

## DIFF CAM-Switcher

NTV-KIT437



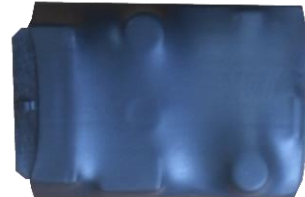
### Overview

The NAV-TV *DIFF-CAM Switcher* is used to interrupt the OEM *differential* rear-cam video signals and input an aftermarket *composite* video source to the factory LCD screen, upon command. It's activated via an external toggle switch (not included).

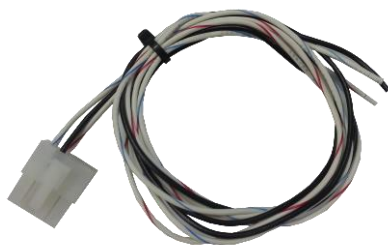
### Kit Contents



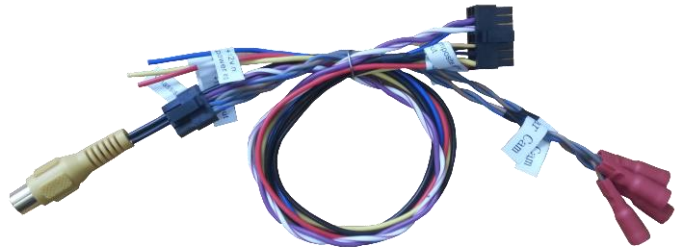
VSW Board  
NTV-ASY187



DIFF CAM Board  
NTV-ASY221



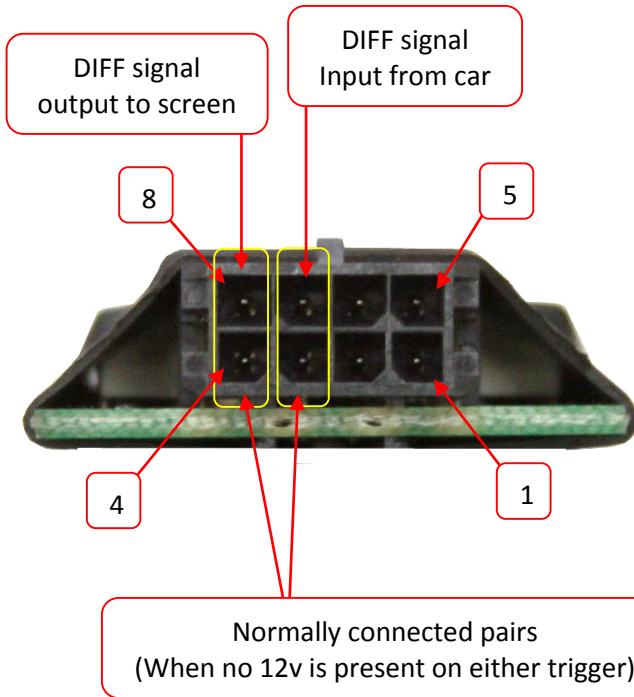
VSW Power Harness  
NTV-HAR066



Main Harness  
NTV-HAR299

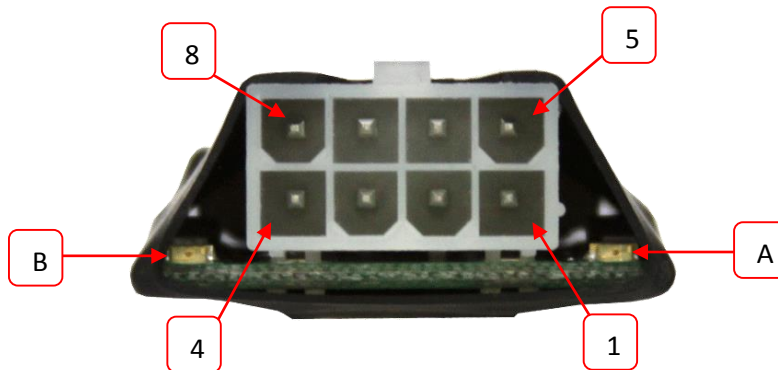
## VSW Harness pin outs

### Input/Output Connector



PIN #	Description	Color
1	--	--
2	DIFF Video IN (-)	White/Purple
3	Video IN - (car side)	White/Orange
4	Video OUT - (screen side)	Orange
5	--	--
6	DIFF Video IN (+)	Purple
7	Video IN + (car side)	White/Blue
8	Video OUT + (screen side)	Blue

### Power/Trigger Connector

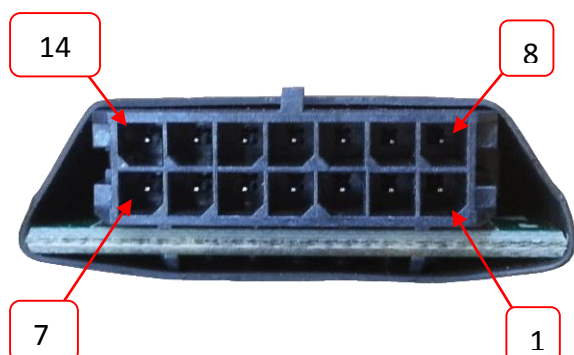


PIN #	Description	Color
1	Not Used	White/Blue
2	Video 1 Trigger	White/Red
6	Ground	Black

Label	Description
A	LED: When illuminated, Video 1 is active
A & B	LEDs: When both illuminated (NOT USED)

Agreement: End user agrees to use this product in compliance with all State and Federal laws. NAV-TV Corp. would not be held liable for misuse of its product. If you do not agree, please discontinue use immediately and return product to place of purchase. This product is intended for off-road use and passenger entertainment only.

### Diff Cam R1 pin outs



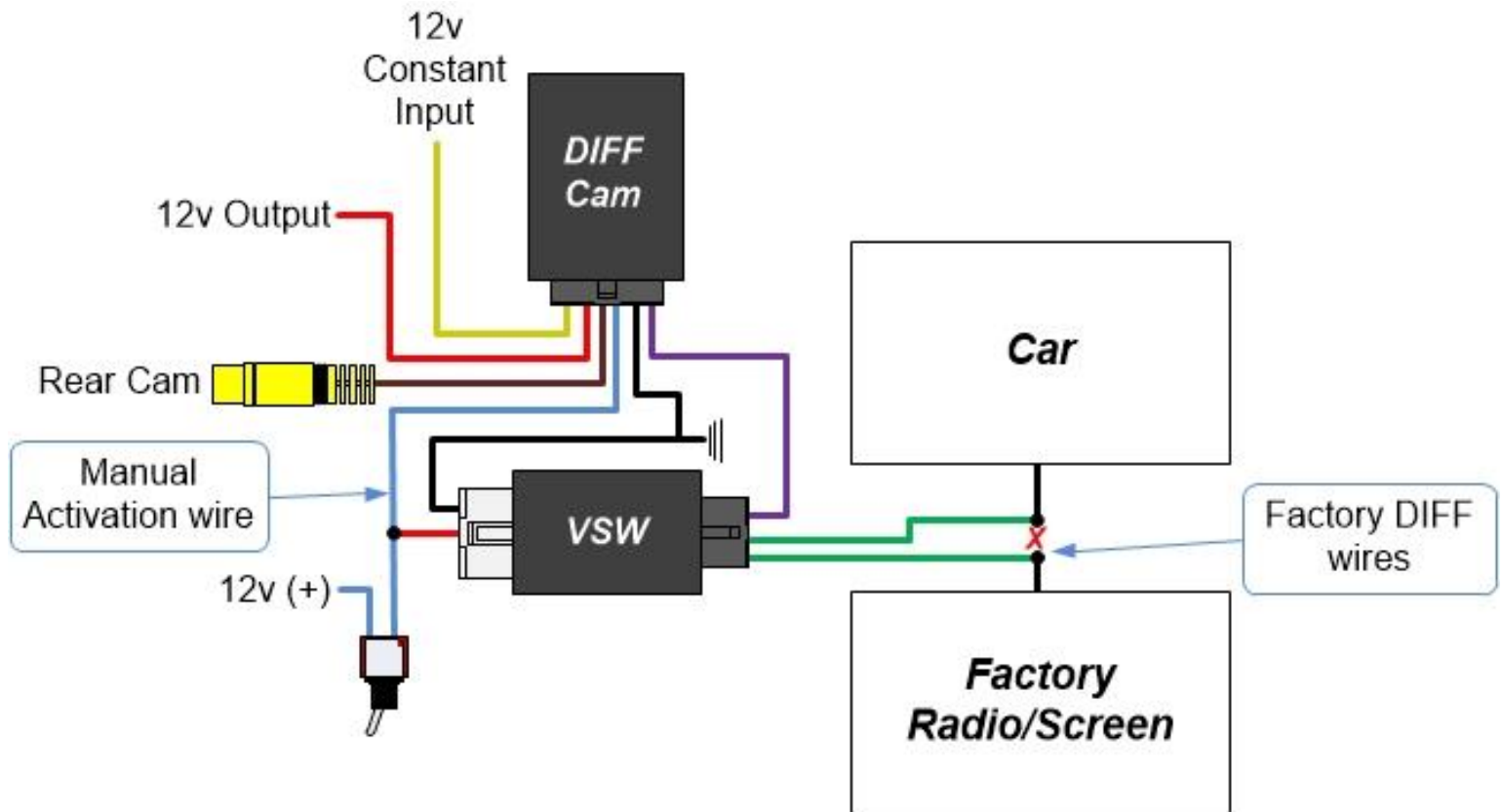
Pin	Description	Color
1	12v Out	Red
3	Ground	Black
6	Manual Activation	Blue
8	Constant	Yellow
9	RCA	[Shield]
10	RCA	[Signal]
12	DIFF Video (-)	White/Violet
13	DIFF Video (+)	Violet

### General Installation (not vehicle specific)

1. Remove the radio from the dash, disconnect all factory harnesses and set aside.
2. Locate the main radio connector. Strip back any factory tape on the main radio harness to easily access the wires.
3. In the main harness, locate the twisted Differential video wires. Cut this pair in half.
4. You now have a 'car side' and a 'radio side' for factory DIFF video wires. Solder the factory 'car side' DIFF video wires to pins 3 & 7 on the VSW (black connector).
5. Solder the 'radio side' factory DIFF video wires to pins 4 & 8 on the VSW (black connector).
6. Connect the following wires from the DIFF CAM R1 harness:
  - a. **Black:** chassis ground
  - b. **Yellow:** 12v constant
  - c. **Blue:** Manual Activation of the DIFF board (tie to the same wire that triggers video switching)
  - d. **Red:** Camera Power
  - e. **RCA:** Connect your aftermarket camera here.
7. Connect the following wires from the VSW's *white, 8-pin* connector:
  - a. **Black:** chassis ground
  - b. **White/Red:** Connect this wire to 12v through a toggle switch. This will toggle Video 1 output.
  - c. **White/Blue:** NOT USED
8. Connect the VSW to its connectors, and the DIFF CAM R1 to its connector.
9. After connecting cameras/video sources, reconnect the factory radio and test for proper operation.

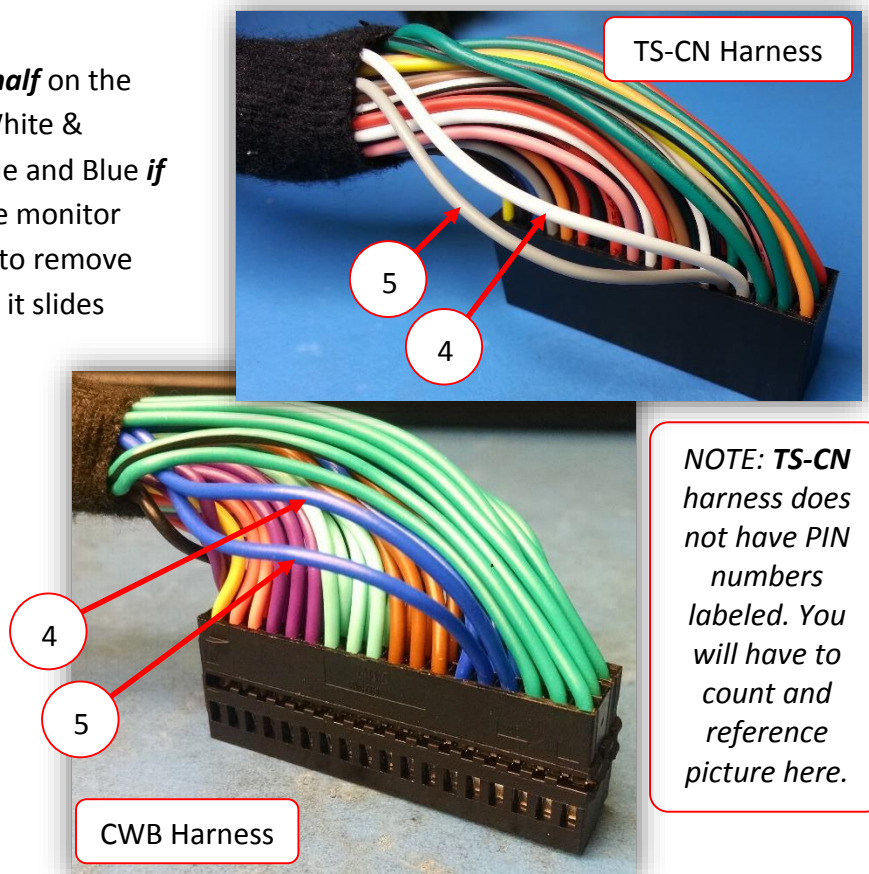


Basic installation diagram (not vehicle specific)



### MY FORD TOUCH F-CAM Installation-specific notes

- Verify that **forced factory camera** operates normally with the INPUT 2 **blue wire** (touch temporarily to 12v +) from the F-CAM kit before beginning this process.
- Refer to the diagram on page 6 and make connections – *NOTE: Cutting OEM DIFF wires (circled in diagram) is specified here, below.*
- 12v (+) to your toggle **CAN NOT** be powered from the provided **Red 'ACC OUT'** wire from the DIFF CAM Board. *You must use a vehicle ACC (+) source.*
- (2x) DIFF video wires to be **cut in half** on the NAV-TV Plug & Play harness are White & Gray/Black **if TS-CN harness** or Blue and Blue **if CWB harness**. Make the cut on the monitor side of the harness. You will need to remove the cover with the lock attached – it slides straight off once releasing clips.



- Follow the chart below to connect the DIFF video wires from the DIFF Board R1 to the T-Harness:

PIN #	Description	Color	Connects to
3	Video IN – (Car Side)	White/Orange	PIN 4 (Car Side)
4	Video OUT (Screen Side)	Orange	PIN 4 (Screen Side)
7	Video IN + (Car Side)	White/Blue	PIN 5 (Car Side)
8	Video OUT + (Screen Side)	Blue	PIN 5 (Screen Side)



- Upon completion, the user will be able to flip a single toggle switch and the factory display will switch from OEM radio screen to the connected front camera image.

FORD Install Diagram (requires F-CAM kit)

