FUSION®

MS-RA50

IPOD

I AM THE BEST
THE FUSIONATOR
MARINE MUSIC MANIA

1:46   5:10

MARINE HEADUNIT

MS-RA50

FUSION®

WARNINGS AND CAUTIONS

Do not attempt to open the unit's chassis. There are no user-serviceable parts or adjustments inside.
If exposed to direct sunlight or operated for extended periods, metal surfaces may become hot. Take care when handling.

USING iPod

This unit has been tested with compatible authentic iPod models under normal expected operating conditions, free from any pre-existing defects in either the unit or the iPod.
No responsibility can be taken for use of the unit other than under normally expected operating conditions in conjunction with fully functional and undamaged iPod units which have been manufactured and authorized by Apple Inc.

REGISTER YOUR PRODUCT ONLINE:

For your own piece of mind, register your product purchase online at
www.fusionelectronics.com

We'll keep you up to date with any news related to your product, any software upgrades or new accessories to help you get the most from your product.

All FUSION True Marine Products are backed by a 3 Year Limited Consumer Warranty and by registering your product you can be assured that if the unexpected occurs we'll have your details and be ready to help.

RECORD YOUR PRODUCT DETAILS HERE:

MODEL NUMBER _____   DATE OF PURCHASE _____

AFFIX RECEIPT HERE

NOTES

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CONTENTS

USER INTERFACE AND CONTROLS

CONTROL PANEL LAYOUT

KEY NAMES

Key	Name
	MENU
	POWER
	ROTARY ENCODER
	SOURCE

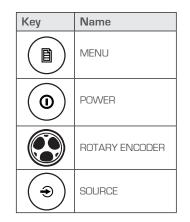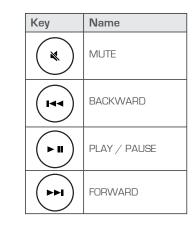| Key	Name
	MUTE
	BACKWARD
	PLAY / PAUSE
	FORWARD

LICENSING

Apple, the Apple logo, iPod and iTunes are trademarks of Apple Computer, Inc., registered in the US and other countries.

General specifications

Operating voltage	10.2 – 16 VDC negative ground
Fuse rating	7.5 amp

Power output

Maximum	40 W x 2
Pre-output voltage	3.0 VRMS

TUNING RANGE

Europe and Australasia

FM radio frequency range	87.5 – 108 MHz.
Frequency step	100 kHz
AM radio frequency range	522 – 1620 MHz.
Frequency step	9 kHz

USA

FM radio frequency range	87.5 – 107.9 MHz.
Frequency step	200 kHz
AM radio frequency range	530 – 1710 MHz.
Frequency step	10 kHz

Japan

FM radio frequency range	70 – 90 MHz.
Frequency step	50 kHz
AM radio frequency range	522 – 1620 MHz.
Frequency step	9 kHz

ROTARY ENCODER AND MENU KEY

Although the controls of the RA50 are designed to be intuitive to use, we recommend that you familiarize yourself with the operation of the Encoder and Menu key before using the unit.

ROTARY ENCODER OPERATION

You can use the Encoder in three ways to control the operation of the RA50:

1		Rotary Encoder turn
2		Encoder press
3	+1	Encoder press and hold down for at least one second

MENU KEY OPERATION

You can use the Menu key to open or to exit from menus:

	Menu key	Press the Menu key to open a menu.
	Menu exit	In an open menu you can use the Menu key at any time to save changes and exit: • Press the Menu key to exit from the current menu level. • Press and hold down the Menu key to exit from the menu completely. **Time out feature:** After a few seconds inactivity, the menu exits and any changes are saved automatically.

USING THE ENCODER AND MENU KEY

You can use the Encoder and Menu key to adjust levels and access menus.

ADJUSTING LEVELS

Use the Encoder and Menu key to adjust levels on the RA50. For example, to adjust the volume level:

Turn Encoder to open the Volume screen

Turn Encoder to adjust the level.

Press Menu to exit (or leave to time out). See "Menu Key Operation" on page 5.

ACCESSING MENUS

Use the Menu key and Encoder to access menus to change settings. For example, to access the Settings menu while in Tuner or AUX mode.:

Press Menu key

The menu is displayed

Turn Encoder to scroll the highlight. Press Encoder to select **Settings** menu.

The Settings menu is displayed

Press Menu to exit. See "Menu Key Operation" on page 5.

MULTI-LEVEL MENUS

All of the menus on the RA50 have more than one level. To access items in multi-level menus:

*   Turn the Encoder to highlight a menu item, then
*   Press the Encoder to select the highlighted item.
*   Repeat these steps as many times as necessary to reach the menu item you require.

In this manual, accessing a multi-level menu item is shown by listing the menu items in order, as in the following example:

Mounting Bracket (Part # MS-HUGMS)

Surface mounts your RA50 Marine Stereo using the gimbal mounting bracket. The bracket can be positioned above or below the RA50 providing a wide choice of mounting options. The bracket is gimbal mounted to the RA50 allowing adjustment of the viewing angle.

SUPPORT, SALES AND SERVICE

FUSION Electronics in New Zealand	**+ 64 9 369 2900**
FUSION Electronics Australia	**+ 61 1300 736 012**
FUSION Electronics Europe	**+31 76 572 3632**
FUSION Electronics USA	**+1 623 580 9000**

Website: www.fusionelectronics.com

SPECIFICATIONS

FCC compliance statement

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

*   this device may not cause harmful interference, and
*   this device must accept any interference received, including interference that may cause undesired operation.

RA50 ACCESSORIES

Made for iPod iPhone

Cable for iPod - 1.5m (Part # MS-IP15L3)

Connects your iPod to your RA50 Marine Stereo, enabling full control and navigation of your iPod from the RA50.

iPod EXTERNAL DOCK (Part # MS-IPDOCKG2)

Connect this external iPod dock to the RA50 Marine Stereo to provide the additional benefit of an integrated housing for your iPod. The bulkhead mount dock complies with IPx5 Waterproof Standards, protecting your iPod from the harsh marine environment. The iPod marine external dock can be flush mounted or wall mounted.

Note: The water ingress rating is on the front of the dock when correctly bulkhead mounted.

SETTINGS > TONE
The above example means: "turn and then press the Encoder to select the **Settings** menu" then "turn and then press the Encoder to select the **Tone** menu".

GETTING STARTED

POWERING THE UNIT ON OR OFF

When you power on the RA50 it will automatically start playing music from the most recently selected input source.

TO POWER THE UNIT ON OR OFF.
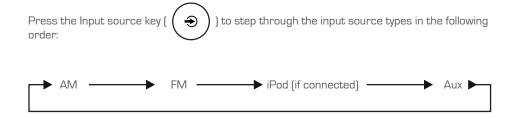
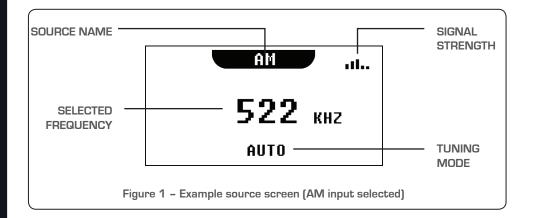|	
Power	• Momentarily press the Power key to power on the unit. As the unit starts up, a splash screen is displayed for several seconds, followed by the input source screen for the current input source.
	• When the unit is on, momentarily press the Power key to power off the unit.

INPUT SOURCE SCREENS

The RA50 supports input from several types of source:
• AM/FM radio
• iPod/iPhone via external connector or docking unit
• Auxiliary input.

Press the Input source key [   ] to step through the input source types in the following order:

AM ⟶ FM ⟶ iPod (if connected) ⟶ Aux

When you select one of these sources, the RA50 displays a source screen, similar to the AM source screen shown in Figure 1 below. The title bar always shows the source name and signal strength. Other additional information varies depending on the source type you have selected.

SOURCE NAME

SIGNAL
STRENGTH

AM

ılı..

SELECTED
FREQUENCY

522 KHZ

AUTO

TUNING
MODE

Figure 1 – Example source screen (AM input selected)

ADJUSTING VOLUME LEVEL

To adjust the volume level:

Turn Encoder | The Volume screen is displayed | Turn Encoder to adjust. | Press Menu to exit. See "Menu Key Operation" on page 5.

MUTING OUTPUT

To mute and unmute the volume:

| Mute | • Press the Mute key to mute the audio output. The Mute icon is displayed over the top of the current input source screen. |
| | • Press the Mute key again to unmute the audio output. The volume continues at the previously set level. |

My Head unit keeps turning itself off then back on when connected to my iPod
This could be happening due to corrupt files and/or a corrupted version of the operating software on your iPod. If you connect to your computer you may get a message on the iPod similar to this: "The iPod 'John's iPod' could not be updated because the firmware was corrupt.
Click this link to get a step-by-step guide to solve this issue: http://support.apple.com/kb/ts1813."

Why does my FUSION Head unit keep locking up when connected to my iPod/iPhone?
If you are experiencing software lock-ups or your unit freezes:

• Reset the Head unit by holding down the power button for 10 seconds or pressing the reset button inside the face plate.

• Reset your Apple iPhone by powering down and then restarting the phone.

• Reset your iPod (see Apple website from model-specific information). This should resume normal operation.

• Make sure you have the latest version of iTunes and the latest operating software in your iPod/iPhone. It is important to update software when Apple releases new versions. If you are connected via a dock, ensure you are using the correct sleeve and the connection to the Head unit is secure.

Will my iPod/iPhone connect to my FUSION product if the battery is flat?
No. It will take a number of minutes for the Apple product to get a minimum level of charge before it can connect and become operational. Please connect and wait for the unit to initialise.

My iPod/iPhone will not connect to the Head unit while in the dock.
If your Head unit displays "No iPod connected" while using iPod as input source:

• Check that you are using the correct sleeve combination. If you have the incorrect sleeve combination this could prevent the iPod connector from mating correctly. It could also damage the connector in the dock or your iPod/iPhone itself.

If you are uncertain which iPod model you have, go to http://www.apple.com/support/ to get the correct model information for your iPod and sleeve.
If you are still unable to connect once you know for certain you have the correct iPod/iPhone–sleeve combination:

• Ensure that you have the latest version of operating software installed in your iPod/iPhone and the latest iTunes version. To do this, connect your iPod/iPhone to iTunes and it will check and, if necessary, prompt you to download the latest version.

If you are still unable to connect once you have confirmed that you have the latest software or you have updated your iPod/iPhone:

• Reset the iPod/iPhone (see the user manual for your Apple product) and also reset the Head unit (see FUSION user manual).
If you are still unable to connect:

• Contact your FUSION dealer or contact FUSION via the tech email.

Volume limit

Use this option to set the maximum output volume level that can be selected by users.

To maximum volume limit:

1. Press the Menu key.
2. Turn and then press the Encoder to select Settings > Volume limit.
3. Turn the Encoder to set the require volume level.
4. Press the Menu key (or leave to time out) to save the setting and exit.

Note: The volume limit setting controls the maximum volume output level but does not limit the volume shown on the Volume screen.

APPENDICES

TROUBLESHOOTING

Resetting the unit

Should the RA50 unit become unresponsive:

- Press and hold the 'Power' button for 10 seconds to reset the unit.
- Reset your iPod/iPhone.
- Remove all power for 5 minutes and then reconnect.

Tuning

If you are unable to tune to radio stations, check you have the correct tuner region selected

For further information, see "Tuner region" on page 23 .

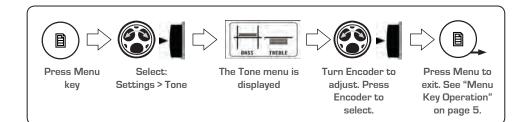### iPod TROUBLESHOOTING

Problem Solution

iPod

Why do I get an error message when I dock my iPhone to my MS-RA50

Some iPhone models may intermittently display the message: "This accessory is not made to work with the iPhone. Would you like to turn on airplane mode to reduce audio interference? You will not be able to make or receive calls." when initially docked with any FUSION iPhone compatible product. All FUSION iPhone-supported products have been tested and certified by Apple, and passed Apple's stringent "Works with iPhone" self-certification test.
Despite this message, all fusion iPhone-compatible products are fully functional and compatible with Apple's iPhone product line.
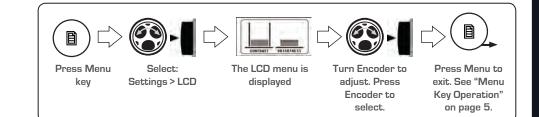Please choose "NO", or simply wait for this message to time out.

ADJUSTING TONE

To change the bass or treble level:

Press Menu key	Select: Settings > Tone	The Tone menu is displayed	Turn Encoder to adjust. Press Encoder to select.	Press Menu to exit. See "Menu Key Operation" on page 5.

ADJUSTING SCREEN BRIGHTNESS

Use the LCD menu to adjust the contrast or brightness of the screen display.
You can press the Menu key at any time (or leave to time out) to save the current brightness level and exit.

To adjust the contrast or brightness of the display screen:

Press Menu key	Select: Settings > LCD	The LCD menu is displayed	Turn Encoder to adjust. Press Encoder to select.	Press Menu to exit. See "Menu Key Operation" on page 5.

Screen brightness can be linked to the vessels lighting system, see "Installing the RA50" on page 19

TUNER

LISTENING TO THE TUNER

To select one of the available tuner bands:

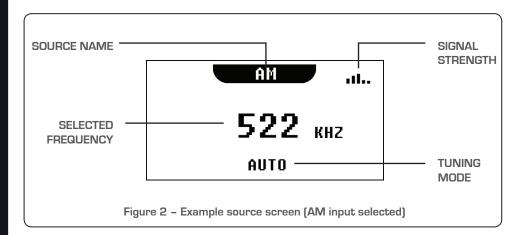Press the Input source key [⊕] to select input from each of the following in turn:

- AM
- FM

The applicable input source screen is displayed for each band.
Continuing to press the key will display the input source screens for iPod (if connected) and Auxiliary as described in the section "Input Source Screens" on page 6.

TUNER SOURCE SCREENS

AM/FM

An example of a typical tuner input source screen is shown in Figure 2 below.

SOURCE NAME

SIGNAL STRENGTH

AM

522 KHZ

SELECTED FREQUENCY

AUTO

TUNING MODE

Figure 2 – Example source screen (AM input selected)

To select the required display language:

1. Press the Menu key.
2. Turn and then press the Encoder to select Settings > Language.
3. Turn the Encoder to highlight the required language.
4. Press the Encoder to select the highlighted language.
5. Press the Menu key (or leave to time out) to save the setting and exit.

Power save
If you are operating the RA50 on battery power, you can turn on the power save option to reduce drain on the battery. The LCD screen shuts down automatically after 1 minute of inactivity (press any key to restore display).

To enable or disable power saving mode:

1. Press the Menu key.
2. Turn and then press the Encoder to highlight **Settings > Power save**.
3. Press the Encoder to turn on power saving [◉] or turn off power saving [○].
4. Press the Menu key (or leave to time out) to save the setting and exit.

Tuner region
Use this option to select the correct region to ensure the RA50 tunes correctly to your local radio stations.

To change the tuner region setting:

1. Press the Menu key.
2. Turn and then press the Encoder to select Settings > Tuner region.
3. Turn the Encoder to highlight the required region:
   - Europe
   - USA (default region)
   - Japan
   - Australasia.
4. Press the Encoder to select the region [◉].
5. Press the Menu key (or leave to time out) to save the setting and exit.

SETTING UP THE RA50

PREPARING FOR IPOD INPUT

This section describes how to prepare for iPod input.

When using your iPod:

• Always remove your iPod from the unit when not in use and do not leave in your vessel. This helps reduce risk of theft or damage as vessel cabins can reach extreme temperatures.

• Do not remove iPod or use stereo in a distracting manner while operating the vessel. Check and obey all marine laws in association with use.

Connecting your iPod
Before you can use your iPod for input, you must first connect the device to the RA50.
You can connect your iPod to the RA50 unit:

• By using an accessory cable.

• By using a docking unit. For added protection, you can connect your iPod to the RA50 by using a Fusion iPod Dock MS-IPDOCKG2.

For further information, see "RA50 Accessories" on page 25.

Note: You cannot select iPod input without first connecting the device.

To connect your iPod to the RA50 by accessory cable:

1. Plug the MS-IP15L3 accessory cable into the base of your iPod.

2. Plug the accessory cable into the RA50 cable located at the rear of the unit.

3. Select input from the device, as required.

ADVANCED SETTINGS

The settings described in this section are usually set up when the unit is installed and not changed again.

Language
The RA50 can display menus and screens in English, Dutch, French, German, Italian or Spanish.

TUNING METHODS

You can use three methods to tune the RA50: automatic, manual and preset.

Encoder	Menu key	Play / Pause	Forward	Backward

To tune to a required frequency, channel or preset:
Press the Play / Pause key to step through the available tuning methods for each band:

Tuning Method	When tuning with this method...
Auto	• Press the Forward or Backward key to start searching for available stations. **Note:** The search stops when a station is found or when the unit has scanned all available frequencies once.
Manual	• Press the Forward or Backward key to step through the range of frequencies one at a time.
Preset	• Press the Forward or Backward key to step through available presets (only available if there are two or more presets) • To tune to a specific preset: a. Press the Menu key. b. Press the Encoder to select Presets. c. Turn the Encoder to highlight the required preset. d. Press the Encoder to tune to the highlighted preset. e. Menu exit. See "Menu Key Operation" on page 4. For further details, see " Adding and Removing Presets" on page 11.

ADDING AND REMOVING PRESETS

The RA50 allows you to set up your favorite AM/FM stations as presets for easy recall.

Note: Up to 15 presets can be stored for each radio band.

When you are using the tuner, the Play / Pause, Forward, Backward, and Menu keys provide special options to allow you to work with preset frequencies (AM/FM).

Encoder	Menu key	Play / Pause	Forward	Backward

To add a new preset:
Do one of the following.
1. Tune the RA50 to the required frequency.
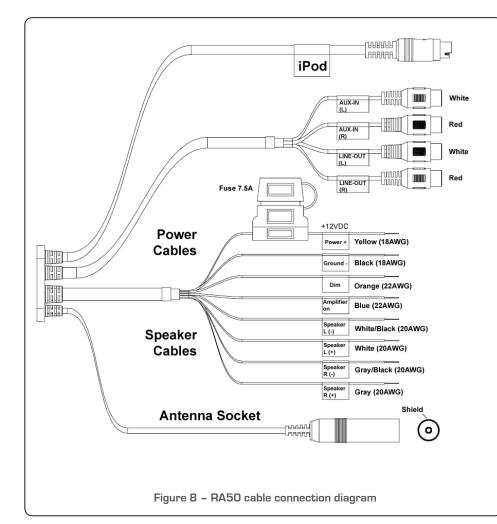2. Press and hold down the Play / Pause key. The message: "Preset saved" is displayed briefly.

or

1. Press the Menu key.
2. Turn and then press the Encoder to select Presets > Save current. The message: "Preset saved" is displayed briefly.

Note: New presets must be unique. If you try to create a preset for the same frequency as an existing one, the unit displays the message "Previously saved".

To remove one or more presets:
1. Press the Menu key.
2. Turn and then press the Encoder to select Presets > Remove preset.
3. Do one of the following (there is no warning or confirmation prompt before deletion):
   • Select Remove all presets and press the Encoder to remove all current presets. The message: "Presets removed" is displayed briefly.
   • Select a preset and press the Encoder to remove the selected preset. The selected preset is removed from the list.
4. Press the Menu key (or leave to time out) to exit.

RA50 CABLE CONNECTION DIAGRAM

Figure 8 – RA50 cable connection diagram

CABLES

Description (colour)

Power +12VDC (Yellow)

Negative ground (Black)

Remote amplifier turn on (Blue)

Dim +12V switched (Orange)

Dim
Connect to vessel lighting system to dim LCD and button illumination when vessel lights are turned on.

Aux input
Connect an Auxiliary source to the left and right RCA (White = L, Red = R).

Lineout
Connect to an external amplifier (White = L, Red = R).

PLAYING CONTENT

Before you can use your iPod as an input source you must first connect the device to the RA50. For further details, see "Preparing for iPod Input" on page 22.
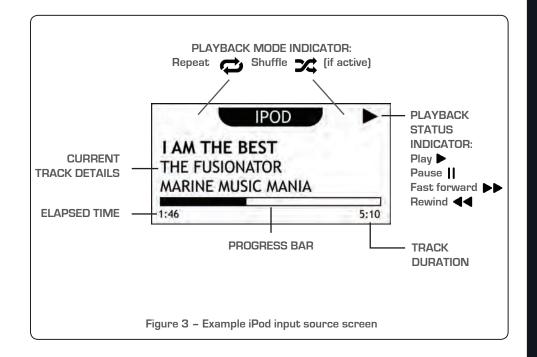
To listen to input from your iPod:

Press the Input source key [⊕] until the iPod input source screen is displayed.

Continuing to press the key will display the input source screens for Auxiliary, AM and FM as described in the section "Input Source Screens" on page 7.

iPod SOURCE SCREEN

An example of a typical iPod input source screen is shown in Figure 3 below.

PLAYBACK MODE INDICATOR:
Repeat ⟲ Shuffle ⤬ (if active)

PLAYBACK STATUS INDICATOR:
Play ▶
Pause ▌▌
Fast forward ▶▶
Rewind ◀◀

CURRENT TRACK DETAILS

ELAPSED TIME

PROGRESS BAR

TRACK DURATION

IPOD ▶
I AM THE BEST
THE FUSIONATOR
MARINE MUSIC MANIA
1:46   5:10

Figure 3 – Example iPod input source screen

CONTROLLING IPOD PLAYBACK

Selecting tracks from a playlist
There can be thousands of tracks stored on an iPod, so you need to select the tracks you wish to play from one of the groupings available (such as Playlists, Artists, Albums). For example, to select tracks by artist:

| Press Menu key | Turn Encoder to scroll the highlight. Press Encoder to select Artist. | Turn Encoder to scroll the highlight. Press Encoder to select an item. You must navigate to select All or a specific track or Album for the unit to start playing. | Press Menu to exit. See "Menu Key Operation" on page 5. |

Controlling Playback
You can control iPod playback with the Play / Pause, Forward and Backward keys. The selected track starts playing automatically.

If you want to:	Use:	Notes:
Play / Pause a track	Play / Pause	• Press the key to pause the current track. The pause icon (❙❙) is displayed top right in the input source screen. • Press the key again to resume play. The play [▶] icon is displayed in the input source screen.
Skip to next track	Forward	• Press the key to skip to the start of the next track.
	Backward	• Press the key to skip to the start of the current track. • Press the key twice to skip to the start of the previous track.
Fast forward / backward	Forward, or Backward	• Press and hold down the key to fast forward (or backward) the playback. The fast forward [▶▶] (or backward) icon is displayed in the input source screen.

INSTALLATION WARNING

Caution! The MS-RA50 is designed for vessels with a 12V DC Negative ground electrical system.

• Ensure the marine vessel's +12V lead is removed from the battery before any equipment is connected.

• Investigate the marine vessel's fuel tanks and electrical wiring locations before you begin installation.

• Ensure all wiring is protected to avoid damage.

When wiring the MS-RA50, ensure that the wires are away from sharp objects and that rubber grommets and insulated bungs are used when routing the wiring. Ensure that when connecting the wires to the speakers and audio system, the terminals and connections are protected from shorting to each other.

Note: Ensure the Aerial cable is routed away from any power cables, and is the minimal length, as long cable runs will affect AM reception performance.

For optimum radio reception, please ensure you use an independent AM/FM marine antenna (ground independent). Please refer to the following site for further info: www.pacificaerials.co.nz
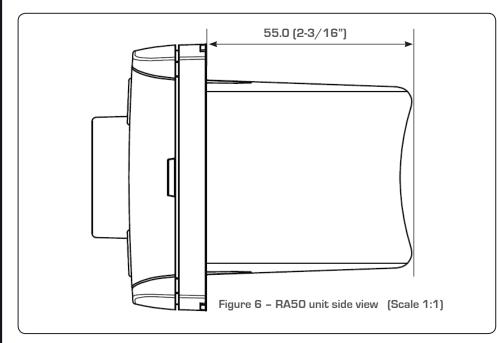
CONNECTIONS

Connections and cables on the RA50 are described below. For further details of cabling, see Figure 8 on page 21.

Aerial connection
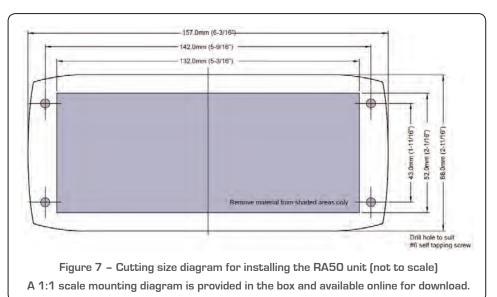Connect an AM/FM marine antenna to the antenna socket.

iPod connection
MS-IPDOCKG2 Marine Docks for iPod (not included) or a MS-IP15L3 accessory cable (not included).

55.0 (2-3/16")

Figure 6 – RA50 unit side view   (Scale 1:1)

Caution! These images are not to scale. Dimensions are shown in millimeters (mm) and inches (").

MOUNTING CUT OUT DIAGRAM

157.0mm (6-3/16")
142.0mm (5-9/16")
132.0mm (5-3/16")

43.0mm (1-11/16")
52.0mm (2-1/16")
68.0mm (2-11/16")

Remove material from shaded areas only

Drill hole to suit
#6 self tapping screw

Figure 7 – Cutting size diagram for installing the RA50 unit (not to scale)

A 1:1 scale mounting diagram is provided in the box and available online for download.

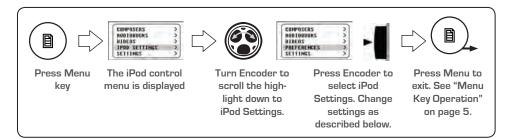## CHANGING IPOD SETTINGS

Additional iPod control features are available through the iPod Settings menu.

To change a setting in the iPod Settings menu:

Press Menu key — **The iPod control menu is displayed** — **Turn Encoder to scroll the high-light down to iPod Settings.** — **Press Encoder to select iPod Settings. Change settings as described below.** — **Press Menu to exit. See "Menu Key Operation" on page 5.**

Turn and then press the Encoder to select Repeat or Shuffle.
Turn the Encoder to highlight the required value and press the Encoder to select (◉) it.

Repeat
*   **Off.** Repeat mode is turned off
*   **One**. Repeat the current song
*   **All.** Repeat all songs in the current playlist

Shuffle
*   **Off.** Random play shuffle is turned off
*   **Tracks**. Shuffle tracks on the current album
*   **Albums**. Shuffle albums in the current Selection.

LISTENING TO AUXILIARY INPUT

The RA50 can accept audio from devices with an audio output such as an MP3 player, TV, games console, computer or DVD player.

Note: An adaptor cable may be required.

The Left and Right AUX input RCA cable is located at the rear of the unit.

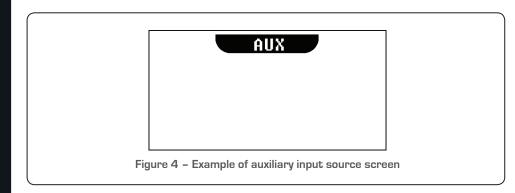**To listen to input from an auxiliary device:**

 Press the Input source key [◎] until the AUX input source screen is displayed.

Continuing to press the key will display the input source screens for AM, FM and iPod (if connected) as described in the section "Input Source Screens" on page 13.

AUXILIARY SOURCE SCREEN

The input source screen displayed when you select auxiliary input is shown in Figure 4 below.

```
                 AUX
```

Figure 4 – Example of auxiliary input source screen

MOUNTING THE UNIT

Important! If any modification to the vessel is required, such as drilling holes, FUSION recommends that you consult with your boat dealer or manufacturer beforehand.

1. Create mounting hole for product and drill screw pilot holes. Refer to mounting template included with product or download from www.fusionelectronics.com

2. Fit mounting gasket.

3. Insert the unit into the mounting hole.

4. Use the supplied 4 x self tapping screws, to fix the unit into position.

5. Attach screw covers.

Note: Appropriate mounting is very important to ensure correct operation. Select a location that allows both free/open airflow around rear of chassis, whilst minimizing exposure to moisture. Allow adequate room at the rear of the unit for the cable looms (approx. 50 mm or 2").

The headunit must not be mounted on more than a 45° angle from the horizontal plain. Failure to follow mounting restrictions could void your warranty

45°

Figure 5 – Locating the RA50 unit into the mounting panel