

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.
- For 2007 & up vehicles without a factory AUX input, add on the CRUX AUX-BM4 for audio.
- For 2007 & below vehicles without a factory AUX input, add on the CRUX AUX-BM5 for audio.
- Must insert factory LVDS cable to module and replace with our aftermarket LVDS-10pin connector.

PARTS INCLUDED:



ACPBM-77X Module



Power/CAN Harness



ACPBM-77X Vehicle Harness



LVDS10 Cable



3.5mm to RCA Adapter



Smart-Play Interface Module



Microphone

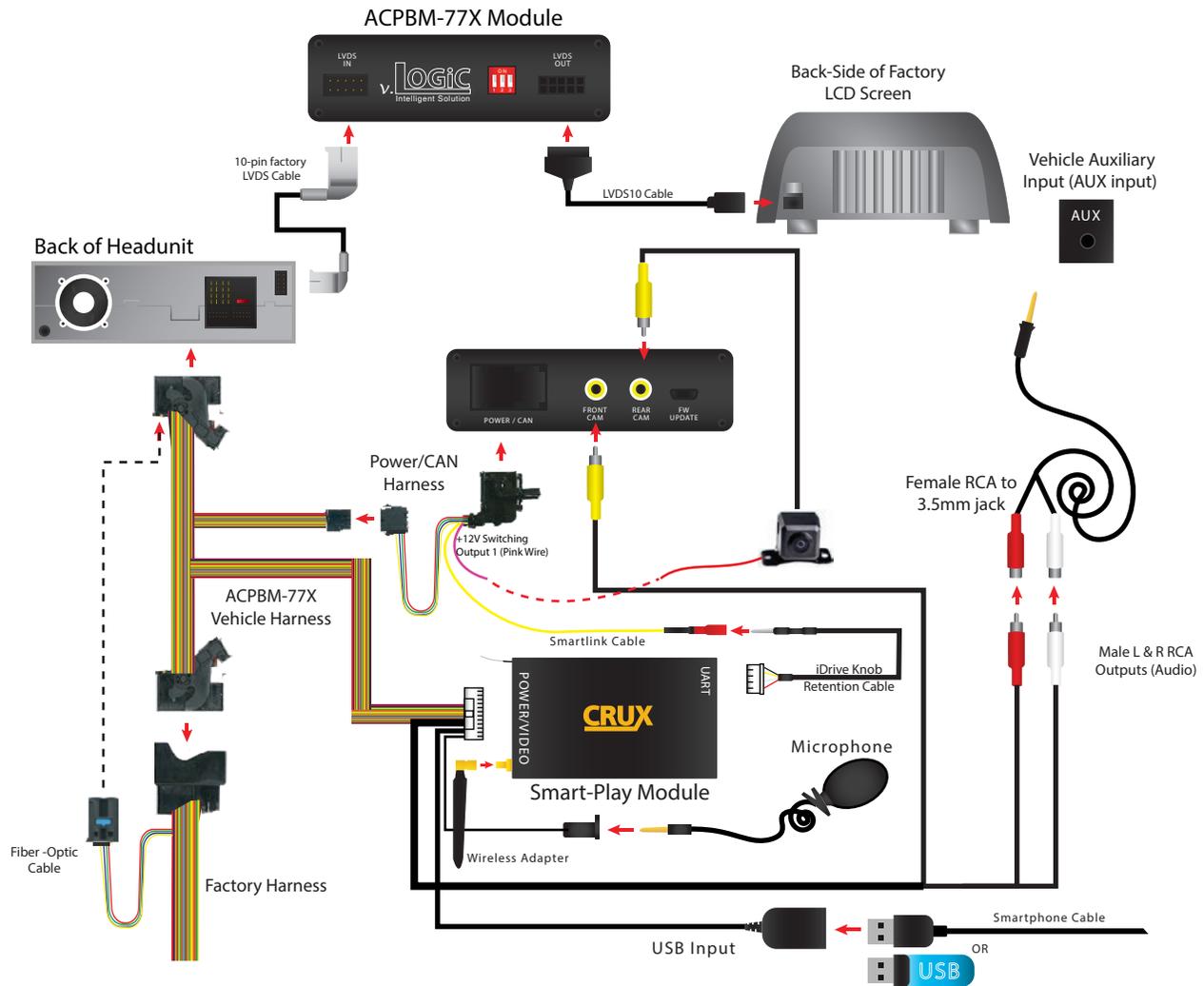
WARNING

PRODUCT WILL NOT WORK WITH ALPINE SCREENS

1. **DO NOT** connect the Quadlock Connector to Factory Radio CD Headunit **UNLESS** the 10 Pin LVDS Cable has been properly and completely connected to factory display and all the other 10 Pin LVDS cable connections have been made according to the wiring diagram above or the factory display will be damaged;
2. **DO NOT** connect the 10 Pin LVDS Cable when the Radio is Powering ON or the factory display will be damaged;
3. When the Radio CD Headunit is active (powered ON), **DO NOT** disconnect any of the 10 pin LVDS Connections or the factory display will be damaged.



INSTALLATION DIAGRAM:



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!

Vehicle / Navigation	Dip 1	Dip 2	Dip 3
M-ASK	OFF	No function	No function
CCC	ON	No function	No function



INSTALLATION INSTRUCTIONS:



1. Installation is done behind the front panel.



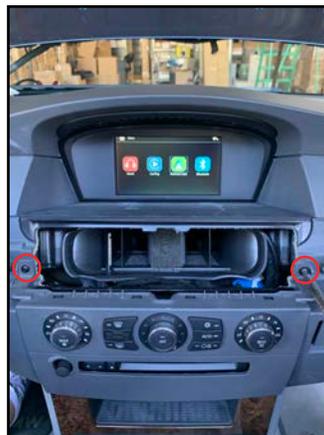
2. Carefully remove the dashboard front panel using a trim removal tool.



3. Pull out the front panel.



4. Remove the 2 torq screws (T-10) under the LCD panel's hood.



5. Remove the two screws bracing the A/C control panel.



6. Remove the A/C control panel.



7. Remove the LCD screen panel.



8. Unplug the gray LVDS connector from the back side of the LCD monitor.



9. Plug in the LVDS10 cable in place of the factory gray LVDS connector.





10. Connect both the gray LVDS connector and other end of the LVDS10 cable to the ACPBM-77X module.



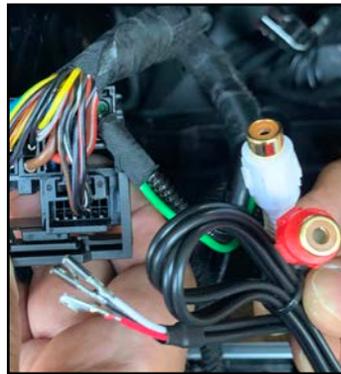
11. Remove the two screws bracing the Headunit.



12. Remove the Headunit and unplug the Quadlock connector.

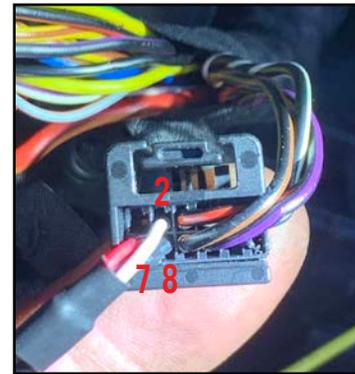


13. Unplug the 2-pin fiber optic cable from the factory Quadlock connector.



14. If your vehicle doesn't come with an auxiliary audio input, you must get an Auxiliary Input Interface kit (CRUX AUX-BM4).

**if your vehicle has factory AUX, skip steps 14-16*



15. Remove the 12-pin connector (wire-side view) from the factory Quadlock connector. Insert the pins from the AUX-BM4 harness as follows:
White - Pin 2 / Red - Pin 7 / Black - Pin 8



16. Plug in the OBD coder in to the vehicle's OBD port to the factory system. Once the module's LED turns green, you can remove the coder.

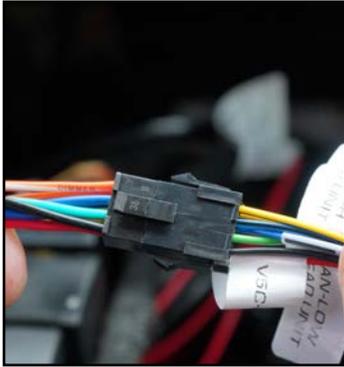


17. Plug in the 2-pin fiber optic connector previously removed from the factory Quadlock connector to the ACPBM-77X harness (Female side).



18. Plug the factory Quadlock connector in to the male side of the ACPBM-77X harness.





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

20. Tap the RED ACC wire from the Smart-Play Power/Video harness to the green +12V output on the ACPBM-77X harness.



21. Plug in the female side of the ACPBM-77X harness to the Headunit.

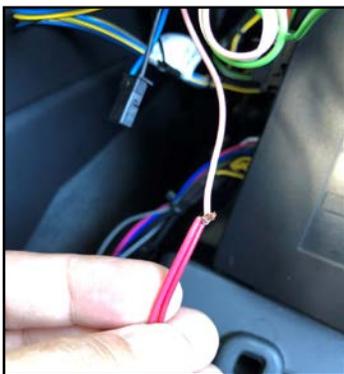


22. Plug the Video Out from the Smart-Play Power/Video harness into the FRONT CAM input on the module.



23. Plug in the Power/CAN harness to the ACPBM-77X module.

24. If installing an aftermarket back-up camera, plug the camera's video out to the REAR CAM input on ACPBM-77X 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.



25. Connect the camera power wires to the PINK power output 1 wire.



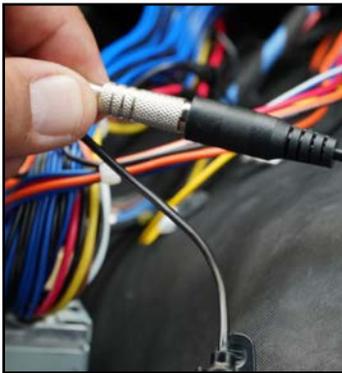


26. Connect the audio out RCAs from the Power/Video harness to the RCA inputs that were installed earlier.

27. If your vehicle has a factory AUX input, use the 3.5mm to RCA Adapter included in the kit to connect sound to the factory audio system.



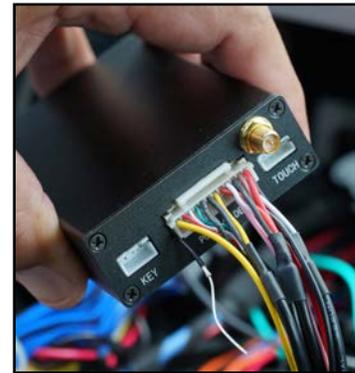
28. Mount the microphone to a location of your choice.



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



30. Connect the 4-pin connector from the Power/CAN harness to the UART port on the Smart-Play module.



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



32. Route the USB cable to a desired location and connect it to your smartphone's lightning cable.



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

34. 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-77X 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-77X OSD Menu:

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

BMW

Note:
To exit the back-up camera image, push down on the iDrive button

Hold the menu button to change the video sources



Use knob to navigate Smartplay/ Android Auto apps and make selections

Shift knob to the right for 10 seconds to enter OSD Menu Use Knob to navigate menu and make selections

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-77X 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-77X 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-77X 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

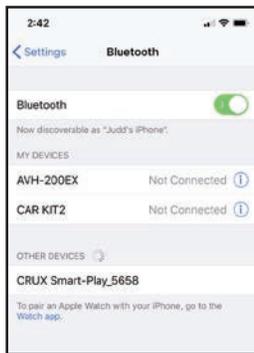




1. Picture above shows the HOME screen of the Smart-Play interface. Music and Video is used in conjunction with a USB thumb drive plugged in to the USB port.



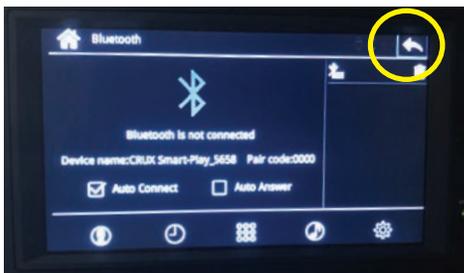
2. Using the iDrive knob of the vehicle, navigate the cursor to the Bluetooth icon (scrolling right). Image above will appear on the screen the BT device name and pairing code (0000).



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



4. Once the ACPBM-77X 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:

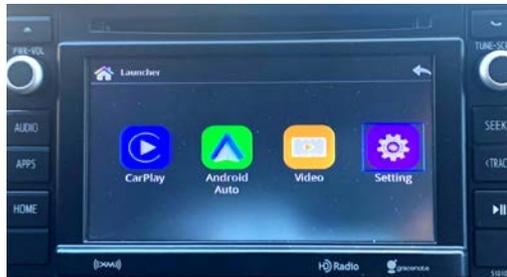
Make sure the audio source on the factory system is set to AUX mode (not AM/FM/Bluetooth). Also, if your smartphone is set to automatically connect to your factory bluetooth, make sure you void the connection. One way is to forget the device (your vehicle) on your phone. This will avoid Smart-Play connection 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.



Powerout 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.

Brightness	50
Contrast	50
Stauration	50
Hue	50
Sharpness	50

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

5 SERIES

2004 - 2010	5 Series Sedan
2004 - 2007	5 Series Wagon

6 SERIES

2004 - 2010	6 Series Coupe
2004 - 2010	6 Series Convertible

X SERIES

2007 - 2013	X5 Sports Activity Vehicle
2008-2011	X6 Sports Activity Coupe



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

