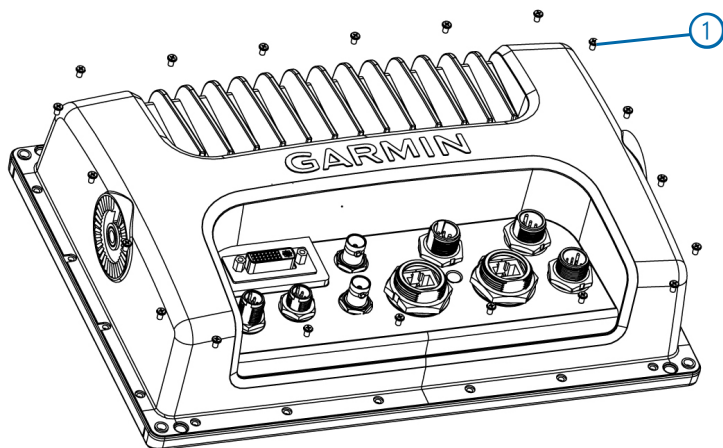
Separating the Rear Housing from the Front Housing: 16 in. Models

- 1 With the chartplotter face down, remove the large nuts, washers, and weathercaps from the ports, using the appropriate socket for each nut.

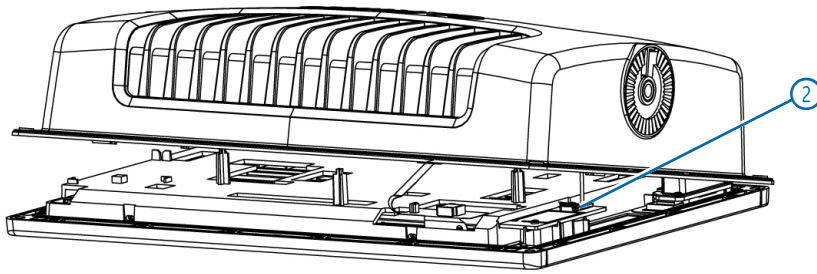
Screw or Nut	Socket or Bit Size	Torque Measurement
Garmin Marine Network port	29 mm socket	15 kgf/cm
Power/data and transducer ports	21 mm socket	11 kgf/cm
NMEA 2000 port	16 mm socket	7 kgf/cm
BNC port	14 mm socket	11 kgf/cm



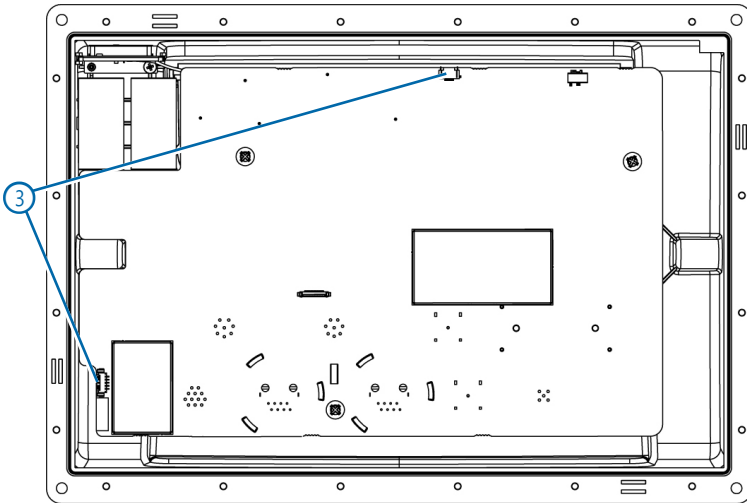
- 2 Remove the T6 screws ① that fasten the rear housing to the front housing.



- 3 Slowly separate the two housings and disconnect the cable ② that is connected to the button board.



- 4 Disconnect all remaining cables on the bottom of the main board ③.



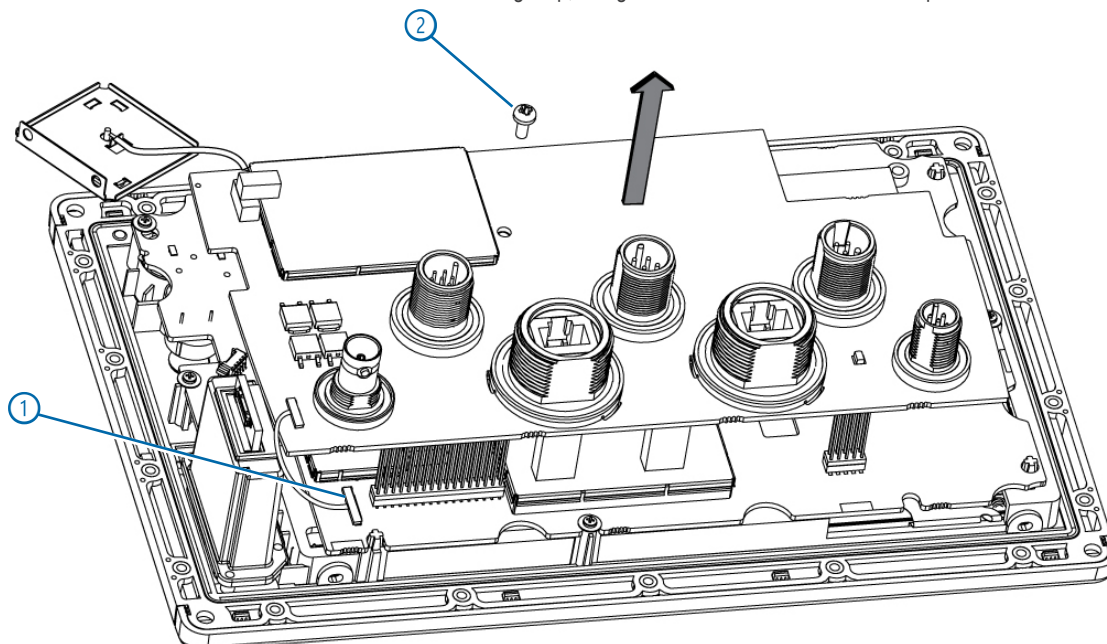
The housings are now separate.

Removing the Connector Board: 7 in. and 8 in. Models

NOTICE

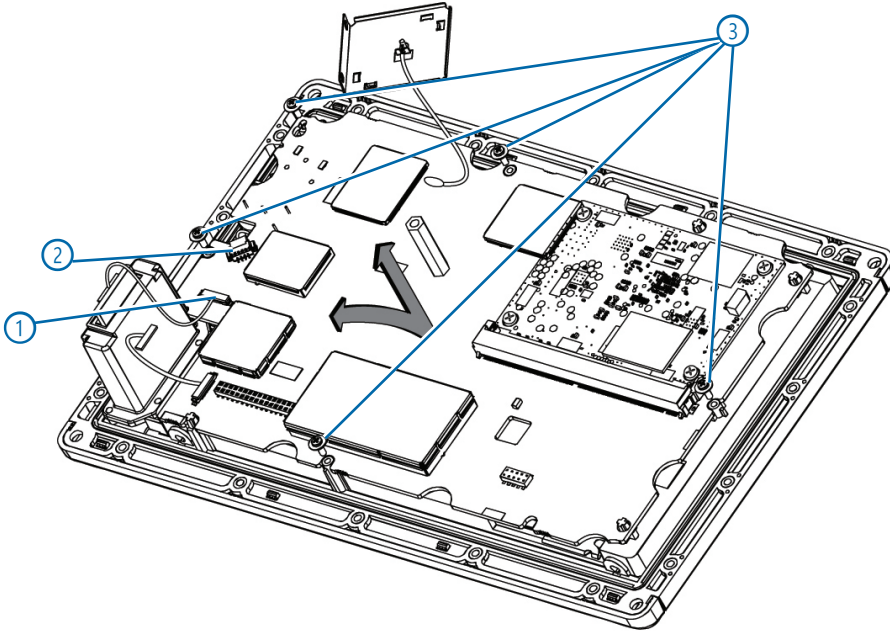
The main board on 7 in. models is not secured to the front case assembly. Use caution when separating the boards to prevent damage.

- 1 Disconnect the cable ① from the lower-left corner of the main board.
- 2 Remove the plastic pan head Phillips screw ② from the center of the connector board.
- 3 Apply pressure to the main board and lift the connector board straight up, being careful not to bend the connector pins between the boards.

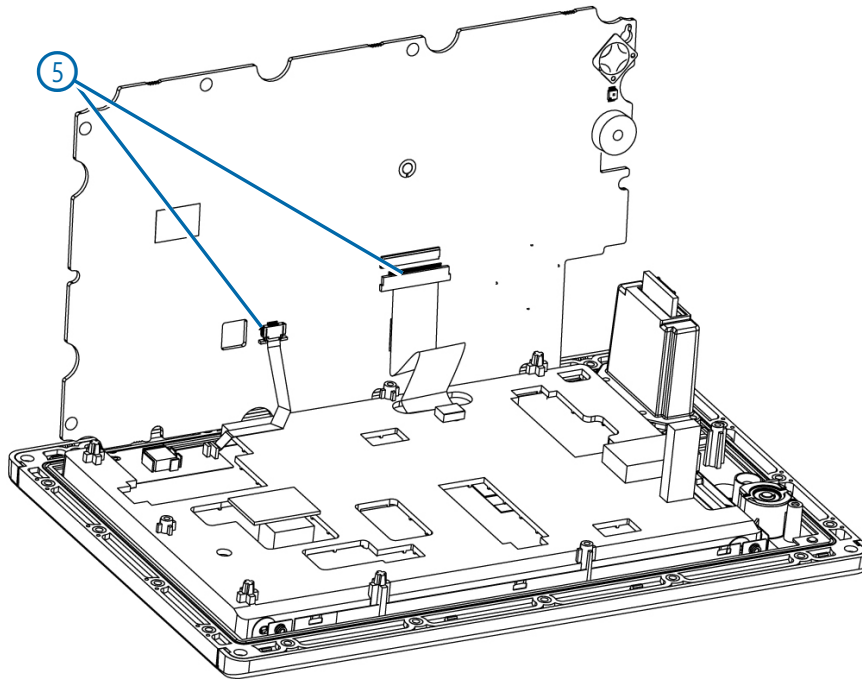


Removing the Main Board: 7 in. and 8 in. Models

- 1 Disconnect the SD port cable ① from the main board.
- 2 Disconnect the 4-pin cable ② from the main board.
- 3 Remove the five screws ③ securing the main board to the screen assembly (8 in. models only).



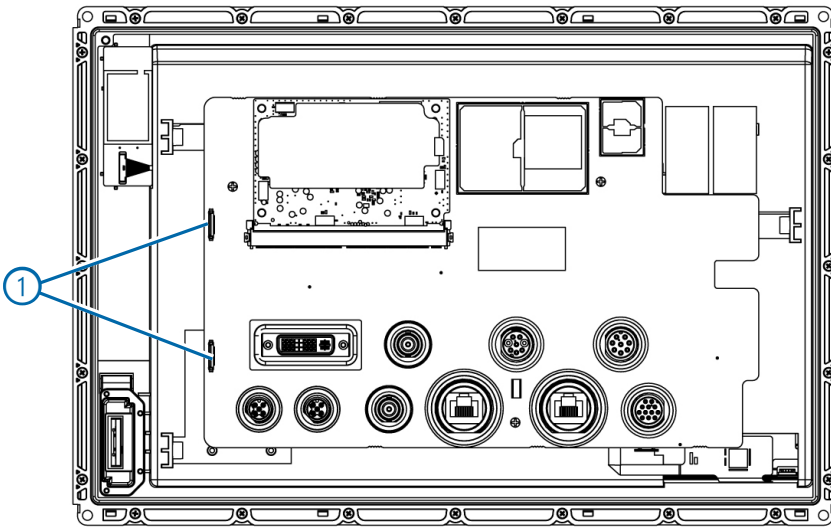
- 5 Slowly lift the main board straight up and tilt it toward you to reveal the cables ⑤ beneath the board.



- 6 Disconnect the cables.
- The main board is now separate from the display assembly.

Removing the Main Board: 10 in. and 12 in. Models

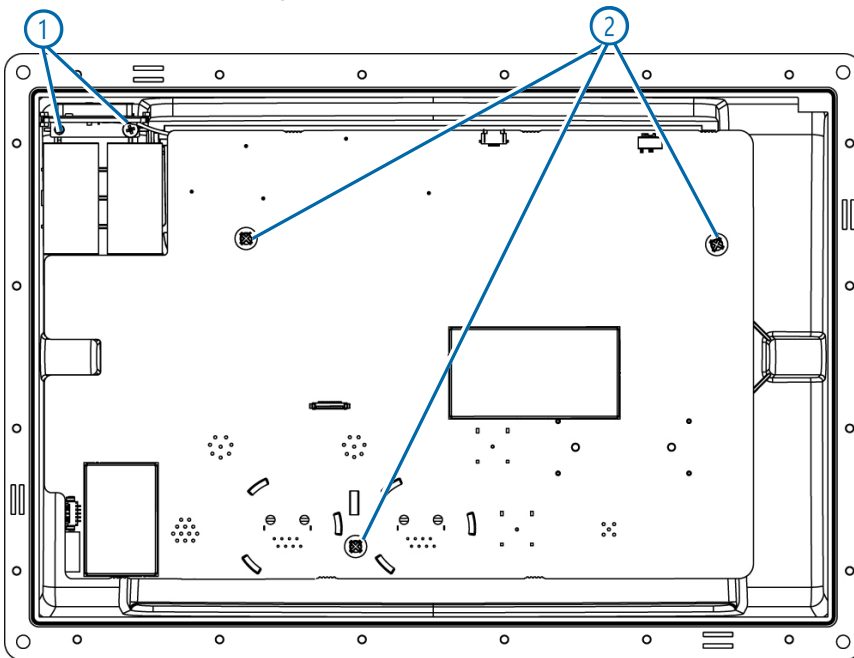
- 1 Separate the housings (page 7).
- 2 Disconnect the cables ① connected to the top of the main board.



- 3 Slowly lift the main board straight up and tilt it to reveal the cables beneath the board.
 - 4 Disconnect the cables connected to the bottom of the main board.
- The main board is now separate from the display assembly.

Removing the Main Board: 16 in. Models

- 1 Open the housing (page 7).
- 2 Remove the screws securing the patch antenna ① to the rear case and slide the patch antenna out of the housing.



- 3 Remove the three screws ② securing the main board to the rear case.
- 4 Disconnect all cables connected to the main board.

Reassembling the Housing

NOTICE

After you have replaced a component or completed a repair, it is vital that you correctly reassemble the unit housing to ensure IEC 60529 IPX7 water resistance.

Kits required (if damaged or distorted):

Chartplotter Model	Kit Number	Description
7407, 7407xsv, 7607, 7607xsv	S00-00533-02	7x07 Case Gasket/O-rings
7408, 7408xsv, 7608, 7608xsv	S00-00533-14	7x08 Case Gasket/O-rings
7410, 7410xsv, 7610, 7610xsv	S00-00533-31	7x10 Case Gasket/O-rings
7412, 7412xsv, 7612, 7612xsv	S00-00533-38	7x12 Case Gasket/O-rings
7416, 7416xsv, 7616, 7616xsv	S00-00533-26	7x16 Case Gasket/O-rings

- 1 Ensure that all replaced or repaired components are properly installed, and that all of the internal cables are connected.
- 2 Examine the large gasket along the rim of the device.
 - Replace the gasket if it is damaged or distorted.
 - Ensure that the gasket channel and the gasket are free of dust and debris.
 - The gasket will only fit one way, and will loosely fit into the channel along the edge of the housing when installed correctly.
- 3 Examine the O-rings around each of the connectors.
 - Replace any O-rings that appear damaged or distorted.
 - Ensure O-ring channels and gaskets are free of dust and debris.
- 4 Ensure the large gasket is in place and the cables are not pinched by the lid.
 - The lid will fit snugly on the main housing. You should not force the lid closed.
- 5 Using a torque wrench with the appropriate socket or bit, tighten the case screws and the nuts around each connector according to the values in the table

Screw or Nut	Socket or Bit Size	Torque Measurement
Case screws	T6 bit or #1 Phillips	3.5 kgf/cm
Garmin Marine Network port	29 mm socket	15 kgf/cm
Power/data and transducer ports	21 mm socket	11 kgf/cm
NMEA 2000 port	16 mm socket	7 kgf/cm
BNC port	14 mm socket	11 kgf/cm

Repair Procedures

Replacing the SD Card Door

Kits required:

Chartplotter Model	Kit Number	Description
7407, 7407xsv, 7607, 7607xsv	S00-00533-05	7x07/7x07xsv SD Card Door
All other models	S00-00533-16	74xx/76xx SD Card Door

- 1 If the original SD card door is still connected to the chartplotter, open the door and twist it clockwise to remove it.
- 2 Place the bottom pin of the new door at the bottom of the SD card-door opening.
- 3 Twist the door counter-clockwise to snap it into place.

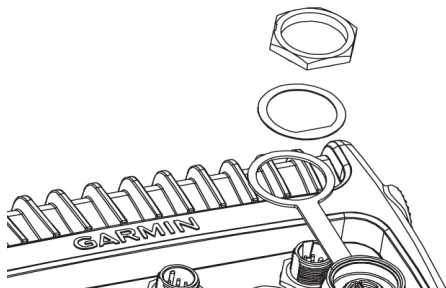
Replacing Weather Caps

If the weather caps are worn or damaged, you can replace them.

Kit required:

Port Name	Kit Number	Description
Ethernet Port	S00-00533-03	74xx/76xx Ethernet weather cap/spacer
NMEA 2000	S00-00533-04	74xx/76xx NMEA2000 weather cap/spacer
BNC Port	S00-00533-06	74xx/76xx BNC weather cap
XDCR Port (8 / 12 pins)	S00-00533-23	7xxx 12 / 8 pin XDCR weather cap/spacer
DVI Port	S00-00533-32	7x10,7x12,7x16 DVI

- 1 Remove the hex nut, spacer, and all remaining pieces of the original weathercap.



- 2 Replace the weathercap, spacer, and hex nut.
- 3 Using a torque wrench with the appropriate socket, tighten the nut around the connector according to the values in the table

Screw or Nut	Socket or Bit Size	Torque Measurement
Garmin Marine Network port	29 mm socket	15 kgf/cm
Power/data and transducer ports	21 mm socket	11 kgf/cm
NMEA 2000 port	16 mm socket	7 kgf/cm
BNC port	14 mm socket	11 kgf/cm

Replacing the Rear Housing

Each model of the 7400/7600 series chartplotters has a single replaceable rear housing.

Kit required:

Chartplotter Model	Kit Number	Description
7607	S00-00533-00	7x07 Rear Case
7x07 (J1939)	S00-00533-49	7x07 J1939 Rear Case
7607xsv	S00-00533-09	7407xsv/7607xsv Rear Case
7407xsv/7607xsv (J1939)	S00-00533-51	7407xsv/7607xsv J1939 Rear Case
7408/7608	S00-00533-24	7408/7608 Rear Case
7408/7608 (J1939)	S00-00533-53	7408/7608 J1939 Rear Case
7408xsv/7608xsv	S00-00533-12	7408xsv/7608xsv Rear Case
7408xsv/7608xsv (J1939)	S00-00533-54	7408xsv/7608xsv J1939 Rear Case
7610	S00-00533-29	7x10 Rear Case
7610xsv	S00-00533-34	7x10xsv Rear Case
7610xsv (J1939)	S00-00533-56	7610xsv J1939 Rear Case
7612	S00-00533-36	7x12 Rear Case
7x12 (J1939)	S00-00533-57	7x12 J1939 Rear Case
7612xsv	S00-00533-39	7x12xsv Rear Case
7x12xsv (J1939)	S00-00533-58	7x12xsv J1939 Rear Case
7616	S00-00533-27	7x16 Rear Case
7x16 (J1939)	S00-00533-59	7x16 J1939 Rear Case
7616xsv	S00-00533-20	7x16xsv Rear Case
7x16xsv (J1939)	S00-00533-60	7x16xsv J1939 Rear Case

- 1 Open the housing ([page 5](#)).
- 2 Install the replacement rear housing.
- 3 Reassemble the housing ([page 12](#)).

Replacing the Front Case Assembly: 7 in. and 8 in. Models

Each model of the 7400/7600 series chartplotters has a single replaceable front case assembly. The front case assembly includes the screen

NOTE: You cannot replace the front case assembly on 16-inch chartplotters. You must send the device to Garmin for repair.

Kits required:

Chartplotter Model	Kit Number	Description
7407	S00-00533-41	7407 Front Case
7607	S00-00533-01	7607 Front Case
7407xsv	S00-00533-42	7407xsv Front Case
7607xsv	S00-00533-10	7607xsv Front Case
7408	S00-00533-43	7408 Front Case
7608	S00-00533-25	7608 Front Case
7408xsv	S00-00533-44	7408xsv Front Case
7408xsv, 7608xsv	S00-00533-13	7608xsv Front Case

- 1 Open the housing ([page 5](#)).
- 2 Remove the connector board (7 in. and 8 in. chartplotters) ([page 9](#)).
- 3 Remove the main board ([page 10](#)).
- 4 Remove the SD card port (8 in. chartplotters) ([page 16](#)).
- 5 On the replacement front case, install the SD card port you removed in step 4.
- 6 On the replacement front case, install the main board you removed in step 3.
- 7 On the replacement front case, install the connector board you removed in step 2.
- 8 Reassemble the housing ([page 12](#)).

Replacing the Front Case Assembly: 10 in. and 12 in. Models

Each model of the 7400/7600 series chartplotters has a single replaceable front case assembly. The front case assembly includes the screen

NOTE: You cannot replace the front case assembly on 16 in. chartplotters. You must send the device to Garmin for repair.

Kits required:

Chartplotter Model	Kit Number	Description
7410	S00-00533-45	7410 Front Case
7610	S00-00533-30	7610 Front Case
7410xsv	S00-00533-46	7410xsv Front Case
7610xsv	S00-00533-35	7610xsv Front Case
7412	S00-00533-47	7412 Front Case
7612	S00-00533-37	7612 Front Case
7412xsv	S00-00533-48	7412xsv Front Case
7612xsv	S00-00533-40	7612xsv Front Case

- 1 Open the housing ([page 7](#)).
- 2 Remove the main board ([page 11](#)).
- 3 Remove the SD card port ([page 16](#)).
- 4 On the replacement front case assembly, install the SD card port using the components removed in step 3.
- 5 On the replacement front case assembly, install the main board using the components removed in step 2.
- 6 Reassemble the housing ([page 12](#)).

Replacing the Connector Board: 7 in. and 8 in. Models

If the connector board becomes damaged or broken, you can replace the connector board on 7 inch and 8 inch chart plotters.

Kits required:

Chartplotter Model	Kit Number	Description
7407, 7408, 7607, 7608	S00-00533-21	7x07/7x08 Connector Board
7407, 7408, 7607, 7608 with J1939	S00-00533-50	7x07/7x08 J1939 Connector Board
7607xsv, 7407xsv, 7408xsv, 7608xsv	S00-00533-28	7x07xsv/7x08xsv Connector Board
7x07xsv, 7x08xsv with J1939	S00-00533-52	7x07xsv/7x08xsv J1939 Connector Board

- 1 Open the housing ([page 5](#)).
- 2 Remove the connector board ([page 9](#)).
- 3 Install the replacement connector board.
- 4 Using a #1 Phillips screwdriver, secure the board using the plastic pan head screw included with the service kit.
- 5 Reassemble the housing ([page 12](#)).

Replacing the Main Board: 7 in. and 8 in. Models

Kits required:

Chartplotter Model	Kit Number	Description
7407, 7407xsv	S12-02579-01	PCB Assy,7407 Main Board WW map
7407 (J1939)	S12-02579-60	PCB Assy,7407 J1939 Main Bd WW map
7607, 7607xsv	S12-02579-11	PCB Assy,7607 Main Board US map
7607 (J1939)	S12-02579-62	PCB Assy,7607 J1939 Main Bd US map
7408, 7408xsv	S12-02579-21	PCB Assy,7408 Main Board WW Map
7408 (J1939)	S12-02579-64	PCB Assy,7408 J1939 Main Bd WW Map
7408xsv (J1939)	S12-02579-65	PCB Assy,7408xsv J1939 Main Bd WW Map
7608, 7608xsv	S12-02579-31	PCB Assy,7608 Main Board US Map
7608 (J1939)	S12-02579-66	PCB Assy,7608 J1939 Main Bd US Map
7608xsv (J1939)	S12-02579-67	PCB Assy,7608xsv J1939 Main Bd US Map

- 1 Open the housing ([page 5](#)).
- 2 Remove the connector board ([page 9](#)).
- 3 Remove the main board ([page 10](#)).
- 5 Solder a new patch antenna ([page 17](#)) to the same place on the replacement board (8 in. models only).
- 6 Reassemble the housing ([page 12](#)).

Replacing the Main Board: 10 in., 12 in., and 16 in. Models

Kits required:

Chartplotter Model	Kit Number	Description
7410	S11-03484-10	PCB Assy,7410 Main Board WW map
7410 (J1939)	S11-03484-40	PCB Assy,7410 J1939 Main Bd WW map
7410xsv	S11-03484-11	PCB Assy,7410xsv Main Board WW Map
7410xsv (J1939)	S11-03484-41	PCB Assy,7410xsv J1939 Main Bd WW Map
7610	S11-03484-12	PCB Assy,7610 Main Board US map
7610 (J1939)	S11-03484-42	PCB Assy,7610 J1939 Main Bd US map
7610xsv	S11-03484-13	PCB Assy, 7610 xsv Main Board US map
7610xsv (J1939)	S11-03484-43	PCB Assy,7610 xsv J1939 Main Bd US map
7412	S11-03484-14	7412 Main Board WW map
7412 (J1939)	S11-03484-44	PCB Assy,7412 J1939 Main Bd WW map
7412xsv	S11-03484-15	7412xsv Main Board WW map
7412xsv (J1939)	S11-03484-45	PCB Assy,7412xsv Main Bd WW map
7612	S11-03484-16	7612 Main Board US map
7612 (J1939)	S11-03484-46	PCB Assy,7612 J1939 Main Bd US map
7612xsv	S11-03484-15	7412xsv Main Board WW map
7612xsv (J1939)	S11-03484-47	PCB Assy,7612xsv Main Bd US map
7416	S11-03779-00	7416 Main Board WW map
7416 (J1939)	S11-03779-10	7416 J1939 Main Bd WW map
7416xsv	S11-03779-01	7416xsv Main Board WW map
7416xsv (J1939)	S11-03779-11	7416xsv J1939 Main Bd WW map
7616	S11-03779-02	7616 Main Board US map
7616 (J1939)	S11-03779-12	7616 J1939 Main Bd US map
7616xsv	S11-03779-03	7616xsv Main Board US map
7616xsv (J1939)	S11-03779-13	7616xsv J1939 Main Bd US map

- 1 Open the housing ([page 7](#)).
- 2 Remove the main board ([page 11](#)).
- 3 Desolder the patch antenna from the main board that is being replaced.
- 4 Solder the patch antenna (removed in step 3) to the replacement board.
- 5 Secure the replacement board to the rear case using the screws removed in step 2.
- 6 Reassemble the housing ([page 12](#)).

Replacing the SD Card Port

NOTICE

SD card ports on 7 in. chartplotters are integrated with the front case assembly. You must replace the front case to replace the SD card port on these models.

Kits required:

Chartplotter Model	Kit Number	Description
All models larger than 7 in.	S00-00533-17	74xx/76xx SD Card Port

- 1 Open the housing ([page 5](#)). The SD card port is located on the front of the housing.
- 2 Disconnect the cable that connects the SD card port to the main board.
- 3 Using a #0 Phillips screwdriver, remove the screws that fasten the SD card port to the front housing, and remove the SD card port from the front housing.
- 4 Ensure the rectangular gasket is in place, clean, and free of debris. The gasket is important because it keeps water from entering around the SD card port.
- 5 Fasten the replacement SD card port to the front housing using the screws you removed in step 3.
- 6 Reconnect the cable you removed in step 2.
Though the replacement SD card port came with a new cable, if the original cable is not damaged, you should reuse the original cable.
- 7 Reassemble the housing ([page 12](#)).

Replacing the Power Button Board: 10 in., 12 in., and 16 in. Models

NOTE: Chartplotters smaller than 10 in. do not contain a power button board.

Kit required:

Chartplotter Model	Kit Number	Description
7610, 7610xsv, 7612, 7612xsv, 7616, 7616xsv	S00-00533-33	7x10,7x12,7x16 Power Button Board

- 1 Separate the front and rear housings ([page 7](#)).
- 2 Disconnect the cable connecting the main board to the power button board.
- 3 Remove the two screws securing the power button board to the front case assembly.
- 4 Replace the power button board and connect the cable to the main board.
- 5 Reassemble the housing ([page 12](#)).

Replacing the Patch Antenna: 8 in., 10 in., and 12 in. Models

Kit required:

Chartplotter Model	Kit Number	Description
7408/7408xsv/7608/7608xsv 7410, 7410xsv, 7610, 7610xsv, 7412, 7412xsv, 7612, 7612xsv	S00-00533-18	74xx/76xx Patch Antenna

- 1 Open the housing ([page 5](#)).
- 2 Remove the connector board (8 in. chartplotters only) ([page 9](#)).
- 3 Desolder the joint connecting the patch antenna to the main board.
- 4 Solder the replacement patch antenna to the main board.
- 5 Install the connector board you removed in step 2 (8 in. chartplotters only).
- 6 Reassemble the housing ([page 12](#)).

Replacing the Patch Antenna: 16 in. Models

Kits required:

Chartplotter Model	Kit Number	Description
7416, 7416xsv, 7616, 7616xsv	S00-00533-07	7616 Patch Antenna

- 1 Open the housing ([page 7](#)).
- 2 Remove the screws securing the patch antenna to the rear housing.
- 3 Remove the main board from the rear housing.
- 4 Desolder the joint connecting the patch antenna to the main board.
- 5 Solder the replacement patch antenna to the main board.
- 6 Install the connector board you removed in step 3.
- 7 Secure the patch antenna using the screws you removed in step 2.
- 8 Reassemble the housing ([page 12](#)).

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