GARMIN

APOLLO™ RA770 INSTALLATION INSTRUCTIONS

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Apollo™ RA770 Installation Instructions
Installation Instructions

Important Safety Information

⚠ WARNING

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

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

This device must be installed according to these instructions.

Disconnect the vessel's power supply before beginning to install this product.

Before applying power to this product, make sure it has been correctly grounded according to these instructions.

⚠ CAUTION

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

NOTICE

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

Do not use the stereo as a template when drilling the mounting holes because this may damage the glass display and void the warranty. You must only use the included template to correctly drill the mounting holes.

You must read all installation instructions before beginning the installation. If you experience difficulty during the installation, contact Fusion® Product Support.

What's In the Box

- Mounting gasket
- Four 8-gauge, self-tapping screws
- Two screw covers
- Power and speaker wiring harness
- Auxiliary-in, line-out, and subwoofer-out wiring harnesses
- 2 m (6 ft.) NMEA 2000® drop cable
- Dust cover

Tools Needed

- Phillips screwdriver
- Electric drill
- Drill bit (size varies based on surface material and screws used)
- Rotary cutting tool or jigsaw
- Silicone-based marine sealant (optional)

Mounting Considerations

- You must mount the stereo on a flat surface that provides open airflow around the rear of the stereo for heat ventilation.
- If you are installing the stereo in a location that may be exposed to water, you must mount it within 45 degrees below or 15 degrees above the horizontal plane.
- If you are installing the stereo in a location that may be exposed to water, you must add a drip loop to the cable to allow water to drip off of the cable and avoid damage to the stereo.
- If you need to mount the stereo on the outside of the boat, you must mount it in a location far above the waterline, where it is not submerged, and where it cannot be damaged by docks, pilings, or other pieces of equipment.
- To avoid interference with a magnetic compass, you should mount the stereo at least 15 cm (5.9 in.) away from a compass.

Mounting the Stereo

NOTICE

Do not use the stereo as a template when drilling the mounting holes because this may damage the display and void the warranty. You must only use the included template to correctly drill the mounting holes.

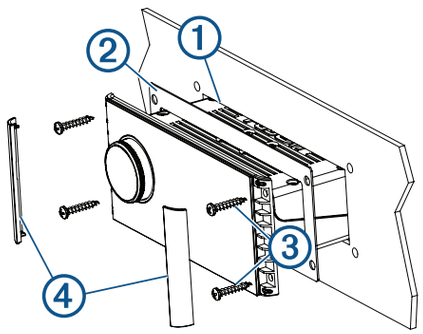
Be careful when cutting the hole to mount the stereo. There is only a small amount of clearance between the case and the mounting holes, and cutting the hole too large could compromise the stability of the stereo after it is mounted.

Be careful when installing the stereo in an aluminum boat or a boat with a conductive hull, if you require the electrical system to be isolated from the boat hull.

Do not apply grease or lubricant to the screws when fastening the stereo to the mounting surface. Grease or other lubricants can cause damage to the stereo housing.

Before you can mount the stereo in a new location on the mounting surface, you must select a location in accordance with the mounting considerations.

1. Adhere the template to the mounting surface.
2. Drill a hole inside the corner of the dashed line on the template.
3. Cut the mounting surface ① along the inside of the dashed line on the template.



4. Ensure the mounting holes on the stereo line up with the pilot holes on the template.
5. Using an appropriately sized drill bit for the mounting surface and screw type, drill the pilot holes.
6. Remove the template from the mounting surface.
7. Complete an action:
   - If you are installing the stereo in a dry location, place the included mounting gasket ② on the back of the stereo.
   - If you are installing the stereo in a location that is exposed to water, apply silicone-based marine sealant on the mounting surface around the cutout.

   NOTICE

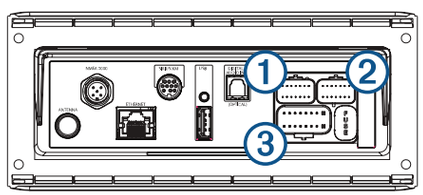
   Do not install the included mounting gasket if you applied sealant to the mounting surface. Using sealant and the mounting gasket may reduce water resistance.
8. If you will not have access to the back of the stereo after installation, make the necessary wiring connections.
9. Secure the stereo to the mounting surface using the included screws ③.

   You should hand-tighten the screws when securing the stereo to the mounting surface to avoid over tightening them.
10. Snap the screw covers in place ④.

Connection Considerations

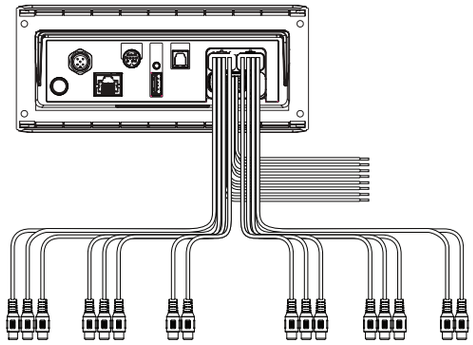
For the stereo to function correctly, you must connect it to power, to speakers, and to input sources. You should carefully plan the layout of the stereo, speakers, input sources, optional NMEA 2000 network, and optional Fusion PartyBus™ devices or network before making any connections.

Port Identification



Item	Description
ANTENNA	Connects the stereo to a typical AM/FM antenna. If you are installing the stereo on a boat with a metal hull, you must use a ground-dependent antenna. If you are installing the stereo on a boat with a non-metal hull, you must use a ground-independent antenna. See the installation instructions provided with your antenna for more information.
NMEA 2000	Connects the stereo to a NMEA 2000 network (NMEA 2000 System Wiring Diagram, page 5). Connects to an NRX series remote control directly (Configuring an Optional Wired NRX Remote Control, page 5).
ETHERNET	Connects the stereo to another Fusion PartyBus stereo, zone stereo, or network (Fusion PartyBus Networking, page 6).
SIRIUS XM	Connects the stereo to a SiriusXM® Connect Tuner to receive SiriusXM stations where available (not included). Connects to a Fusion DAB module to receive DAB stations where available (not included).
USB	Connects the stereo to a USB source.
DIGITAL AUDIO IN	Connects the stereo to an optical digital audio source, such as TV or DVD player.
FUSE	Contains the 15 A fuse for the device.
①	Connects the stereo to the wiring harness for auxiliary input 2, and for the line and subwoofer outputs for zones 3 and 4.
②	Connects the stereo to the wiring harness for auxiliary input 1, and for the line and subwoofer outputs for zones 1 and 2.
③	Connects the stereo to the power and speaker wiring harness.

Wiring Harness Wire and Connector Identification



Wire or RCA Connector Function	Bare Wire Color or RCA Label Name	Notes
Ground (-)	Black	Connects to the power source (Power Connection, page 3).
Power (+)	Yellow	Connects to the power source (Power Connection, page 3).
Ignition	Red	Connects to the power source (Power Connection, page 3).
Amplifier on	Blue	Connects to optional external amplifiers, enabling them to turn on when the stereo turns on. A connected amplifier must use the same ground (-) as the stereo for this signal wire to function correctly.
Telemute	Brown	Activates when connected to ground. For example, when you connect this wire to a compatible, hands-free mobile kit, the audio mutes or the input switches to Aux1 when a call is received and the kit connects this wire to ground. You can enable this functionality from the settings menu.
Dim	Orange	Connects to the boat's illumination wire to dim the stereo screen when the lights are on. The gauge of the illumination wire must be suitable for the fuse supplying the circuit it is connected to.
Speaker zone 1 left (+)	White	
Speaker zone 1 left (-)	White/black	
Speaker zone 1 right (+)	Gray	
Speaker zone 1 right (-)	Gray/black	
Speaker zone 2 left (+)	Green	
Speaker zone 2 left (-)	Green/black	
Speaker zone 2 right (+)	Purple	
Speaker zone 2 right (-)	Purple/black	
Zone 1 line out (left) Zone 1 line out (right) Zone 1 subwoofer out	ZONE 1 ZONE 1 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 1. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Zone 2 line out (left) Zone 2 line out (right) Zone 2 subwoofer out	ZONE 2 ZONE 2 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 2. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Auxiliary in 1 left Auxiliary in 1 right	AUX IN 1	Provides an RCA stereo line input for audio sources, such as a CD or MP3 player.
Zone 3 line out (left) Zone 3 line out (right) Zone 3 subwoofer out	ZONE 3 ZONE 3 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 3. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Zone 4 line out (left) Zone 4 line out (right) Zone 4 subwoofer out	ZONE 4 ZONE 4 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 4. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Auxiliary in 2 left Auxiliary in 2 right	AUX IN 2	Provides and RCA stereo line input for audio sources, such as a CD or MP3 player.

Power Connection

When connecting the stereo to power, you must connect the yellow, red, and black wires to the power source. The yellow and red wires have different functions, and the method you use to connect them to power depends on how you plan to use the stereo on your vessel.

Yellow wire

- This wire provides power to the stereo.
- This wire should be connected through a 15 A circuit breaker, if one is available on the vessel.

NOTICE

If a 15 A circuit breaker is not available on the vessel, you must connect this wire to power through a 15 A fuse (not included).

- This wire provides power to the stereo at all times, and it will drain the battery even when the stereo is not in use. You should install a manual switch on this wire if a 15 A circuit breaker is not available on the vessel, or if you cannot toggle the breaker to remove power to the stereo when storing the vessel.
- If it is necessary to extend this wire, use 14 AWG (2.08 mm^2) wire. For extensions longer than 1 m (3 ft.), use 12 AWG (3.31 mm^2) wire.

Red wire

- This wire can be connected to the same power source as the yellow wire through the ignition or through a manual switch. This enables you to turn the stereo on and off automatically when you turn the vessel on and off, or when you activate the switch.
- Using this wire to turn the stereo on and off behaves in the same way as using the power button on the stereo to turn it on and off. It is not necessary to connect this wire to a switch if you plan to toggle the power using the power button on the stereo or using a connected chartplotter or remote control. This wire must be connected to turn the stereo on.
- When you turn off the stereo using this switch or the power button, it enters a standby mode that allows the stereo to start up again faster than if you switch the power off using the yellow wire. When it is in standby mode, the stereo uses up to 200 mA, and you must turn off power to the stereo on the yellow wire through the circuit breaker or manual switch when you are not using the vessel to avoid draining the battery.
- **NOTICE**

  You must connect this wire to power through a 1 A fuse (not included), whether or not you connect it to the ignition or manual switch.
- If it is necessary to extend this wire, use 22 AWG (0.33 mm^2) wire.

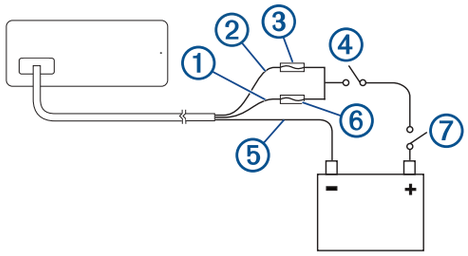
Black wire

- This is the ground wire, and you must connect it to the negative terminal of the power source or to a common ground.
- If it is necessary to extend this wire, use 14 AWG (2.08 mm^2) wire. For extensions longer than 1 m (3 ft.), use 12 AWG (3.31 mm^2) wire.

Connecting to Power Without Using an Ignition Switch

This method of connection is used most often on larger vessels and on vessels with multiple networked stereos and other marine devices. For these installations, a faster startup time is typically less critical, and it is more effective to use the breaker or a dedicated switch on the electrical panel to turn off the stereo and ensure that no unexpected power drain occurs.

1 Consult this diagram to plan the wire connections.



Item	Description	Notes
①	Yellow wire	You should connect this wire to the red wire before you connect both wires to the manual switch or circuit breaker.
②	Red wire	You should connect this wire to the yellow wire so that it does not act as a physical standby switch.
③	1 A fuse (not included)	You must install this fuse on the red wire before you connect the red wire to the yellow wire.
④	Manual switch (optional)	This switch is needed only if a circuit breaker is not available or if it provides a more convenient method of cutting power to the stereo.
⑤	Black wire	Ground (-)
⑥	15 A fuse (not included)	This fuse is required if you are not able to connect to power through a 15 A circuit breaker ⑦.
⑦	15 A circuit breaker	If a circuit breaker is not available, you must connect a 15 A fuse ⑥ on the yellow wire

2 Route all wires to the stereo wiring harness, the circuit breaker or switch, and the power source as necessary.

Do not connect the wiring harness to the stereo until after you have made all of the bare wire connections.

3 Install all of the necessary fuses on the red and yellow wires.

4 Connect the wiring harness to the stereo.

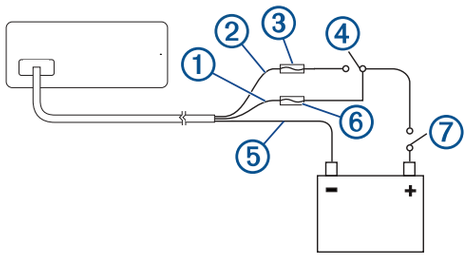
When the circuit breaker or manual switch is closed, the stereo is always on. You can use the power button on the stereo or a connected chartplotter or remote control to place the stereo in a low-power standby mode if needed.

NOTE: When you are not using the vessel, you should remove power to the stereo using the circuit breaker or manual switch to avoid draining the battery.

Connecting to Power Through an Ignition Switch

This method of connection is used most often on ski boats, wake boats, and similar sport or recreational vessels where power to the engines is toggled often. For these installations, a quick standby and faster startup time is desired so that music can be stopped and begin playing again as quickly as possible after restarting the engines. When in standby mode, the stereo uses up to 200 mA, and you should connect the power wires through a circuit breaker or manual switch to avoid draining the battery when you are not using the boat.

1 Consult this diagram to plan the wire connections.



Item	Description	Notes
①	Yellow wire	You must connect this wire to the same power source as the ignition or ACC switch.
②	Red wire	You must connect this wire to the ignition or ACC switch before you connect it to the same power source as the yellow wire.
③	1 A fuse (not included)	You must install this fuse on the red wire before you connect the red wire to the ignition or ACC switch.
④	Ignition or ACC switch	Connecting the red wire to this switch allows the stereo to enter a low-power standby mode when you turn off the engines, so it can start up faster when you turn on the engines again.
⑤	Black wire	Ground (-)
⑥	15 A fuse (not included)	This fuse is required if you are not able to connect to power through a 15 A circuit breaker ⑦.
⑦	15 A circuit breaker or manual switch	If a circuit breaker is not available, you must connect a 15 A fuse ⑥ on the yellow wire. You should also connect the yellow wire to power using a manual switch, so you can remove power to the stereo when you are not using the boat.

2 Route all wires to the stereo wiring harness, the ignition or ACC switch, the circuit breaker, and the power source as necessary.

Do not connect the wiring harness to the stereo until after you have made all of the bare wire connections.

3 Install all of the necessary fuses on the red and yellow wires.

4 Connect the wiring harness to the stereo.

When you turn on the ignition switch, the stereo turns on along with other accessory electronics. When you turn off the ignition switch, the stereo enters a low-power standby mode.

NOTE: When you are not using the vessel for an extended period of time, you should remove power to the stereo using the circuit breaker or other manual switch on the yellow wire to avoid draining the battery.

Speaker Zones

You can group speakers in one area into a speaker zone. This enables you to control the audio level of the zones individually. For example, you could make the audio quieter in the cabin and louder on deck.

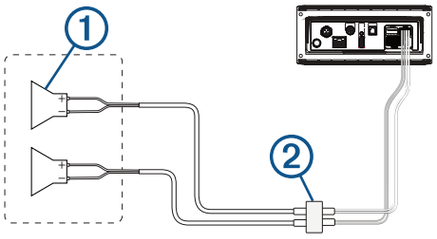
Up to two speakers can be connected per channel (left and right) of each zone, in parallel. A zone can support no more than four speakers using the on-board amplifier.

Zones 1 and 2 are powered by the on-board amplifier. To use the RCA line outputs and the RCA subwoofer outputs for zones 1 and 2, you must connect external amplifiers.

Zones 3 and 4 are available as line-level outputs only. To use the RCA line outputs and the RCA subwoofer outputs for zones 3 and 4, you must connect external amplifiers.

You can set the balance, volume limit, tone, subwoofer frequency, and name for each zone, and configure other zone-specific settings.

Single-Zone System Wiring Example

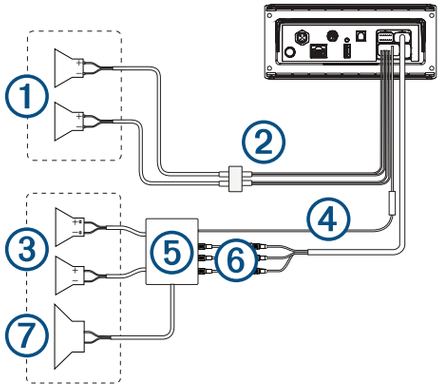


①	Speakers
②	Water-tight connection

Speaker System Wiring Using a Line Out

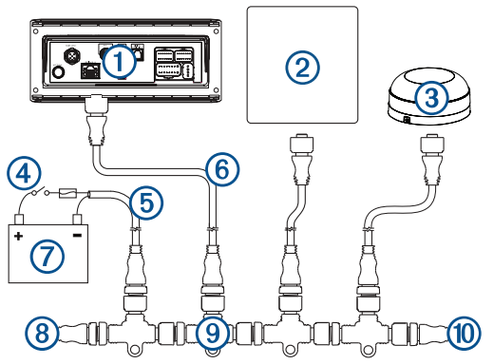
This diagram illustrates a system installation with an external amplifier and subwoofer connected to zone 2 on the stereo using a line out. You can connect an amplifier and subwoofer to any or all of the available zones on the stereo.

NOTE: You can connect speakers to the speaker wires for the internal stereo amplifier while using the line out on zones 1 and 2, although adjusting the volume affects both the speakers connected to the internal amplifier and the line out. This may result in uneven volume levels.



①	Zone 1 speakers
②	Water-tight connection
③	Zone 2 speakers
④	Amplifier-on signal wire You must connect this wire to each amplifier connected to a zone line out. A connected amplifier must use the same ground (-) as the stereo for this signal wire to function correctly.
⑤	Powered amplifier connected to the zone 2 line out
⑥	Zone 2 line out and subwoofer out Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier. You may need to use an RCA splitter to connect this to an amplifier.
⑦	Subwoofer

NMEA 2000 System Wiring Diagram



①	Stereo
②	Supported chartplotter, MFD, or compatible Fusion NMEA 2000 remote control
③	NMEA 2000 GPS antenna, speed sensor, or wind instrument. When the stereo is connected to the same NMEA 2000 network as a compatible engine, a GPS antenna, a chartplotter with a built-in GPS antenna, a wind instrument, or a water speed sensor, it can be configured to automatically adjust the volume according to the engine RPM, the speed over ground, the wind speed, or the speed through water. See the stereo Owner's Manual for more information.
④	In-line switch
⑤	NMEA 2000 power cable
⑥	NMEA 2000 drop cable, up to 6 m (20 ft.)
⑦	9 to 16 Vdc power supply
⑧	NMEA 2000 terminator or backbone cable
⑨	NMEA 2000 T-connector
⑩	NMEA 2000 terminator or backbone cable

Configuring an Optional Wired NRX Remote Control

NOTICE

The stereo is configured by default to work with a NMEA 2000 network, and the NRX POWER option should be enabled only when an optional wired NRX remote control is connected directly to the stereo. Enabling this option when the stereo is connected to a NMEA 2000 network may damage other devices on the NMEA 2000 network.

If you connect an optional wired NRX remote control directly to the stereo, and not through a NMEA 2000 network, additional configuration is needed.

1 Select ☰ > **SETTINGS** > **POWER OPTIONS**.

2 Select an option:

- If you connected both your stereo and your optional wired remote to a NMEA 2000 network, make sure the **NRX POWER** option is not selected. This enables the optional remote to receive power from the NMEA 2000 network.

- If you connected the optional wired remote directly to the stereo through the NMEA 2000 connector, select the **NRX POWER** option. This enables the stereo to supply power to the optional remote.

Fusion PartyBus Networking

The Fusion PartyBus networking feature allows you to connect multiple compatible stereos together on a network, using a combination of wired or wireless connections.

You can group a compatible stereo, such as the Apollo™ RA770 stereo, with other compatible stereos connected to the network. Grouped stereos can share available sources and control media playback on all of the stereos in the group, which allows for a synchronized audio experience across the vessel. You can quickly create, edit, and break up groups as needed from any compatible stereo or remote control on the network.

NOTE: A zone stereo, such as the Apollo SRX400, can create or join a group to control and play sources from other stereos, but it cannot share its sources with the group.

For additional considerations when sharing sources, see the owner's manual.

You can use compatible stereos and remote controls, whether they are grouped or not, to adjust the volume of the available speaker zones for any stereo on the network.

You can connect up to eight Fusion PartyBus stereos on a network wirelessly.

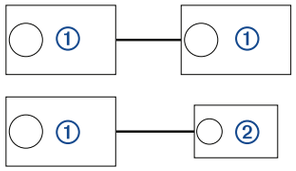
Wired Networking Considerations

When you are planning your network installation, observe the following considerations for all wired connections.

- You must connect devices using standard Cat5e or Cat6 network cables with RJ45 connectors.
- You can use one network cable to directly connect two compatible devices.
- You must use wired network switches and wired or wireless network routers when you connect more than two compatible devices to a network.
- If you install a router on the network, it should be configured to be a DHCP server by default. See your router instructions for more information.
- If you do not install a router, and there are no other DHCP servers on the network, you should configure one Fusion PartyBus stereo to be a DHCP server (Setting the Fusion PartyBus Device as the DHCP Server, page 7).

Wired Network Example for Direct Connections

No network setting changes are needed when connecting two devices together directly, but for the best results, you should configure one device to be a DHCP server (Setting the Fusion PartyBus Device as the DHCP Server, page 7).

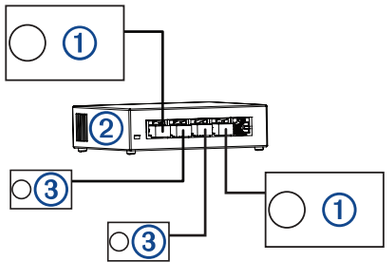


①	Fusion PartyBus stereo
②	Fusion PartyBus zone stereo or remote control

Wired Network Example with a Switch or Router

You must use wired network switches, a wired network router, or both to connect more than two devices.

If you did not install a router, and there are no other DHCP servers on the network, you should configure one Fusion PartyBus stereo to be a DHCP server (Setting the Fusion PartyBus Device as the DHCP Server, page 7). If you installed a router, you may need to configure it to be a DHCP server. See your router instructions for more information.



①	Fusion PartyBus stereo
②	Wired network switch or wired network router
③	Fusion PartyBus zone stereo or remote control

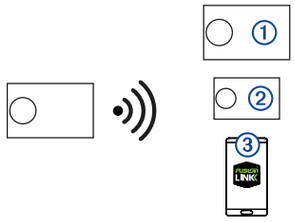
Wireless Networking Considerations

When you are planning your network, observe the following considerations for all wireless connections.

- Wired connections are more reliable than wireless connections. You should plan your network to use network cables, but if it is not possible, many Fusion PartyBus devices are Wi-Fi® compatible. You can connect them to wireless routers or access points.
- If you install a wireless router on the network, it should be configured to be the DHCP server by default. See your wireless router instructions for more information.
- If you are not using a wireless router, you can configure this device as a wireless access point, so you can connect other devices within wireless range.

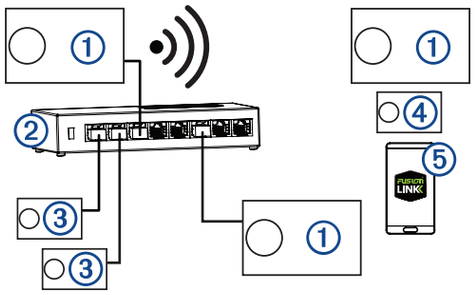
  NOTE: You should not configure this device as a wireless access point if you have a router installed on the network, because it may introduce DHCP conflicts and result in poor network performance.
- If you connect a Fusion PartyBus device to the network as a WI-FI CLIENT, you cannot connect any additional wired Fusion PartyBus devices to that device.
- You can connect a smartphone to the wireless network to control any stereo on the network using the Fusion-Link™ app.
- You can connect an Apple® device to the wireless network to stream media to multiple stereos on the network using Apple AirPlay® 2.
- Connecting a Bluetooth® device to the stereo may interfere with some Wi-Fi connections.
- Wi-Fi signals may interfere with Bluetooth device connections. You should turn off the Wi-Fi setting on your stereo if you are not using it to connect to a wireless network or to provide a wireless access point.

Wireless Access Point Example



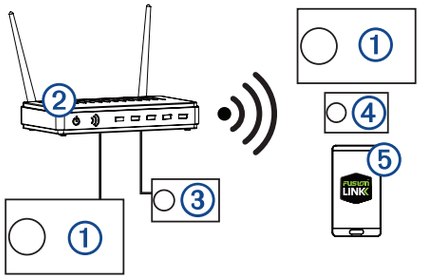
①	Fusion PartyBus stereo
②	Fusion PartyBus zone stereo
③	Smartphone using the Fusion-Link app

Wireless Network Example with a Wired Switch or Router



①	Fusion PartyBus stereo
②	Wired network switch or wired network router
③	Fusion PartyBus zone stereo or remote control
④	Fusion PartyBus zone stereo
⑤	Smartphone using the Fusion-Link app.

Wireless Network Example with a Wireless Router or Access Point



①	Fusion PartyBus stereo
②	Wireless network router or wireless access point
③	Fusion PartyBus zone stereo or remote control
④	Fusion PartyBus zone stereo
⑤	Smartphone using the Fusion-Link app

Constructing a Network

You should have a basic understanding of networking when building a network for Fusion PartyBus devices.

These instructions guide you through the basics of building and configuring a network, and should apply to most situations. If you need to perform advanced networking tasks, such as assigning static IP addresses to devices on the network or configuring advanced settings on a connected router, you may need to consult a networking professional.

1. Determine the installation location of the Fusion PartyBus devices you want to connect to the network.

   NOTE: Wired connections are more reliable than wireless connections. When planning your network, you should run network cables instead of using wireless connections when possible.
2. Determine the installation location of any needed network routers or switches.
3. Route Cat5e or Cat6 network cable to the installation locations of the stereos, switches, and router.
4. Connect the network cables to the stereos, switches, and router.

   NOTICE

   Do not completely install the stereos yet. You should test the network before you install the stereos.
5. Turn on all devices connected to the network, including wireless devices.
6. Select an option:
   - If you are using a network router (wired or wireless), consult the documentation provided with your router to configure the router as the DHCP server, if necessary. When using a router as the DHCP server, all stereos on the network should use their default configuration (DHCP client).
   - If you are not using a wireless router, you should configure a stereo as a wireless access point, if necessary (Setting the Fusion PartyBus Device as a Wireless Access Point, page 7). Configuring a stereo as a wireless access point makes that stereo the DHCP server, and all of the other stereos on the network should use their default configuration (DHCP client).
   - If you are not using a network router, not using a stereo as a wireless access point, and there are no other DHCP servers on the network, you should configure one of the stereos as the DHCP server (Setting the Fusion PartyBus Device as the DHCP Server, page 7).
7. Test the network by selecting ☰ > **GROUPS** to view a list of devices connected to the on the network, and select an option:
   - If any Fusion PartyBus devices are not available to the network, troubleshoot the network (Network Troubleshooting, page 8).
   - If all Fusion PartyBus devices are available on the network, complete the installation for each stereo, if necessary.

Network Configuration

TIP: You can select the network status icon from any screen to open the network configuration menu.

Setting the Fusion PartyBus Device as the DHCP Server

If you connected more than two network devices together using a network switch or wireless access point but you did not install a router, you should configure only one Fusion PartyBus stereo to be a DHCP server.

NOTICE

Having more than one DHCP server on the network causes instability and poor performance for all devices on the network.

NOTE: If you have set up this stereo as a WI-FI ACCESS POINT, it is configured as a DHCP server by default, and no further settings changes are needed (Setting the Fusion PartyBus Device as a Wireless Access Point, page 7).

1. If the device is connected to the network using an Ethernet cable, select ☰ > **SETTINGS** > **NETWORK** > **WI-FI OFF**.
2. If the device is connected to the network using an Ethernet cable, select **STATIC IP** > **SAVE**.
3. Select **ADVANCED** > **DHCP SERVER** > **DHCP ENABLED** > **SAVE**.

Configuring the Stereo for use with a Garmin® Marine Network

You can connect this stereo to a Garmin Marine Network in order to view and control the stereo using a compatible Garmin chartplotter.

NOTE: When you configure the stereo for use with a Garmin Marine Network, you are limited to using only Garmin and Fusion devices. You may not be able to use third-party routers, storage devices, or other network products with this stereo directly.

When the stereo is connected to a Garmin Marine Network, you can connect a smartphone to a wireless access point on a connected Garmin chartplotter and use the Fusion-Link app to control the stereo.

You cannot use Wi-Fi networking on a stereo configured for use with a Garmin Marine Network. This functionality is compatible with wired network connections only.

Select ☰ > **SETTINGS** > **NETWORK** > **WI-FI OFF** > **GARMIN MARINE NETWORK**.

Setting the Fusion PartyBus Device as a Wireless Access Point

Before you can connect additional Fusion PartyBus devices or smartphones to a Fusion PartyBus device wirelessly, you must configure one device as a wireless access point. This is not necessary if you installed a wireless router or other wireless access point on the network.

NOTE: You should not configure this device as a wireless access point if you have a router installed on the network. Doing so may introduce DHCP conflicts and result in poor network performance.

For more detailed configuration instructions, see the owner's manual.

1 Select ☰ > **SETTINGS** > **NETWORK** > **WI-FI ACCESS POINT**.
2 Select **USE DEFAULTS** and wait for the device to save the network settings.

NOTE: After the default settings are saved, you can scroll down to the bottom of the NETWORK menu to view and change the SSID and password assigned to the access point.

NOTE: When you configure the stereo as a wireless access point, you can also use the wired network connection without changing any additional settings. The wired and wireless networks are bridged.

Connecting the Fusion PartyBus Device to a Wireless Access Point

You can connect this device to a wireless access point on a router or compatible Fusion PartyBus device on the network. This device can connect using Wi-Fi Protected Setup (WPS), if it is supported by your access point. This device can connect using Apple Accessory Configuration (WAC) using a supported Apple device.

1 Select ☰ > **SETTINGS** > **NETWORK** > **WI-FI CLIENT** > **SSID**.

A list of wireless access points within rage appears.

2 Select the Fusion PartyBus wireless access point.
3 If necessary, select **PASSWORD**, enter the password, and select ✔.
4 Select **SAVE**.

NOTE: When you connect the stereo to a wireless access point, you cannot use the wired network connection.

Resetting Network Settings

You can reset all network settings for this stereo to the factory default values.

1 Select ☰ > **SETTINGS**.
2 Select **NETWORK** > **ADVANCED** > **RESET** > **YES**.

Advanced Network Configuration

You can perform advanced networking tasks on a Fusion PartyBus device, such as defining DHCP ranges and setting static IP addresses. See the owner's manual for more information.

Network Troubleshooting

If you cannot see or connect to Fusion PartyBus devices on the network, check the following:

- Verify that only one device, either a stereo or a router, is configured as a DHCP server.
- Verify that all Fusion PartyBus devices, network switches, routers, and wireless access points are connected to the network and turned on.
- Verify that wireless Fusion PartyBus devices are connected to a wireless router or wireless access point on the network.

  NOTE: Wired connections are more reliable than wireless connections. If possible, you should connect devices to the network using an Ethernet cable.
- You may experience wireless interference if there are many nearby wireless access points. Change the channel on your router or wireless access point to test for and correct interference.
- Connecting a Bluetooth device to a stereo configured as a wireless access point or client may reduce wireless performance. Disconnect Bluetooth devices to test for and correct interference.
- If you configured static IP addresses, verify that every device has a unique IP address, that the first three sets of numbers in the IP addresses match, and that the subnet masks on every device are identical.
- If you have made configuration changes that might be causing networking issues, reset all network settings to the factory default values.

Stereo Information

Specifications

General

Weight	750 g (26.5 oz.)
Water resistance	IEC 60529 IPX7 (front of stereo only, when properly installed)
Operating temperature range	From 0 to 50°C (from 32 to 122°F)
Storage temperature range	From -20 to 70°C (from -4 to 158°F)
Input voltage	From 10.8 to 16 Vdc
Current (max.)	15 A
Current (muted)	Less than 900 mA
Current (off)	Less than 200 mA
Fuse	15 A mini blade-type
NMEA 2000 LEN @ 9 Vdc	1 (50 mA)
Bluetooth wireless range	Up to 10 m (30 ft.)
ANT® wireless range	Up to 3 m (10 ft.)
Wireless frequencies/protocols	Wi-Fi 2.4 GHz @ +15 dBm nominal Bluetooth 2.4 GHz @ +10 dBm nominal ANT 2.4 GHz @ +4 dBm nominal
Compass-safe distance	15 cm (5.9 in.)

On-board, Class D Amplifier

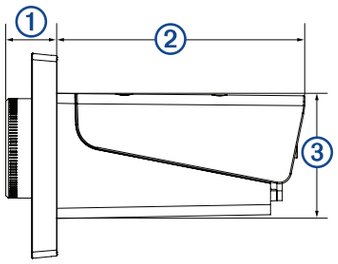
Output music power per channel	4 x 70 W max. 2 ohm
Total output peak power	280 W max.
Output power per channel [1]	4 x 43 W RMS at 14.4 Vdc input, 2 ohm, 10% THD 4 x 26 W RMS at 14.4 Vdc input, 4 ohm, 10% THD
Line output level (max.)	5.5 V (peak to peak)
Aux input level (typical)	1 V RMS

Tuner frequencies

Tuner	Europe and Australasia	USA	Japan
FM radio frequency range	87.5 to 108 MHz	87.5 to 107.9 MHz	76 to 95 MHz
FM frequency step	50 kHz	200 kHz	50 kHz
AM radio frequency range	522 to 1620 kHz	530 to 1710 kHz	522 to 1620 kHz
AM frequency step	9 kHz	10 kHz	9 kHz

Stereo Dimension Drawings

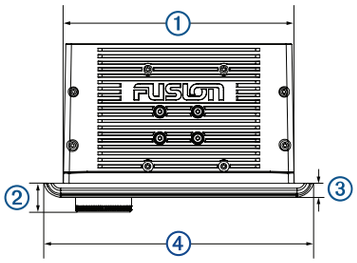
Side Dimensions



①	20.4 mm (0.8 in.)
②	99 mm (3.9 in.)
③	50 mm (1.97 in.)

[1] The stereo may limit the output power to prevent the amplifier from overheating, and to maintain the audio dynamics.

Top Dimensions



①	164 mm (6.5 in.)
②	20.4 mm (0.8 in.)
③	10 mm (0.39 in.)
④	192 mm (7.56 in.)

Software Updates

Go to support.garmin.com to find software updates and information for your device.

物質宣言

部件名称	有毒有害物质或元素					
	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
印刷电路板组件	X	O	O	O	O	O
屏幕/背光	X	O	O	O	O	O
金属零件	X	O	O	O	O	O
电缆 电缆组件 连接器	X	O	O	O	O	O

本表格依据 SJ/T11364 的规定编制。

O: 代表此种部件的所有均质材料中所含的该种有害物质均低于 (GB/T26572) 规定的限量

X: 代表此种部件所用的均质材料中, 至少有一类材料其所含的有害物质高于 (GB/T26572) 规定的限量

* 该产品说明书应提供在环保使用期限和特殊标记的部分详细讲解产品的担保使用条件。

产品

連絡地址

製造銷售:台灣國際航電股份有限公司

聯絡地址:新北市汐止區樟樹二路 68 號

電　　話:(02)2642-8999

客服專線:(02)2642-9199

Apollo™ RA770 Installation Instructions
安裝指示

Important Safety Information

⚠ WARNING

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

請見產品包裝內附的 GARMIN 安全及產品資訊須知，以瞭解產品注意事項及其他重要資訊。

This device must be installed according to these instructions.

Disconnect the vessel's power supply before beginning to install this product.

Before applying power to this product, make sure it has been correctly grounded according to these instructions.

⚠ CAUTION

為避免造成人員傷亡，在鑽孔、切割或研磨時，請務必配戴安全護目鏡、護耳裝置和防塵面罩。

NOTICE

在鑽孔或切割時，請務必檢查表面的另一側，以避免船隻受損。

Do not use the stereo as a template when drilling the mounting holes because this may damage the glass display and void the warranty. You must only use the included template to correctly drill the mounting holes.

You must read all installation instructions before beginning the installation. If you experience difficulty during the installation, contact Fusion Product Support.

What's In the Box

- Mounting gasket
- Four 8-gauge, self-tapping screws
- Two screw covers
- Power and speaker wiring harness
- Auxiliary-in, line-out, and subwoofer-out wiring harnesses
- 2 m (6 ft.) NMEA 2000 drop cable
- Dust cover

所需工具

- Phillips 螺絲起子
- 電鑽
- 鑽頭 (尺寸因表面材質與使用的螺絲而異)
- 旋轉式切割工具或電鋸
- 矽膠型船用密封劑 (選用)

Mounting Considerations

- You must mount the stereo on a flat surface that provides open airflow around the rear of the stereo for heat ventilation.
- If you are installing the stereo in a location that may be exposed to water, you must mount it within 45 degrees below or 15 degrees above the horizontal plane.
- If you are installing the stereo in a location that may be exposed to water, you must add a drip loop to the cable to allow water to drip off of the cable and avoid damage to the stereo.
- If you need to mount the stereo on the outside of the boat, you must mount it in a location far above the waterline, where it is not submerged, and where it cannot be damaged by docks, pilings, or other pieces of equipment.
- To avoid interference with a magnetic compass, you should mount the stereo at least 15 cm (5.9 in.) away from a compass.

安裝音響

注意

鑽安裝孔時，請勿使用音響作為模板，因為這麼做可能會損傷顯示幕，並使保固失效。您必須僅使用隨附的模板來正確鑽出安裝孔。

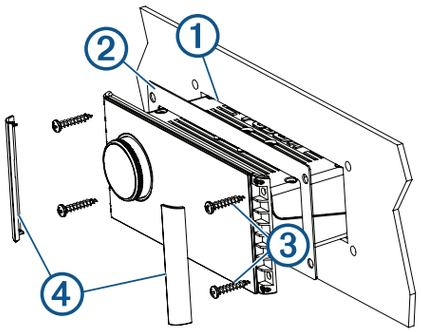
切割音響安裝孔時請務必小心。機殼與安裝孔間僅有少量間隙，而切出太大的孔可能會損及音響安裝後的穩定性。

若您必須將電力系統與船體隔離，則在鋁製船或是船體含導電材質的船上安裝音響時，請務必小心。

將音響固定在安裝平面時，請勿在螺絲上塗抹潤滑油或潤滑劑。潤滑油或其他潤滑劑可能會造成音響外殼損壞。

在固定表面的新位置上安裝音響前，您必須依照安裝考量事項選取位置。

1. 將模板貼附至固定表面。
2. 在模板的虛線角落內鑽孔。
3. 沿著模板虛線內部切割固定表面 ①。



4 確認音響上的安裝孔對齊模板上的引導孔。
5 使用固定表面與螺絲類型適用尺寸的鑽頭鑽出引導孔。
6 從安裝平面上取下模板。
7 請完成動作：
   - 若要將音響安裝在乾燥的位置，請將隨附的固定墊片 ② 置於音響背面。
   - 若要將音響安裝至會接觸到水的位置，請將矽膠型船用密封劑塗在切割孔周圍的安裝平面。

注意

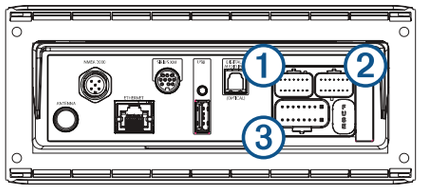
若您將密封劑塗在安裝平面，則請勿安裝隨附的固定墊片。同時使用密封劑和固定墊片可能會降低防水性能。

8 若完成安裝後無法觸及音響背面，請接好必要配線。
9 使用隨附的螺絲 ③ 將音響固定至安裝表面。
   將音響固定至安裝平面時，您應該用手鎖緊螺絲，以避免螺絲鎖得太緊。
10 將螺絲蓋卡入定位 ④。

連線考量事項

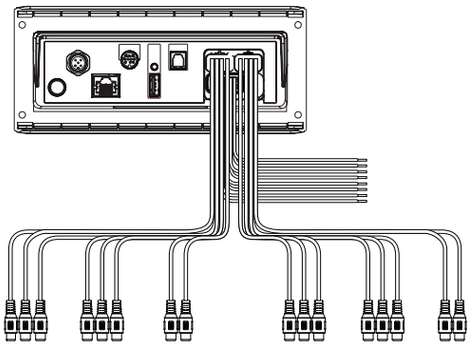
您必須將音響連接至電源、喇叭及輸入來源，音響才能正常運作。在進行任何的連接前，您應謹慎規劃音響、喇叭、輸入來源、選用 NMEA 2000 網路及選用 Fusion PartyBus 裝置或網路的佈線。

Port Identification



Item	Description
ANTENNA	Connects the stereo to a typical AM/FM antenna. If you are installing the stereo on a boat with a metal hull, you must use a ground-dependent antenna. If you are installing the stereo on a boat with a non-metal hull, you must use a ground-independent antenna. See the installation instructions provided with your antenna for more information.
NMEA 2000	Connects the stereo to a NMEA 2000 network (NMEA 2000 系統佈線圖, page 13). Connects to an NRX series remote control directly (設定選用的有線 NRX 遙控器, page 13).
ETHERNET	Connects the stereo to another Fusion PartyBus stereo, zone stereo, or network (Fusion PartyBus 網路, page 13).
SIRIUS XM	Connects the stereo to a SiriusXM Connect Tuner to receive SiriusXM stations where available (not included). Connects to a Fusion DAB module to receive DAB stations where available (not included).
USB	Connects the stereo to a USB source.
DIGITAL AUDIO IN	Connects the stereo to an optical digital audio source, such as TV or DVD player.
FUSE	Contains the 15 A fuse for the device.
①	Connects the stereo to the wiring harness for auxiliary input 2, and for the line and subwoofer outputs for zones 3 and 4.
②	Connects the stereo to the wiring harness for auxiliary input 1, and for the line and subwoofer outputs for zones 1 and 2.
③	Connects the stereo to the power and speaker wiring harness.

Wiring Harness Wire and Connector Identification



Wire or RCA Connector Function	Bare Wire Color or RCA Label Name	Notes
Ground (-)	Black	Connects to the power source (Power Connection, page 11).
Power (+)	Yellow	Connects to the power source (Power Connection, page 11).
Ignition	Red	Connects to the power source (Power Connection, page 11).
Amplifier on	Blue	Connects to optional external amplifiers, enabling them to turn on when the stereo turns on. A connected amplifier must use the same ground (-) as the stereo for this signal wire to function correctly.
Telemute	Brown	Activates when connected to ground. For example, when you connect this wire to a compatible, hands-free mobile kit, the audio mutes or the input switches to Aux1 when a call is received and the kit connects this wire to ground. You can enable this functionality from the settings menu.
Dim	Orange	Connects to the boat's illumination wire to dim the stereo screen when the lights are on. The gauge of the illumination wire must be suitable for the fuse supplying the circuit it is connected to.
Speaker zone 1 left (+)	White	
Speaker zone 1 left (-)	White/black	
Speaker zone 1 right (+)	Gray	
Speaker zone 1 right (-)	Gray/black	
Speaker zone 2 left (+)	Green	
Speaker zone 2 left (-)	Green/black	
Speaker zone 2 right (+)	Purple	

Wire or RCA Connector Function	Bare Wire Color or RCA Label Name	Notes
Speaker zone 2 right (-)	Purple/black	
Zone 1 line out (left) Zone 1 line out (right) Zone 1 subwoofer out	ZONE 1 ZONE 1 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 1. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Zone 2 line out (left) Zone 2 line out (right) Zone 2 subwoofer out	ZONE 2 ZONE 2 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 2. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Auxiliary in 1 left Auxiliary in 1 right	AUX IN 1	Provides an RCA stereo line input for audio sources, such as a CD or MP3 player.
Zone 3 line out (left) Zone 3 line out (right) Zone 3 subwoofer out	ZONE 3 ZONE 3 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 3. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Zone 4 line out (left) Zone 4 line out (right) Zone 4 subwoofer out	ZONE 4 ZONE 4 SUB OUT	Provides output to an external amplifier, and is associated with the volume control for zone 4. Each subwoofer cable provides a single mono output to a powered subwoofer or subwoofer amplifier.
Auxiliary in 2 left Auxiliary in 2 right	AUX IN 2	Provides and RCA stereo line input for audio sources, such as a CD or MP3 player.

Power Connection

When connecting the stereo to power, you must connect the yellow, red, and black wires to the power source. The yellow and red wires have different functions, and the method you use to connect them to power depends on how you plan to use the stereo on your vessel.

Yellow wire

- This wire provides power to the stereo.
- This wire should be connected through a 15 A circuit breaker, if one is available on the vessel.

  NOTICE

  If a 15 A circuit breaker is not available on the vessel, you must connect this wire to power through a 15 A fuse (not included).
- This wire provides power to the stereo at all times, and it will drain the battery even when the stereo is not in use. You should install a manual switch on this wire if a 15 A circuit breaker is not available on the vessel, or if you cannot toggle the breaker to remove power to the stereo when storing the vessel.
- If it is necessary to extend this wire, use 14 AWG (2.08 mm^2) wire. For extensions longer than 1 m (3 ft.), use 12 AWG (3.31 mm^2) wire.

Red wire

- This wire can be connected to the same power source as the yellow wire through the ignition or through a manual switch. This enables you to turn the stereo on and off automatically when you turn the vessel on and off, or when you activate the switch.
- Using this wire to turn the stereo on and off behaves in the same way as using the power button on the stereo to turn it on and off. It is not necessary to connect this wire to a switch if you plan to toggle the power using the power button on the stereo or using a connected chartplotter or remote control. This wire must be connected to turn the stereo on.
- When you turn off the stereo using this switch or the power button, it enters a standby mode that allows the stereo to start up again faster than if you switch the power off using the yellow wire. When it is in standby mode, the stereo uses up to 200 mA, and you must turn off power to the stereo on the yellow wire through the circuit breaker or manual switch when you are not using the vessel to avoid draining the battery.
- **NOTICE**

  You must connect this wire to power through a 1 A fuse (not included), whether or not you connect it to the ignition or manual switch.
- If it is necessary to extend this wire, use 22 AWG (0.33 mm^2) wire.

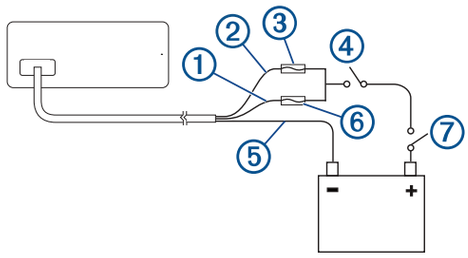
Black wire

- This is the ground wire, and you must connect it to the negative terminal of the power source or to a common ground.
- If it is necessary to extend this wire, use 14 AWG (2.08 mm^2) wire. For extensions longer than 1 m (3 ft.), use 12 AWG (3.31 mm^2) wire.

Connecting to Power Without Using an Ignition Switch

This method of connection is used most often on larger vessels and on vessels with multiple networked stereos and other marine devices. For these installations, a faster startup time is typically less critical, and it is more effective to use the breaker or a dedicated switch on the electrical panel to turn off the stereo and ensure that no unexpected power drain occurs.

1 Consult this diagram to plan the wire connections.



Item	Description	Notes
①	Yellow wire	You should connect this wire to the red wire before you connect both wires to the manual switch or circuit breaker.
②	Red wire	You should connect this wire to the yellow wire so that it does not act as a physical standby switch.
③	1 A fuse (not included)	You must install this fuse on the red wire before you connect the red wire to the yellow wire.
④	Manual switch (optional)	This switch is needed only if a circuit breaker is not available or if it provides a more convenient method of cutting power to the stereo.
⑤	Black wire	Ground (-)
⑥	15 A fuse (not included)	This fuse is required if you are not able to connect to power through a 15 A circuit breaker ⑦.
⑦	15 A circuit breaker	If a circuit breaker is not available, you must connect a 15 A fuse ⑥ on the yellow wire

2 Route all wires to the stereo wiring harness, the circuit breaker or switch, and the power source as necessary.

Do not connect the wiring harness to the stereo until after you have made all of the bare wire connections.

3 Install all of the necessary fuses on the red and yellow wires.

4 Connect the wiring harness to the stereo.

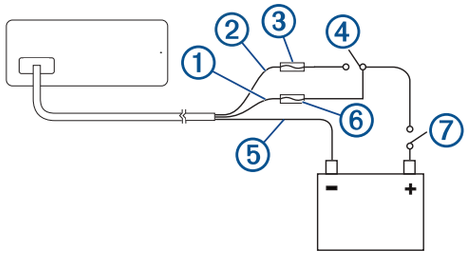
When the circuit breaker or manual switch is closed, the stereo is always on. You can use the power button on the stereo or a connected chartplotter or remote control to place the stereo in a low-power standby mode if needed.

NOTE: When you are not using the vessel, you should remove power to the stereo using the circuit breaker or manual switch to avoid draining the battery.

Connecting to Power Through an Ignition Switch

This method of connection is used most often on ski boats, wake boats, and similar sport or recreational vessels where power to the engines is toggled often. For these installations, a quick standby and faster startup time is desired so that music can be stopped and begin playing again as quickly as possible after restarting the engines. When in standby mode, the stereo uses up to 200 mA, and you should connect the power wires through a circuit breaker or manual switch to avoid draining the battery when you are not using the boat.

1 Consult this diagram to plan the wire connections.



Item	Description	Notes
①	Yellow wire	You must connect this wire to the same power source as the ignition or ACC switch.
②	Red wire	You must connect this wire to the ignition or ACC switch before you connect it to the same power source as the yellow wire.
③	1 A fuse (not included)	You must install this fuse on the red wire before you connect the red wire to the ignition or ACC switch.
④	Ignition or ACC switch	Connecting the red wire to this switch allows the stereo to enter a low-power standby mode when you turn off the engines, so it can start up faster when you turn on the engines again.
⑤	Black wire	Ground (-)
⑥	15 A fuse (not included)	This fuse is required if you are not able to connect to power through a 15 A circuit breaker ⑦.
⑦	15 A circuit breaker or manual switch	If a circuit breaker is not available, you must connect a 15 A fuse ⑥ on the yellow wire. You should also connect the yellow wire to power using a manual switch, so you can remove power to the stereo when you are not using the boat.

2 Route all wires to the stereo wiring harness, the ignition or ACC switch, the circuit breaker, and the power source as necessary.

Do not connect the wiring harness to the stereo until after you have made all of the bare wire connections.

3 Install all of the necessary fuses on the red and yellow wires.

4 Connect the wiring harness to the stereo.

When you turn on the ignition switch, the stereo turns on along with other accessory electronics. When you turn off the ignition switch, the stereo enters a low-power standby mode.

NOTE: When you are not using the vessel for an extended period of time, you should remove power to the stereo using the circuit breaker or other manual switch on the yellow wire to avoid draining the battery.

喇叭區間

您可以將一個區域內的喇叭分組成幾個喇叭區間。 此可方便您控制個別區間的音訊等級。 例如，您可以調低駕駛艙的音量，並調高甲板的音量。

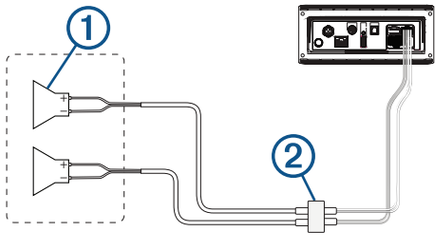
各區間的每個聲道 (左和右) 最多可並聯連接兩個喇叭。 一個區間使用內建放大器可支援最多四個喇叭。

區間 1 和 2 由內建的放大器驅動。 若要針對區間 1 和 2 使用 RCA 線路輸出和 RCA 超低音揚聲器輸出，您必須連接外部放大器。

區間 3 和 4 僅可作為線路位準輸出。 若要針對區間 3 和 4 使用 RCA 線路輸出和 RCA 超低音揚聲器輸出，您必須連接外部放大器。

您可以設定每個區間的平衡、音量限制、音調、超低音揚聲器頻率和名稱，以及配置其他區間專屬設定。

單區間系統佈線範例

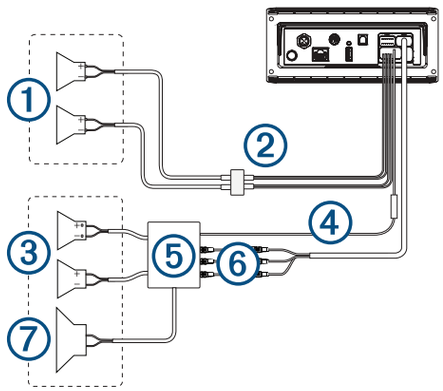


①	喇叭
②	水密連接

使用線路輸出進行喇叭系統佈線

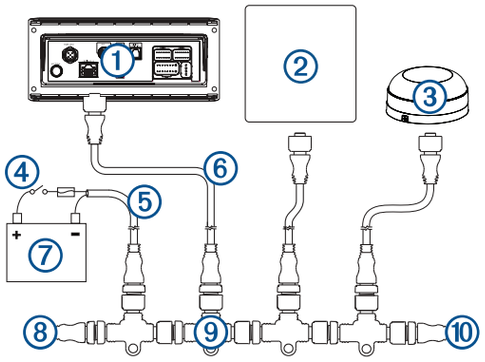
此圖表說明使用線路輸出將外部放大器和超低音揚聲器連接到音響區間 2 的系統安裝。 您可以將放大器和超低音揚聲器連接到音響上的任何或所有可用區間。

備忘錄： 您可以在使用區間 1 和 2 的線路輸出時，將喇叭連接至內部音響放大器的喇叭連接線，不過調整音量會影響連接至內部放大器和線路輸出的喇叭。 這可能會導致音量不平均。



①	區間 1 喇叭
②	水密連接
③	區間 2 喇叭
④	放大器開啟訊號線 您必須將這條線連接到與區間線路輸出連接的每個放大器。 已連接的放大器所使用的接地 (-) 必須與音響所使用的相同，此訊號線才能正常運作。
⑤	接上電源且連接到區間 2 線路輸出的放大器
⑥	區間 2 線路輸出與超低音揚聲器輸出 每條超低音揚聲器纜線皆可為接上電源的超低音揚聲器或超低音揚聲器放大器提供一個單聲道輸出。 您可能需要使用 RCA 分接器將此連接至放大器。
⑦	超低音揚聲器

NMEA 2000 系統佈線圖



①	音響
②	支援的航儀、MFD 或相容的 Fusion NMEA 2000 遙控
③	NMEA 2000 GPS 天線、速度感應器或風向儀。 當音響與相容的引擎、GPS 天線、內建 GPS 天線的航儀、風向儀或水速感應器連接到相同的 NMEA 2000 網路時，可以設定為根據引擎 RPM、地面速度、風速或對水航速自動調整音量。如需更多資訊，請參閱音響使用手冊。
④	線中開關
⑤	NMEA 2000 電源線
⑥	NMEA 2000 下引纜線，最遠 6 公尺 (20 英尺)
⑦	9 至 16 VDC 電源
⑧	NMEA 2000 終端電阻或骨幹纜線
⑨	NMEA 2000 T 型接頭
⑩	NMEA 2000 終端電阻或骨幹纜線

設定選用的有線 NRX 遙控器

注意

本音響預設與 NMEA 2000 網路搭配運作，因此 NRX 電源選項僅應在選用的有線 NRX 遙控器直接連線至音響時啟用。在音響連接至 NMEA 2000 網路時啟用此選項可能會損壞 NMEA 2000 網路上的其他裝置。

如果將選用的有線 NRX 遙控器直接連接至音響而非透過 NMEA 2000 網路連線，則需要進行其他設定。

1 選取 ☰ > **設定** > **電源選項**。

2 選取一個選項：

- 如果已同時將音響和選用的有線遙控器連線至 NMEA 2000 網路，請確定您未選取 **NRX 電源**選項。如此可讓選用的遙控器從 NMEA 2000 網路接收電力。
- 如果是透過 NMEA 2000 接頭將選用的有線遙控器直接連接至音響，請選取 **NRX 電源**選項。如此可讓音響供應電源給選用的遙控器。

Fusion PartyBus 網路

Fusion PartyBus 網路功能可讓您使用有線或無線連線的組合，在網路上將多個相容的音響連線在一起。

您可以將相容的音響 (例如 Apollo RA770 音響) 與連接到網路的其他相容音響併至群組。群組的音響可以分享群組中所有音響上的可用來源，並控制媒體播放，這可讓您在整個船隻中體驗同步音訊。您可以視需要從網路上任何相容的音響或遙控器快速建立、編輯和拆開群組。

備忘錄： 像 Apollo SRX400 這樣的區間音響可以建立或加入一個群組，以控制和播放其他音響上的音訊，但無法將自身的音訊分享到群組中。

如需瞭解分享來源的其他考量，請參閱使用手冊。

您可以使用相容的音響和遙控器 (無論是否已併至群組) 來調整網路上任何音響的可用喇叭區間音量。

使用無線連線最多可在網路中連線八個 Fusion PartyBus 音響。

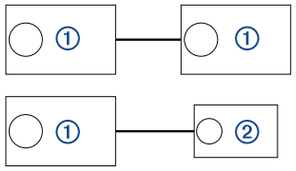
有線網路考量事項

規劃網路安裝時，所有有線連線皆應注意以下考量事項。

- 您必須使用有 RJ45 接頭的標準 Cat5e 或 Cat6 網路線來連接裝置。
- 您可以使用一條網路線直接連接兩個相容的裝置。
- 當兩個以上的相容裝置連線到網路時，必須使用有線網路交換器與有線或無線網路路由器。
- 若您在網路上安裝路由器，其預設應設定為 DHCP 伺服器。 如需更多資訊，請參閱路由器指示。
- 若您未安裝路由器，而且網路上沒有其他 DHCP 伺服器，您應該將一個 Fusion PartyBus 音響設定為 DHCP 伺服器 (將 Fusion PartyBus 裝置設定為 DHCP 伺服器, 第 14 頁)。

直接連線的有線網路範例

直接連接兩個裝置時，不需要變更網路設定，但為獲得最佳效果，您應該將一個裝置設定為 DHCP 伺服器 (將 Fusion PartyBus 裝置設定為 DHCP 伺服器, 第 14 頁)。

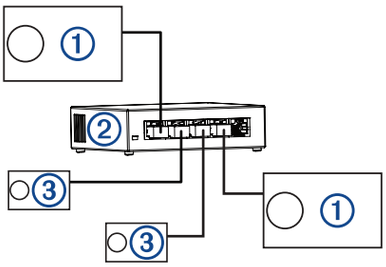


①	Fusion PartyBus 音響
②	Fusion PartyBus 區間音響或遙控器

使用交換器或路由器的有線網路範例

您必須使用有線網路交換器、有線網路路由器，或同時使用兩者來連接兩個以上的裝置。

如果您並未安裝路由器，而且網路上沒有其他 DHCP 伺服器，您應該將一個 Fusion PartyBus 音響設定為 DHCP 伺服器 (將 Fusion PartyBus 裝置設定為 DHCP 伺服器, 第 14 頁)。 如果您已安裝路由器，則可能需要將其設定為 DHCP 伺服器。 如需更多資訊，請參閱路由器指示。



①	Fusion PartyBus 音響
②	有線網路交換器或有線網路路由器
③	Fusion PartyBus 區間音響或遙控器

無線網路考量事項

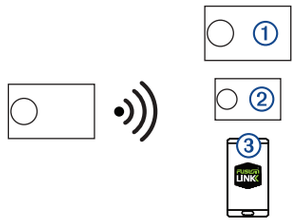
規劃網路時，所有無線連線皆應注意以下考量事項。

- 有線連線比無線連線更加可靠。 您應將網路規劃為使用網路線，但若不可行，許多 Fusion PartyBus 裝置仍可與 Wi-Fi 相容。 您可以將其連線至無線路由器或存取點。
- 若您在網路上安裝無線路由器，其預設應設定為 DHCP 伺服器。 如需更多資訊，請參閱無線路由器指示。
- 如果您不是使用無線路由器，可以將此裝置設定為無線存取點，以便連接無線範圍內的其他裝置。

  備忘錄： 如果您的網路上有安裝路由器，請勿將此裝置設定為無線存取點，因為這可能會造成 DHCP 衝突，導致網路效能不佳。
- 若 Fusion PartyBus 裝置是以 WI-FI 用戶端連線到網路，即無法將任何其他有線 Fusion PartyBus 裝置連接到該裝置。
- 您可以將智慧型手機連線到無線網路，以使用 Fusion-Link 應用程式控制該網路上的任何音響。
- 您可以將 Apple 裝置連線到無線網路，以使用 Apple AirPlay 2 將媒體串流至網路上的多個音響。

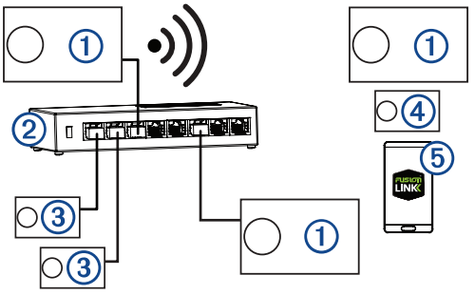
- 將 Bluetooth 裝置連接至音響可能會干擾某些 Wi-Fi 連線。
- Wi-Fi 訊號可能會干擾 Bluetooth 裝置連線。 如果您不是使用 Wi-Fi 設定來連接無線網路或提供無線網路存取點，則應在音響上關閉此設定。

無線存取點範例



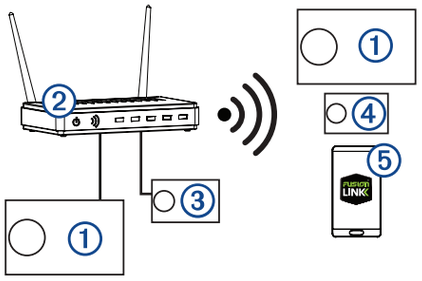
①	Fusion PartyBus 音響
②	Fusion PartyBus 區間音響
③	使用 Fusion-Link 應用程式的智慧型手機

使用有線交換器或路由器的無線網路範例



①	Fusion PartyBus 音響
②	有線網路交換器或有線網路路由器
③	Fusion PartyBus 區間音響或遙控器
④	Fusion PartyBus 區間音響
⑤	使用 Fusion-Link 應用程式的智慧型手機。

使用無線路由器或存取點的無線網路範例



①	Fusion PartyBus 音響
②	無線網路路由器或無線存取點
③	Fusion PartyBus 區間音響或遙控器
④	Fusion PartyBus 區間音響
⑤	使用 Fusion-Link 應用程式的智慧型手機

建構網路

為 Fusion PartyBus 裝置建構網路時，您應該具備網路的基本知識。

這些指示會引導您瞭解關於建置和設定網路的基本知識，並應適用於大部分的情況。 若您要執行進階網路工作，例如指派靜態 IP 位址給網路上的裝置，或是在連接的路由器上進行進階設定，可能必須洽詢網路專家。

1. 為您要安裝在網路上的 Fusion PartyBus 裝置決定安裝位置。

   備忘錄： 有線連線比無線連線更加可靠。 規劃網路時，您應盡可能使用網路線，而不是使用無線連線。
2. 為任何所需網路路由器或交換器決定安裝位置。
3. 將 Cat5e 或 Cat6 網路線佈線至音響、交換器或路由器的安裝位置。
4. 將網路線連接到音響、交換器和路由器。

   注意

   請還不要完成音響的安裝工作。 您應先測試網路，再安裝音響。
5. 開啟連線到網路的所有裝置，包括無線裝置。
6. 選取任一選項：
   - 若您使用的是網路路由器 (有線或無線)，請在必要時參考路由器隨附的文件，將路由器設定為 DHCP 伺服器。 將路由器作為 DHCP 伺服器使用時，網路上所有音響應使用其預設設定 (DHCP 用戶端)。
   - 如果您不是使用無線路由器，您應該視需要將音響設定為無線存取點 (將 Fusion PartyBus 裝置設定為無線存取點, 第 14 頁)。將音響設定為無線存取點會使該音響成為 DHCP 伺服器，而網路上的所有其他音響則應使用其預設設定 (DHCP 用戶端)。
   - 如果您不是使用網路路由器、不是使用音響作為無線存取點，且網路上沒有其他 DHCP 伺服器，您應該將其中一個音響設定為 DHCP 伺服器 (將 Fusion PartyBus 裝置設定為 DHCP 伺服器, 第 14 頁)。
7. 選取 ☰ > **群組**，以檢視已連線至網路的裝置清單，然後選取選項：
   - 如果在網路上無法使用任何 Fusion PartyBus 裝置，請進行網路疑難排解 (網路疑難排解, 第 15 頁)。
   - 如果在網路上可使用所有 Fusion PartyBus 裝置，請視需要為各音響完成安裝。

網路設定

秘訣： 您可以從任何畫面選取網路狀態圖示，即可開啟網路設定選單。

將 Fusion PartyBus 裝置設定為 DHCP 伺服器

如果您使用網路交換器或無線存取點連接兩個以上的網路裝置，但是並未安裝路由器，您應該僅將一個 Fusion PartyBus 音響設定為 DHCP 伺服器。

注意

網路上有一個以上的 DHCP 伺服器會造成網路上所有裝置的不穩定和效能不佳。

備忘錄： 如果您已將此音響設定為 WI-FI 存取點，依預設會設定其為 DHCP 伺服器，而且不需要進一步設定變更 (將 Fusion PartyBus 裝置設定為無線存取點, 第 14 頁)。

1. 如果裝置使用乙太網路纜線連接至網路，請選取 ☰ > **設定** > **網路** > **Wi-Fi 關閉**。
2. 如果裝置是使用乙太網路纜線連線至網路，請選取**靜態 IP** > **儲存**。
3. 選取**進階** > **DHCP 伺服器** > **DHCP 已啟用** > **儲存**。

設定音響以搭配 Garmin Marine Network 使用

您可以將此音響連接到 Garmin Marine Network，以使用相容的 Garmin 航儀檢視和控制音響。

備忘錄： 當您將音響設定為與 Garmin Marine Network 搭配使用時，僅限使用 Garmin 和 Fusion 裝置。您可能無法直接使用搭配此音響的第三方路由器、儲存裝置或其他網路產品。

音響連線至 Garmin Marine Network 時，您可以透過已連線的 Garmin 航儀上的無線網路存取點連接智慧型手機，然後使用 Fusion-Link 應用程式控制音響。

您無法在設定為與 Wi-Fi Marine Network 搭配使用的音響上使用 Garmin 網路。此功能僅與有線網路連線相容。

選取 ☰ > **設定** > **網路** > **Wi-Fi 關閉** > **Garmin Marine Network**。

將 Fusion PartyBus 裝置設定為無線存取點

您必須先將一個裝置設定為無線存取點，之後才能將其他 Fusion PartyBus 裝置或智慧型手機無線連線至 Fusion PartyBus 裝置。 若您已在網路上安裝無線路由器或其他無線存取點，就不需要這麼做。

備忘錄： 如果您的網路上安裝了路由器，則不應將此裝置設定為無線存取點， 否則可能會造成 DHCP 衝突，並導致網路效能不佳。

如需更詳細的設定指示，請參閱使用手冊。

1 選取 ☰ > **設定** > **網路** > **WI-FI 存取點**。

2 選取**使用預設值**，然後等候裝置儲存網路設定。

備忘錄： 儲存預設設定後，您可以向下捲動至網路選單的底部，以檢視及變更指派給存取點的 SSID 和密碼。

備忘錄： 將音響設定為無線存取點時，您也可以使用有線網路連線，不必變更任何其他設定， 即會橋接有線和無線網路。

將 Fusion PartyBus 裝置連線到無線存取點

您可以將此裝置連線到路由器上的無線存取點，或網路上相容的 Fusion PartyBus 裝置。 如果您的存取點支援 Wi-Fi Protected Setup (WPS)，此裝置可使用 WPS 連線。 本裝置可使用支援的 Apple 裝置透過 Apple 配件設定 (WAC) 連線。

1 選取 ☰ > **設定** > **網路** > **WI-FI 用戶端** > **SSID**。

隨即顯示範圍內無線存取點的清單。

2 選取 Fusion PartyBus 無線存取點。

3 若有必要，請選取**密碼**，輸入密碼，然後選取 ✔。

4 選取**儲存**。

備忘錄： 當您將音響連接至無線存取點時，無法使用有線網路連線。

重設網路設定

您可以將此音響的所有網路設定重設為出廠預設值。

1 選取 ☰ > **設定**。

2 選取 **網路** > **進階** > **重置** > **是**。

進階網路設定

您可以在 Fusion PartyBus 裝置上執行進階網路設定工作，例如定義 DHCP 範圍及設定靜態 IP 位址。如需更多資訊，請參閱使用手冊。

網路疑難排解

若您看不到或無法連線到網路上的 Fusion PartyBus 裝置，請檢查下列項目：

- 確認僅有一個裝置 (音響或路由器) 設定為 DHCP 伺服器。
- 確認所有 Fusion PartyBus 裝置、網路交換器、路由器和無線存取點皆已連線到網路，並且已開啟。
- 確認無線 Fusion PartyBus 裝置已連線到網路上的無線路由器或無線存取點。

  備忘錄： 有線連線比無線連線更加可靠。 如果可以，應使用乙太網路纜線將裝置連接至網路。
- 如果附近有許多無線存取點，可能會發生無線干擾。 變更路由器或無線存取點上的頻道以測試及修正干擾。
- 將 Bluetooth 裝置連接到設定為無線存取點或用戶端的音響，可能會降低無線效能。 中斷 Bluetooth 裝置連線以測試及修正干擾。
- 如果您設定的是靜態 IP 位址，請驗證每個裝置都有一個獨一無二的 IP 位址、IP 位址的前三組號碼都相符，且每個裝置上的子網路遮罩都完全相同。
- 若您已執行設定變更，而該變更可能造成網路問題，請將所有網路設定重設為出廠預設值。

音響資訊

規格

一般

權重	750 公克 (26.5 盎司)
防水	IEC 60529 IPX7 (在適當安裝的情況下，僅限音響正面)
作業溫度範圍	從 0 到 50°C (從 32 到 122°F)
貯放溫度範圍	從 -20 到 70°C (從 -4 到 158°F)
輸入電壓	10.8 至 16 Vdc
電流 (最大)	15 安培
電流 (靜音)	低於 900 毫安培
電流 (關閉)	小於 200 mA
保險絲	15 A 迷你刀片型
NMEA 2000 LEN @ 9 伏特直流電壓	1 (50 mA)
Bluetooth 無線範圍	最遠 10 公尺 (30 英尺)
ANT 無線範圍	最遠 3 公尺 (10 英尺)
無線頻率/通訊協定	Wi-Fi 2.4 GHz @ +15 dBm 標稱 Bluetooth 2.4 GHz @ +10 dBm 標稱 ANT 2.4 GHz @ +4 dBm 標稱
羅盤安全距離	15 cm (5.9 in.)

內建 D 類放大器

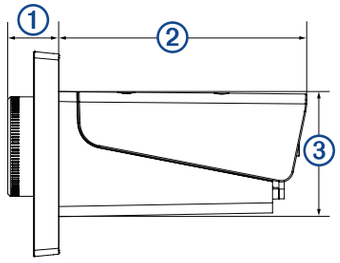
每聲道輸出音樂功率	4 x 最大 70 W，2 ohm
總輸出峰值功率	最大 280 瓦
每聲道輸出功率 [1]	輸入 14.4 伏特直流電時為 4 x 43 W RMS，2 ohm，10% THD 輸入 14.4 伏特直流電時為 4 x 26 W RMS，4 ohm，10% THD
線路輸出位準 (最大)	5.5 伏特 (峰值至峰值)
Aux 輸入位準 (一般)	1 V RMS

調諧器頻率

調諧器	歐洲和澳大拉西亞	USA	日本
FM 無線電頻率範圍	87.5 到 108 MHz	87.5 到 107.9 MHz	76 到 95 MHz
FM 頻率步階	50 kHz	200 kHz	50 kHz
AM 無線電頻率範圍	522 到 1,620 kHz	530 到 1,710 kHz	522 到 1,620 kHz
AM 頻率步階	9 kHz	10 kHz	9 kHz

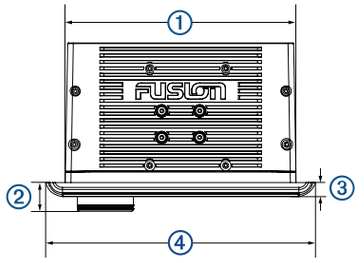
音響尺寸圖

側面尺寸



①	20.4 公釐 (0.8 英吋)
②	99 公釐 (3.9 英吋)
③	50 公釐 (1.97 英吋)

上方尺寸



[1] 音響可能會限制輸出功率，以避免放大器過熱，並維持音訊動態。

①	164 公釐 (6.5 英吋)
②	20.4 公釐 (0.8 英吋)
③	10 公釐 (0.39 英吋)
④	192 公釐 (7.56 英吋)

軟體更新

請前往 support.garmin.com，尋找您裝置的軟體更新和資訊。

低功率電波輻射器材管理宣告

本產品謹遵循中華民國國家通訊傳播委員會所頒布電信管理法，並經驗證通過合格，請使用者遵循相關電信法規以避免違反規定受罰。若使用者欲攜帶本機至其他國家應用，也請遵循該地區或國家之相關法令限制。根據國家通訊傳播委員會低功率射頻器材技術規範規定

3.8.2 章節：

取得審驗證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。

前項合法通信，指依電信法規定作業之無線電通信。低功率射頻器材須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

限用物質含有情況標示聲明書

設備名稱：船用音響主機, 型號（型式）：MS-RA770, A03408

單元	限用物質及其化學符號					
	鉛 (Pb)	汞 (Hg)	鎘 (Cd)	六價鉻 (Cr^{+6})	多溴聯苯 (PBB)	多溴二苯醚 (PBDE)
印刷電路板組件	—	O	O	O	O	O
螢幕/背光	—	O	O	O	O	O
線材/電纜組件	—	O	O	O	O	O
外殼	—	O	O	O	O	O
主機	—	O	O	O	O	O

備考 1. 〝超出 0.1 wt % 〞及〝超出 0.01 wt %〞係指限用物質之百分比含量超出百分比含量基準值。

備考 2. 〝O〞係指該項限用物質之百分比含量未超出百分比含量基準值。

備考 3. 〝—〞係指該項限用物質為排除項目。