

### PRODUCT FEATURES:

- Smart-Play Integration system allows connection of Android and other devices to the iDrive infotainment system.
- Control Apps using smartphone's voice control feature or the factory iDrive Knob.
- Adds aftermarket rear view camera input.
- Picture-in-picture mode combining after-market rear-view picture with factory parking sensor graphics.
- Built-in on-screen display and setup.
- 1 trigger output (+12V max. 1A) for the camera power.

\*NOTE: Android Phones must have a firmware version of 8 and above.

### PARTS INCLUDED:



ACPBM-77Y Module



Power/CAN Harness 1 (E-Series)



Power/CAN Harness 2 (F-series)



ACPBM-77Y Vehicle Harness



3.5mm to RCA Adapter



Smart-Play Interface Module



LVDS 2 Cable (to radio)



LVDS 1 Cable (to vehicle)



Microphone

#### NOTE:

This kit has two separate POWER/CAN harnesses. Only use the harness that's designed for your vehicle.

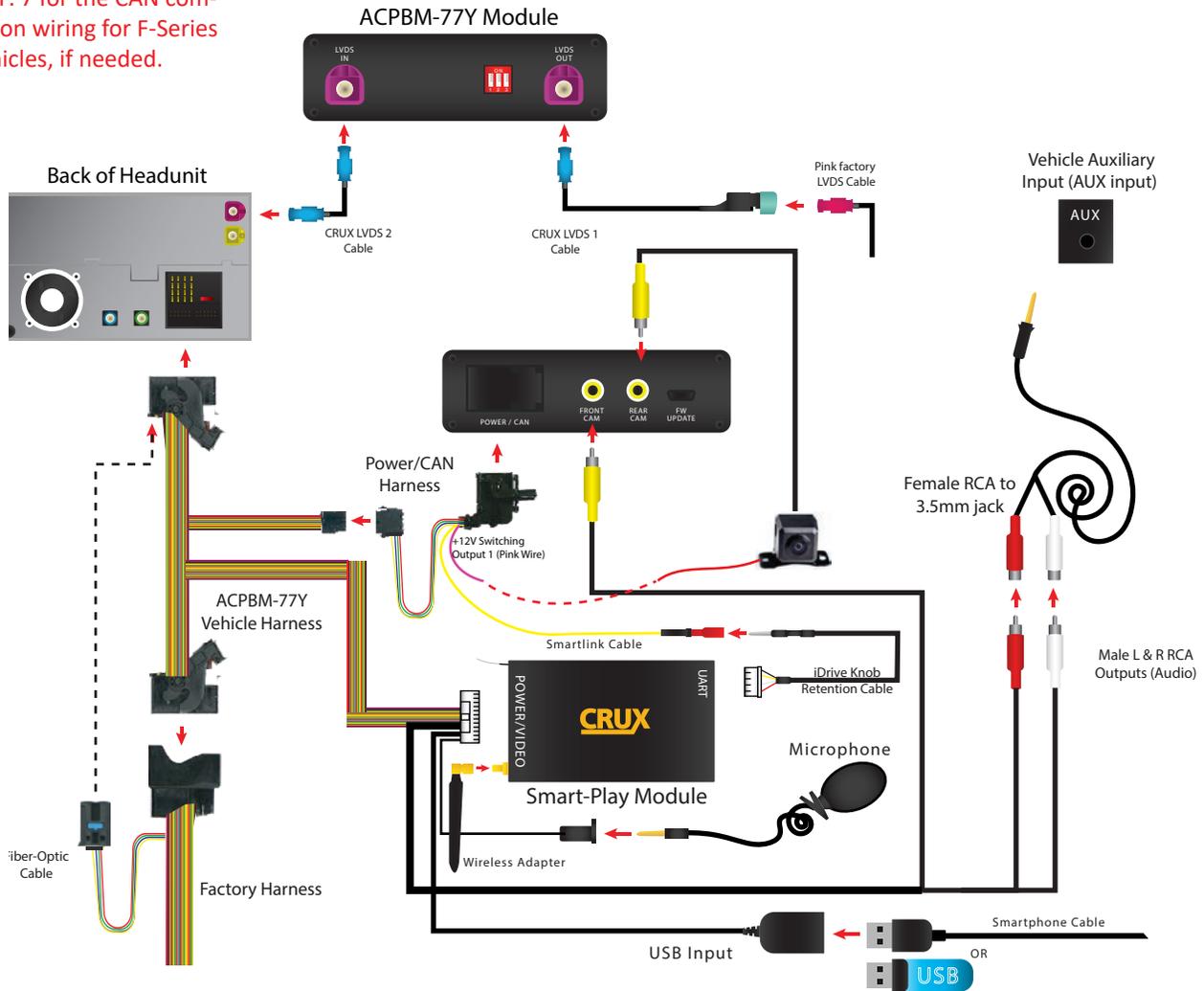
POWER/CAN 1 - E-Series Trims

POWER/CAN 2 - F-Series Trims



## INSTALLATION DIAGRAM:

Refer to P. 7 for the CAN communication wiring for F-Series vehicles, if needed.



## DIP SWITCH SETTINGS:

Setting the DIP switches of the Interface Box.

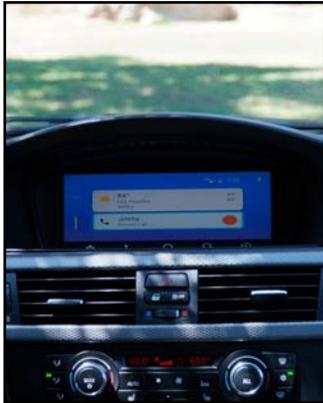
DIPs 1 and 2 on the back of the interface-box is used to set the monitor size. DIP 3 must be set to OFF.

**After each change of the DIP switch settings you have to execute a power reset of the interface box!**

<u>VEHICLE / SCREEN SIZE</u>	<u>DIP 1</u>	<u>DIP 2</u>	<u>DIP 3</u>
CIC-E (E-Series) / 6.5"	OFF	OFF	No Function
CIC-E (E-Series) / 8.8"	OFF	ON	No Function
CIC-F (F-Series) / 7"	ON	OFF	No Function
CIC-F (F-Series) / 10.2"	ON	ON	No Function



**INSTALLATION INSTRUCTIONS:**



1. Installation is done behind the front panel.



2. Carefully remove the dashboard front panel using a trim removal tool.



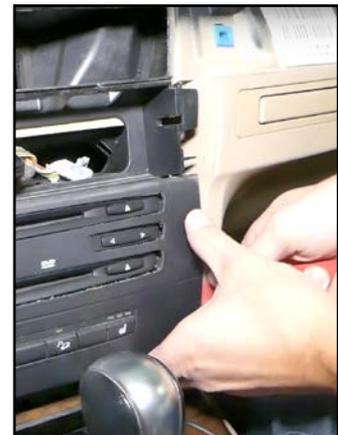
3. Carefully remove the hazard/door-unlock panel and unplug the harness.



4. Remove the push-to-start panel and its connector to fully take off the front panel.



5. Remove the A/C control panel using a trim removal tool, along with the cables connected to it.



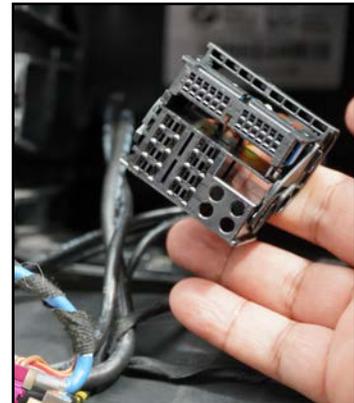
6. Carefully remove the Headunit panel.



7. Remove the 4 screws bracing the Headunit.



8. Remove the Headunit to gain access to its backside.



9. Unplug the Quadlock connector from behind the radio.

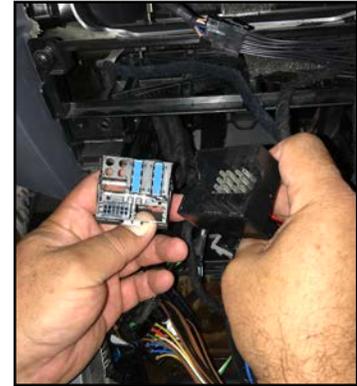




10. Unplug the 2-pin fiber optic cable from the factory Quadlock connector.



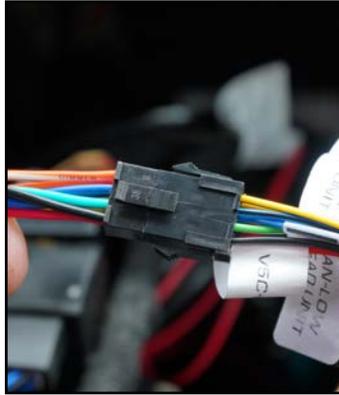
11. Plug in the 2-pin fiber optic connector to the ACPBM-77Y harness (Female side).



12. Plug the factory Quadlock connector in to the male side of the ACPBM-77Y harness.



13. Plug in the female side of the ACPBM-77Y harness to the Headunit.



14. Connect the male 8-pin connector from the ACPBM-77Y to the female 8-pin connector on the Power/CAN harness.

\*Make sure you use the correct Power/CAN harness for your vehicle trim (refer to NOTE on p.1)\*



15. Unplug the PINK LVDS factory cable from the Headunit.





16. Connect the LVDS 2 cable in place of the PINK LVDS factory cable.



17. Connect the factory PINK LVDS cable to the male end of the LVDS 1 cable (CYAN colored connector).



18. Plug the otherside of the LVDS 1 cable into to the LVDS OUT port on the ACPBM-77Y module. And plug the otherside of the LVDS 2 cable into the LVDS IN port on the same module.

19. If your vehicle is an F-series trim, we will need to access the CAN data from beneath the iDrive knob. This only applies to you if you are using the Power/CAN 2 Harness. If you are installing on an E-series trim (Power/CAN 1) you can skip steps 23 - 28.

Refer to P. 7 for the wiring diagram for the F-series if needed.



20. Carefully remove the center trim using a trim removal tool to get underneath the iDrive knob.



21. Your vehicle may have a 4-pin or 10-pin connector for the iDrive knob. Remove the iDrive connector.



22. Using a pin removal tool, remove the Green(CAN LO Pin 4) and Orange/Green(CAN HI Pin 3) wires from the iDrive connector.  
Both 4 & 10 pin connectors have the same pin positions.

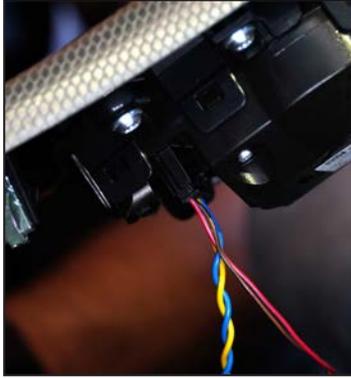


23. Insert the two pins (Orange/Green --> Pin1 & Green --> Pin2) into the empty 2-pin connector attached to the Yellow/Black & Blue/Black wires from the Power/CAN 2 harness.



24. Insert the Yellow (CAN HI) --> Pin3 and Blue (CAN LO) ---> Pin4 wires into the 4-pin iDrive connector (inplace of the Green & Orange/Green wires removed earlier).





25. Plug in the the modified iDrive connector back into the port underneath the iDrive knob.

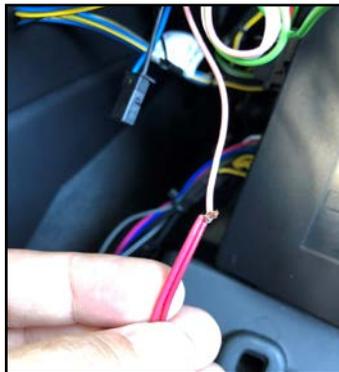


26. Plug the Video Out from the Smart-Play Power/Video harness into the FRONT CAM input on the module.



27. Plug the otherside of the LVDS 1 cable into to the LVDS OUT port on the ACPBM-77Y module. And plug the otherside of the LVDS 2 cable into the LVDS IN port on the same module.

28. If installing an aftermarket back-up camera, plug the camera's video out to the REAR CAM input on ACPBM-77Y module. Use the PINK power output 1 wire provided on the Power/CAN harness to power the camera. An image is displayed in step 26. If retaining an OEM camera or if you're not installing a back-up camera, skip steps 25 and 26.



29. Tap the camera power wire to the PINK power output 1 wire.



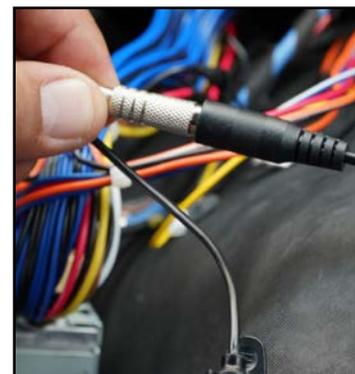
30. Connect the audio out RCAs from the Power/Video harness to the RCA inputs on the 3.5mm to RCA adapter.



31. Plug in the 3.5mm jack into the vehicle's factory AUX input.

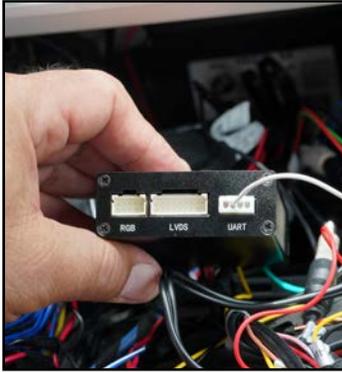


32. Mount the microphone to a location of your choice.



33. Connect the 3.5mm microphone jack to the MIC input on the Power/Video harness.

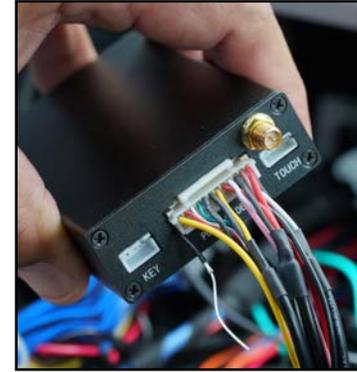




34. Connect the white wire with the 4-pin connector from the Power/CAN harness to the UART port on the Smart-Play module.



35. Route the USB cable to a desired location and connect it to your smart-phone's lightning cable.

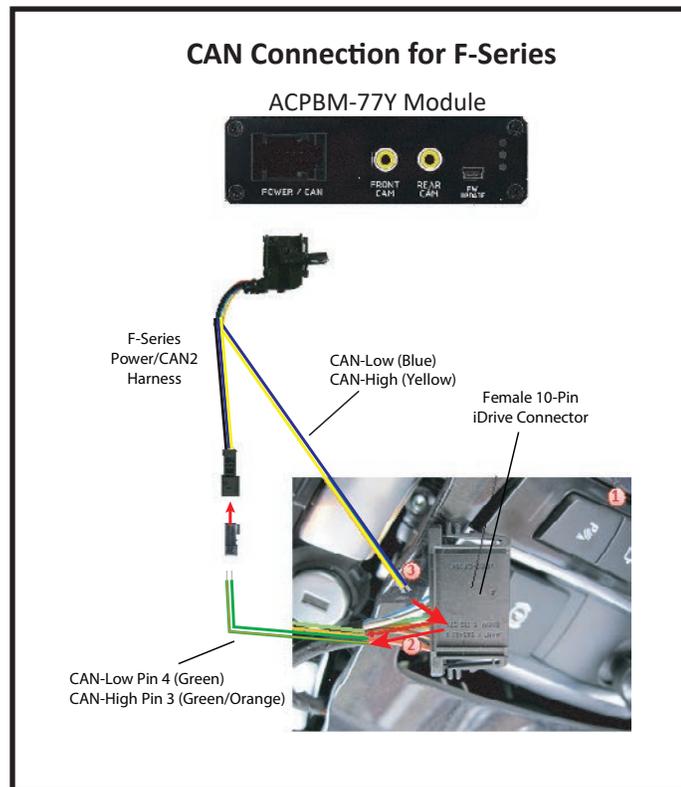


36. Connect the Power/Video harness to the POWER/VIDEO port on the Smart-Play module.



37. Test the communication. Turn on the ignition and check if LEDs are on.

38. Check the OSD settings and make sure they match those on the next page. Test the Back-Up camera. Put gear in reverse and check for rear camera image on screen. Go to Smart-Play mode and test for functionality. Once the cameras and Smart-Play validation is complete, mount the ACPBM-77Y and Smart-Play modules. And finally, reinstall all the components to their original set-up.



**OSD SETTINGS:**

**OSD Menu**

Use the following buttons to enter the ACPBM-77Y OSD Menu:

**NOTE: Must be in factory infotainment menu to trigger full OSD menu**

**BMW**

Hold for 3 sec to enter  
Smart-Play menu  
  
to exit, hold for 3 sec

Press the menu button  
to change the video sources

Hold either for 3 sec to  
enter OSD menu  
  
to exit, hold for 3 sec



Use knob to navigate menu  
and make selections

**NOTE: To exit back-up camera  
image, press the iDrive button once**

To ensure that Smart-Play works, make sure  
these input settings are in effect:

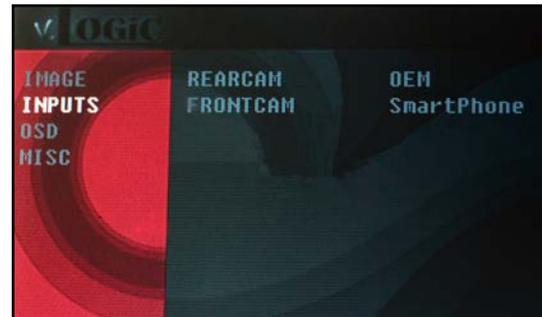
**FRONTCAM (FVC) = SmartPhone**

To retain the factory Back-Up Camera:

**REARCAM (RVC) = OEM**

To activate an aftermarket Back-Up Camera:

**REARCAM (RVC) = ON**



**CONNECTING THE SMART-PLAY INTERFACE:**

The ACPBM-77Y utilizes wireless technology for Apple devices. Android devices are required to be plugged in to the USB port using the smartphone's OEM charger/data cable. The USB port on the ACPBM-77Y can be used to charge the Apple device or play videos or music from a USB thumb drive. In the vehicle's Media menu, activate AUX Input to get the Smart-Play sound through the vehicle's audio

**Using the ACPBM-77Y Input Selection**

Switch the vehicle's audio source to the AUX source. This will allow us to hear the Smart-Play audio through the audio system. Hold the "MENU" button for 3-5 seconds to enter forced view mode.

A short press of the "MEDIA" button will toggle through the video sources. Each short press will toggle to the next enabled input. If all inputs are enabled the order is:

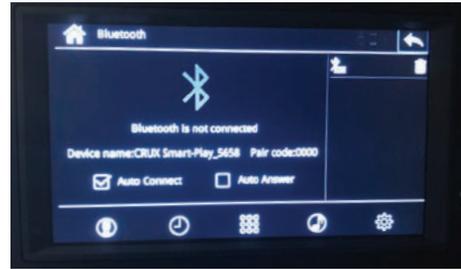
Rear CAM > Video Input (Smart-Play) > Repeat ...

To exit the Smart-Play menu, hold the "Menu" button for 3-5 sec

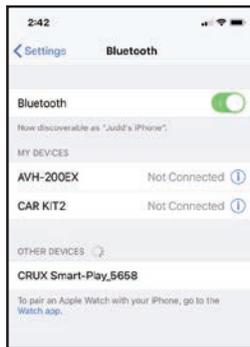




1. Picture above shows the HOME screen of the Smart-Play interface. Music and Video is used in conjunction with a USB thumb drive plugged in to the USB port.



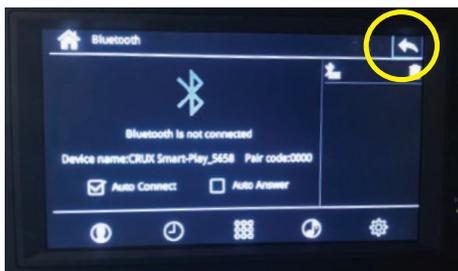
2. Using the iDrive knob of the vehicle, navigate the cursor to the Bluetooth icon (scrolling right). Image above will appear on the screen the BT device name and pairing code (0000).



3. Go to "Settings" then "Bluetooth" on your Apple device and connect to "CRUX Smart-Play\_XXXX".



4. Once the ACPBM-77Y has connected via Bluetooth, it will also connect to wifi automatically.



5. Use the iDrive knob to navigate the cursor to the "BACK" button.



6. Image above shows the "Home Screen" once the smartphone is connected.

**NOTE:**

Make sure the audio source on the factory system is set to AUX mode (not AM/FM/Bluetooth). Also, if your smartphone is set to automatically connect to your factory bluetooth, make sure you void the connection. One way is to forget the device (your vehicle) on your phone. This will avoid Smart-Play connection interferences. If you are using the wireless feature and notice degraded audio or video quality, switch to the wired alternative, for it is a higher quality connection, unlike bluetooth.



**Display settings for Smart-Play**

Adjust brightness, contrast, and saturation for a more defined image.

To get to the Display menu, scroll to the SETTING icon in the Smart-Play HOME menu, and select it.



Once in the SETTING menu, scroll to the Display submenu and adjust the brightness, contrast, and saturation to your desired values.



**Video-In-Motion Function**

It is possible to activate and deactivate the video-in-motion in the OSD menu “MISC” (Operation of the OSD: see chapter “OSD-Operation”).



OSD-Menu	Menu Item	Setting	Description
MISC	VIM	ON	Video-In-Motion activated
		OFF	Video-In-Motion deactivated

NOTE: The Video-In-Motion function is permanently active without disturbing the navigation performance.



**Power out settings for Rear Aftermarket Camera and Smart-Play**

(Use the PINK (12V Output 1) wire to power the Rear camera)

In the OSD Menu under MISC, set “POWEROUT1” to CAM. And set “POWEROUT2” to CAN.



**Configuring the Trigger Outputs**

You can configure the +12V trigger outputs in the OSD menu under MISC. The PINK wire (12V OUTPUT 1) is Power Out 1 for the cameras and Power Out 2 is for the Smart-Play module.



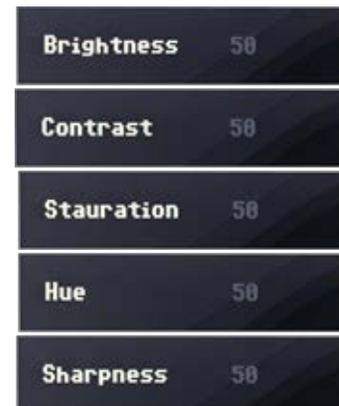
OSD Menu	Menu Item	Setting	Description
Option	Power Out 1 (PINK)	CAN	+12V when the interface is on (red LED on)
		ACC	+12V when ignition is on
		Cam	+12V when camera input is activated (manually or automatically)
	Power Out 2	CAN	Smart-Play power on.
OFF		Trigger output deactivated	

Tip: We recommend for all camera to use power out setting “Cam” and for Smart-Play the power out setting of “CAN”.



### Image Settings

The camera picture can be set in the OSD menu. For this setting you must first activate the camera level and push the “MENU” button for 2 seconds to activate the settings menu. With the rotation knob you can select and change the “Brightness”, “Contrast”, “Saturation”, Hue” and “Sharpness”. Click “Exit” to leave the settings menu.



Note: The picture settings will be retained for every camera input separately.

### OSD Settings

You can change the basic configurations of the interface in the OSD (on screen display).



OSD Menu	Menu Item	Setting	Description	
OSD	POS. X	0-xxx	Horizontal position of the OSD	
	POS. Y	0-xxx	Vertical position of the OSD	
	Size	Small		Small OSD menu window
		Large		Large OSD menu windows
	Osd TimeOut	2-20	Time setting for automatic OSD shutoff	
Info	Version	X.XX.XX	Displays the current SW-version	
Option 1	Factory Reset		Reset to factory default settings	



## VEHICLE APPLICATIONS:

### BMW

#### 1 SERIES

2007 - 2011 1 Series 3-door hatchback  
2007 - 2013 1 Series 2-door Coupe (1M)  
2004 - 2012 1 Series (5-door)  
2008 - Up 1 Series Convertible

#### 3 SERIES

2005 - 2011 3 Series Sedan  
2005 - 2011 3 Series Wagon  
2006 - 2013 3 Series Coupe  
2007 - Up 3 Series Convertible  
2005 - 2011 3 Series Sedan  
2005 - 2011 3 Series Wagon  
2006 - 2013 3 Series Coupe  
2007 - Up 3 Series Convertible

#### 5 SERIES

2011-Up 5 Series  
2012-Up 5 Series Sports Wagon

#### 6 Series

2011-Up 6 Series  
2011-Up 6 Series Convertible

#### 7 Series

2008-Up 7 Series  
2009-Up 7 Series long wheel

#### X SERIES

2009 - Up X1 Sports Vehicle  
2012-Up X3 Sports Vehicle  
2007 - 2013 X5 Sports Activity Vehicle  
2008 - 2011 X6 Sports Activity Coupe

#### Z SERIES

2009 - Up Z4 Roadster



Your vehicle must have this CIC infotainment system to use this product.

