ControlPRO 2
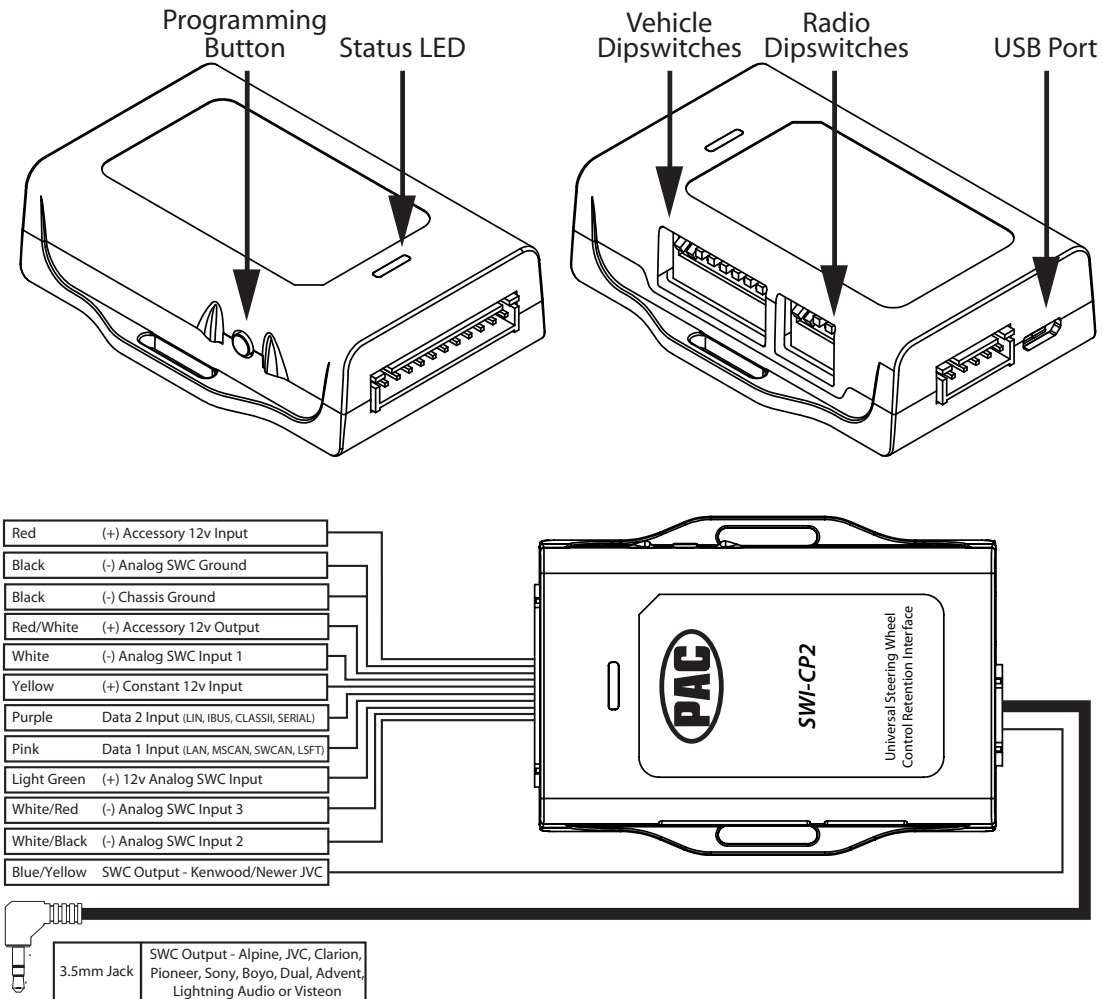## Steering Wheel Control Interface

Introduction & Features

The SWI-CP2 interface allows the retention of steering wheel controls (SWC), rear seat controls (RSC) and retained accessory power (RAP) whenever replacing a factory radio. 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 SWI-CP2 works in vehicles with either data or analog SWC.

Features

- Compatible in vehicles equipped with LAN, LIN, CAN, Class II, Analog or Serial Data SWC
- Easily configurable using either a PC or manually
- Retains memory even if power is lost
- Ability to assign two radio functions to one SWC button
- Updatable via the ControlPro PC Application.
- Create and save custom vehicle configuration files for later use.
- Highly visible tricolor LED to keep the user informed of the modules status.
- Equipped with a manual learning function for compatibility with unlisted vehicles equipped with analog steering wheel controls.

Interface & Wiring Overview

Please visit www.pac-audio.com/controlpro/App to download the PC application that provides vehicle specific wiring and vehicle configuration processes.

Programming Button | Status LED | Vehicle Dipswitches | Radio Dipswitches | USB Port

Wire	Function
Red	(+) Accessory 12v Input
Black	(-) Analog SWC Ground
Black	(-) Chassis Ground
Red/White	(+) Accessory 12v Output
White	(-) Analog SWC Input 1
Yellow	(+) Constant 12v Input
Purple	Data 2 Input (LIN, IBUS, CLASSII, SERIAL)
Pink	Data 1 Input (LAN, MSCAN, SWCAN, LSFT)
Light Green	(+) 12v Analog SWC Input
White/Red	(-) Analog SWC Input 3
White/Black	(-) Analog SWC Input 2
Blue/Yellow	SWC Output - Kenwood/Newer JVC
3.5mm Jack	SWC Output - Alpine, JVC, Clarion, Pioneer, Sony, Boyo, Dual, Advent, Lightning Audio or Visteon

SWI-CP2
Universal Steering Wheel Control Retention Interface

ControlPRO 2
Steering Wheel Control Interface

Installation

Please visit www.pac-audio.com/controlpro/App to download the PC application that provides vehicle specific wiring and configuration processes. We recommend that all wiring connections be soldered to ensure a sturdy and reliable connection.

Configuring/Programming

Manual Configuration Mode

This is the fastest most convenient way to program our module. This method only requires you to look up the dipswitches and wiring via our PC, Android or Apple application, set the dipswitches and then connect it to the vehicle/radio for it to function.

With this method, the CP2 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 downloading your device specific ControlPro application from www.pac-audio.com/controlpro/app. 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 on page 5.

1. Please Visit www.pac-audio.com/controlpro/app to download the your device specific ControlPro application. Launch the application and find your vehicle/radio combination.
2. Set the vehicle dipswitches according to the application.
3. Set the radio dipswitches according to the chart below.
4. Wire up the interface according to the installation instructions in the application.

App Mode

With this method, the CP2 can be connected to a PC in which the application assigns the vehicle and SWC button functionality. The dipswitches on the side of the interface must all be set to down/on which is the default position. When using this method, it is not required to manually program the SWC buttons when programming via App mode.

1. Visit www.pac-audio.com/controlpro/app to download the ControlPro PC application.
2. Connect the CP2 to the PC. When using a PC to configure, it is not required to power the module via the 11 pin connector. **PLEASE NOTE:** It may be necessary to update your Microsoft .NET Framework. If you require this update your PC will automatically notify you. If you do not get a notification then you do not require the update.
3. Launch the application or software and follow the on screen prompts.

Manual Programming Mode

With this method the SWC values must be manually programmed into the CP2 by using the programming button. The vehicle dipswitches on the side of the interface must all be set to the up (off) position. The radio dipswitches must be set to the proper radio configuration (see below). **PLEASE NOTE: This mode is only compatible in vehicles with both analog SWC and a discrete 12v Accessory wire. Vehicles with CAN-Bus buttons cannot be manually programmed.**

1. Visit www.pac-audio.com/controlpro/app to download the ControlPro PC application.
2. Launch the application and find the installation instructions for your vehicle.
3. Set the radio dipswitches according to the chart below.
4. Wire up the interface according to the installation instructions in the application.
5. Connect the CP2 to the vehicle
6. You can now follow the programming instructions on the next page.

Radio Dipswitch Settings							
Alpine	Clarion/Nakamichi	Fusion	JVC	Kenwood	Other	Pioneer	Sony

Other - Advent, BOYO, Dual, Lightning Audio, Visteon, Rockford Fosgate

Manually Mapping the SWC Buttons

PLEASE NOTE: This section only applies to button programming in manual programming mode. If you are using the CP2 in manual configuration mode (specific vehicle dipswitch settings) and wish to re-assign button functions, please follow the "SWC Button Re-assignment Procedure" on page 4.

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 blink green. If any function does not work, repeat the programming steps.

Radio Function Mapping 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			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								

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SWC Button Re-assignment Procedure

PLEASE NOTE: This section only applies to button re-assignment within a configuration. If you are using the CP2 in manual programming mode (all vehicle dipswitches up) please refer to the "Manually Mapping the SWC Buttons" section on page 3

If you wish to re-assign the SWC functions or utilize short press long press dual command functionality you will need to 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 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. 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 SWC can always be restored to default settings by pressing and releasing the program button on the side of the interface once and waiting 7 seconds for the descending chime and the LED to flash 4 times.

Optional 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			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 & Verification

1. Turn the ignition on. The red LED on the interface will turn on & the +12v accessory output wire will turn on.

2. Verify that all SWC are functioning properly. The green LED will flash each time it sees a steering wheel button pressed.

3. Turn off the vehicle & remove the key. In vehicles equipped with retained accessory power (RAP) the accessory output and the red LED will remain active & keep the radio on for 10 minutes unless the driver side door is opened. In vehicles that do not support RAP the LED and accessory output will shut off when the key is switched or removed from the ignition.

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	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 SWI-CP2 to my vehicle?
A. The wiring info can be found within our Android, Apple or PC application. Download @ www.pac-audio.com/controlpro/app

Q. Where can I find info on setting the dipswitches on the side of the module?
A. The dipswitch settings can be found within our Android, Apple or PC application. Download @ www.pac-audio.com/controlpro/app

Q. The module's LED is flashing a pattern that is not consistent with normal operation.
A. Please reference the LED and chime legend above for your specific case.

Q. What all can I connect to the Red/White (Accessory Output) wire on the module?
A. The interface's accessory output (Red/White) is only rated at 1 Amp. If you require more current capacity an external relay must be used.

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, CP2, 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 using the application 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 SWI-CP2 can be updated with new firmware as it becomes available using the PC application. When using the application to update, please follow the procedures outlined in the PC application to update your interface.