

ASWC-1

Axxess Steering Wheel Control Interface Installation Manual

US. PAT. NOS. 8014920 and 8214105

INTERFACE FEATURES

- One Interface does it all - No additional interfaces needed
- Designed to be compatible with all major radio brands
- Auto detects vehicle type, radio connection, and presets controls
- Ability to dual assign steering wheel control buttons
- Can be manually programmed for most vehicles
- Memory retains settings even after battery disconnection or interface removal
- All connections done at the radio location
- Micro "B" USB updatable

INTERFACE COMPONENTS

- ASWC-1 Interface • 12-pin harness with male 3.5mm connector
- Female 3.5mm connector with Brown and Brown/White wires

TOOLS REQUIRED

- Cutting tool • Crimping tool • Tape

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Caution: *Metra recommends disconnecting the negative battery terminal before beginning any installation. All accessories, switches, and especially air bag indicator lights must be plugged in before reconnecting the battery or cycling the ignition.*

Preface

What you need to know before you begin

- 1) Know the correct year, make, and model of your vehicle.
- 2) Ensure the steering wheel controls work before removing the factory radio, and know what the **Volume Up** button is. The **Volume Up** button is used for programming, so knowing this before removing the radio is crucial.

***Note:** Steering wheel controls must be the ones that came with the vehicle when purchased. We do not support custom work, i.e. adding a new steering wheel with added/new buttons.*

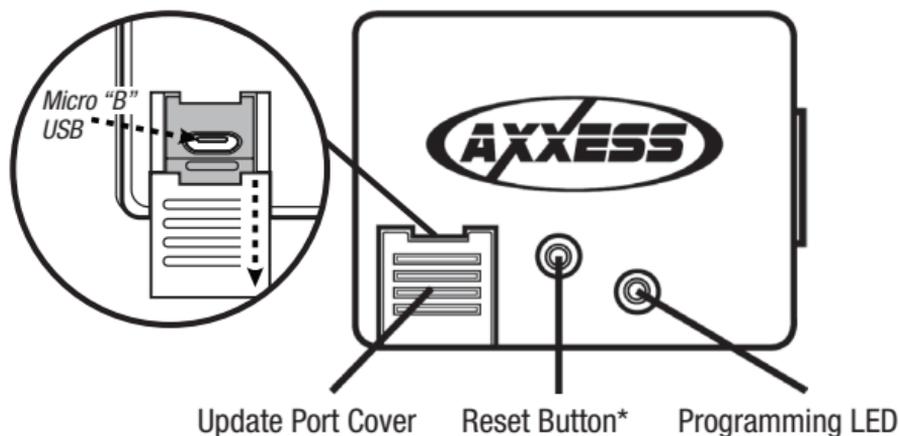
- 3) Be sure that the radio you are installing is compatible with the ASWC-1. Additionally, refer to the Radio Legend (p. 13) and your radio's owners manual.
- 4) Update the ASWC-1 to the latest software.

Overview

Introduction to the ASWC-1 Interface and Wiring Harness

On the top of the ASWC-1 interface there are three points of interest:

- 1) **Programming LED**
- 2) **Reset Button**
- 3) **Update Port Cover** (slide to open)

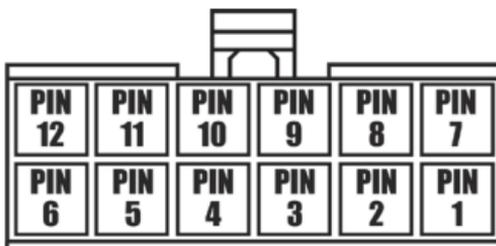


***Note:** The Reset button is recessed. An item, such as a partially unfolded paper clip, is needed to press the button.

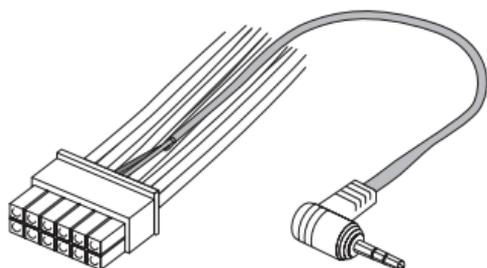


Overview

Below are the wire colors for the ASWC-1.

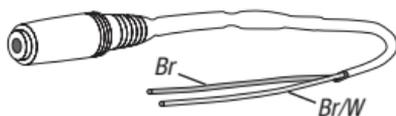


Pin-1	Pink	Pin-7	Blue/Pink
Pin-2	White/Green	Pin-8	Black/Green
Pin-3	Yellow/Green	Pin-9	Red (<i>tip of 3.5mm connector</i>)
Pin-4	Green/Orange	Pin-10	White (<i>ring of 3.5mm connector</i>)
Pin-5	Gray/Red	Pin-11	Gray/Blue
Pin-6	Black	Pin-12	Red



Shown above: 12-pin harness with male 3.5mm connector.

Shown below: Female 3.5mm connector with Brown (Br) and Brown/White (Br/W) wires.





ASWC-1 Installation

Connections to be made

Into vehicle:

- 1) Connect the **Black** wire of the ASWC-1 to the ground. You may use the same grounding point as the aftermarket radio; *but it is highly recommended to ground the ASWC-1 to the chassis, of the vehicle, by itself.*
- 2) With the key in the off position, connect the **Red** wire of the ASWC-1 to the 12-volt accessory wire.
- 3) Locate the correct steering wheel control wire(s) in the vehicle's harness, as described in the "[ASWC-1 Vehicle Instructions](#)". Connect these wires to the ASWC-1.

Note: *Metra recommends that the wires are soldered for the best and most secure connection. Tapping style connectors are not recommended due to a higher chance of a intermittent connection or change in resistance values (which will cause the ASWC-1 to fail to program).*

Into radio:

- 1) For the radios listed below, plug the included female 3.5mm adapter (with the **Brown** and **Brown/White** wires) into the male 3.5mm connector of the ASWC-1 harness.
 - A. For Eclipse radios:** Connect the Eclipse steering wheel control wires (normally **Brown** and **Brown/Black**) to the **Brown** and **Brown/White** wires of the ASWC-1. The **Brown** of the ASWC-1 goes to the **Brown/Black** of the Eclipse and **Brown/White** of the ASWC-1 goes to the **Brown** of the Eclipse.

ASWC-1 Installation

Connections to be made

B. For Metra OE radios: Connect the steering wheel control Key 1 wire (**Gray**) to the **Brown** wire of the ASWC-1. Isolate and tape the **Brown/White** wire, it will not be used.

C. For Kenwood, or select JVC's with a Blue/Yellow steering wheel control wire: Connect the Kenwood/JVC steering wheel control wire to the **Brown** wire of the ASWC-1. Isolate and tape the **Brown/White** wire, it will not be used.

Note: Some of the newer Kenwood radios will auto detect as a JVC. If this is the case, manually set the radio type, refer to the Changing Radio Type section (pp. 12-13).

D. For XITE radios: Connect the steering wheel control SWC-2 wire from the radio to the **Brown** wire of the ASWC-1. Isolate and tape the **Brown/White** wire, it will not be used.

2) **For Parrot Asteroid Smart or Tablets:** Connect the 3.5mm jack of the ASWC-1 into the female 3.5mm jack of the AX-SWC-PARROT (sold separately). Then plug the 4-pin male harness into the corresponding steering wheel control female harness in the radio.

Note: AX-SWC-PARROT is required (sold separately) and the radio must be updated to rev. 2.1.4 or higher. Additionally, the ASWC-1 must be updated to the most recent software available.

3) **For all other radios:** Plug in the male 3.5mm connector of the ASWC-1 into the back of the aftermarket radio, designated for an external steering wheel control interface. Please refer to the aftermarket radios manual if in doubt where the 3.5mm connector of the ASWC-1 goes into.



ASWC-1 Installation Programming

The ASWC-1 can be programmed two different ways. It can auto program itself through **Auto Detect Mode**, or it can be manually programmed (pp. 19-21). The following, which is recommended, is for auto programming.

Auto Detect Mode: Overview

The ASWC-1 has the ability to auto detect select vehicles and what aftermarket radio it is connected to.

For the auto detect feature to work there are (3) possible actions that must be taken. Note, only one action will be required depending on the vehicle:

1. Turn the ignition on and no other action is required.

--- Or ---

2. Turn the ignition on, press and hold the **Volume Up** button on the steering wheel.

--- Or ---

3. Turn the ignition on, and then tap the **Volume Up** button repeatedly on the steering wheel.

Auto Detect Mode: Steps

Note: Please read all Auto Detect Mode steps ***before*** beginning.

- 1) Complete connections to the vehicle and the aftermarket radio.
- 2) Turn the ignition on, the LED will start rapidly flashing **Red**; which means the ASWC-1 is looking for the vehicle and the radio.

Note: If the LED did not start flashing **Red** rapidly press the reset button for 3 seconds and then proceed to Step 3.

- 3) Perform action required for your particular vehicle, as noted in the "ASWC-1 Vehicle Instructions".

ASWC-1 Installation Programming

- 4) After a few seconds the LED should stop flashing rapidly and go out for approximately 2 seconds. At this point do not press any buttons.
- 5) After the approximate 2 seconds there will be a series of 7 **Green** flashes, some short, and some long. The long flashes represent the wires that are recognized by the ASWC-1.

***Tip:** Knowing this will help if you need to troubleshoot; refer to p. 22, for the appropriate LED Feedback section legend.*

- 6) The LED will pause for another 2 seconds, and then flash **Red** up to 15 times depending on what radio is connected to the ASWC-1.

***Tip:** Knowing this will help if you need to troubleshoot; refer to p. 23, for the appropriate LED Feedback section legend.*

- 7) This is the end of the auto detection stage. If the ASWC-1 detected the vehicle and the radio successfully the LED will light up solid.
- 8) For vehicles with OE Bluetooth buttons, press and hold the **Hang up** or **Pick up** button on the steering wheel after the LED on the ASWC-1 goes solid. If the OE Bluetooth buttons are able to be used the LED will go out after 3 seconds. Your OE Bluetooth buttons are now programmed to your aftermarket radio.

***Note:** The aftermarket radio must have Bluetooth capability and must be able to accept these commands.*

- 9) Make sure the steering wheel control buttons function correctly in the vehicle and enjoy.

***Tip:** If the ASWC-1 did not go to a solid LED, press the **Reset** button for 3 seconds, release, and then start from Step 3. If the LED still doesn't go to a solid LED refer to the LED Feedback section (p. 22). This will help you to determine if the ASWC-1 is detecting your vehicle. If not, refer to the instructions starting on p. 6, and make sure all the instructions were followed as stated. If you have done this and the ASWC-1 is still not going to a solid LED please refer to the Troubleshooting section (pp. 16-18).*

ASWC-1 Installation

Remapping the SWC buttons

Let's say you have ASWC-1 programmed to your radio and you want to change the button assignment for the steering wheel controls. For instance, you would like **Seek Up** to be **Mute**. Follow the steps below to remap the steering wheel control buttons:

- 1) Make sure the ASWC-1 is visible, so you can see the LED flashes to confirm button recognition.
Tip: Turning off the radio is recommended.
- 2) Within the first 20 seconds of turning the ignition on, press and hold the **Volume Up** button on the steering wheel until the LED goes solid.
- 3) Release the **Volume Up** button and the LED will go out; **Volume Up** has now been programmed.
- 4) Follow the list in the Button Assignment Legend (p. 11), to reference the order in which the steering wheel control buttons need to be programmed.

***Note:** If the next function on the list is not on the steering wheel; press the **Volume Up** button for 1 second, until the LED comes on, and then release the button. This will tell the ASWC-1 that the function is not available and it will move onto the next function.*

- 5) To complete the remapping process, press and hold the **Volume Up** button on the steering wheel until the LED on the ASWC-1 goes out.



A5WC-1 Installation

Remapping the SWC buttons

Button Assignment Legend

- | | |
|-------------------|-------------------------|
| 1. Volume Up | 8. Preset Down |
| 2. Volume Down | 9. Power |
| 3. Seek Up/Next | 10. Band |
| 4. Seek Down/Prev | 11. Play/Enter |
| 5. Source/Mode | 12. PTT (Push to Talk)* |
| 6. Mute | 13. On Hook |
| 7. Preset Up | 14. Off Hook |

**Only the following Pioneer models have the capability of retaining this feature: AVIC-Z110BT, AVIC-Z120BT, AVIC-Z130BT, AVIC-Z140BT, AVIC-X920BT, AVIC-X930BT, AVIC-X940BT.*

Note: *Not all radios will have all of these commands. Please refer to the radio owner's manual or contact the radio vendor directly for specific commands recognized by that particular radio.*



ASWC-1 Installation

Changing Radio Type

- 1) After 3 seconds of turning the key on, press and hold the **Volume Down** button on the steering wheel until the LED on the ASWC-1 goes solid.
- 2) Release the **Volume Down** button; the LED will go off indicating we are now in Changing Radio Type mode.
- 3) Refer to the Radio Legend (p. 13) to know which radio number you would like to have programmed.
- 4) Press and hold the **Volume Up** button until the LED goes solid, then release. Repeat this step for the desired radio number you have selected.
- 5) Once the desired radio number has been selected, press and hold the **Volume Down** button, on the steering wheel, until the LED goes solid. The LED will remain on for about 3 seconds while it stores the new radio information.
- 6) Once the LED goes off the Changing Radio Type mode will end. You can now test the steering control wheel controls.

Note: *If at any time the user fails to press any button for a period longer than 10 seconds this process will abort.*



ASWC-1 Installation Changing Radio Type

Radio Legend

- | | |
|-----------------------|----------------------|
| 1. Eclipse (Type 1) | 9. Valor |
| 2. Kenwood | 10. Clarion (Type 2) |
| 3. Clarion (Type 1) | 11. Metra OE |
| 4. Sony and Dual | 12. Eclipse (Type 2) |
| 5. JVC | 13. LG |
| 6. Pioneer and Jensen | 14. Parrot* |
| 7. Alpine | 15. XITE |
| 8. Visteon | |

** AX-SWC-PARROT is required (sold separately) and the radio must be updated to rev. 2.1.4 or higher. Additionally, the ASWC-1 must be updated to the most recent firmware available.*

Note: *If you have a Clarion radio and the ASWC-1 did not work try the other Clarion radio type, same for the Eclipse.*



A5WC-1 Installation Dual Assignment Instructions

Nota: *Seek Up and Seek Down are already set to Preset Up and Preset Down for a long button press.*

- 1) Turn on the ignition but do not start the vehicle.
- 2) Press and hold down the steering wheel button, that you want to assign a long press function, for about 10 seconds until the LED rapidly flashes green. At this point release the button and the LED will go solid green.
- 3) Press and release the **Volume Up** button the number of times corresponding to the new button number selected (refer to the chart on p. 15). The green LED will blink rapidly when the **Volume Up** is pressed and back to solid green when released. Then go to the next step when the **Volume Up** button has been pressed the desired number of times.

Caution: *If more than 10 seconds elapses between a **Volume Up** button press this procedure will abort, and the LED will go off.*

- 4) To store the long press button in memory, press the button that you assigned a long press button (the button held down in Step 1). The LED will now go off indicating it has been stored.

Note: *These steps must be repeated for each button you would like to assign dual purpose action to.*

To reset a button, back to its original use, repeat Step 1. Then press the **Volume Down** button. The LED will go off and the long press mapping for the button will be erased.



A5WC-1 Installation Dual Assignment Instructions

Dual Assignment Legend

Button Number	New Button Action
1	Not allowed
2	Not allowed
3	Seek Up/Next
4	Seek Down/Prev
5	Mode/Source
6	Mute
7	Preset Up
8	Preset Down
9	Power
10	Band
11	Play/Enter
12	PTT
13	On Hook
14	Off Hook
15	Fan Up
16	Fan Down
17	Temp Up
18	Temp Down

ASWC-1 Troubleshooting

Auto Detect Mode

If the auto detect feature was tried and at the end the LED did not go solid, but instead continually flashes; this means that the ASWC-1 did not detect the vehicle. Follow these steps to determine what may have happened:

- 1) Verify that you have a 12-volt DC on the **Red** accessory wire of the ASWC-1, using a multimeter.
- 2) Reconfirm that you have a good ground to the solid **Black** wire of the ASWC-1.

Attention: Due to the nature of how microprocessors function, sometimes having the ASWC-1's ground shared and using the factory ground in the OE wiring harness is not sufficient; and will cause problems. The use of a chassis ground solely by itself is highly recommended, especially in data communication vehicles. Attach the solid **Black** wire of the ASWC-1 to a good chassis ground, all by itself. Ensure this wire is straight from the ASWC-1 without any extensions, and make sure a ring terminal (not supplied) is used, and crimped properly. This will alleviate any grounding issues that may keep the ASWC-1 from programming; most cases of the ASWC-1 not programming comes from the lack of this step being done.

- 3) Recheck that the wires connected to the ASWC-1 and vehicle are correct; referencing the "ASWC-1 Vehicle Instructions" document.
- 4) Verify that the wires connected from the ASWC-1 to the vehicle are connected direct; i.e., solder, crimp cap, military splice. No tapping style connectors, or butt connectors are permitted due to increased resistance.

ASWC-1 Troubleshooting Auto Detect Mode

Note: *If a pre-wired harness is being used and you have tried all the troubleshooting steps listed above, if the ASWC-1 still does not go to a solid LED, remove the pre-wired ASWC-1 harness and use the harness that came with the ASWC-1.*

If you have performed any of the steps above; reprogram the ASWC-1 by pressing the reset button on the ASWC-1 for 3 seconds, release, and then follow the instructions on p. 9, starting from Step 3. If the ASWC-1 still does not go to a solid LED at the end, please refer to Manual Programming Mode on pp. 19-21 to manually program the ASWC-1.

If the ASWC did go to a solid LED but still does not work, follow these steps to troubleshoot the radio programming portion of the auto programming sequence:

- 1) Confirm that the 3.5mm jack on ASWC-1 is connected to your radio securely, and in the correct jack of the radio. Make sure it is not plugged into the Bluetooth mic or AUX jack. If you are not sure what jack to connect to the radio, please contact the radio vendor. If the wrong jack of the radio was connected to, correct it; and then reprogram the ASWC-1.

Note: *Some radios do not use a jack for the steering wheel controls, instead they use a wire. If so, reference Connections to be Made (p. 6), and ensure that you have the proper wire(s) connected.*

- 2) If you are using a radio with a wire for connections instead of a jack, make sure you have also programmed the steering wheel controls to the radio following the instructions included with the radio. Contact the radio vendor if you have any questions with this.

Note: *This does not apply to JVC and Kenwood radios.*

ASWC-1 Troubleshooting Auto Detect Mode

- 3) **For Kenwood radios**, make sure that the ASWC-1 displays that a Kenwood radio is being used; reference to Radio Legend (p. 21). If the Radio Legend shows a JVC radio instead, then reference to the Changing Radio Type (p. 12) to force program the ASWC-1 to display Kenwood.

Tip: Some Kenwood radios have a feature called Remote Sensor. If your radio has this feature, ensure it is turned on. If it is on, turn it off, then back on.

- 4) **For Alpine radios**, remove the 3.5mm jack from the radio, reprogram the ASWC-1 with the jack removed, and then reconnect the 3.5mm jack back into the radio.

Tip: Some Alpine radios have a feature that turns the remote to either the back, or the front. If you have one of these radios, ensure the sensor is on the rear setting. If the setting is on the rear, turn it to the front, then back to the rear.

- 5) **For Pioneer and Sony radios**, if the ASWC-1 works, but the buttons are out of order, or become out of order; this could be caused by the 3.5mm jack on the ASWC-1 not seating properly, slipping out, or dirt on the contacts. Additionally, sometimes this can be intermittent. Remove any dirt on the contacts, reinsert the jack firmly into the radio, and then put a stress loop on the 3.5mm cable to prevent this from happening in the future. Also, if anything is prohibiting the jack from seating all the way in, such as a heatsink, lightly trim some of the plastic from the 3.5mm jack as needed.



ASWC-1 Troubleshooting Manual Programming Mode

Tip: *If you do not know if you have a data communication vehicle or not, refer to the “ASWC-1 Vehicle Instruction”. If it indicates to press and release the **Volume Up** button repeatedly to program the ASWC-1, then you have a data communication vehicle.*

Note: *Not every radio will have all the possible steering wheel control commands on the steering wheel. Aftermarket radios that do not have Bluetooth will not recognize the **PTT (Push to Talk)** or **On/Off Hook** commands, however these buttons may be able to be manually programmed to do other commands. Please refer to the radio owner’s manual or radio vendor for specific commands that the radio will recognize.*

Note: *Please read all Manual Programming Steps **before** beginning.*

- 1) Follow the steps in the Connections to be Made section (p. 6-7) to wire up the ASWC-1 to your radio.
- 2) Turn the ignition on, then press and hold the **Reset** button on the ASWC-1 for approximately 10 seconds until the LED on the ASWC-1 flashes slow; and then release the **Reset** button.
- 3) At this point, press and hold the **Volume Up** button on the steering wheel for 7 seconds until the LED goes solid. Now release the **Volume Up** button, and the LED will go off. **Volume Up** has now been programmed.

ASWC-1 Troubleshooting

Manual Programming Mode

- 4) Next, press and hold the **Volume Down** button until the LED goes solid. Release the **Volume Down** button and the LED will turn off; **Volume Down** has now been programmed.
- 5) At this point refer the Manual Programming Legend (p. 21) and continue to the **Seek Up/Next** button.

Note: For any command that needs to be skipped, press the **Volume Up** button for each one. The LED should light up each time you press the **Volume Up** button.

- 6) After the last button on your steering wheel has been programmed, press and hold the **Volume Up** button until the LED flashes slow; and then release the **Volume Up** button.

Note: If at any time an error is made hold down the reset button on the ASWC-1 for 10 or more seconds. This will restart the manual programming. Go back to Step 4 and start again.

- 7) Press and hold the **Volume Down** button until the LED starts to flash quickly.
- 8) Release the **Volume Down** button.
- 9) After approximately 4 seconds of the LED flashing quickly the LED will go out for 2 seconds.
- 10) Then the LED will flash, up to 15 times, depending on what radio is connected to the ASWC-1.
- 11) Make sure the number of flashes match what radio you have installed. Refer to the Radio Legend (p.13).

Note: If the number of flashes do not match the radio you have installed, refer to the Changing Radio Type section (p. 13).



ASWC-1 Troubleshooting Manual Programming Mode

- 12) Press and hold down the **Volume Down** button until the LED goes solid.
- 13) Programming for the vehicle and the radio is now complete. Next, test the steering wheel control functions to make sure it works correctly.

Manual Programming Legend

- | | |
|-------------------|------------------------|
| 1. Volume Up | 10. Band |
| 2. Volume Down | 11. Play/Enter |
| 3. Seek Up/Next | 12. PTT (Push to Talk) |
| 4. Seek Down/Prev | 13. On Hook |
| 5. Source/Mode | 14. Off Hook |
| 6. Mute | 15. Fan Up |
| 7. Preset Up | 16. Fan Down |
| 8. Preset Down | 17. Temp Up |
| 9. Power | 18. Temp Down |

ASWC-1 Troubleshooting

Resetting Original ASWC-1 Settings

- 1) Turn the ignition on and wait 3 seconds.
- 2) Press the **Reset** button for 3 seconds and then release.
- 3) Refer to the Programming section (pp. 8-9) to program the ASWC-1.
- 4) Once the LED is solid the ASWC-1 is reset and should be operating with the default settings.

ASWC-1 Troubleshooting

LED Feedback

A. Vehicle LED Feedback (indicated by **Green** LED on the ASWC-1)

- 1st LED flash is the **White/Green**
- 2nd LED flash is the **Yellow/Green**
- 3rd LED flash is the **Green/Orange**
- 4th LED flash is the **Gray/Red**
- 5th LED flash is the **Black/Green**
- 6th LED flash is the **Gray/Blue**
- 7th LED flash is the **Pink**

Note (section A):

- Short flashes represent the steering wheel control wire(s) that are not connected to the vehicle from the ASWC-1.
- Long flashes represent wire(s) that are connected to the vehicle.

ASWC-1 Troubleshooting LED Feedback

B. Radio LED Feedback (indicated by **Red** LED on the ASWC-1)

- 1st LED flash is for Eclipse (Type 1)
- 2nd LED flash is for Kenwood
- 3rd LED flash is for Clarion (Type 1)
- 4th LED flash is for Sony and Dual
- 5th LED flash is for JVC
- 6th LED flash is for Pioneer and Jensen
- 7th LED flash is for Alpine*
- 8th LED flash is for Visteon
- 9th LED flash is for Valor
- 10th LED flash is for Clarion (Type 2)
- 11th LED flash is for Metra OE
- 12th LED flash is for Eclipse (Type 2)
- 13th LED flash is for LG
- 14th LED flash is for Parrot**
- 15th LED flash is for XITE

***Note (section B):** *If the ASWC-1 flashes 7 times and you do not have an Alpine radio connected to it that means that the ASWC-1 did not see any radio connected. Verify the 3.5mm connector is connected to the steering wheel control input into the radio.*



INSTALLATION INSTRUCTIONS ASWC-1

IMPORTANT WARNING

This product includes instructions for installation which must be carefully followed. The instructions are worded in such a manner to assume that the installer is capable of completing these type of electronic installations. If you are unclear as to what you are instructed to do or believe that you do not understand the instructions so as to properly and safely complete the installation *you should consult a technician who does have this knowledge and understanding.*

Failure to follow these instructions carefully and to install the interface as described could cause harm to the vehicle or to safety systems on the vehicle. Interference with certain safety systems could cause harm to persons as well.