

NAV-TV

INTERFACING THE FUTURE

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BHM
10/17/18
NTV-DOC278

BMW12N-H

NTV-KIT791



Quick Reference
(LVDS) Video Cable connects at Screen
Power/CAN T-Harness connects at Radio
Unit requires Constant 12v
Do not power camera with reverse light. Use ACC or purple wire (through relay)

Overview

The BMW12N-H kit interfaces 2 composite video inputs & HDMI input to the factory media screen in select 2012+ BMWs **with the 6-pin video connector (at the screen)**. This interface generates steering-based guidelines while in reverse for added convenience.

*NOTE: 2017 year 'EVO' touch-screen monitors are **NOT compatible** with this interface.*

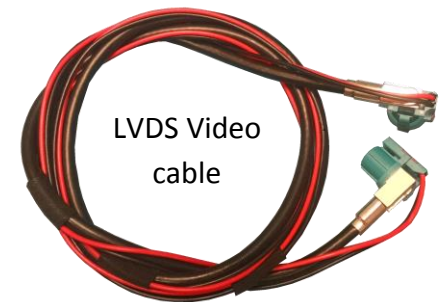
Kit Contents

Audio OUT Cable



BMW12N-H Interface

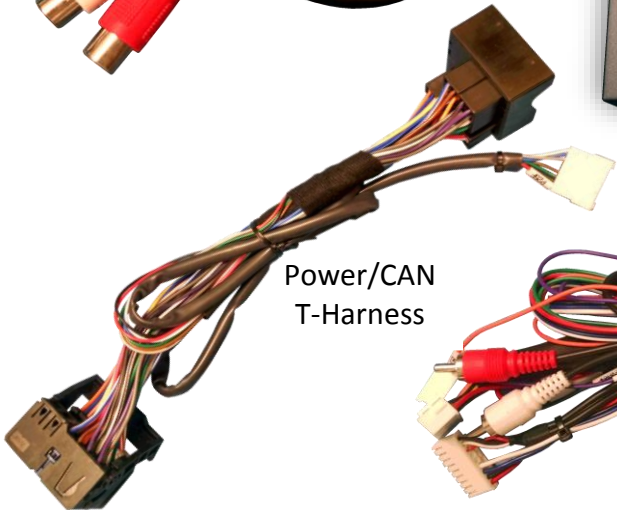
LVDS Video cable



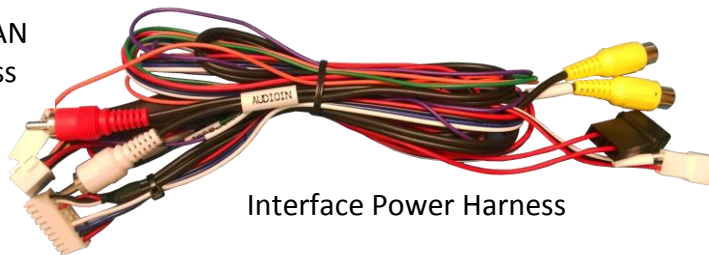
IR Eye Cable



Power/CAN T-Harness



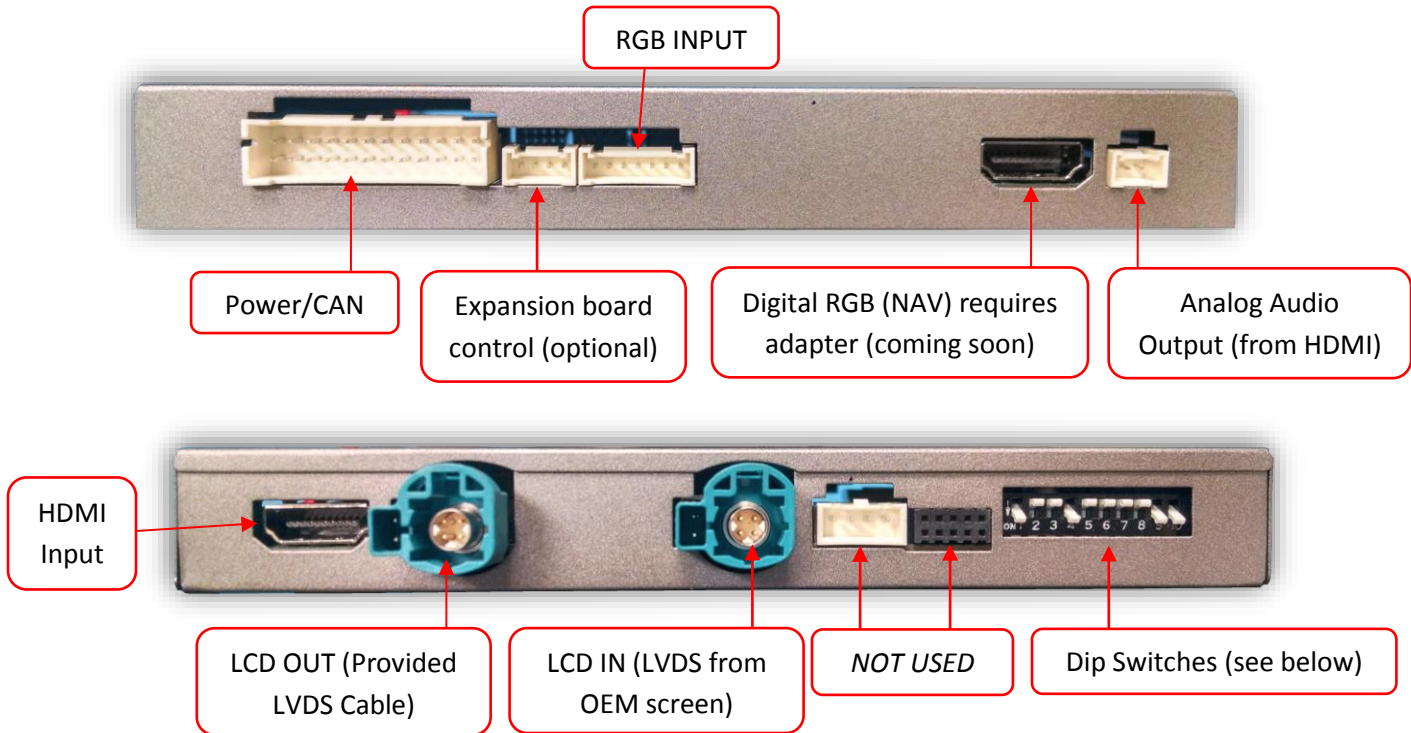
Interface Power Harness



Remote (menu control)

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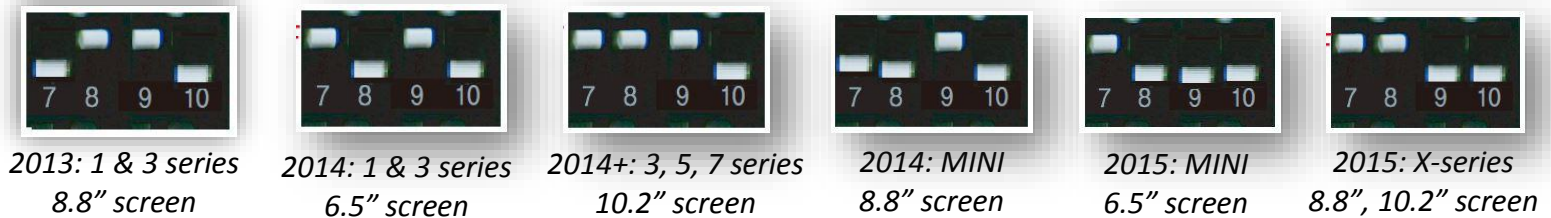
Interface Connectors



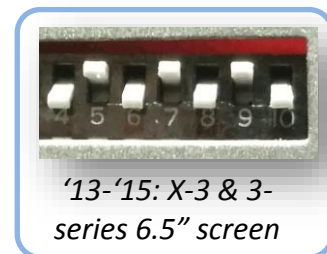
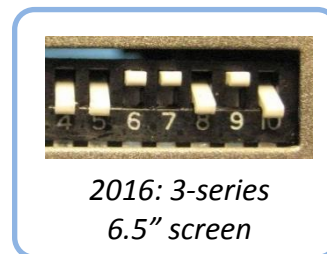
Dip Switch settings*

Dip SW:	1	2	3	4	5	6	7	8	9	10
UP	KEEP UP	SKIPS V1	SKIPS V2	RVC OFF	CAN SETTING	CAN SETTING	CAN SETTING	HIGH RES	VEH SETTING	KEEP DOWN
DOWN	KEEP UP	ENABLES V1	ENABLES V2	RVC ON	CAN SETTING	CAN SETTING	CAN SETTING	LOW RES	VEH SETTING	KEEP DOWN

Known Dip Switch Configuration



***Note: after adjusting Dip Switches, you must disconnect and reconnect power to the interface or the change will not be implemented.**



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BMW12N-H Interface Installation (5 Series example)

1. The BMW12-N intercepts **two OEM harnesses in two locations**: the main radio quad-lock connector and the screen. You must gain access to both places for proper installation.
 - Access the rear of the screen by removing the dashboard panel (clips only) and then removing (2x) Torx T20 screws securing the screen to the sub-dash.



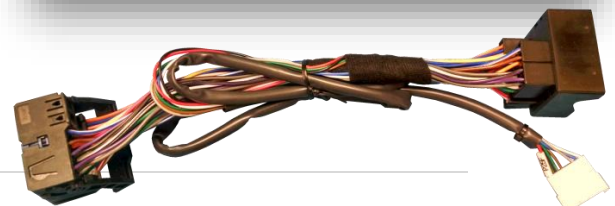
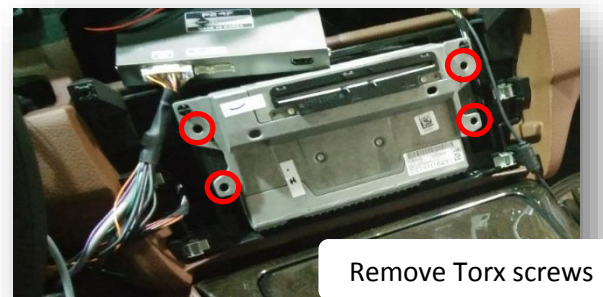
2. Disconnect the OEM screen LVDS video cable and connect it to the port on the BMW12-N labeled 'LCD-IN'.



3. Connect the provided LVDS Video Cable to the port on the BMW12-N labeled 'LCD-OUT' and the other end back to the screen.

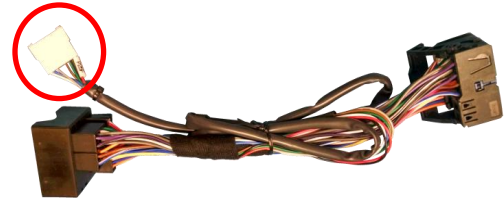


4. To access the radio harness, remove the dash panel which sits in front on the radio stack (disc player), then remove and Torx screws securing the radio to the sub-dash. Pull the radio straight out and locate the quad-lock connector.
 - a. Connect the provided Plug & Play T-Harness between the radio and the OEM harness. Be certain to move the fiber optics (if equipped) from the OEM harness to the front of the T-Harness.



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5. Connect the provided **Interface Power Harness** to the provided **T-Harness** via the white 10-pin connector.



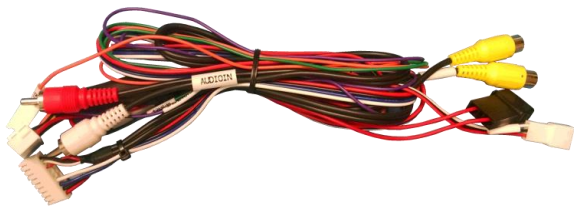
6. Connect your HDMI cable from the HDMI source to the port on the interface labeled 'HDMI IN'.



- a. Use the provided **Audio OUT Cable** for HDMI source audio out. *NOTE: connecting these white/red RCAs to the 'AUDIO IN' RCAs located among the Interface Power Harness will result in audio playback when 'AUX' is selected via the OEM BMW system.*



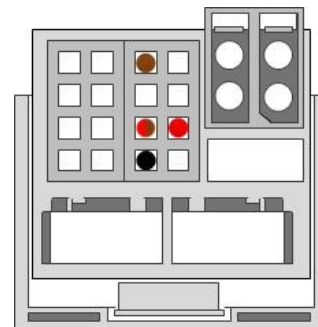
7. Install and run the reverse camera video source power and signal to the BMW12N-H interface location and connect to the RCA labeled 'CAMERA'. Power your camera with an ACC source or use the **violet wire** for reverse 12v (+) only. *NOTE: this wire outputs 500 mA MAX – do not use to supply power to more than 1 camera. Use this wire to trigger a relay if you're concerned with current supply.*
8. **Optional:** If installing a secondary camera or AUX video source, connect signal RCA to the RCA on the BMW12N-H interface labeled 'AVIN'.
9. After DIP switch settings have been set (see page 2), connect the 24-PIN power connector to the BMW12 interface labeled 'POWER CAN'. Proceed to **Menu Options** section if necessary (front camera settings, etc) or to **BMW12N-H Operation**.



If you'd rather hard-wire this harness to the vehicle manually (or having issues with Plug & Play T-Harness), Cut the 10-pin connector (step 5) off of the provided Power harness and connect the following to the **main OEM power connector**:

- **Black (ground) to PIN 12 (-)**
- **Red (power) to PIN 15 (+)**
- **Blue (CAN HI) to PIN 11 (CAN HI)**
- **White (CAN LOW) to PIN 9 (CAN LO)**

Wire Side



Menu Adjustments

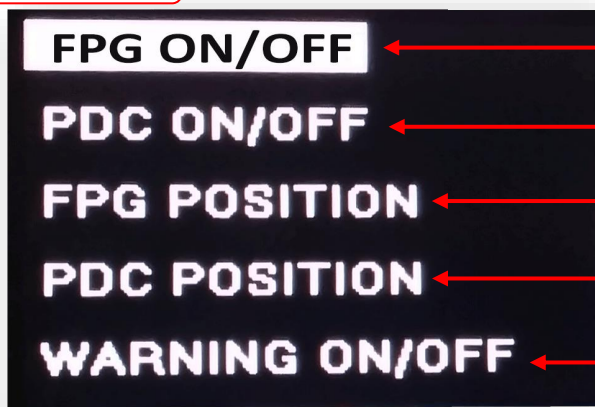
Before you start:

- The IR-Eye must be connected
- Make sure the car's ignition is on and radio is on
- You must be in **Reverse Camera** mode **OR** **AUX Video** mode (see below):
 - **Reverse Camera Mode** adjusts Reverse Camera Settings
 - **AUX Video Mode** adjusts AUX Video Settings
- Press the **OK BUTTON 4 times** (numbers will display per press), then press **POWER**.
- The **OSD Menu** will appear on screen (auto-time out in about 5 seconds if no action occurs).



Return
(AUX VID
menu
control)

RVC Menu



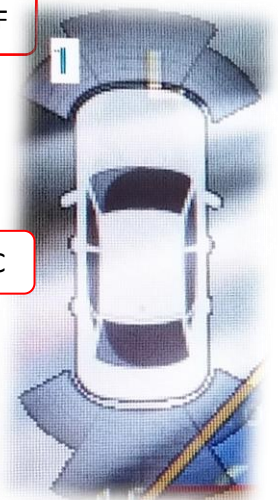
Functional Parking Guidelines ON/OFF

Parking Distance Control
ON/OFF (while in reverse)

Adjust FPG Position

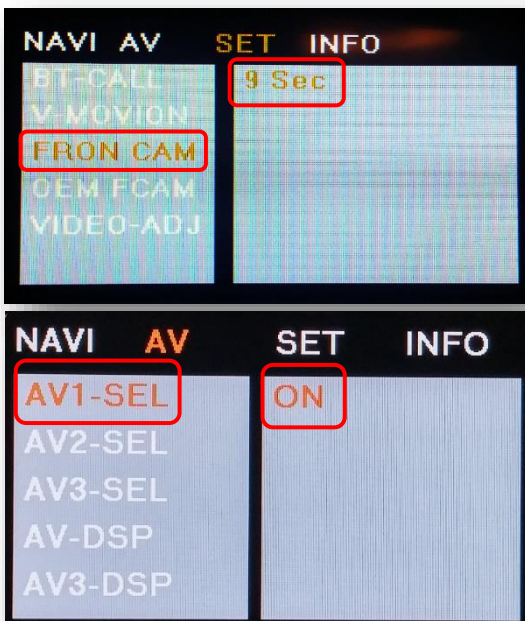
Adjust PDC Position

'Safe to move?' ON/OFF



PDC

AUX
VIDEO
Menu



If adding a front camera OR Aux Video source:

1. Disconnect POWER/CAN Harness from interface
2. Place DIP SWITCH 1 in the DOWN position, reconnect power
3. Press and hold the iDRIVE knob '**MENU**' to activate the AUX screen
4. Press **OK** button on remote 4 times, then press **POWER**

SET – FRON CAM must be turned on if adding a *front camera* **and the user wishes for automatic front camera switching**. Options for 5, 7, 9 or 11 seconds are user-selectable for the length of time the front camera input stays active once the vehicle is placed out of reverse.

If the user wants only an AUX video input **without front camera**, set **AV1-SEL** to **ON**

Once finished with settings, place DIP SWITCH 1 back into the **UP position** and reset power to interface.

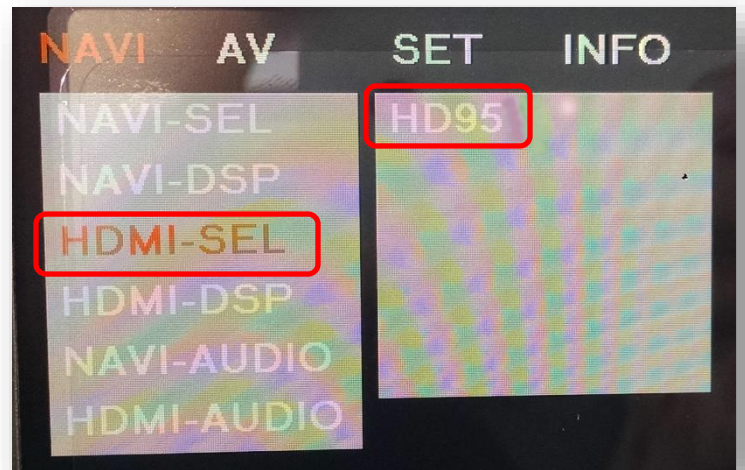
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HDMI Setup

In order to use the HDMI feature of this kit, it must be setup via the OSD menu first.



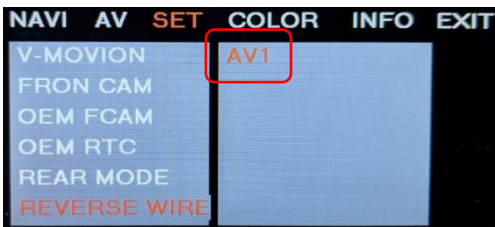
1. Put dip switch #1 in the **DOWN** position.
2. Activate the 'NAV INPUT' by holding the **HOME** button on the iDRIVE knob controller.
3. Once 'NAV INPUT' shows on the screen, on the remote press the **OK** **BUTTON 4 times**, then press **POWER**.
4. Navigate to the 'NAVI' section.
 - a. Select 'HDMI-SEL'
 - b. Choose 'HD95'
 - c. Press **MODE** on the remote to return
5. Navigate to the 'AV' section.
 - a. Select 'AV1-SEL'
 - b. Choose 'HDMI'
6. If the user desires **front camera timer**, set it up now through 'FRON CAM' under 'SET' and choose timer length. If adding front camera and no timer is desired, use DIP SWITCH #2 instead (only).
7. Replace dip switch #1 to the **UP** position.



Green Trigger wire setup

This module includes a green *input* wire for analog triggering of either the Reverse camera input or the 'AVIN' input (yellow RCAs), selectable through the AV menu. This allows for adding multiple cameras through the use of an SVS-6 switcher, etc. Follow the steps below adjust this feature. *NOTE: by default, the green wire will trigger the Reverse camera input RCA.*

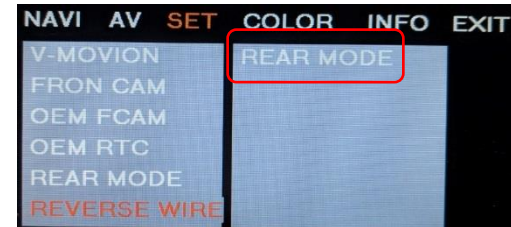
1. Put dip switch #1 in the **DOWN** position. When this section is complete, return switch #1 **UP**.
2. Activate the 'NAV INPUT' by **holding** the 'MENU' button on the iDRIVE knob.
3. Once 'NAV INPUT' shows on the screen, on the remote press the **OK BUTTON 4 times**, then press **POWER**.
4. Navigate to the 'SET' section.
 - Select 'REVERSE WIRE'
 - Choose 'AV1', 'REAR' or 'REAR MODE' (explanations below)
 - Press **MODE** on the remote to return and exit the OSD menu (or let it time out).
 - Test by sending temporary power (12v +) to the **green wire** labeled *reverse*.



AV1 shows the 'AVIN' RCA when the green reverse wire is triggered.

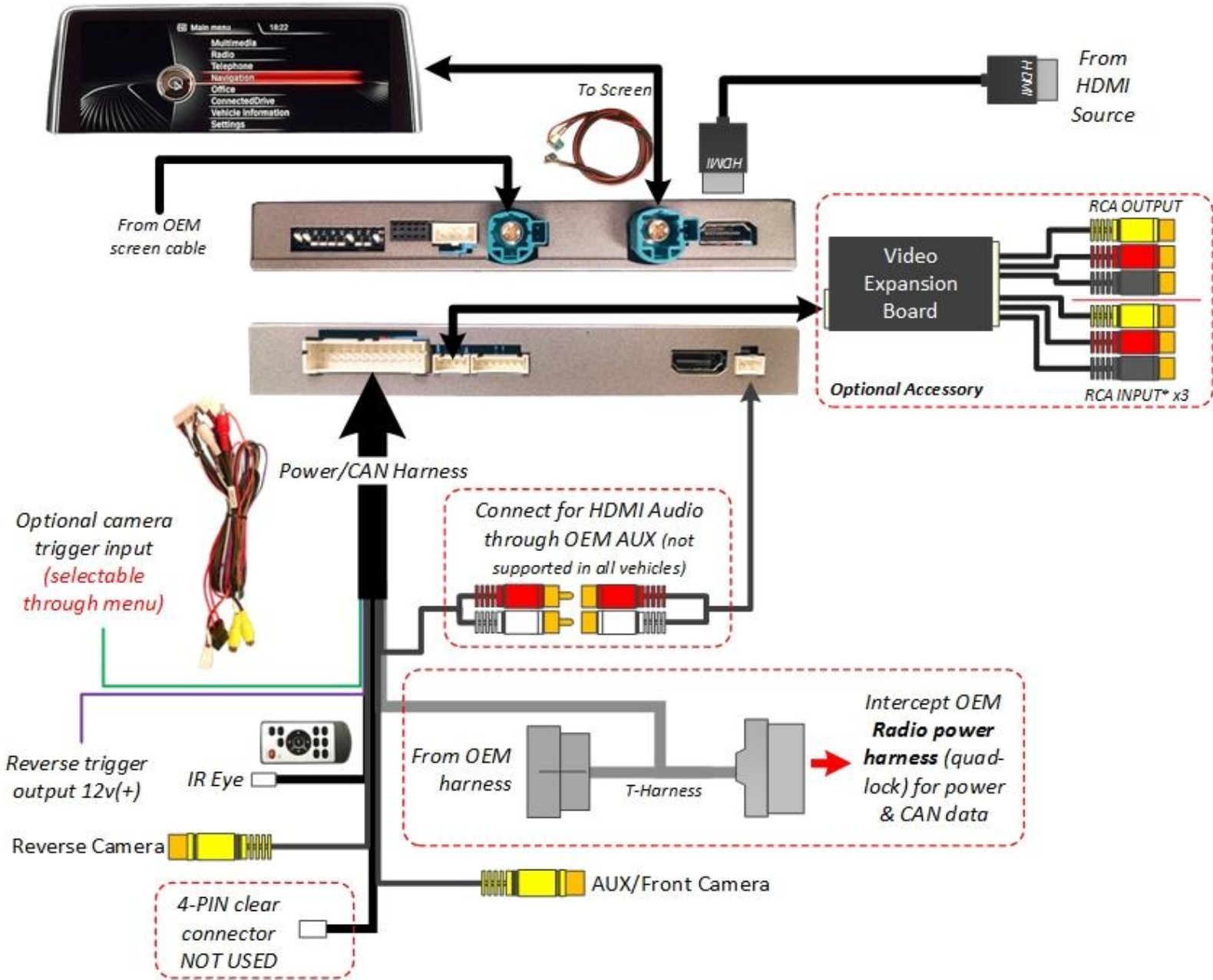


REAR shows the 'CAMERA' RCA (with no lines) when the green reverse wire is triggered.



REAR MODE shows the 'CAMERA' RCA (with dynamic lines) when the green reverse wire is triggered.

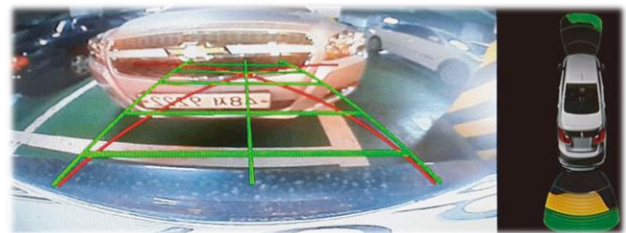
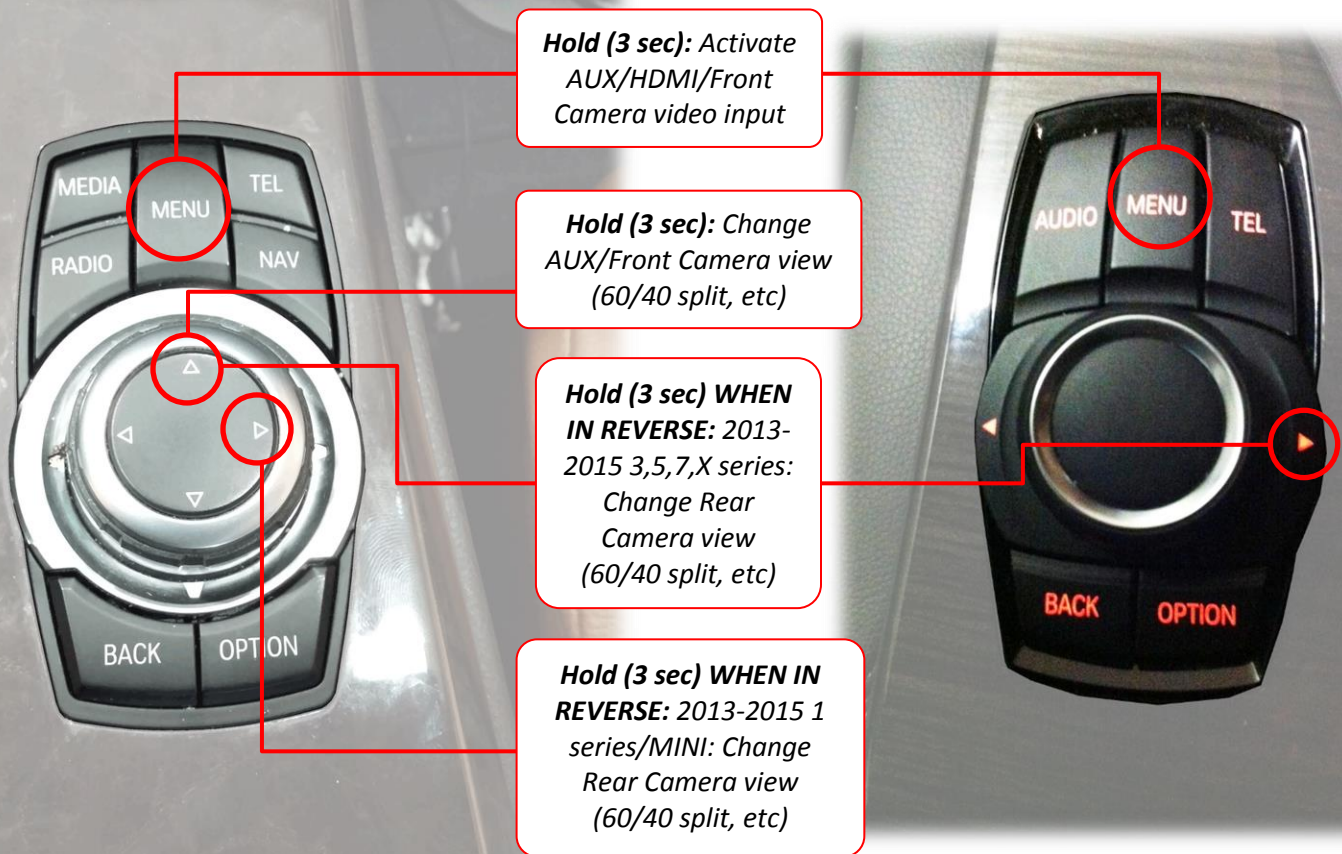
BMW12N-H Installation Diagram



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BMW12N-H Operation

- Once all connections are made and dip switches are set properly, placing the vehicle in reverse will display the connected camera with dynamic guidelines for convenience*.
- Additionally, see below for AUX/HDMI/Front camera activation using factory buttons.



**NOTE: Some 3-series vehicles steering wheel data is not present, therefore turning lines are not supported on some 3-series vehicles.*

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