GM1A-RST

Introduction and Features

The GM1A-RST interface allows the replacement of a factory radio in select General Motors vehicles with the Class II Data-Bus. Using this interface will retain factory features such as Steering Wheel Controls (SWC), Rear Seat Control (RSC), OnStar, warning chimes and the factory Bose amplifie when the original radio is removed. The GM1A-RST provides Data-Bus driven outputs such as retained accessory power (RAP), vehicle speed signal (VSS), illumination, reverse trigger and parking brake. You can also add multiple camera inputs to your aftermarket radio with Data-Bus controlled automatic activation (front camera only) by connecting a VS41 into the expansion port on the GM1A-RST.

Important Notes

1. The included chime speaker should only be used when you are connecting an aftermarket amplifier to the cabin speakers.
2. The Programming Button and Adjustment Dial on the side of the interface have multiple functions. Please see Page 3 for more details.
3. Aftermarket radios with a 2-wire resistive based SWC circuit will not have default button assignments programmed. Please refer to the owner's manual of the radio you are installing, to find out the proper SWC programming procedure
4. Compatible with Premium Bose (Y91)*, standard Bose, and non amplified systems. To verify the RPO code on your vehicle, check the glove compartment for a silver sticker with these codes. The RPO codes will be listed in alphabetical order.
5. Real time speaker fading from radio on Premium factory amplified systems (Y91)*, is only supported with the "amplifie audio output" connection of the GM1A-RST.
6. When using real time speaker fading (Premium Bose only), if the fader setting is biased more to the front or rear as the radio turns on, the sound may begin at the default setting and then quickly transition to your custom setting.
7. Aftermarket radio features such as High Pass Filters (crossovers), DSP or "Network Mode" will interfere with proper fader function (Premium Bose only). In order for the GM1A-RST's fader function to work, the audio from the aftermarket radio's output must match so it can compare the front and rear audio levels and determine the proper fader setting for the factory amplifie .
8. When used in conjunction with the add on camera controller (VS41) the GM1A-RST will only provide Data-Bus controlled automatic activation for the front camera. Please refer to the vehicle specific VS41 instructions for more detail
9. In vehicles with Premium Bose (Y91)*, if the audio level is too low, or too high, the level can be fine tuned using the adjustment dial on the side of the interface. See Page 5 for more details. **The level adjust does not operate with standard Bose Systems or non amplified systems.**

* The Premium Bose RPO code is UQA (instead of Y91) in the following vehicles:

- **2004 Buick Rainier**
- **2003 - 2006 Chevrolet SSR**
- **2002 - 2004 Chevrolet Trailblazer**
- **2002 - 2004 GMC Envoy**
- **2002 - 2004 Oldsmobile Bravada**

Module Layout
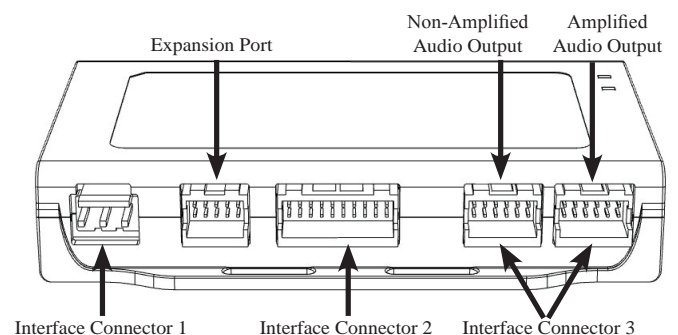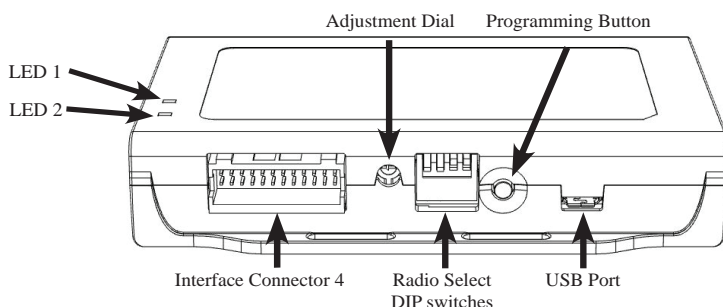
GM1A-RST

Radio Replacement Interface with
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Installation Steps

Set DIP switches that correspond with your radio to the ON position.
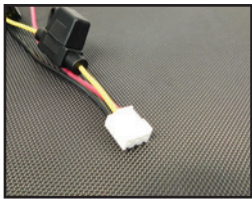**Set all other DIP switches to the OFF position.**

DIPSWITCH ON = DOWN

	Alpine	JVC	Kenwood / Lightning Audio	Clarion / Nakamichi	2-Wire Resistive	Pioneer / Other*	Sony	Fusion
	1	2	1 & 2	3	2 & 3	1, 2, & 3	4	1 & 4

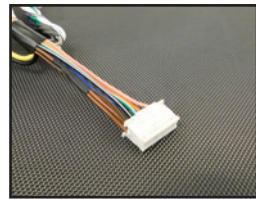*Other - Dual / Axxera (these brands could also have 2-wire resistive), Jensen, Rockford Fosgate

1. Set the Radio Select DIP switches according to the radio you are installing.
2. Wire your aftermarket radio to the GM1A-RST's harness according to the wiring connections chart below.
3. The Brown mute loop in Interface Connector 4 (if not cut) will turn the GM1A's accessory output off when any OnStar function is active. If the aftermarket radio has a mute input, cut this loop and connect the Brown wire in pin 23 to it.
4. Plug Interface Connectors 1 and 2 into the appropriate ports on the GM1A-RST interface (using the diagram on page 1 or the label on the bottom of the interface).
5. The Connector 3 connection will be dependent upon whether or not the vehicle has a factory amplified system. Plug this connector into the appropriate port on the GM1A-RST (using the diagram on page 1 or the label on the bottom of the interface).
6. If the aftermarket radio is equipped with an auxiliary input and you wish to retain the factory RSE audio, plug the RCA connectors from the secondary harness into the radios auxiliary input.
7. Remove the factory radio and plug in the GM1A-RST's Vehicle Connector 1 and Vehicle Connector 2 into the factory vehicle harness.
8. If you wish to reassign functions to the SWC, follow the programming instructions on Page 4.
9. If you are connecting an aftermarket amplifier to the cabin speakers, plug Connector 3 into the "Amplifie Audio Output" connector (see illustration on bottom of page 1), connect the chime speaker to the chime plug coming out of Interface Connector 4 and install the chime speaker in a place free of obstructions, where it can be easily heard (usually low in the dash facing downward).
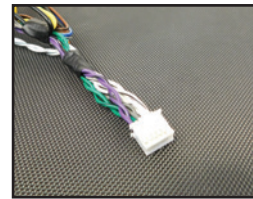
Interface Connector 1
(3-pin)

Interface Connector 2
(20-pin)

Interface Connector 3
(12-pin)
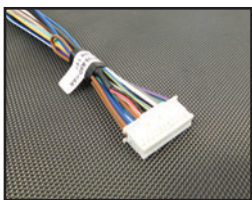
Interface Connector 4
(24-pin)
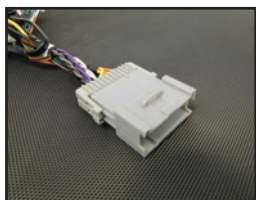
Vehicle Connector 1
(24-pin)

Vehicle Connector 2
(12-pin)

Wiring Connections

Yellow	12v+
Red	Accessory Output (10 amp)
Black	Ground
Brown Loop	Mute Output
Blue	Not Used
Blue / White	Remote On Input
Orange	Not Used
Orange / White	Illumination Output
Purple / White	Reverse Output (+)
Light Green	Parking Brake Output (-)
Pink	Vehicle Speed Signal (VSS) Output
Blue / Yellow	SWC Output / Key 1
Brown	SWC Output / Key 2
3.5 mm Jack	SWC Output
Purple	Rear R + input
Purple / Black	Rear R - input
Green	Rear L + input
Green / Black	Rear L - input
Gray	Front R + input
Gray / Black	Front R - input
White	Front L + input
White / Black	Front L - input

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VS41 Wiring

The VS41 can be connected to the GM1A-RST and used to switch multiple cameras. Please refer to the document labeled **"Instructions for wiring the VS41 into 2003-2006 Chevy / GMC Trucks and SUVs".**

Adjustable Settings

These products have settings that are adjustable through our RadioPRO PC app or through the push-button on the module. Some settings are only adjustable through the PC app. Some of these settings require the module to be connected to the vehicle. Below is a breakdown of these settings.

SETTING	AVAILABLE ON PC APP		AVAILABLE ON MODULE
	CONNECTED TO CAR	NOT CONNECTED TO CAR	
Chime volume (excluding Premium Bose)	YES	NO	YES
Factory amplifier settings: Bass, Mid, Treble, Gain, and Fade (Premium Bose)	YES	NO	GAIN ONLY
OnStar volume (RST or RT products only)	YES	NO	YES
Read product version	YES	YES	N/A
Update firmware	YES	YES	N/A
Camera settings (VS41 required)	YES	YES	NO

Related Downloads

Programming Button and Adjustment Dial Functions

You can **press and hold the programming button** on the side of the interface to access different programming modes. Once the LED is lit to the mode you desire (see below for modes), immediately release the programming button to access that mode.

PLEASE NOTE:
- **This process must be done with the interface in the vehicle and the key in the ignition position.**
- **If there is a Premium Bose system, and you are also installing an amplifier on the cabin speakers, make sure that the chime speaker is connected and chimes are enabled through the RadioPRO app before proceeding. Please see the RadioPRO app section on Page 4 for more details.**

A. **1 Chime and LED 2 flash green: SWC re-assignment**. This allows you to re-assign the SWC functions to the buttons of your choice. Please see the Optional Steering Wheel Control Programming instructions on Page 4 for more details.

B. **2 Chimes and LED 2 flash amber: SWC re-calibration** (this mode is available in the **Corvette only**). This allows you to re-calibrate the analog SWC in the event they fall out of the expected range and do not function properly. If data control SWC are detected by the interface, this mode will be automatically skipped.

C. **3 Chimes and both LEDs flash green: Chime volume adjustment**. This allows you to adjust the volume of the chimes generated by the interface using the adjustment dial on the side. (This mode is not available in vehicles equipped with Premium Bose (Y91 / UQ7) amps. If a premium Bose amp is detected by the interface, this mode will be skipped as the factory amp is what generates the chimes. Please see the vehicles owner's manual for adjustment of chime volume in vehicles with Premium Bose (Y91 / UQ7).

D. **4 Chimes and LED 2 flash red: Master reset.** This does a master reset of the interface and restores the following settings to factory defaults:
  - SWC Mapping
  - SWC Calibration
  - Camera Settings
  - Infotainment Settings
  - Interface User Options

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Default Steering Wheel Control Programming

Default SWC Button Assignments

	Alpine	JVC	Kenwood	Clarion	Pioneer	Sony	Fusion
Volume +	Volume +	Volume +	Volume +	Volume +	Volume +	Volume +	Volume +
Volume -	Volume -	Volume -	Volume -	Volume -	Volume -	Volume -	Volume -
Source Up	Source	Source	Source	Source	Source	Source	Source
Source Down	Band	Preset +	Mute	N/P	Band	Band	Off
Seek Up	Track +	Track +	Track +	Search +	Track +	Track +	Track +
Seek Down	Track -	Track -	Track -	Search -	Track -	Track -	Track -
Voice*	OnStar/Voice	OnStar/Voice	OnStar/Voice	OnStar/Voice	OnStar/Voice	OnStar/Voice	OnStar/Mute
Prog	Preset +	Preset -	Preset +	Band	Preset +	Preset +	Audio

***Voice default is OnStar. If OnStar retention is not necessary, unplug the OnStar module to default to Voice (Mute for Fusion radios).**

Default SWC Button Assignments (Corvette)

	Alpine	JVC	Kenwood	Clarion	Pioneer	Sony	Fusion
Volume +	Volume +	Volume +	Volume +	Volume +	Volume +	Volume +	Volume +
Volume -	Volume -	Volume -	Volume -	Volume -	Volume -	Volume -	Volume -
Seek Up	Track +	Track +	Track +	Search +	Track +	Track +	Track +
Seek Down	Track -	Track -	Track -	Search -	Track -	Track -	Track -
Voice	OnStar/Voice	OnStar/Voice	OnStar/Voice	OnStar/Voice	OnStar/Voice	OnStar/Voice	OnStar/Mute
End	Source	Source	Source	Source	Source	Source	Source

***Voice default is OnStar. If OnStar retention is not necessary, unplug the OnStar module to default to Voice (Mute for Fusion radios).**

Optional Steering Wheel Control Programming

Programming
1. Turn the key to the ignition position.
2. Press and release programming button on the side of the interface.
3. Within 7 seconds, press the button that is to be learned on the steering wheel. LED 2 will turn red when the button is pressed.
   At this point you have two options:
      A. For short press functionality: Release the button within 1.5 seconds. LED 2 will turn back to green.
      B. For long press functionality: Hold the button until LED 2 starts blinking. Release the button and the LED will go back to green.
4. 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.
6. Once programming is completed, wait seven seconds. LED 2 will flash three times indicating end of programming
7. Test the interface for proper functionality. Whenever a SWC is pressed LED 2 will illuminate green.
8. If any function does not work, repeat the programming steps.

Optional Programming Order

	Alpine	JVC	Kenwood / Lightning Audio	Clarion / Nakamichi	2-Wire Resistive	Other *	Pioneer	Sony
1	Volume +	Volume +	Volume +	Volume +		Volume +	Volume +	Volume +
2	Volume -	Volume -	Volume -	Volume -		Volume -	Volume -	Volume -
3	Mute	Mute	Mute	Mute		Mute	Mute	Mute
4	Preset +	Source	Source	Source	No specific	Preset +	Preset +	Preset +
5	Preset -	Track +	Play	Search +	programming	Preset -	Preset -	Preset -
6	Source	Track -	Track +	Search -	order. Please	Source	Source	Source / End Call
7	Track +	Band / Disc +	Track -	Band	refer to the	Track +	Track +	Track +
8	Track -	Preset / Disc -	Disc / FM +	Send / End	owner's	Track -	Track -	Track -
9	Power	Select	Disc / AM -	Send	manual of	Band	Band	Band
10	Enter / Play	Attenuation	Answer	End	your radio for	Answer **	Phone Menu	Power / End Call
11	Band / Program	Phone Receive	Voice	Voice	SWC	End **	Answer Call	Voice / Answer / End Call
12	Receive	Phone Reject	On Hook		programming	PTT **	End Call	Voice (Android Auto & Car Play) Answer / End Call***
13	End	Voice	Off Hook		instructions.		Voice	
14	Voice	Power	Mute					
15		Preset +	Voice					

* Dual / Axxera, Jensen, Rockford Fosgate   ** Jensen ONLY   *** XAV-AX100 / 200 Only
Please Note: On any entry with multiple commands, the commands shown are source dependent.

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Testing and Verificatio

1. Turn the ignition on. LED 2 will illuminate red and the +12v accessory wire will turn on.
2. Turn on the radio and check chimes, volume, balance, and fader.
3. **In vehicles equipped with Premium Bose (Y91 / UQ7):** If the overall volume is too low, use the adjustment dial on the side of the interface to set it to the desired level. The best way to do this is to turn the volume on the radio to 3/4 volume, then turn the adjustment dial on the GM1A-RST clockwise until some distortion is heard, then counter-clockwise a little.
4. Verify that all SWC buttons are functioning properly for both the aftermarket radio and OnStar. To adjust OnStar volume, press the OnStar button on the mirror then use the volume buttons on the SWC to adjust the level. When you hear a chime during this process it means you have reached the farthest minimum / maximum level.
5. Pressing the OnStar button on the rearview mirror will turn off the rear speakers and allow the OnStar audio to be heard in the two front speakers. The OnStar active LED will also turn on. When OnStar disconnects, the radio will un-mute or turn back on and the OnStar LED will turn off. Pressing the VR / OnStar button on the steering wheel will also activate OnStar.
6. Turn off vehicle and remove key. RAP will be active and keep the radio on for 10 minutes or until any door is opened.
7. The LED and radio will turn off when RAP turns off or until any door is opened.

SWC Re-calibration Procedure (Corvette Only)

Please Note: This is only necessary if after installation, the SWC are acting erratic or unresponsive in the Corvette.

1. Turn the key to the ignition position.
2. Press and hold the programming button until LED 2 turns amber and you hear two chimes. When this happens, release the programming button.
3. Within 7 seconds, press and hold the button that is to be learned on the steering wheel. The LED will turn off when the button is pressed and begin blinking when the value has been learned. Once the LED begins blinking, release the button.
4. Repeat step 3 for each additional function on the steering wheel.
5. If you come to a button in the list that your vehicle does not have, skip it by pressing the programming button on the interface. Any buttons not learned during this process will not function.
6. Once programming is completed, the LED will flash indicating end of programming
7. Test the interface for proper functionality. Whenever a SWC is pressed LED 2 on the interface should blink green. If any function does not work, repeat the programming steps.

Button Programming Order
Volume Up
Volume Down
Seek Up
Seek Down
Preset
Answer / Voice
Hang Up
Preset Up

Rear Seat Entertainment (RSE); If equipped

The factory RSE system will function independently from the aftermarket radio. The unit will power up and pass audio through the headphones as long as the vehicle's ignition is on. If you wish to pass audio from the RSE to the aftermarket radio you must connect the RCAs from the 12-pin connector to the aftermarket radios auxiliary input. Select the aftermarket radios auxiliary input to hear RSE audio.

RadioPRO PC App

Download the RadioPRO PC App.

Use of the RadioPRO PC App allows you to do the following:

- Configure User Interface Options such as
    - Factory amplifier settings (Bass, Mid, Treble, Gain, Fader and Balance)
    - Chime Volume
    - Camera Settings
    - Telematics Volume
- Update Product Firmware
- Read Firmware/Hardware Versions

PLEASE NOTE:
The interface must be connected to the vehicle when using the following features of the RadioPRO PC App:
- **Factory Amplifier Settings**
- **Chime Volume**
- **Telematics Volume**

The interface does not need to be connected to the vehicle when using the following features of the RadioPRO PC App:
- **Interface User Options**
- **Camera Settings**
- **Firmware Updates**
- **Reading firmware/hardware versions**

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RadioPRO PC App (cont)
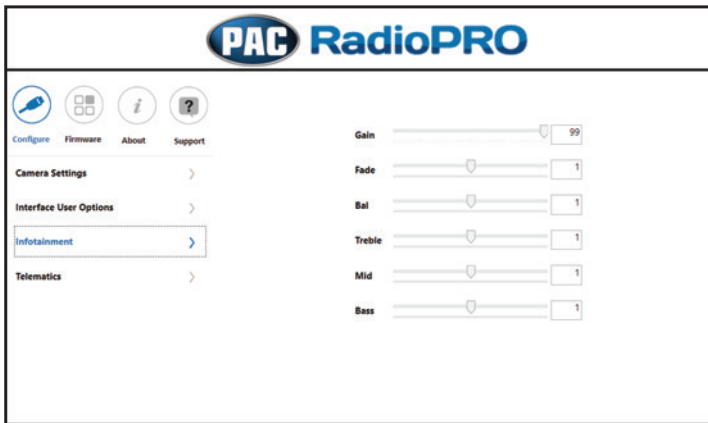
Infotainment/Factory Amplifier Adjustments

The RadioPRO PC app will also allow you to adjust the settings of the factory amplifier (Y91 / UQ7 Premium systems only). You can adjust Amp Gain, Fader, Balance, Bass, Mid and Treble and real time fade. When real time fade is enabled in amplified systems, it will allow fading to be controlled directly from the aftermarket radio. Restoring factory settings on the module will default all values back to middle.

Telematics Volume

You can adjust the OnStar volume through the RadioPRO PC app. Press the blue button on the mirror or the VR SWC to launch OnStar then adjust the volume using the slider.

Chime Volume

You can adjust the chime volume through the RadioPRO PC app. Not available in Premium Bose (Y91 / UQ7) systems.

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RadioPRO PC App (cont)

Firmware Updates

The RadioPRO PC app will also allow you to update the interface with new firmware as it becomes available. The GM1A-RST can be updated with new firmware as it becomes available.

Connect the interface to your PC and select "Firmware", then "Update Firmware". Now select "Select File". Finally, browse to the place where you saved the file and select it. This will begin the updating process. Once finished, disconnect the interface from the PC and test operation.
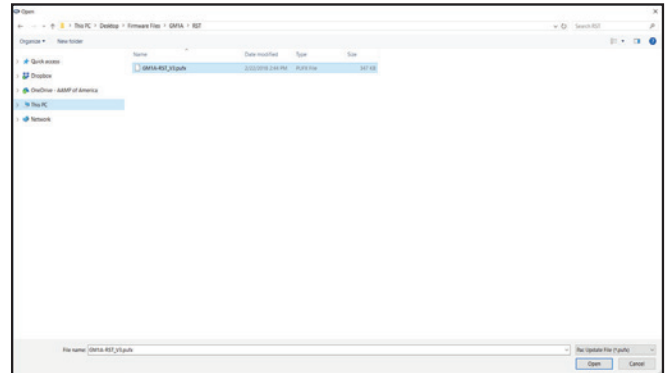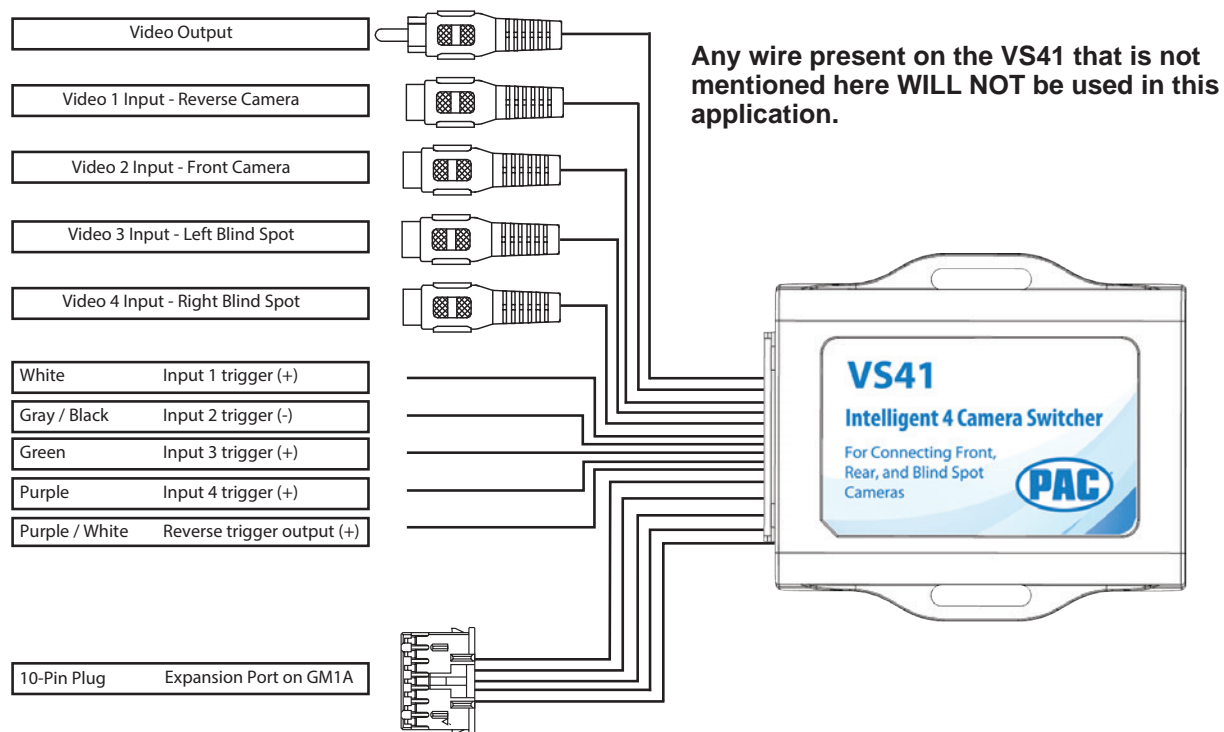
Introduction & Features

The VS41 is an intelligent 4 camera switcher for controlling front, rear, and blind spot cameras. It is designed to be used with PAC radio replacement interfaces.

Important Notes

1. These instructions are specifically for adding reverse, blind spot, and front cameras (or any combination of the three) to a aftermarket radio in the following vehicles:

   • 2003-2006 GM Trucks / SUVs

2. You must locate and connect to the analog turn signal wires in the vehicle, as well as connect the reverse output trigger from the GM1A to the VS41. Please wire the VS41's analog input triggers 1, 3 and 4 according to the instructions below.
3. Analog input trigger 2 on the VS41 only needs to be connected if you want manual activation of the front camera via toggle switch. Automatic activation of the front camera (Input 2) via Class II Data-Bus commands can be set using the RadioPRO PC application. See page 2 for more details on the RadioPRO PC app.
4. The reverse trigger output will provide a 150 mA 12v (+) trigger while any of the input triggers are activated.
5. The VS41 video output will always default to the signal from Input 1 when none of the input triggers are activated. This Input is ideal for connecting the rear (reverse) camera.
6. The VS41 inputs have priority in descending numerical order. For example: If you have Input 3 or 4 triggered, then you trigger a lower number input (for example Input 2), Input 2 will take priority over the higher numbered Input.
7. If there is poor video quality after installation of this module, please ensure quality connections on all RCA connections.

Wiring Connection Chart

Any wire present on the VS41 that is not mentioned here WILL NOT be used in this application.

Video Output	
Video 1 Input - Reverse Camera	
Video 2 Input - Front Camera	
Video 3 Input - Left Blind Spot	
Video 4 Input - Right Blind Spot	

White	Input 1 trigger (+)
Gray / Black	Input 2 trigger (-)
Green	Input 3 trigger (+)
Purple	Input 4 trigger (+)
Purple / White	Reverse trigger output (+)

| 10-Pin Plug | Expansion Port on GM1A |

VS41 Wire	Connection
White	**Reverse Trigger Input (+) -** Connect to the Purple / White reverse trigger output provided by the GM1A
Gray / Black	**Front Camera Trigger (-) -** If you would like to manually force the front camera, hook this wire to a ground (-) trigger through a toggle switch.
Green	**Left Blind Spot Trigger Input (+) - ***Dark green at turn signal switch on top of steering column. See diagrams next page.
Purple	**Right Blind Spot Trigger Input (+) - ***Light green at turn signal switch on top of steering column. See diagrams next page.
Purple / White	**Reverse Trigger Output (+) -** Connect this wire to the aftermarket radio's reverse trigger input.

*Please verify all signals with a multi-meter before connecting the VS41

Installation Steps

1. Connect the 10-pin expansion plug to the GM1A interface.
2. Wire up all the triggers and inputs as indicated in the chart on page 1.
3. See diagrams below for location of turn signal wires.
4. Once connected, verify all cameras are showing properly. The front camera behavior can be setup using the RadioPRO app. Please see the next section for more details on the RadioPRO app.

Fig. A
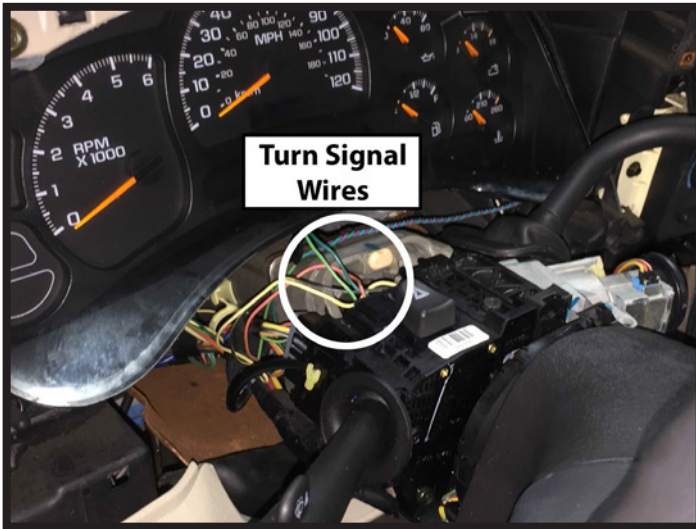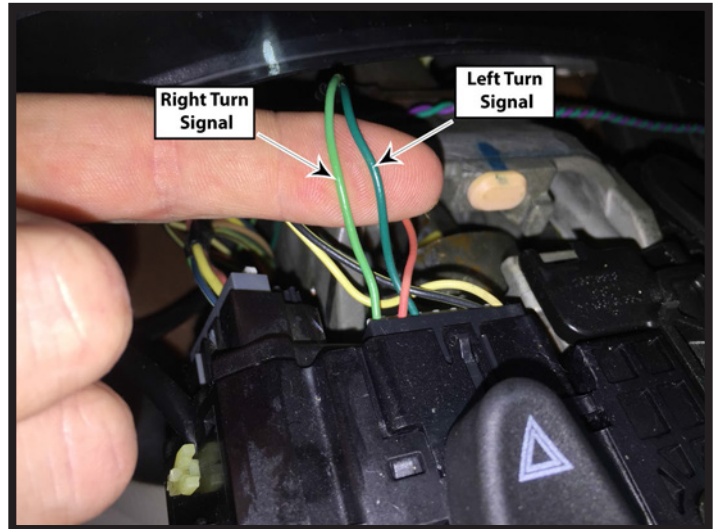

Fig. B

RadioPRO App

Use of the RadioPRO App allows you to do the following:
• Set the behavior of the front camera

Connect the GM1A interface to the PC and select the behavior of the front camera. Use the chart below to understand how each mode works. The GM1A does not have to be connected to power or in the vehicle to access camera settings.

Mode	Description	Notes
Greater than 0MPH and less than *xMPH	This will activate the camera input whenever the vehicle is going faster than 0 mph or less than the designated number.	*Options are: 3 mph, 5mph, or 7 mph.
On when Shift into D until 6MPH or 30Sec	This will activate the camera input whenever the vehicle is placed into Drive. The camera input will turn off once the vehicles speed is faster than 6MPH, or after 30 seconds.	This mode should be used in vehicles that have an *automatic* transmission
On when Shift out of R until 6MPH or 30Sec	This will activate the camera input whenever the vehicle is shifted out of reverse. The camera input will turn off once the vehicles MPH is faster than 6MPH, or after 30 seconds.	This mode should only be used in vehicles that have a *manual* transmission.

Rev. 032818

Pacific Accessory Corporation

INSTALLATION INSTRUCTIONS

1. If this is the first time using the RadioPRO PC Application, download the Radio PRO PC Application. This can be found at the "Download" tab at the very bottom of the firmware list on this page.
2. Download the firmware file.
3. Install the Radio PRO PC Application using the .exe file you downloaded in step one.
4. Open the RadioPRO PC Application using the new shortcut created on your desktop.
5. Connect the interface to the computer using a standard to micro USB cable.
6. Click the "Firmware" icon.
7. Click "Select File" and browse to the new firmware file. The new firmware can be found where you saved it before beginning.
8. Once the file is chosen the update will begin. When successful it will show the text "Update Completed".