

NAV-TV

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SVS-6

Universal Smart Video Switcher with 6 video inputs

NTV-KIT592



For OEM & Aftermarket screens

Left Side View



Front/Rear View



Right Side View



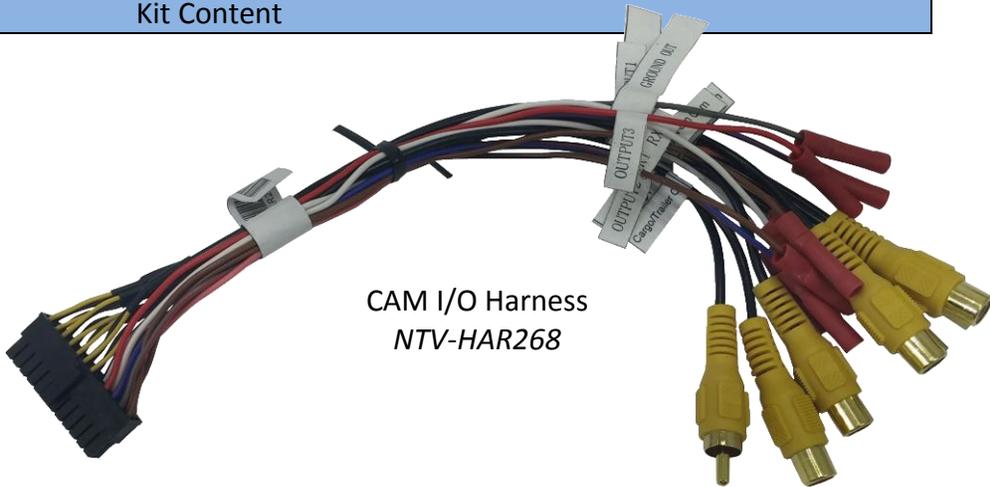
Overview

The SVS-6 is a truly unique and universal video input module that connects to ANY full color LCD screen equipped with an rear-view camera input (and wired reverse-camera trigger) for adding front, rear, blind spot cameras (turn signal cams) as well as 2 additional video inputs (including one auto video-sensing input). All cameras are triggered from wired inputs and this module is designed for use with OEM or aftermarket radio screens. *Note: OEM radios require additional parts.*

Kit Content



SVS-6 Module
NTV-ASY224



CAM I/O Harness
NTV-HAR268

Optional Cameras available



Camera 8 (rear)
NTV-KIT509



Camera 12 (rear, front)
NTV-KIT564



Blind-Spot CAM KIT (TSC)
NTV-KIT594



Camera 7 (rear, front)
NTV-KIT442



Camera 6 (rear/front)
NTV-KIT299

SVS-6 24-Pin Connector

PIN #	Description	Color
1	Shield for Trailer CAM (video sense) RCA	Black
2	Shield for Front CAM RCA	Black
3	Shield for Right Turn RCA	Black
4	Shield for Left Turn RCA	Black
5	Shield for AUX VID RCA	Black
6	Shield for Reverse CAM RCA	Black
7	Shield for VIDEO OUT	Black
8	Ground (-)	Black
9	Input 6 Trigger (Reverse IN from CAR) (+)	White/Black
10	Input 5 Trigger (Left Turn Sig IN) (+)	Purple
11	Input 4 Trigger (Right Turn Sig IN) (+)	Pink
12	UART RX (future use with XG)	Brown/Black
13	Signal for Trailer CAM RCA	Yellow
14	Signal for Front CAM RCA	Yellow
15	Signal for LEFT Turn CAM RCA	Yellow
16	Signal for RIGHT Turn CAM RCA	Yellow
17	Signal for AUX VIDEO IN RCA	Yellow
18	Signal for Reverse CAM RCA	Yellow
19	Video Signal OUTPUT RCA (to radio)	Yellow
20	ACC INPUT (+)	Red
21	12v Reverse OUTPUT to RADIO	Blue
22	--Not Used--	Blue/Red
23	Input 3 Trigger (AUX Video) (+)	Gray/Red
24	Input 2 Trigger (Front CAM) (+)	Brown



INPUT	LED 1	LED 2
Idle	Fade in/out	Fade in/out
RVC	ON	
FVC		ON
Right Turn		ON (blink)
Left Turn	ON (blink)	
AUX VID	ON (solid)	ON (solid)
Trailer CAM	ON (alternating)	ON (alternating)

The SVS-6 is equipped with **on demand** dip-switches. Disconnecting power is not necessary for adjustment.



DIP SWITCH 1: UART CONTROL

UP: UART command control ONLY. For future use.

DOWN: Analog triggers ONLY. Standard universal control.



DIP SWITCH 2: TURN SIGNAL CONTROL

UP: Turn signal cameras will only stay active for 12 seconds.

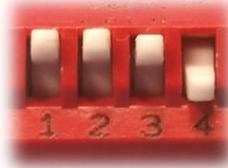
DOWN: Turn signal cameras will display as long as there is a 12v signal to the module.



DIP SWITCH 3: TURN CAMERA OVER RVC

UP: When in reverse, if active, turn signals will display instead of RVC.

DOWN: RVC has priority regardless of turn signal inputs.



DIP SWITCH 4: FRONT CAM ACTIVATION

UP: Using a momentary button to activate **input 2** will display F-CAM for 12 seconds.

DOWN: Front CAM will display as long as there is a 12v signal to the module.

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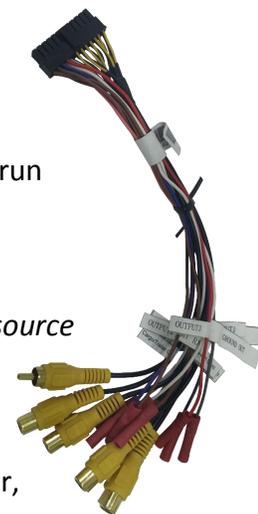
SVS-6 Installation for OEM screens

Note: This section of the installation is intended for OEM screens, which would normally require a separate reverse camera (RVC) interface with analog (wire) reverse trigger.

1. Remove the vehicle's radio/screen. You must gain access to the required location when installing an aftermarket rear camera. Refer to the installation manual of the RVC interface in use if necessary.
2. From the main SVS-6 harness, connect the black wire to ground (-) and the red wire to an ACC 12v (+) source.
3. Connect the (male) **'VIDEO OUT' RCA** from the provided **CAM I/O Harness** to the **rear camera input port** of the RVC interface.
4. Connect the **Reverse OUTPUT wire (pin 21, blue)** to the RVC trigger wire on the interface wire intended for RVC activation (often 'forced rear camera' input).
5. Mount and install all cameras (front, rear, trailer, aux video and blind-spot cameras) and run video signal/power leads to the location where the SVS-6 will be mounted.

Camera Installation Notes:

- a. Use a vehicle switched **ACC 12v** wire to power your cameras. *Make sure the ACC source you're using has sufficient current to power all of your cameras. A thicker-gauge wire (constant 12v) can be used for power supply to a relay, and trigger the relay with an ACC source if you're not sure.*
 - b. Connect each camera signal to each yellow RCA input per their specific labels (rear, front, right TSC, left TSC etc).
6. Connect the **vehicle's OEM reverse wire** to **input 6 (pin 9, white/black)**. *Note: if this wire was already connected to the existing interface's RVC trigger, disconnect it and connect it here (pin 9) instead. The interface's RVC trigger must connect to the SVS-6 module at pin 21. See diagram, page 7. Note 2: If using an interface to gain a reverse camera and the reverse signal is over CAN data, this connection is not necessary.*
 7. Locate, test, splice and extend the **left & right vehicle turn signal wires** (wires will show 12v whenever the bulb is illuminated) to the location where the SVS-6 will be mounted.
 - *These wires can typically be found at the physical OEM turn signal lever harness beneath the steering wheel shroud. In some vehicles, you may find them at the BCM. Note: These triggers must be positive (+) polarity to the SVS-6. If the signals are negative, use relays for pole reversal.*
 8. Connect the vehicle's left turn signal to **input 5 (pin 10, purple)**. Connect the vehicle's right turn signal to **input 4 (pin 11, pink)**.
 9. If a front camera was installed, connect **input 2 (pin 24, brown)** to an accessory 12v (+) source **through a toggle or momentary button (not included) for activation**. *Note: if using a momentary button, DIP Switch #4 must be in the UP position for 12 second Front-CAM time-out.*
 10. **Optional:** If adding an AUX video source to the AUX RCA input, connect **input 3 (pin 23, gray/red)** to an accessory 12v (+) source **through a toggle (not included) for activation or use a NAV-TV S2P**.
 11. **Optional:** If adding a Trailer Camera source to the Trailer CAM input, **any time this input RCA sees a video source, this video input will take priority over the regular RVC video input port**. This is a great option if the user often connects a trailer for *automatically* displaying the proper camera while in reverse.
 12. Connect the SVS-6 module to the 24-pin plug and proceed to 'SVS-6 Operation' (page 6).



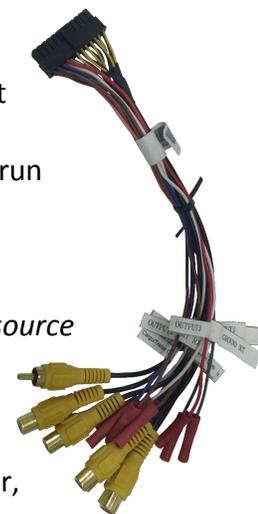
SVS-6 Installation for aftermarket radio screens

Note: This section of the installation is intended for aftermarket screens, equipped with a composite reverse camera (RVC) input & analog (wire) reverse trigger.

1. Remove the vehicle's radio/screen. You must gain access to the required location when installing an aftermarket rear camera. Refer to the installation manual of the head unit in use if necessary.
2. From the main SVS-6 harness, connect the black wire to ground (-) and the red wire to an ACC 12v (+) source.
3. Connect the (male) '**VIDEO OUT**' RCA from the provided **CAM I/O Harness** to the **rear camera input port** of the head unit.
4. Connect the **Reverse OUTPUT wire (pin 21, blue)** to the RVC trigger wire on the head unit (typically purple or purple/white).
5. Mount and install all cameras (front, rear, trailer, aux video and blind-spot cameras) and run video signal/power leads to the location where the SVS-6 will be mounted.

Camera Installation Notes:

- a. Use a vehicle switched **ACC 12v** wire to power your cameras. *Make sure the ACC source you're using has sufficient current to power all of your cameras. A thicker-gauge wire (constant 12v) can be used for power supply to a relay, and trigger the relay with an ACC source if you're not sure.*
- b. Connect each camera signal to each yellow RCA input per their specific labels (rear, front, right TSC, left TSC etc).



6. Connect the **vehicle's OEM reverse wire** to **input 6 (pin 9, white/black)**. *Note: if this wire was already connected to the existing head unit's RVC trigger, disconnect it and connect it here (pin 9) instead. The head unit's RVC trigger must connect to the SVS-6 module at pin 21. See diagram, page 7.*
7. Locate, test, splice and extend the **left & right vehicle turn signal wires** (wires will show 12v whenever the bulb is illuminated) to the location where the SVS-6 will be mounted.
 - *These wires can typically be found at the physical OEM turn signal lever harness beneath the steering wheel shroud. In some vehicles, you may find them at the BCM. **Note: These triggers must be positive (+) polarity to the SVS-6. If the signals are negative, use relays for pole reversal.***
8. Connect the vehicle's left turn signal to **input 5 (pin 10, purple)**. Connect the vehicle's right turn signal to **input 4 (pin 11, pink)**.
9. If a front camera was installed, connect **input 2 (pin 24, brown)** to an accessory 12v (+) source **through a toggle or momentary button (not included) for activation**. *Note: if using a momentary button, DIP Switch #4 must be in the UP position for 12 second Front-CAM time-out.*
10. **Optional:** If adding an AUX video source to the **AUX RCA input**, connect **input 3 (pin 23, gray/red)** to an accessory 12v (+) source **through a toggle (not included) for activation or use a NAV-TV S2P**.
11. **Optional:** If adding a Trailer Camera source to the **Trailer CAM input**, **any time this input RCA sees a video source, this video input will take priority over the regular RVC video input port**. This is a great option if the user often connects a trailer for *automatically* displaying the proper camera while in reverse.
12. Connect the SVS-6 module to the 24-pin plug and proceed to 'SVS-6 Operation' (page 6).

SVS-6 Operation

Reverse Camera (Video 6): Placing the vehicle in reverse will display the connected reverse camera as usual, **unless** a Trailer camera is present, connected and powered on. In this case, the *Trailer Cam* RCA signal will have priority over the typical RVC RCA.

AUX Video (Video 5): Whenever *input 3* receives 12v (+), the connected AUX video image will display on screen *with lowest priority* (see chart below).

Left & Right Turn Signal Cameras (Video 4 & 3): When connected properly, normal usage of the OEM turn signal stalk will display either left or right turn signal image, respectively.

- If the user desires the **display screen to return to factory in 12 seconds**, dip switch #2 must remain UP.
- If the user desires the **Turn Signal Cameras to display (priority) over the RVC image**, dip switch #3 must remain UP.

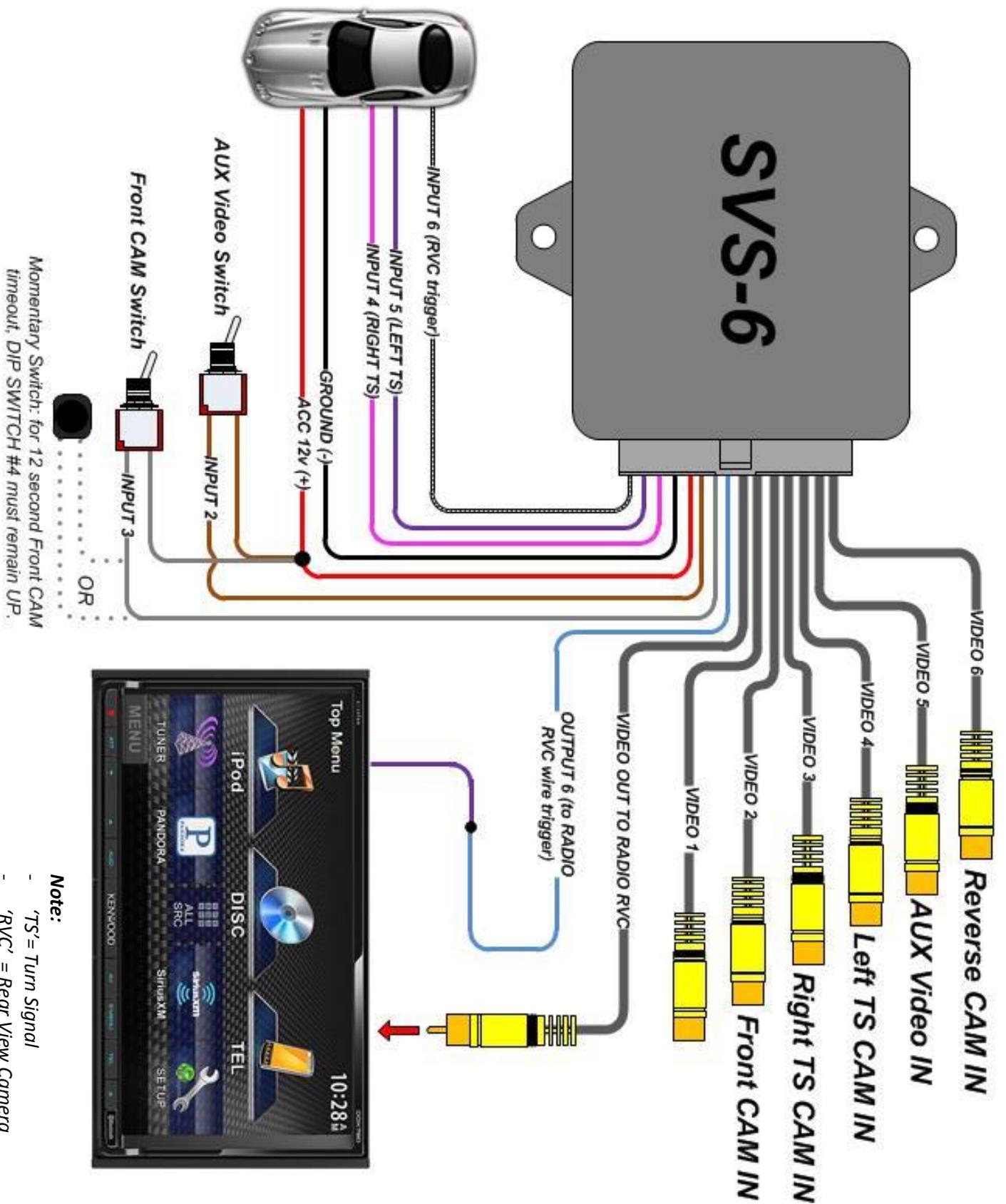
Front Camera (Video 2): Whenever *input 2* receives 12v (+), the connected front camera image will display on screen *with second-to-last priority* (see chart below).

- If the user desires the **Front Camera to display for 12 seconds only**, use a momentary button instead of a toggle switch. For this function, dip switch #4 must remain UP.
- If the user is expecting to be able to automatically switch between reverse and front cam (when in and out of reverse gear), the front camera activation must be on a toggle switch, not a momentary button (using built-in SVS-6 timer).

Trailer Camera (Video 1): This is a video-sensing input. If you have a video signal (such as a trailer or 5th-wheel camera) connected to this RCA input and the camera is powered, then this video signal will automatically take priority over the usual RVC input RCA signal. *This condition will remain until the signal or power is disconnected from this video source.*

Below is a chart for Video Input priority order. Installation requirements will vary, adjust the DIP Switches to suit your needs. See page 3 for Dip Switch options.

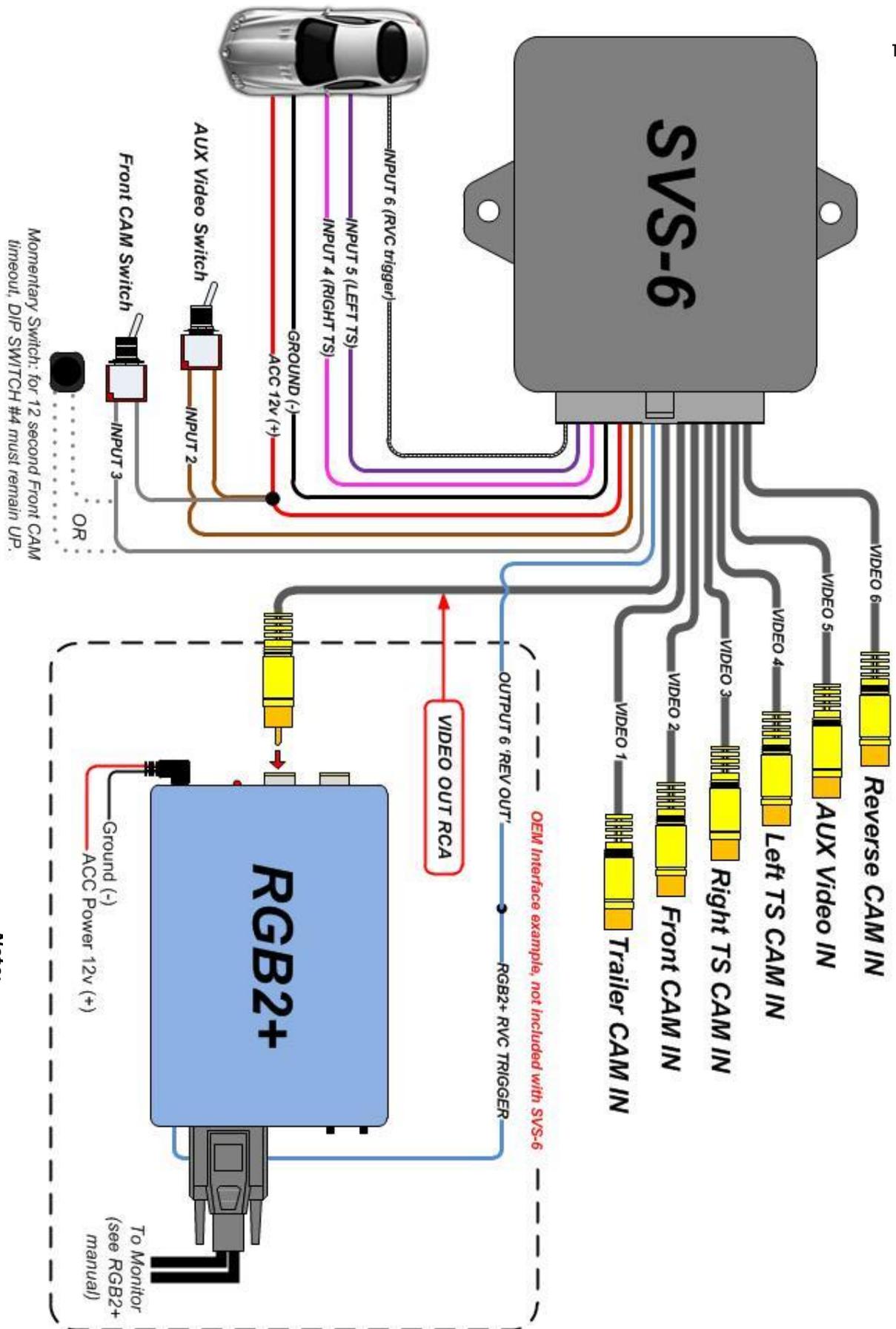
PRIORITY	VIDEO INPUT RCA	Condition
1 st	Trailer CAM	If used & when source is connected & powered
2 nd	Reverse CAM	If Trailer CAM is not used, RVC = 1 st
3 rd	Turn Signal CAM L & R	If DIP SWITCH 3 is UP, TSC = 2 nd
4 th	Front CAM	----
5 th	AUX Video IN	----



Note:

- 'TS' = Turn Signal
- 'RVC' = Rear View Camera
- Momentary button not included

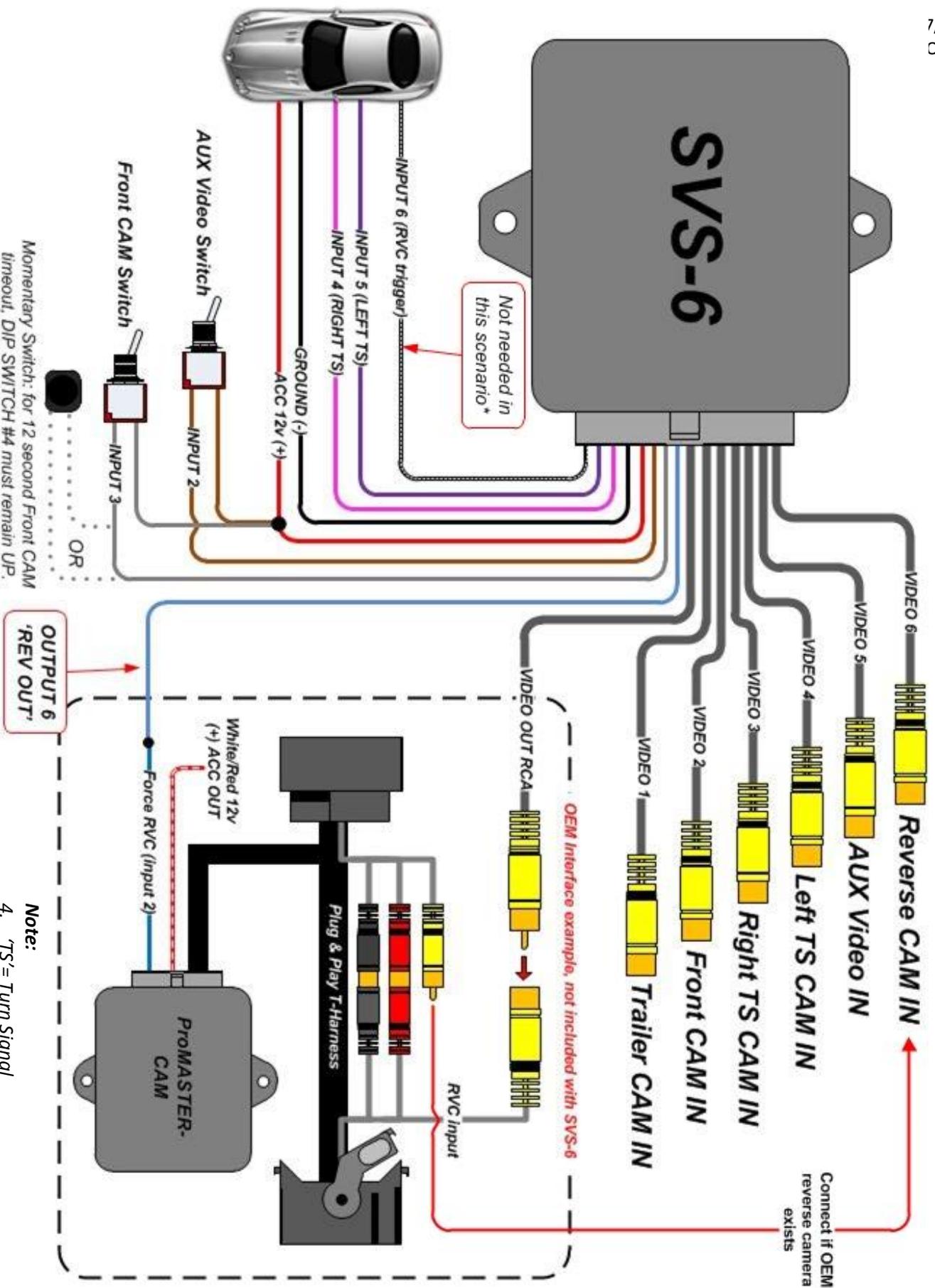
SVS-6 Install Diagram (with example OEM Integration Kit)



Note:

1. 'TS' = Turn Signal
2. 'RVC' = Rear View Camera
3. Momentary button not included

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*Any time the reverse signal is handled over CAN data (like the module the SVS-6 is paired with here), INPUT 6 (RVC trigger) does not need to be connected.

- Note:**
4. 'TS' = Turn Signal
 5. 'RVC' = Rear View Camera
 6. Momentary button not included

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SVS-6 FAQs

Q1. I have the front camera connected to a toggle switch. Whenever I turn it off, the camera stays on for a period of time afterwards.

A1. Check dipswitch 4 is in the UP position. In the DOWN position, the front camera will stay on as long as the input has 12v, *but the timer doesn't start until 12v is removed.*

Q2. Can I change the priority of the video inputs, or which one will display over the other?

A2. No, the video input priority cannot be reconfigured.

Q3. When I connect my camera signals, the image will turn on and off with the blinkers.

A3. Verify you're using the proper Turn Signal camera inputs on the SVS-6.

Q4. When I put my vehicle into reverse, the backup image will display but none of the other images will show. The radio will not transition and only shows the radio screen.

A4. The reverse wire that would normally connect to the radio has to be removed and connected to RVC INPUT of the SVS-6. REV_OUT (pin 21) from the SVS-6 is then connected to the reverse wire of the radio. You cannot connect both the vehicles reverse wire and SVS-6 OUTPUT wire together at the radio. By doing so, it may power the reverse bulbs any time the cameras are requested & *can potentially damage both the SVS-6 and/or the vehicle's BCM.*

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