

# NAV-TV

INTERFACING THE FUTURE

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## MFT F-CAM

Force Front Camera Module

**NTV-KIT831**



BHM  
07/31/18  
NTV-DOC298

## Overview

The MFT F-CAM module uses OEM buttons (or wire triggers) to force an added front camera on the OEM screen at any time, in any gear on SYNC 2 and SYNC 3 (8") Ford infotainment systems. Forcing OEM rear camera with this kit is also available if required. ***NOTE: This kit will NOT program rear camera. This module is only intended for use with an existing rear camera (or one that was added previously with NAV-TV KIT391, 392, 456 etc).***

## Kit Content



DIFF Module (Diff  
Video Conversion)  
NTV-ASY221



MFT F-CAM  
Module (KT3)  
NTV-ASY256



USB cable (updates)  
NTV-CAB009

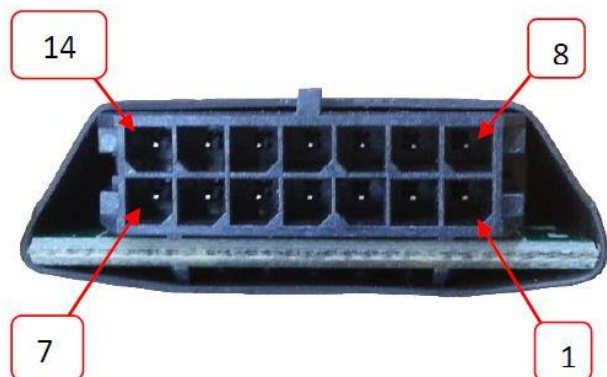


VSW Module (video switching)  
NTV-ASY187



Plug & Play T-Harness  
NTV-HAR305

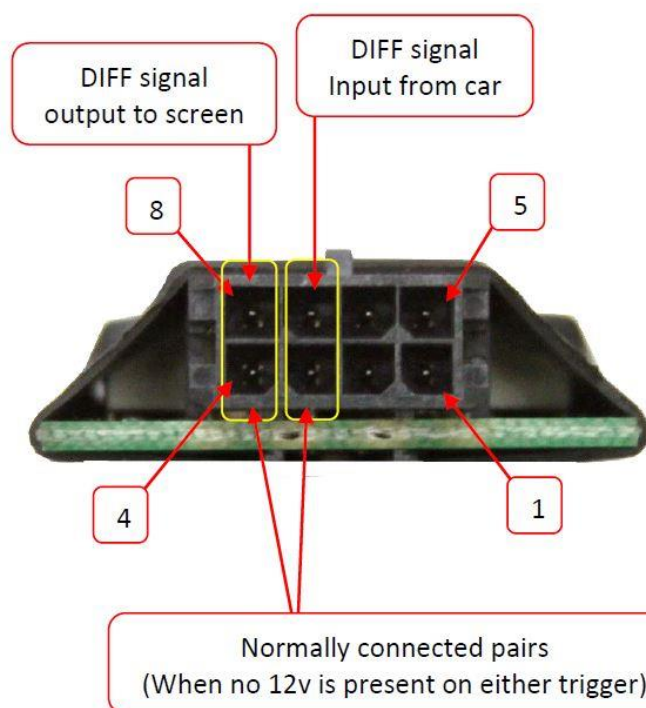
## DIFF Module Pin Out



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

## VSW I/O Connector Pin Out

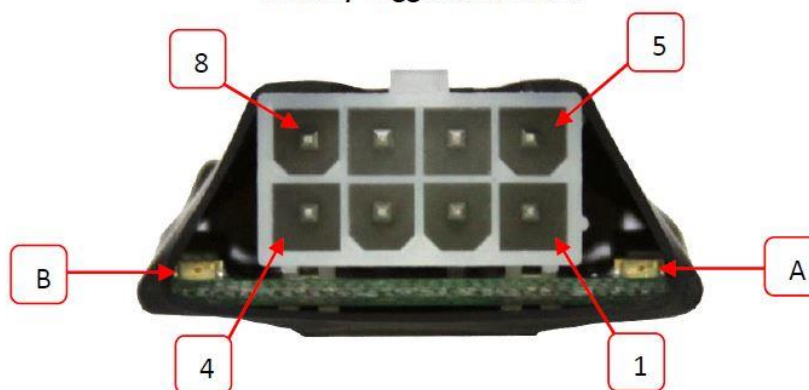
### Input/Output Connector



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

## VSW Power/Trigger Pin Out

### 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)

## MFT F-CAM Module Pin Out

Pin #	Description	Color
1	12v Constant Power (+)	Yellow
2	INPUT 1 <i>Force Rear Camera*</i>	Red
3	INPUT 2 <i>Force Front Camera</i>	Blue
4	--NOT USED--	Pink
5	--NOT USED--	Gray
6	LIN (camera side)	Green
8	CAN HI (Radio Side)	Purple/Black
9	CAN HI (Vehicle Side)	White/Black
10	Ground (-)	Black
11	OUTPUT 1 ACC 12v Out	Orange
12	OUTPUT 2 Reverse 12v Out	Blue/White
13	OUTPUT 3 12v [out] follows front CAM trigger	White
14	Looped to pin 15	Yellow
15	Looped to pin 14	Yellow
16	LIN (BCM Side)	Orange/White
17	CAN LO (Radio Side)	Purple
18	CAN LO (Vehicle Side)	White



**Wire side**

*\*Forcing OEM rear camera is only supported on SYNC 2 systems.*

## MFT F-CAM Installation

1. Remove the 8" SYNC screen (radio). Connect the provided T-Harness (with all PCB's connected) between the OEM vehicle harness and the radio/screen assembly.
2. Turn the ignition **ON** and wait for the radio to boot fully. Test all functions for normal functionality (including reverse camera – vehicle may have to be running).
3. **Test front camera force activation before mounting camera and running wires to kit.** Press and HOLD the **right-arrow** button on the steering wheel (left side) for 2 seconds – verify the screen switches (to black screen or camera image if connected).
4. Run your front camera (or AUX video signal) to the dash location and connect to an ACC 12v source for power (do not use a reverse signal). **OUTPUT 1 (red) from the MFT F-CAM provides 12v ACC out for convenience.**

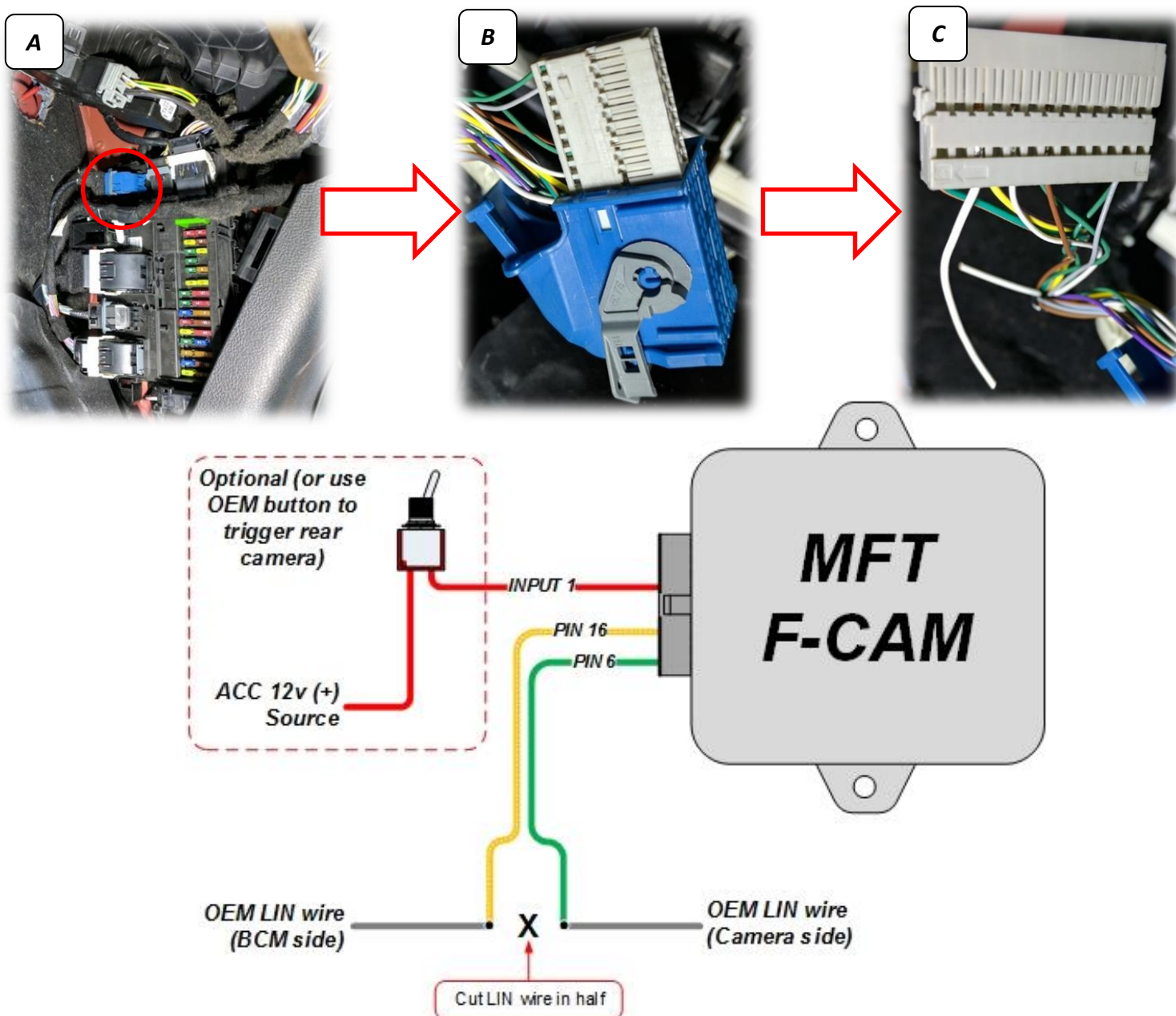


- **See next page for information regarding forcing the OEM camera on at any time (requires modifying factory LIN wire)**

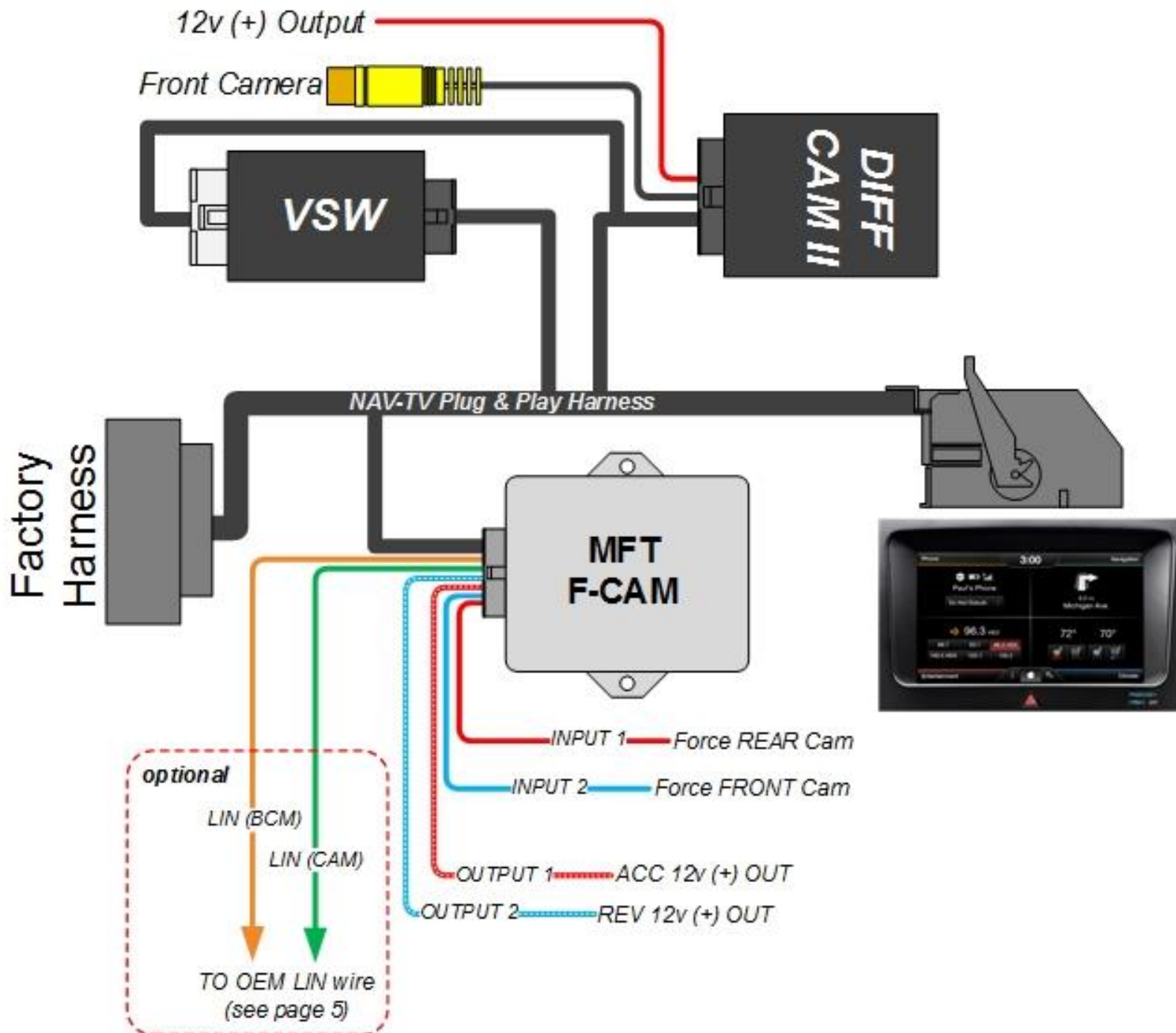


Forcing OEM rear camera (SYNC 2 ONLY)

5. **Optional:** If forced OEM reverse camera is desired, extend pins 6 & 16 (from the MFT F-CAM module) to the passenger kick panel. Locate the BCM behind the passenger kick panel.
- Locate the typically **Blue** connector (F150), remove from BCM (with ignition off)
  - Using a pick tool or small flathead, slide the inner connector out of the blue shell
  - Locate PIN 37 (LIN). This wire controls the *OEM rear camera and the lines that turn with the steering wheel*. Cut the wire at PIN 37 in **half** leaving slack on both sides.
  - Connect your extended *PIN 6* to the *vehicle side* of the cut wire.
  - Connect your extended *PIN 16* to the *BCM side* of the cut wire.



## MFT F-CAM Install Diagram Overview



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.

## MFT F-CAM Kit Operation

### Toggling Cameras

This function allows the viewing of an auxiliary aftermarket camera at any time.



F150

**Press and HOLD (2 seconds)  
To toggle rear camera**

**Press and HOLD (2 seconds)  
To toggle front camera**

Additionally, if you send 12v (through a toggle) to **INPUT 1 (Red)** or **INPUT 2 (Blue)**, it will force the rear or front camera

Forcing **OEM rear camera** is only supported on SYNC 2: 8" media screens. For this feature, additional wiring must be completed to separate the LIN wire at the same time (see page 5).



Mustang

**Press and HOLD (2 seconds) to  
toggle front camera**