

# GARMIN®

## GPSMAP® 8700

### INSTALLATION INSTRUCTIONS

#### Important Safety Information

##### WARNING

Failure to follow these warnings, cautions, and notices could result in personal injury, damage to the vessel or device, or poor product performance.

See the *Important Safety and Product Information* guide in the product box for product warnings and other important information.

When connecting the power cable, do not remove the in-line fuse holder. To prevent the possibility of injury or product damage caused by fire or overheating, the appropriate fuse must be in place as indicated in the product specifications. In addition, connecting the power cable without the appropriate fuse in place voids the product warranty.

##### CAUTION

To avoid possible personal injury, always wear safety goggles, ear protection, and a dust mask when drilling, cutting, or sanding.

To avoid possible personal injury or damage to the device and vessel, disconnect the vessel's power supply before beginning to install the device.

To avoid possible personal injury or damage to the device or vessel, before applying power to the device, make sure that it has been properly grounded, following the instructions in the guide.

To avoid possible personal injury or damage to this device and vessel, only install this device when the vessel is on land, or when properly secured and docked in calm water conditions.

##### NOTICE

For the best possible performance, the device must be installed according to these instructions.

When drilling or cutting, always check what is on the opposite side of the surface to avoid damaging the vessel.

Read all installation instructions before proceeding with the installation. If you experience difficulty during the installation, contact Garmin® Product Support.

#### Contacting Garmin Support

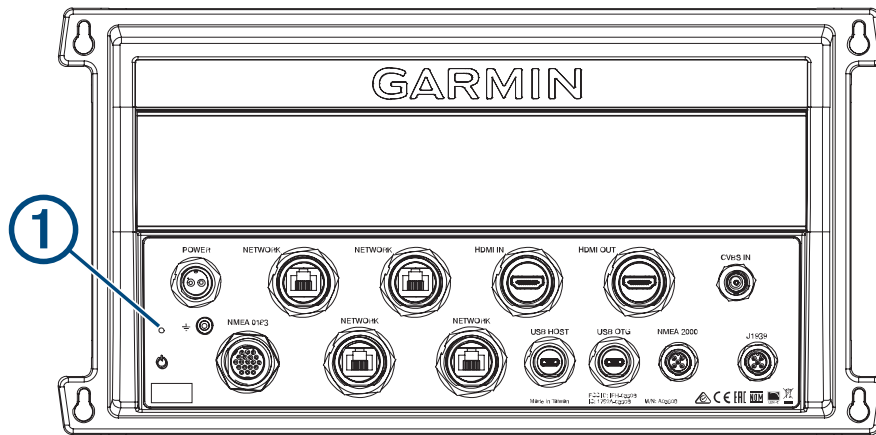
- Go to [support.garmin.com](https://support.garmin.com) for help and information, such as product manuals, frequently asked questions, videos, and customer support.
- In the USA, call 913-397-8200 or 1-800-800-1020.
- In the UK, call 0808 238 0000.
- In Europe, call +44 (0) 870 850 1241.

#### Software Update

You may need to update the chartplotter software after installation. For the instructions on how to update the software, see the owner's manual at [garmin.com/manuals/GPSMAP8700](https://garmin.com/manuals/GPSMAP8700).



## Connector View



POWER	Power cable connection
NETWORK	Garmin Marine Network
HDMI IN	HDMI® in
HDMI OUT	HDMI out to connect the chartplotter to a monitor. Required for device functionality.
CVBS IN	Composite video in
①	Status LED
⏏	Power ground
⏻	Power button
NMEA 0183	NMEA® 0183 and audio out
USB HOST	Micro-USB output for connecting a touchscreen monitor
USB OTG	Micro-USB input from compatible Garmin card reader <sup>1</sup> , computer, or other supported USB accessory
NMEA 2000	NMEA 2000® network
J1939	J1939 network

## Tools Needed

- Drill
- Drill bits appropriate for the surface and hardware (3.2 mm (1/8 in.) drill bit for included screws)
- Phillips screwdriver
- Pencil

<sup>1</sup> Only compatible Garmin card readers recommended. Third-party card readers are not guaranteed to be fully compatible.

## Mounting Considerations

### NOTICE

This device should be mounted in a location that is not exposed to extreme temperatures or conditions. The temperature range for this device is listed in the product specifications (*Specifications, page 18*). Extended exposure to temperatures exceeding the specified temperature range, in storage or operating conditions, may cause device failure. Extreme-temperature-induced damage and related consequences are not covered by the warranty.

- You must mount the device in a location where it will not be submerged.
- You must mount the device in a location with adequate ventilation where it will not be exposed to extreme temperatures.
- You must mount the device at least 2.54 cm (1 in.) from cables and other potential sources of interference.
- You must mount the device in a location that allows room for the routing and connection of all cables.

## Mounting the GPSMAP 8700 Black Box Device

### NOTICE

If you are mounting the device in fiberglass, when drilling the pilot holes, use a countersink bit to drill a clearance counterbore through only the top gel-coat layer. This will help to avoid cracking in the gel-coat layer when the screws are tightened.

**NOTE:** Screws are included with the device, but they may not be suitable for the mounting surface.

Before you mount the device, you must select a mounting location, and determine what screws and other mounting hardware are needed for the surface.

- 1 Place the black box device in the mounting location, and mark the location of the pilot holes.
- 2 Drill a pilot hole for one corner of the device.
- 3 Loosely fasten the device to the mounting surface with one corner, and examine the other three pilot-hole marks.
- 4 Mark new pilot-hole locations if necessary, and remove the device from the mounting surface.
- 5 Drill the remaining pilot holes.
- 6 Secure the device to the mounting location.

## Connection Considerations

When connecting this device to power and to other Garmin devices, you should observe these considerations.

- The power and ground connections to the battery must be checked to make sure they are secured and cannot become loose.
- The cables may be packaged without the locking rings installed. The cables should be routed before the locking rings are installed.
- After installing a locking ring on a cable, you should make sure the ring is securely connected and the o-ring is in place so the power or data connection remains secure.

## Connecting to Power

### ⚠ WARNING

When connecting the power cable, do not remove the in-line fuse holder. To prevent the possibility of injury or product damage caused by fire or overheating, the appropriate fuse must be in place as indicated in the product specifications. In addition, connecting the power cable without the appropriate fuse in place voids the product warranty.

You should connect the red wire to the power source through the ignition or another manual switch to turn the device on and off.

- 1 Route the power cable between the power source and the device.
- 2 Connect the red power wire to the ignition or another manual switch, and connect the switch to the positive (+) battery terminal if necessary.
- 3 Connect the black wire to the negative (-) battery terminal or to ground.
- 4 Connect the power cable to the device, and turn the locking ring clockwise to tighten it.

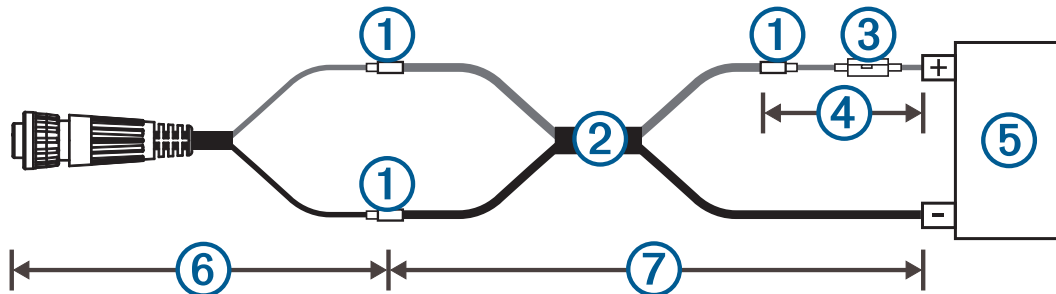
### Additional Grounding Consideration

This device should not need additional chassis grounding in most installation situations. If you experience interference, you can use the grounding screw on the housing to connect the device to the water ground of the boat to help avoid the interference.



### Power Cable Extensions

If necessary, the power cable can be extended using the appropriate wire gauge for the length of the extension.



①	Splice
②	<ul style="list-style-type: none"> <li>• Up to 4.6 m (15 ft.): 10 AWG (5.26 mm<sup>2</sup>) extension wire</li> <li>• Up to 7 m (23 ft.): 8 AWG (8.36 mm<sup>2</sup>) extension wire</li> <li>• Up to 11 m (36 ft.): 6 AWG (13.29 mm<sup>2</sup>) extension wire</li> </ul>
③	Fuse (10 A, 42 V fast-acting)
④	20.3 cm (8 in.)
⑤	Battery
⑥	20.3 cm (8 in.)
⑦	11 m (36 ft.) maximum extension

## Power Considerations

While you can turn the device on and off using the power key, the device will likely not be easily accessible to do so. You should consider connecting a switch or one of the following to turn the GPSMAP 8700 device on and off:

- A GRID™ device

**NOTE:** A GRID 20 device will **not** turn the GPSMAP 8700 device on or off. Using the power key on the GRID 20 device will place the GPSMAP 8700 device into sleep mode.

- Another Garmin chartplotter
- A GMM™ monitor

When power is applied to the GPSMAP 8700 device, the device will turn on. You cannot disable the auto power on feature.

## Garmin Marine Network Considerations

### NOTICE

A Garmin Marine Network PoE Isolation Coupler (010-10580-10) must be used when connecting any third-party device, such as a FLIR® camera, to a Garmin Marine Network. Connecting a Power over Ethernet (PoE) device directly to a Garmin Marine Network chartplotter damages the Garmin chartplotter and may damage the PoE device. Connecting any third-party device directly to a Garmin Marine Network chartplotter will cause abnormal behavior on the Garmin devices, including the devices not properly turning off or the software becoming inoperable.

This device can connect to additional Garmin Marine Network devices to share data such as radar, sonar, and detailed mapping. When connecting Garmin Marine Network devices to this device, observe these considerations.

- All devices connected to the Garmin Marine Network must be connected to the same ground. If multiple power sources are used for Garmin Marine Network devices, you must tie all ground connections from all power supplies together using a low resistance connection or tie them to a common ground bus bar, if available.
- A Garmin Marine Network cable must be used for all Garmin Marine Network connections.
  - Third-party CAT5 cable and RJ45 connectors must not be used for Garmin Marine Network connections.
  - Additional Garmin Marine Network cables and connectors are available from your Garmin dealer.
- The NETWORK ports on the device each act as a network switch. Any compatible device can be connected to any NETWORK port to share data with all devices on the boat connected by a Garmin Marine Network cable.

## Station Connection Considerations

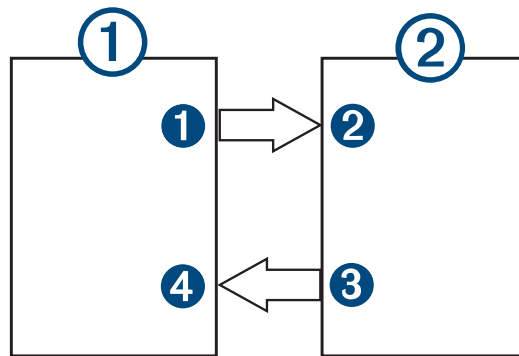
This device can be set up in conjunction with other compatible Garmin devices to work together as a station. When planning stations on your boat, observe these considerations.

- Devices earlier than the GPSMAP 8000 series and GPSMAP 8500 series cannot be used in a station.
- Although it is not necessary, it is recommended that you install all of the devices you plan to use in one station near each other.
- No special connections are necessary to create a station, as long as all of the devices are connected to the Garmin Marine Network ([Garmin Marine Network Considerations, page 5](#)).
- Stations are created and modified using the device software. See the owner's manual provided with the device for more information.

## GMM Monitor Connection Considerations

You can use a GMM monitor to view and control the GPSMAP 8700. When connecting a GMM monitor to the GPSMAP 8700 device, you must observe these considerations.

- The touchscreen functionality of the GMM monitor can be used to control one GPSMAP 8700 device.
- Although it is recommended to use Garmin DVI-D cables, high-quality third-party DVI-D cables may be used. Before you route a DVI-D cable, you should connect all devices to it for testing.
- You must use an HDMI to DVI-D cable or adapter.
- You must connect the GMM monitor to the same power source as the GPSMAP 8700 device. If this is not possible, you must connect the devices to the same ground.
- You must connect the GMM monitor to a NETWORK port on the GPSMAP 8700 device or to the same Garmin Marine Network as the GPSMAP 8700 device.
- The touch data is sent over the Garmin Marine Network.



### Devices

Item	Device
①	GPSMAP chartplotter
②	GMM touchscreen monitor

### Connections

From	To	Cable
① Chartplotter's HDMI OUT port	② GMM monitor's MAIN DVI VIDEO IN port	DVI-D cable with an HDMI adapter
③ GMM monitor's GARMIN PROCESSOR BOX port	④ Chartplotter's NETWORK port or the Garmin Marine Network	Garmin Marine Network Cable

## NMEA 2000 Considerations

### NOTICE

If you are connecting to an **existing** NMEA 2000 network, identify the NMEA 2000 power cable. Only one NMEA 2000 power cable is required for the NMEA 2000 network to operate properly.

A NMEA 2000 Power Isolator (010-11580-00) should be used in installations where the existing NMEA 2000 network manufacturer is unknown.

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If you are installing a NMEA 2000 power cable, you must connect it to the boat ignition switch or through another in-line switch. NMEA 2000 devices will drain your battery if the NMEA 2000 power cable is connected to the battery directly.

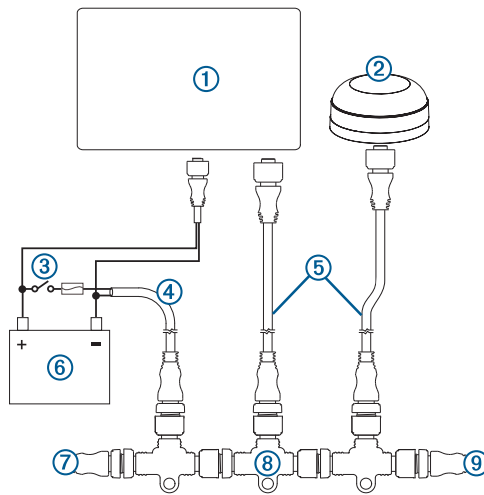
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This device can connect to a NMEA 2000 network on your boat to share data from NMEA 2000 compatible devices such as a GPS antenna or a VHF radio. The included NMEA 2000 cables and connectors allow you to connect the device to your existing NMEA 2000 network. If you do not have an existing NMEA 2000 network you can create a basic one using cables from Garmin.

This device is not powered through the NMEA 2000 network. You must connect the device to a power source ([Connecting to Power, page 4](#)).

If you are unfamiliar with NMEA 2000, you should read the *Technical Reference for NMEA 2000 Products* at [garmin.com/manuals/nmea\\_2000](http://garmin.com/manuals/nmea_2000).

The port labeled NMEA 2000 is used to connect the device to a standard NMEA 2000 network.



Item	Description
①	NMEA 2000 compatible Garmin device
②	GPS antenna
③	Ignition or in-line switch
④	NMEA 2000 power cable
⑤	NMEA 2000 drop cable
⑥	12 Vdc power source
⑦	NMEA 2000 terminator or backbone cable
⑧	NMEA 2000 T-connector
⑨	NMEA 2000 terminator or backbone cable

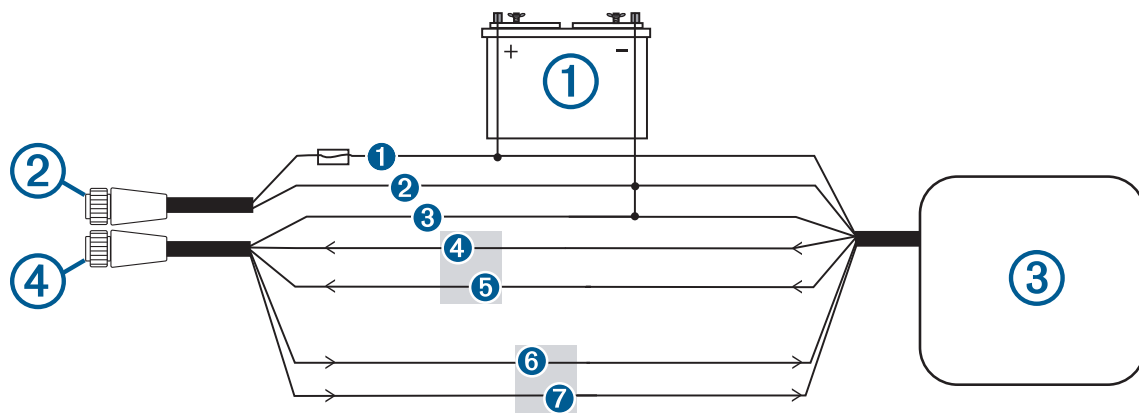


## NMEA 0183 Connection Considerations

- The chartplotter provides one Tx (transmit) port and one Rx (receive) port.
- Each port has 2 wires, labeled A and B according to the NMEA 0183 convention. The corresponding A and B wires of each internal port should be connected to the A (+) and B (-) wires of the NMEA 0183 device.
- You can connect one NMEA 0183 device to the Rx port to input data to this chartplotter, and you can connect up to three NMEA 0183 devices in parallel to the Tx port to receive data output by this chartplotter.
- See the NMEA 0183 device installation instructions to identify the transmit (Tx) and receive (Rx) wires.
- You must use 28 AWG, shielded, twisted-pair wiring for extended runs of wire. Solder all connections and seal them with heat-shrink tubing.
- Do not connect the NMEA 0183 data wires from this device to power ground.
- The power cable from the chartplotter and the NMEA 0183 devices must be connected to a common power ground.
- The internal NMEA 0183 ports and communication protocols are configured on the chartplotter. See the NMEA 0183 section of the chartplotter owner's manual for more information.
- See the chartplotter owner's manual for a list of the approved NMEA 0183 sentences that the chartplotter supports.

## NMEA 0183 Device Connections

This diagram illustrates two-way connections for both sending and receiving data. You can also use this diagram for one-way communication. To receive information from a NMEA 0183 device, refer to items ①, ②, ③, ④, and ⑤ when connecting the Garmin device. To transmit information to a NMEA 0183 device, refer to items ①, ②, ③, ⑥, and ⑦ when connecting the Garmin device.



Item	Description
①	Power source
②	Power cable
③	NMEA 0183 device
④	NMEA 0183 cable

Item	Garmin Wire Function	Garmin Wire Color	NMEA 0183 Device Wire Function
①	Power	Red	Power
②	Power ground	Black	Power ground
③	Data ground	Black	Data ground
④	Rx/A (In +)	White/orange	Tx/A (Out +)
⑤	Rx/B (In -)	White	Tx/B (Out -)
⑥	Tx/A (Out +)	Gray	Rx/A (In +)
⑦	Tx/B (Out -)	Pink	Rx/B (In -)

If the NMEA 0183 device has only one input (receive, Rx) wire (no A, B, +, or -), you must leave the pink wire unconnected.

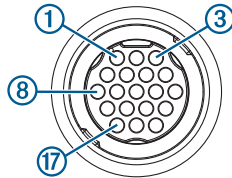
If the NMEA 0183 device has only one output (transmit, Tx) wire (no A, B, +, or -), you must connect the white/orange wire to ground.

## NMEA 0183 with Audio Cable Pinout

The NMEA 0183 with audio cable includes bare wires and an RCA connector for an audio out connection to a stereo, including Fusion® stereos. This optional cable (010-12390-21) can be purchased from [garmin.com](http://garmin.com) or your local Garmin dealer.

After installing, you can connect the RCA connector to the AUX input of the stereo, so the chartplotter's HDMI input is output to the stereo.

This pinout information is for the NMEA 0183 with audio cable.



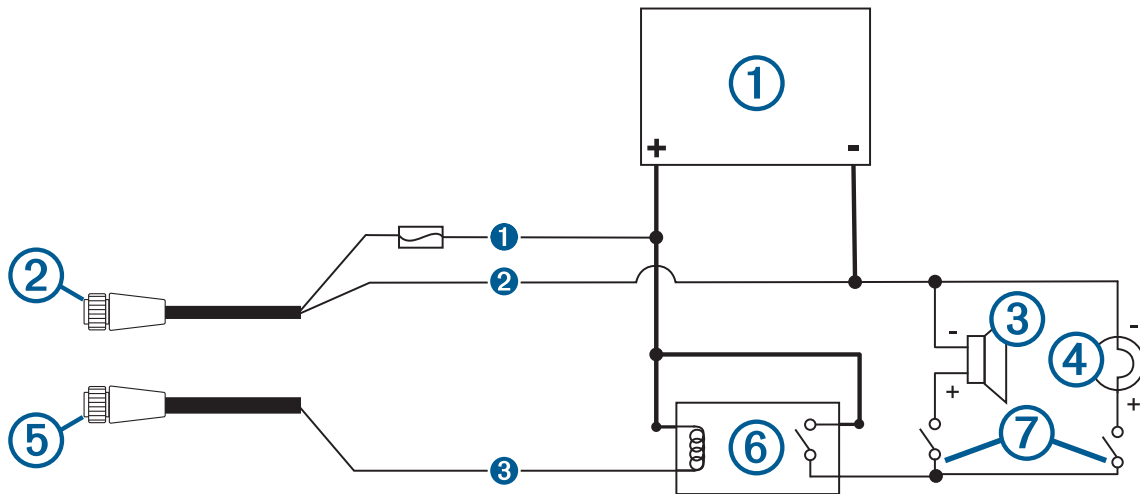
Port	Wire Function	Wire Color	Pin Number
Input port 1	Rx/A (In +)	White	①
Input port 1	Rx/B (In -)	White/orange	②
Output port 1	Tx/A (Out +)	Gray	③
Output port 1	Tx/B (Out -)	Pink	④
Input port 2	Rx/A (In +)	Brown	⑤
Input port 2	Rx/B (In -)	White/brown	⑥
Output port 2	Tx/A (Out +)	Blue	⑦
Output port 2	Tx/B (Out -)	White/blue	⑧
Input port 3	Rx/A (In +)	Violet	⑨
Input port 3	Rx/B (In -)	White/violet	⑩
Input port 4	Rx/A (In +)	White/black	⑪
Input port 4	Rx/B (In -)	Red/white	⑫
N/A	Audio Common	Blue/red	⑬
N/A	Audio Right Channel	Red	⑭
N/A	Audio Left Channel	White	⑮
N/A	Alarm	Yellow	⑯

Port	Wire Function	Wire Color	Pin Number
N/A	Accessory on	Orange	⑰
N/A	Ground (shield)	Black	⑱
N/A	Spare	N/A	⑲

### Lamp or Horn Connections

The device can be used with a lamp, a horn, or both, to sound or flash an alert when the chartplotter displays a message. This is optional, and the alarm wire is not necessary for the device to function normally. When connecting the device to a lamp or horn, observe these considerations.

- The alarm circuit switches to a low-voltage state when the alarm sounds.
- The maximum current is 100 mA, and a relay is needed to limit the current from the chartplotter to 100 mA.
- To toggle visual and audible alerts manually, you can install single-pole, single-throw switches.



Item	Description
①	Power source
②	Power cable
③	Horn
④	Lamp
⑤	NMEA 0183 cable
⑥	Relay (100 mA coil current)
⑦	Toggle switches to enable and disable lamp or horn alerts

Item	Wire Color	Wire Function
①	Red	Power
②	Black	Ground
③	Yellow	Alarm

## J1939 Engine Network Connection Considerations

### NOTICE

You must use a Garmin GPSMAP J1939 accessory cable when connecting the chartplotter to the J1939 engine network to prevent corrosion due to moisture. Using a different cable voids your warranty.

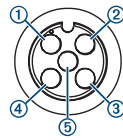
If you have an existing engine network on your boat, it should already be connected to power. Do not add any additional power supply.

This chartplotter can connect to an engine network on your boat to read data from compatible devices such as certain engines. The engine network follows a standard and uses proprietary messages.

You should connect only one chartplotter to one engine network. Connecting more than one chartplotter to one engine network may result in unexpected behavior.

The port labeled J1939 is used to connect the device to the existing engine network. You must route the cable within 6 m (20 ft.) of the engine network backbone.

The Garmin GPSMAP J1939 accessory cable requires connection to a power source and proper termination. For more information on connecting to your engine network, see the manufacturer's engine documentation.



Pin	Wire Color	Description
①	Bare	Shield
②	Red	Power, positive
③	Black	Power, negative
④	White	CAN High
⑤	Blue	CAN Low

## HDMI Video Considerations

### NOTICE

To prevent corrosion due to moisture, you must use Garmin GPSMAP accessory cables when connecting the chartplotter to the video source or display. Do not connect a media player stick directly into the back of the chartplotter. Using different cables or connecting a media player stick into the back of the chartplotter voids your warranty.

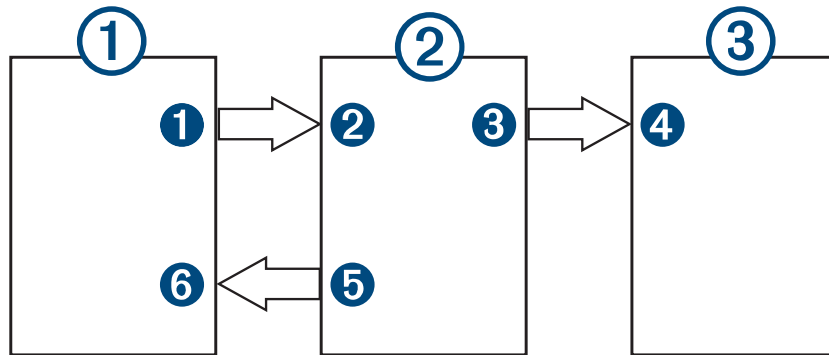
The GPSMAP 8700 chartplotter allows video input from HDMI video sources, such as a Chromecast™ device. You cannot view protected HDMI content (HDCP content), though. Check the video source's manual to verify that HDCP can be turned off for the source.

HDMI video is shared across the Garmin Marine Network, but it is not shared across the NMEA 2000 network. Through the HDMI OUT port, you can display the video on screen, such as a television or monitor.

The Garmin GPSMAP HDMI accessory cable is 4.5 m (15 ft) long. If you need a longer cable, you should use an active HDMI cable only. You need an HDMI coupler to connect the two HDMI cables.

You need a Garmin GPSMAP USB OTG adapter cable to power a media player stick. The USB HOST port can supply up to 2.5 W to power a media player stick.

You must make all cable connections in a dry environment.



#### Devices

Item	Device
①	HDMI source, such as a Chromecast device
②	GPSMAP chartplotter
③	Monitor, such as a computer or television

#### Connections

From	To	Cable
① HDMI source's HDMI OUT port	② Chartplotter's HDMI IN port	Garmin HDMI Cable
③ Chartplotter's HDMI OUT port	④ Monitor's HDMI IN port	Garmin HDMI Cable
⑤ Chartplotter's USB OTG or USB HOST port	⑥ HDMI source's USB HOST port	GPSMAP USB OTG adapter cable to power the HDMI source, if possible (2.5 W maximum)

#### Composite Video Considerations

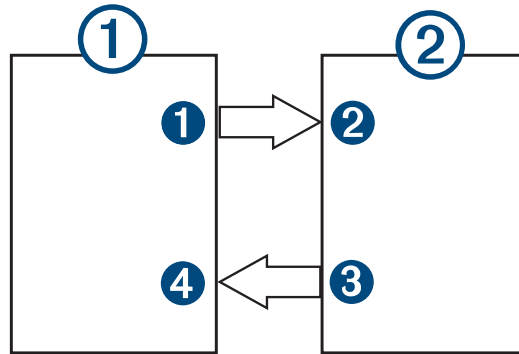
This chartplotter allows video input from composite video sources using the port labeled CVBS IN. When connecting composite video, you should observe these considerations.

- The CVBS IN port uses a BNC connector. You can use a BNC to RCA adapter to connect a composite-video source with RCA connectors to the CVBS IN port.
- Video is shared across the Garmin Marine Network, but it is not shared across the NMEA 2000 network.

## Third-Party Touchscreen Connection Considerations

When connecting a third-party touchscreen to view and control the GPSMAP 8700 device, you must observe these considerations.

- The video data is sent over the HDMI connection.
- The touch data is sent over the USB connection.



### Devices

Item	Device
①	GPSMAP chartplotter
②	Third-party touchscreen monitor

### Connections

From	To	Cable
① Chartplotter's HDMI OUT port	② Monitor's HDMI IN port	Garmin HDMI Cable
③ Monitor's USB port	④ Chartplotter's USB HOST port	Garmin OTG Adapter Cable

**NOTE:** If the monitor is not a touchscreen, you should install a GRID remote control (not a GRID 20 remote control).



## Touchscreen Controls for a Connected Computer

### NOTICE

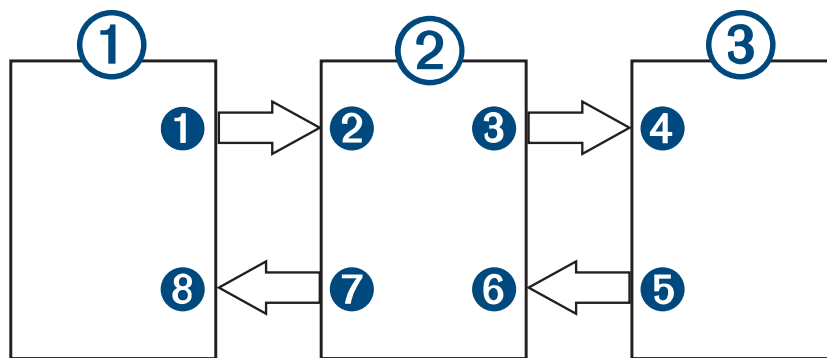
To prevent corrosion due to moisture, you must use Garmin GPSMAP accessory cables when connecting the chartplotter to the computer. Using different cables voids your warranty.

You can connect the chartplotter to a computer to see the computer screen and to control the computer using a touchscreen. To see the computer screen, you must connect the computer to the HDMI IN port and connect the touchscreen to the HDMI OUT port. To control the computer using the chartplotter touchscreen, you must connect the computer to the USB OTG port and connect the touchscreen to the USB HOST port.

The HDMI Cable (010-12390-20) is 4.5 m (15 ft) long. If you need a longer cable, you should use an active HDMI cable only. You need an HDMI coupler to connect the two HDMI cables.

The Garmin OTG Adapter Cable (010-12390-11) is 1.8 m (6 ft) long and the Garmin USB Cable (010-12390-10) is 4.5 m (15 ft) long. If you need a longer cable, you should use a USB hub or USB repeater extension cable only.

You must make all cable connections in a dry environment.



### Devices

Item	Device
①	Computer
②	GPSMAP chartplotter
③	Touchscreen monitor

### Connections

From	To	Cable
① Computer's HDMI OUT port	② Chartplotter's HDMI IN port	Garmin HDMI Cable
③ Chartplotter's HDMI OUT port	④ Monitor's HDMI IN port	Garmin HDMI Cable
⑤ Monitor's USB port	⑥ Chartplotter's USB HOST port	Garmin OTG Adapter Cable
⑦ Chartplotter's USB OTG port	⑧ Computer's USB HOST port	Garmin USB Cable

## Specifications

Dimensions (W × H × D)	38.3 × 19.8 × 4.7 cm (15 <sup>1</sup> / <sub>8</sub> × 7 <sup>13</sup> / <sub>16</sub> × 1 <sup>7</sup> / <sub>8</sub> in.)
Clearance on front of device	8.6 cm (3 <sup>3</sup> / <sub>8</sub> in.)
Weight	1.39 kg (3.06 lb.)
Compass-safe distance	2.54 cm (1 in.)
Temperature range	From -15° to 55°C (from 5° to 131°F)
Material	Polycarbonate plastic and die-cast aluminum
Water rating	IEC 60529 IPX7 <sup>1</sup>
Fuse	10 A, 42 V fast-acting
Input voltage	From 10 to 32 Vdc
Max. power usage at 10 Vdc	40.1 W
Typical current draw at 12 Vdc	1.5 A
Max. current draw at 12 Vdc	6.0 A
NMEA 2000 LEN @ 9 Vdc	2
NMEA 2000 draw	75 mA max.
HTML integration	Compatible with OneHelm™ integration
Memory card	External card reader required (not included)
Wireless frequency and protocols	Wi-Fi® and ANT® technologies 2.4 GHz @ 14.15 dBm maximum

<sup>1</sup> The device withstands incidental exposure to water of up to 1 m for up to 30 min. For more information, go to [www.garmin.com/waterrating](http://www.garmin.com/waterrating).

## NMEA 2000 PGN Information

### Transmit and Receive

PGN	Description
059392	ISO acknowledgment
059904	ISO request
060160	ISO transport protocol: Data transfer
060416	ISO transport protocol: Connection management
060928	ISO address claimed
065240	Commanded address
126208	Request group function
126996	Product information
126998	Configuration information
127237	Heading/track control
127245	Rudder
127250	Vessel heading
127258	Magnetic variance
127488	Engine parameters: Rapid update
127489	Engine parameters: Dynamic
127493	Transmission parameters: Dynamic
127505	Fluid level
127508	Battery status
128259	Speed: Water referenced
128267	Water depth
129025	Position: Rapid update
129026	COG and SOG: Rapid update
129029	GNSS position data
129283	Cross track error
129284	Navigation data
129539	GNSS DOPs
129540	GNSS satellites in view
130060	Label
130306	Wind data
130310	Environmental parameters (obsolete)
130311	Environmental parameters (obsolete)

PGN	Description
130312	Temperature (obsolete)

#### Transmit

PGN	Description
126464	Transmit and receive PGN list group function
126984	Alert Response
127497	Trip parameters: Engine

#### Receive

PGN	Description
065030	Generator average basic AC quantities (GAAC)
126983	Alert
126985	Alert text
126987	Alert threshold
126988	Alert value
126992	System time
127251	Rate of turn
127252	Heave
127257	Attitude
127498	Engine parameters: Static
127503	AC input status (obsolete)
127504	AC output status (obsolete)
127506	DC detailed status
127507	Charger status
127509	Inverter status
128000	Nautical leeway angle
128275	Distance log
129038	AIS class A position report
129039	AIS class B position report
129040	AIS class B extended position report
129044	Datum
129285	Navigation: Route, waypoint information
129794	AIS class A static and voyage related data
129798	AIS SAR aircraft position report

PGN	Description
129799	Radio frequency/mode/power
129802	AIS safety-related broadcast message
129808	DSC call Information
129809	AIS class B "CS" static data report, part A
129810	AIS class B "CS" static data report, part B
130313	Humidity
130314	Actual pressure
130316	Temperature: Extended range
130576	Trim tab status
130577	Direction data

## NMEA 0183 Information

### Transmit

Sentence	Description
GPAPB	APB: Heading or track controller (autopilot) sentence "B"
GPBOD	BOD: Bearing (origin to destination)
GPBWC	BWC: Bearing and distance to waypoint
GPGGA	GGA: Global positioning system fix data
GPGLL	GLL: Geographic position (latitude and longitude)
GPGSA	GSA: GNSS DOP and active satellites
GPGSV	GSV: GNSS satellites in view
GPRMB	RMB: Recommended minimum navigation information
GPRMC	RMC: Recommended minimum specific GNSS data
GPRTE	RTE: Routes
GPVTG	VTG: Course over ground and ground speed
GPWPL	WPL: Waypoint location
GPXTE	XTE: Cross track error
PGRME	E: Estimated error
PGRMM	M: Map datum
PGRMZ	Z: Altitude
SDDBT	DBT: Depth below transducer
SDDPT	DPT: Depth
SDMTW	MTW: Water temperature
SDVHW	VHW: Water speed and heading

**Receive**

Sentence	Description
DPT	Depth
DBT	Depth below transducer
MTW	Water temperature
VHW	Water speed and heading
WPL	Waypoint location
DSC	Digital selective calling information
DSE	Expanded digital selective calling
HDG	Heading, deviation, and variation
HDM	Heading, magnetic
MWD	Wind direction and speed
MDA	Meteorological composite
MWV	Wind speed and angle
VDM	AIS VHF data-link message

You can purchase complete information about National Marine Electronics Association (NMEA) format and sentences from [www.nmea.org](http://www.nmea.org).

## J1939 Information

The chartplotter can receive J1939 sentences. The chartplotter cannot transmit over the J1939 network.

Description	PGN	SPN
Engine percent load at current speed	61443	92
Engine speed	61444	190
Engine manifold exhaust gas temperature - right manifold	65031	2433
Engine manifold exhaust gas temperature - left manifold	65031	2434
Engine auxiliary coolant	65172	
Active diagnostic trouble codes	65226	
Vehicle distance	65248	
Water in fuel indicator	65279	
Engine wait to start lamp	65252	1081
Engine over speed test	65252	2812
Engine air shutoff command status	65252	2813
Engine alarm output command status	65252	2814
Engine total hours of operation	65253	247
Navigation-based vehicle speed	65256	517
Engine fuel temperature 1	65262	174
Engine oil temperature 1	65262	175
Engine fuel delivery pressure	65263	94
Engine oil pressure	65263	100
Engine coolant pressure	65263	109
Engine coolant temperature	65263	110
Engine coolant level	65263	111
Engine fuel rate	65266	183
Engine average fuel economy	65266	185
Engine intake manifold #1 pressure	65270	102
Battery potential / power input 1	65271	168
Transmission oil temperature	65272	177
Transmission oil pressure	65272	127
Fuel level	65276	96
Engine oil filter differential pressure	65276	969



## Status LED

LED Activity	Status
Solid red	The device is turning on.
Flashing green	The device is operating normally.
Flashing orange	The device software is being updated.

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