COD-F53

Ford OEM 360 Surround-View Camera Controller with 3 AUX video inputs

NTV-KIT910

Overview

The COD-F53 (Camera-On-Demand) kit allows Ford SuperDuty trucks equipped with OEM (5-camera system) surround view cameras to be displayed on demand, without lock-out restrictions. Additional features include adding additional AUX video inputs, turn signal cameras, easy forcing OEM cameras & last known camera retention (from hard camera button press). *NOTE: This kit will NOT program any camera system. This module is designed for SuperDutys equipped with the OEM trailer package (5-camera system).*

Kit Content

Plug & Play T-Harness
NTV-HAR332

RCA Harness
NTV-HAR334

COD-F53 Module
NTV-ASY301

USB cable (updates)
NTV-CAB009

F53 Satellite Board
NTV-ASY306, NTV-HAR333

COD-F53 Module Pin Out

Pin #	Description	Color
1	12v Constant Power (+)	Yellow
2	INPUT 1: *VIDEO 1 trigger (+)*	Red
3	INPUT 2: *VIDEO 2 trigger (+)*	Blue
4	INPUT 3: --*NOT USED*--	Pink
5	RX (OE camera button – button side)	Blue
6	CAN-3 HIGH (camera module)	Blue
7	CAN-2 HIGH (CAN gateway)	Blue
8	CAN-1 HIGH (APIM)	Yellow
9	CAN-0 HIGH (CAN gateway)	Yellow/Black
10	Ground (-)	Black
11	OUTPUT 1: -*Used for VID1 trigger*--	White/Red
12	OUTPUT 2: --*Used for VID2 trigger*--	White/Blue
13	OUTPUT 3: --*Used for VID3 trigger*--	White/Purple
14	TX (OE camera button – module side)	Purple
15	CAN-3 LOW (camera module)	Purple
16	CAN-2 LOW (CAN gateway)	Purple
17	CAN-1 LOW (APIM)	Orange
18	CAN-0 LOW (CAN gateway)	Orange/White

Wire side

COD-F53 Installation

1. Remove the 8" SYNC 3 screen (radio):

   a. Remove the center channel speaker cover on the top (middle) of the dash (4 clips only) *NOTE: this panel is very tight*.

   b. Remove (2) 7mm bolts securing the top panel (previously hidden by the speaker grill).
   c. Remove the whole upper shelf panel, it should be held in by clips only, now. Disconnect the speaker lead. Set this panel assembly aside.
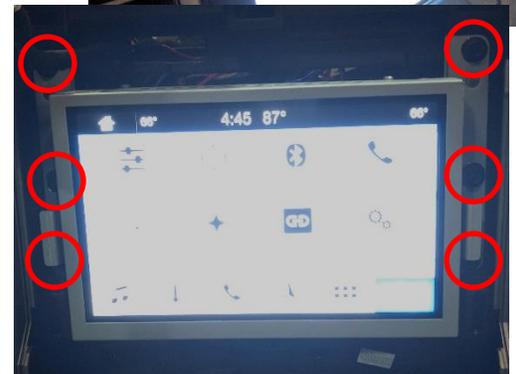

   d. Remove (2) 7mm screws on top of the climate/screen dash panel, and then pull panel straight towards you. Disconnect all harnesses and set the panel aside.
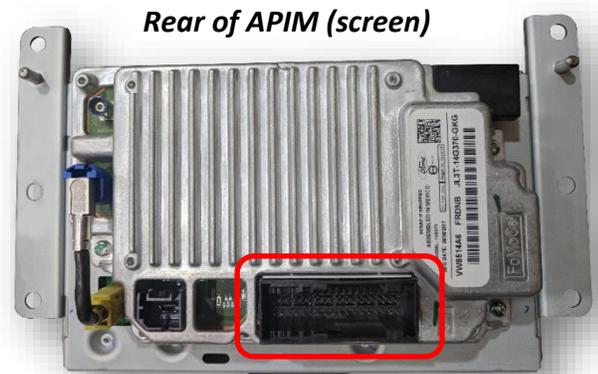

   e. Remove (6) 7mm screws securing the screen (APIM) to the sub-dash. Disconnect all harnesses and set the APIM aside.
   f. *NOT SHOWN:* the IPM (camera module) is bolted to the sub-dash directly behind the screen with 7mm screws. Remove it to connect the T-Harness properly. *Do not attempt to connect to the IPM while it is still connected to the sub-dash.*

Rear of APIM (screen)

2. Connect the provided (large, main) T-Harness between the vehicle harness and the APIM (screen).

3. Connect the provided SAT-switcher board/harness to the IPM (directly behind screen). Connect the (OE) IPM vehicle harness (previously removed) to the SAT-switcher board.

IPM (camera module)

4. Connect the 8-pin harness from the main T-Harness to the SAT-switcher board's 8-pin port.

SAT-switcher board: IPM-IN side

5. Connect the provided 6-pin RCA harness to the SAT-switcher board's 6-pin port. The RCA inputs and triggers for each input are discussed on step 7 (next page).

SAT-switcher board: IPM-OUT side

6. Connect the *white/purple* wire from the RCA harness to the main T-Harness' *white/purple* using the bullet connectors provided.

7. The COD-F53 input triggering was designed specifically for the OE SuperDuty Up-Fitter switches, but any analog 12v switch will work the same. When adding additional cameras to the COD-F53 module, use *INPUT 1 and INPUT 2* for 12v (+) analog triggers for *VIDEO 1 (blue) and VIDEO 2 (white) RCAs, respectively*. If adding a third camera, *both INPUT 1 + 2 powered together simultaneously* will display *VIDEO 3 (red) RCA.* This allows you to switch 3 different cameras, but only utilize (2) Up-Fitter switches (of 6 available switches). If using the Up-Fitter switches for AUX camera triggering, extend a pair of wires (from INPUT 1 & 2) to the *driver's side engine bay, near the firewall* to connect to the corresponding switch wires.

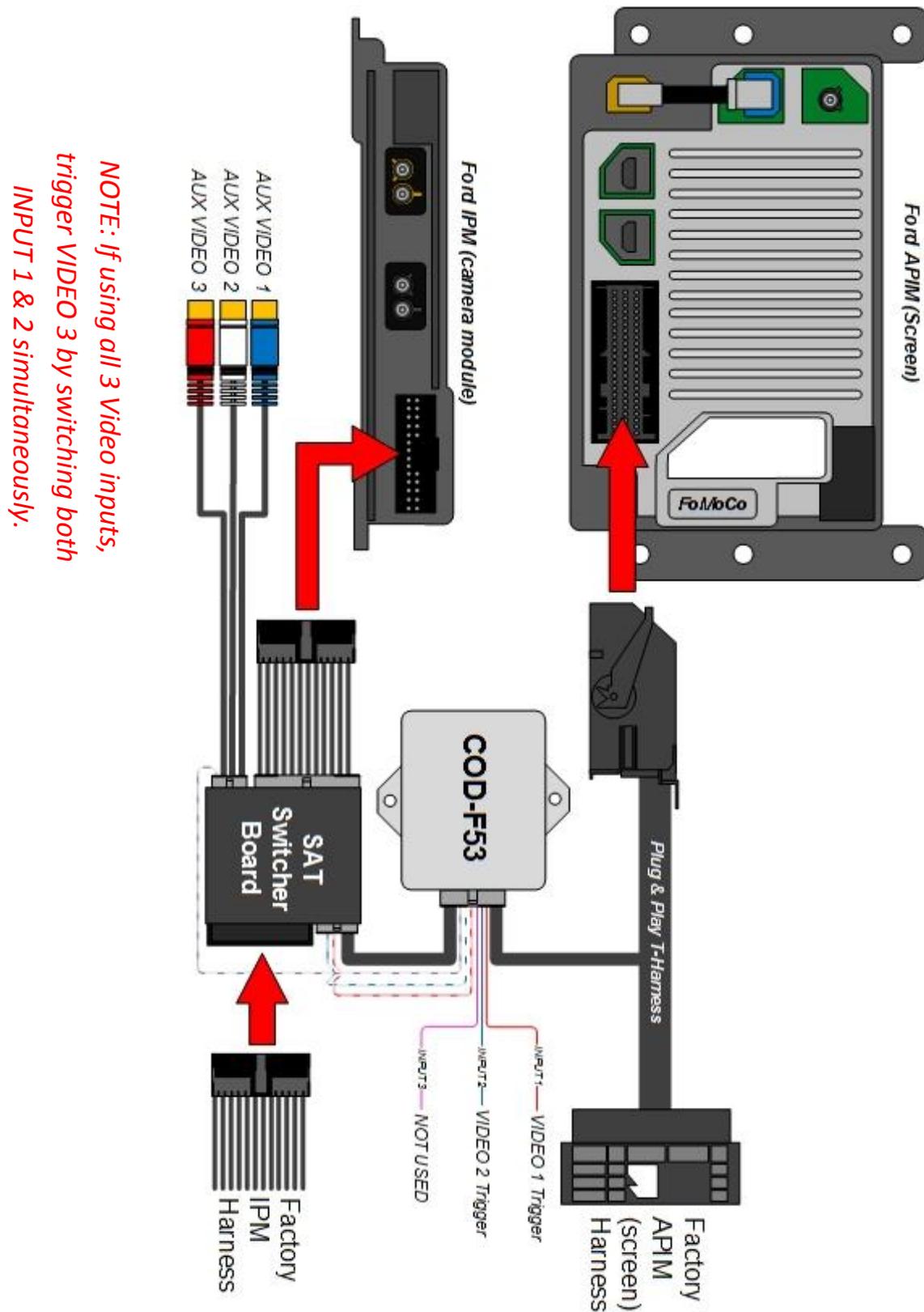*NOTE: power your AUX cameras with a 12v ACC source!*

UpFitter switch wires (engine bay drivers side near firewall)

8. Connect the 18-pin plug to the COD module and secure it in the sub-dash (up underneath the center-channel speaker) so that nothing rattles.

9. Return the screen to the sub-dash and reconnect the climate/screen surround panel for testing.

10. ***Proceed to 'COD-F53 Operation'.***

COD-F53 Wiring Diagram

NOTE: If using all 3 Video inputs, trigger VIDEO 3 by switching both INPUT 1 & 2 simultaneously.

AUX VIDEO 1
AUX VIDEO 2
AUX VIDEO 3

Ford IPM (camera module)

Ford APIM (Screen)

FoMoCo

SAT Switcher Board

COD-F53

Plug & Play T-Harness

Factory IPM Harness

INPUT3 — NOT USED
INPUT2 — VIDEO 2 Trigger
INPUT1 — VIDEO 1 Trigger

Factory APIM (screen) Harness

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.

COD-F53 Operation (SuperDuty)

Once the COD-F53 module is connected properly, all added camera commands are performed through the factory camera button. Added features are outlined below:

Camera Button

- ***Single-Press camera button shows rear camera and rear cam options*** (default after ignition), press and release once again to clear

- ***Double-Tap camera button shows <u>front camera</u> and front cam options,*** press and release once again to clear

- ***Last used camera image (whether front, rear, cargo or surround view) is retained when switching back and fourth from radio screen to camera screen via camera button*** (instead of default surround view only with each press)

- ***Reverse camera mode (whichever chosen when in reverse) retained when selecting Reverse Gear again***

- ***Turn signals switch to corresponding side view**** (left or right, panned 100%)

*NOTE: to disable turn signal camera activation, press and HOLD the camera button for 20 seconds. Once complete, turn signal cameras will deactivate. Repeat this process to reactivate TSC at any time.

***NOTE: forcing the **rear camera** may affect NAV guidance temporarily. This is a factory limitation.*

BHM
02/06/19
NTV-DOC341

COD-F53 NOTES

- SYNC 3 radio *must be at least Version 3* for all features to work properly. Under SETTINGS, then GENERAL SETTINGS, look for the SYNC version. The radio system can be updated over the air if the vehicle is connected to a local WiFi connection. For more detail information, watch this video: https://www.youtube.com/watch?v=No8fJ7V21Y8
- If your unit came with a USB cable and has a serial number, *then it is updateable.* If you suspect the unit needs a software update, connect the module to a Windows PC via USB and go to www.navtvdevice.com. All updates are available on that web page.
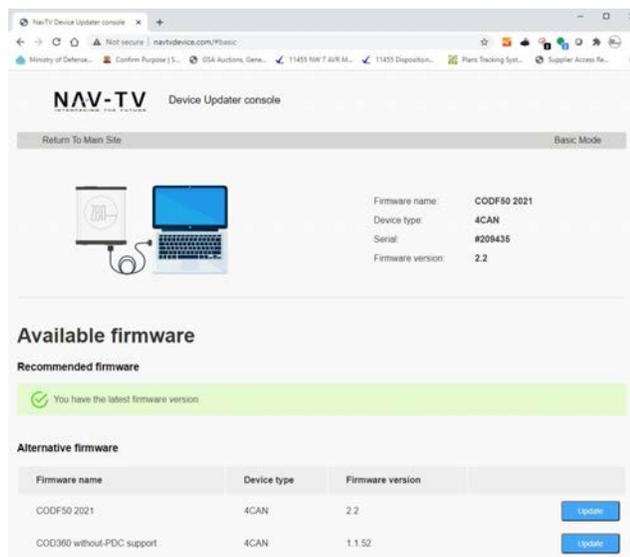
NAV-TV
INTERFACING THE FUTURE

MADE IN U.S.A PRODUCT

ISO 9001 SGS

2020+ COD F50/F53 updating and Vehicle Selection

For 2017-2019 and 2020+ Ford Super Duty Vehicles with 360 Camera Systems

1. With an internet enabled laptop, Point your browser to **www.navtvdevice.com**
2. Plug in the COD into an availabe USB Port on the laptop.
3. Wait for the interface to be recognized
4. Select COD-F50 2021 for 2020+ vehicles, or:
5. Select COD360 for 2017-2019 Vehicles
6. Click Update and wait for the unit to finish the updating process.

2020+ COD APIM Programming - Using Forscan

Select "Configuration and Programming"

Navigate to 7D0-06-01 *xxx

If you have 0,2,4,6,8,A,C or E, Leave unmodified and nothing has to be done.

7D0-05-02	805E	Restore	Write
7D0-06-01	A280	Restore	Write
7D0-07-01	3000	3A00	0049

If you have 1,3,5,7,9,B,D or F,
Change the FIRST Digit by deducting 1,
use the table for reference:

1>0	9>8
3>2	B>A
5>4	D>C
7>6	F>E

Click "Write" and exit. Test system.

2020+ COD APIM Programming - Using NAV-TV Programmer

1. Start the Vehicle, Wait for SYNC radio to start
2. Plug in Programmer to the OBD2 connector
3. Within 4 seconds, light on the programmer will turn on steady and the radio will reset.
4. Unplug immediately, Do not leave programmer connected
5. The APIM is now configured..

To reverse the programming and return to stock:

1. Start the Vehicle, Wait for SYNC radio to start
2. Plug in Programmer to the OBD2 connector
3. Within 4 seconds, light on the programmer will turn on steady and the radio will reset.
4. Wait 2 minutes, the radio will reset again, this time the programming will revert to the factory condition.
5. Unplug programmer