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BMW09

Video and camera integration for new (2009 and up) iDrive (CIC) equipped BMW vehicles

What's in the box	Package Contents
1. **BMW09 Interface module** 2. **Power harness** 3. **LCD out harness** 4. **OSD keyboard** 5. **OSD keyboard harness** 6. **RGB/NAVI harness** 7. **Mode button and harness (Optional for source select)** 8. **A/V harness** *Note that due to manufacturing differences, some harnesses and connectors may not appear exactly as pictured, but the module will operate as stated.*	

Screen Removal	Display Screen
1. **Remove (2) Torx T10 screws at the top of the screen unit as shown circled in the accompanying photo.** 2. **Once the screws are removed, there will be a gap between the top of the screen unit and the dashboard. Push a small screwdriver gently into this gap and the screen should come out of its mounting with virtually no force.** 3. **Place a soft covering over the face of the screen and turn it over.** 4. **Remove the video harness from the side of the screen as shown circled in the accompanying photo. The other harness is where the CAN connection will be made, as well as the power connection for the optional CAN-2-Accessory module.**	

1 | P a g e

BMW09 Interface Connectors

| LED | Mode | Power/CAN | RGB(In) | A/V (In/Out) |

| LCD (Out) | LCD (In) | OSD Keyboard | Dipswitches |

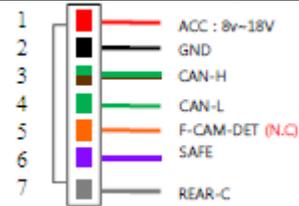| Installation |
|---|

1. **Plug in the video cable from the vehicle into the LCD-In port on the BMW09 interface.**
2. **Connect the round LCD cable supplied with the BMW09 into the LCD-Out port on the BMW09. Connect the other end of the round LCD cable plug into the port on the navigation screen where the factory video cable was connected.**
3. **Connect the Black (Ground) wire leading from the main power harness of the BMW09 to chassis ground.**
4. **Connect the Red (Acc, +12v) wire to a +12v accessory power source or Nav-TV's CAN-2-Accessory module.**
5. **Optional, but recommended: Connect the CAN Hi and Low wires to the CAN wires on the screen's Power and CAN harness. The vehicle's CAN wires are Orange/Green (Hi) and Green (Low.) NOTE: Strip back the 2 CAN wires and wrap and solder the 2 CAN wires from the BMW09 harness to the vehicle's CAN wires. DO NOT CUT THE VEHICLE'S CAN WIRES! THIS MAY CAUSE CAN CORRUPTION IN THE VEHICLE.**

Dip Switch settings	Power connector pinout

Pin	Color	Signal
1	Red	ACC : 8v~18V
2	Black	GND
3	Green	CAN-H
4	Green	CAN-L
5	Orange	F-CAM-DET (N.C)
6	Purple	SAFE
7	Gray	REAR-C

Disconnect BMW09 Power plug before making any DIP switch changes.

Switches 1-4 – These switches enable/disable the module's RGB and video inputs, in order. Set the switches Up to enable the appropriate inputs or Down to disable them. For instance, if AV1 and AV2 are desired, switches 2 and 3 should be up, while 1 and 4 should be down.
Switch 5 – Screen select: Up is correct for most vehicles, but if an image does not appear correctly or at all, set this switch down.
Switch 6 – Currently not used (leave in the Up position.)
Switch 7 – Rear camera. If a rear camera is being added, set this switch Down, otherwise set it Up.
Switch 8 – Currently not used (leave in the Up position.)

Pin 1 – Acc (Red) +12v accessory power.
Pin 2 – Ground (Black)
Pins 3 & 4 – CAN Hi (Greeen/Brown) & Low (Green) (Optional): Connect as per Step 5 of the Installation Instructions above.
Pins 5 & 6 – Not used (Orange, Purple)
Pin 7 – Rear (Gray): If CAN will not be connected or does not work reliably, connect to Reverse lights for backup camera, and follow the procedure under "OSD Keyboard" to change the Reverse detection.
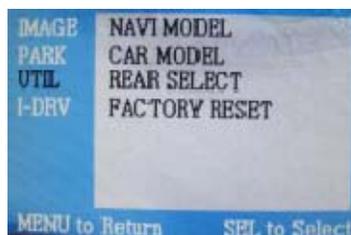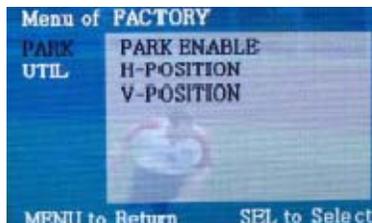
Source Select

➢ **Press the Mode button to toggle through all available video inputs.**
➢ **If CAN is connected, hold the MENU button on the iDrive or steering wheel Down arrow for 3 seconds.**

OSD Keyboard functions	OSD Keyboard

Menu – OSD Menu.
SEL – Select/source change.
UP – Move up through menus.
Down – Move down through menus.
*Factory Mode – This is not necessary in most installations, however, if certain settings need to be changed, activate the video/camera mode first, then quickly press UP=>DOWN=>UP=>Menu in sequence and verify that "Menu of FACTORY" (see photo) appears on the screen. If a different Menu appears, press Menu to exit, then try pressing the keys quicker.
The main function of Factory Mode is to select the Reverse camera detection method between CAN (default) and the Gray wire. Experimentation with the other functions is not encouraged, as it may set a mode that may be difficult to recover from.

To change the Reverse detection:
1) **Enter the Factory Mode.**
2) **Press the DOWN button to highlight** *UTIL*, **then press SEL.**
3) **Press DOWN until** *REAR SELECT* **is highlighted, then press SEL.**
4) **Press DOWN, then press SEL.**
5) **Press MENU twice to clear the menu from the screen.**

LED Indicators

✓ **LED 1 is illuminated when the module is receiving power.**
✓ **LED 2 is illuminated when a video source or camera is selected and video is present.**

CAN Operation (optional)

1) **Camera is automatically activated when the vehicle is in Reverse (Gray wire is not needed.)**
   Note: Due to the enormous amount of CAN messages in the vehicle, this function will not work reliably if any doors are open. When testing the reverse camera operation over CAN, please ensure that all doors are closed.
2) **Video source can be changed by holding either the iDrive Menu button, or the steering wheel Down button for 3 seconds.**
3) **On most vehicles, split-screen can be selected by holding the circle button on the steering wheel for 3 seconds, while video/camera is displayed. (This only needs to be done once, then the setting is saved.) Note that some vehicles have a different button in that location (right side of the wheel, lower-left button) which should have the same function with this module. On the 7 Series, the Down arrow on the iDrive is used instead.**

PIP Operation with Parking Sensors (PDC)

If the vehicle is equipped with parking sensors, the module can provide a combination of sensors and camera on the screen. When in camera mode the split-screen button (see above) will cycle through various on-screen combinations of Camera & PDC, as well as displaying only one of the two modes.

Note about Accessory Power

Since the entertainment system in these vehicles can be on when the key is off, it is important to use Accessory power when connecting something other than a camera. However, "true" Accessory power is very hard to find in this vehicle, which is why the Nav-TV CAN-2-Accessory (C2A) module is extremely useful for providing a source of "true" Accessory power for the BMW09 module.