

Introduction and Features

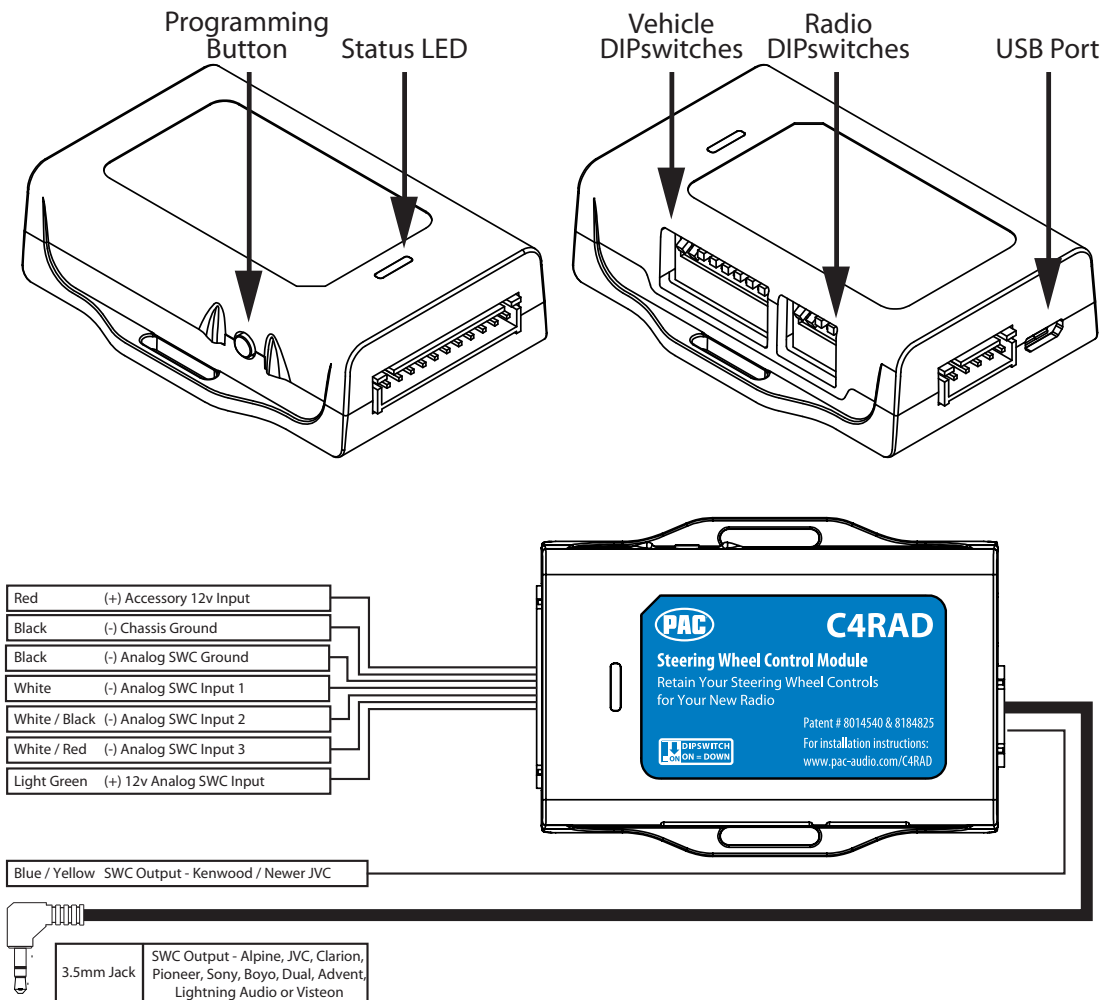
The C4RAD interface allows the retention of steering wheel controls (SWC) when replacing a factory radio in a vehicle equipped with analog steering wheel controls. Use of this interface also allows you to program two radio functions to each SWC button by using short press / long press dual command functionality. The C4RAD only works in vehicles with analog SWCs.

Features

- Compatible in vehicles equipped with analog steering wheel controls
- Easily configurable using the on-board DIPswitches
- Ability to assign two radio functions to one SWC button
- Updatable via the C4RAD PC Application
- Highly visible tricolor LED to keep the user informed of the module's status
- Equipped with a manual learning function for compatibility with unlisted vehicles, equipped with analog steering wheel controls

Interface and Wiring Overview

Please visit www.pac-audio.com/c4rad to look up the vehicle specific wiring and vehicle configuration processes.



Installation

Please visit www.pac-audio.com/c4rad to look up the vehicle specific wiring and configuration processes. If your vehicle's DIPswitch and wiring information is available on our website, we recommend using the DIPswitch configuration mode as it is the fastest and easiest way to program the C4RAD. We also recommend that all wiring connections be soldered to ensure a sturdy and reliable connection.

Configuring / Programming

DIPswitch Configuration Mode

This is the fastest most convenient way to program our module. This method only requires you to visit www.pac-audio.com/c4rad and look up the DIPswitches and wiring, set the DIPswitches and then connect it to the vehicle / radio for it to function.

With this method, the C4RAD uses a pre-determined DIPswitch configuration to assign the vehicle and SWC button functionality. The DIPswitches on the side of the interface must be manually set to the proper configuration by the user. These vehicle specific DIPswitch settings can be found by visiting our website @ www.pac-audio.com/c4rad. If you wish to re-assign button functions or use short press / long press dual command functionality, please follow the button re-assignment procedure outlined below.

1. Please visit www.pac-audio.com/c4rad to look up your vehicle / radio combination.
2. Set the vehicle DIPswitches according to what is displayed on the website.
3. Set the radio DIPswitches according to what is displayed on the website.
4. Make all of the necessary connections from the C4RAD-HAR to the vehicle according to the installation instructions displayed on the website.
5. Connect the C4RAD module to the C4RAD-HAR harness.
6. Verify functionality of the SWC buttons to your aftermarket radios.

PLEASE NOTE: The section below only applies to button re-assignment when using the DIPswitch Configuration Mode. If you are using the C4RAD in the manual programming mode (all vehicle DIPswitches up) please refer to the "Manual Mode" section on page 3.

Button Re-assignment

If you wish to re-assign the SWC functions, or utilize short press long press dual command functionality, follow the steps outlined in this section. Please read each of the following steps to familiarize yourself with the process before beginning. The interface must be programmed in the specific order shown in the chart on the next page.

The steering wheel control button functions must be mapped in the specific order shown in the chart on the next page. If you come across a function in the chart that your steering wheel does not have, or you do not want to map, press the programming button on the side of the C4RAD to skip that function. The LED will flash twice and then stay on confirming that you have successfully skipped that function and are ready to map the next button function.

1. Turn the key to the ignition position. The LED will illuminate red.
2. Press and hold the programming button on the side of the interface until the LED illuminates green. Release the programming button.
3. Within 7 seconds, press the button that is to be learned on the steering wheel. The LED will turn red when the steering wheel button is pressed. **At this point you have two options:**
 - a. **For short press functionality:** Release the button on the steering wheel. The LED will change back to green.
 - b. **For long press functionality:** Continue to hold the button until the LED flashes between red and amber. Release the button and the LED will change back to green.
4. If you need to program more buttons, repeat step 3 for each additional audio function on the steering wheel.
5. If you come across a function in the chart that your steering wheel does not have, or you do not want to program, press and release the program button on the side of the interface to skip that function. The LED will turn off and back on when the skip has been done successfully.
6. Once programming is completed, wait seven seconds. The LED will flash green 3 times indicating the end of programming.
7. Test the interface for proper functionality. Whenever a SWC button is pressed the LED on the interface should blink green. If any function does not work, repeat the programming steps.

The SWCs can always be restored to default settings by pressing and holding the program button on the side of the interface until the LED illuminates green, releasing it and waiting 7 seconds for the LED to flash 3 times.



Configuring / Programming (cont.)

Radio DIPswitch Settings							
Alpine	Clarion / Nakamichi	Fusion	JVC	Kenwood	Other	Pioneer	Sony
Other - Advent, BOYO, Dual, Lightning Audio, Visteon, Rockford Fosgate							

Manual Mode

With this method, the C4RAD will learn the SWC button values and assign them to the proper radio function.

1. Set all of the vehicle DIPswitches to the UP (off) position.
2. Set the radio DIPswitches according to the chart above.
3. Please Visit www.pac-audio.com/c4rad to look up your vehicles wiring. If your vehicle is not listed on our website but the proper SWC wiring info has been identified, make all the necessary connections using the wiring overview on page 1.

The steering wheel control button functions must be programmed in the specific order shown in the chart below. If you come across a function in the chart that your steering wheel does not have, or you do not want to map, press the programming button on the side of the C4RAD to skip that function. The LED will flash twice and then stay on confirming that you have successfully skipped that function and are ready to map the next button function.

Please read each of the following steps to familiarize yourself with the process before beginning. The interface must be programmed in the specific order shown in the chart below.

1. Turn the key to the ignition position. The LED will illuminate red.
2. Press and hold the programming button on the side of the interface until the LED illuminates green. Release the programming button.
3. Within 7 seconds, press the button that is to be learned on the steering wheel. **At this point you have two options:**
 - a. **For short press functionality:** Hold the button on the steering wheel until the LED changes from green to red. Release the button.
 - b. **For long press functionality:** Continue to hold the button until the LED flashes between red and amber once. Release the button.
4. If you need to program more buttons, repeat step 3 for each additional audio function on the steering wheel.
5. If you come across a function in the chart that your steering wheel does not have, or you do not want to program, press and release the program button on the side of the interface to skip that function. The LED will turn off then back on when the skip has been done successfully.
6. Once programming is completed, wait seven seconds. The LED will flash green 3 times indicating the end of programming.
7. Test the interface for proper functionality. Whenever a SWC button is pressed the LED on the interface should flash green. If any function does not work, repeat the programming steps.

Radio Function Programming Order

Radio	Alpine	JVC	Kenwood	Clarion / Nakamichi	Other*	Sony	Pioneer	Fusion
1	Volume +	Volume +	Volume +	Volume +	Volume +	Volume +	Volume +	Volume +
2	Volume -	Volume -	Volume -	Volume -	Volume -	Volume -	Volume -	Volume -
3	Mute	Mute	Mute	Mute	Mute	Mute	Mute	Mute
4	Preset +	Source	Source	Source	Preset +	Preset +	Preset +	Source
5	Preset -	Track +	Play	Search +	Preset -	Preset -	Preset -	Track +
6	Source	Track -	Track +	Search -	Source	Source	Source	Track -
7	Track +	Band / Disc +	Track -	Band	Track +	Track +	Track +	Audio
8	Track -	Preset / Disc -	Disc / FM +	Send / End	Track -	Track -	Track -	Power
9	Power	Select	Disc / AM -	Send	Band	Band	Band	
10	Enter / Play	Attenuation	Answer	End		Reject Call / Source (Bluetooth equipped radios only)	Phone Menu	
11	Band / Program	Phone Receive	Voice Dial	Voice		Answer / End Call	Answer Call	
12	Receive	Phone Reject	On Hook				End Call	
13	End	Voice Dial	Off Hook				Voice Activation	
14		Power	Mute (Multimedia units only)					

*Other = Advent, Boyo, Dual, Lightning Audio, Rockford Fosgate, & Visteon



Testing and Verification

1. Turn the ignition on. The red LED on the interface will turn on.
2. Verify that all SWC are functioning properly. The green LED will flash each time a steering wheel button is pressed.
3. Turn off the vehicle and remove the key. The LED on the module should turn off.

Troubleshooting and FAQ

LED Legend			
Color	During Normal Operation	During Manual Programming Mode	During Optional Programming
Solid Red	Accessory on	Waiting on short press button release	Waiting on short press button release
Solid Green	N/A	Waiting on button to be pressed	Waiting on button to be pressed
Solid Amber	Update required - Please call tech support	N/A	N/A
Flashing Green	SWC button is being pressed	N/A	N/A
Flashing Amber every 5 seconds	Module is connected to the PC via USB	N/A	N/A
Flashing Red / Amber	Error - DIPswitch setting on vehicle switches set to unknown config	Long Press Button detected	Long Press Button detected
Flashing Green / Red	Error - DIPswitch setting on radio switches set to unknown config	N/A	N/A
Flashing Green / Amber / Red	Error - Button not pressed long enough or value of button is too close to rest value	N/A	N/A

- Q. Where can I find the wiring info to connect the C4RAD to my vehicle?
 A. The wiring info can be found on our website @ www.pac-audio.com/c4rad
- Q. Where can I find info on setting the DIPswitches on the side of the module?
 A. The dipswitch settings can be found on our website @ www.pac-audio.com/c4rad
- Q. The module's LED is flashing a pattern that is not consistent with normal operation.
 A. Please reference the LED legend above for your specific case.
- Q. Is there a way to perform a master reset to the module?
 A. The interface can be reset, when **not connected via USB**, by pressing and holding the programming button on the side of the interface for seven seconds until the LED turns amber. **This reset can only be done while the module is connected to the vehicle.**
- Q. I have connected all of the wires and set the DIPswitches as instructed. I am having an issue where some or all of the buttons are not functioning correctly or at all.
 A. Verify that all of the ground wires (Radio, C4RAD, and steering wheel circuit) are connected at the same place. In some vehicles the factory ground may not be a sufficient ground for all of these wires. In this case please make all ground connections to chassis ground.
- Q. I'm looking at your website and I don't see my radio listed (Advent, Boyo, Dual, Lightning Audio, Rockford Fosgate or Visteon).
 A. When installing any of these brands you will need to select Pioneer as your radio.

Product Updates (Firmware)

The C4RAD can be updated with new firmware as it becomes available using the C4RAD PC application. When using the application to update, please follow the procedures outlined in the PC application to update your interface.

