PRODUCT FEATURES:

- Plug and Play Installation
- Media Controller with controls by factory infotainment (iDrive)
- Rear-view camera input
- Front camera input
- Front camera input can also be used as an Auxiliary Video Input (Crux part# AUX-ABMP1, Fiber Optic Auxiliary Audio Input Interface, may be required to create an Auxiliary Audio Input).(Sold separately)
- Manual switching to rear-view camera (only for vehicles with PDC button)
- Manual return from rear-view and front camera (cancellation of automatic switching)
- 2 trigger outputs (+12V max. 1A), separately adjustable switching events (CAN, ACC, camera, reverse gear)
- Picture-in-picture mode combining aftermarket rear-view and front camera picture(s) with factory parking sensor graphics
- Compatible with all factory video accessories (e.g. rear-view camera, Top-View Camera System)

PARTS INCLUDED:

VRFBM-77EF Module

BM-77EF Harness

E-Series Power/CAN Harness

F-Series Power/CAN2 Harness

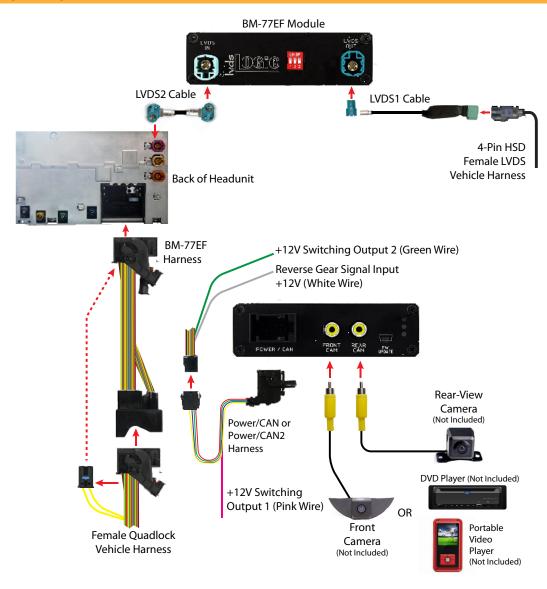LVDS1 Cable (to vehicle)

LVDS2 Cable (to radio)

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phone: (818) 609-9299 • fax: (818) 996-8188 • www.cruxinterfacing.com

INSTALLATION DIAGRAM:

BM-77EF Module

LVDS2 Cable

LVDS1 Cable

4-Pin HSD Female LVDS Vehicle Harness

Back of Headunit

BM-77EF Harness

+12V Switching Output 2 (Green Wire)

Reverse Gear Signal Input +12V (White Wire)

Power/CAN or Power/CAN2 Harness

+12V Switching Output 1 (Pink Wire)

Female Quadlock Vehicle Harness

Rear-View Camera (Not Included)

DVD Player (Not Included)

OR

Front Camera (Not Included)

Portable Video Player (Not Included)

DIP SWITCH SETTINGS:

VEHICLE / SCREEN SIZE	DIP 1	DIP 2	DIP 3
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

You have to execute a power reset of the interface after each change of DIP switch settings!
NOTES:
1. The Interface is installed behind the headunit and needs a constant +12V power source.
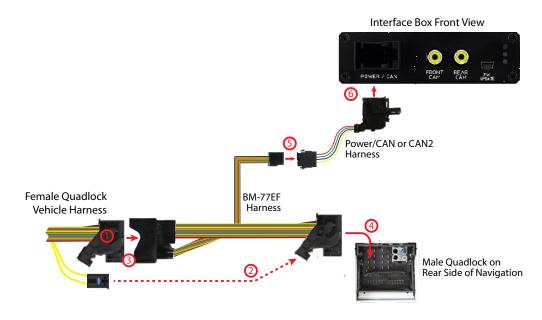2. Use the appropriate Power/CAN harness for the application (E or F Series).

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INSTALLATION INSTRUCTIONS:

Connecting the VRFBM-77EF harness

Interface Box Front View

Power/CAN or CAN2
Harness

Female Quadlock
Vehicle Harness

BM-77EF
Harness

Male Quadlock on
Rear Side of Navigation

1 Remove the female Quadlock connector of the vehicle harness from the rear of the headunit.

2 Remove optical leads from the female Quadlock connector of the vehicle harness and insert them into the female Quadlock connector of BM-77EF harness at the same position.

3 Connect female Quadlock connector of vehicle harness to the male Quadlock connector of BM-77EF harness.

4 Connect female Quadlock connector of BM-77EF to the male Quadlock connector of the headunit.

5 Connect female 8 pin molex connector of the BM-77EF harness to the male 8 pin molex connector of the Power/CAN or Power/CAN2 harness.

6 Connect the female 12pin Power/CAN or Power/CAN2 harness to the VRFBM-77EF module.

LEDs on the VRFBM-77EF Module
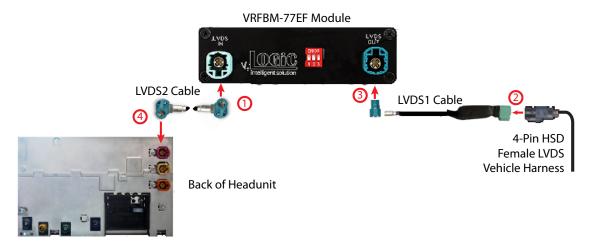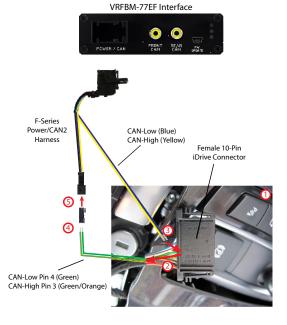

BLUE = Valid Input Source
GREEN = OK
RED = Power

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LVDS Connection

VRFBM-77EF Module

LVDS2 Cable

④

① ③ LVDS1 Cable ②

Back of Headunit

4-Pin HSD
Female LVDS
Vehicle Harness

① Connect the female 4pin HSD LVDS connector of the LVDS cable to the male 4pin HSD LVDS connector (LVDS-IN) on the rear of the VRFBM-77EF module.

② Remove the grey female 4pin HSD LVDS connector of the vehicle harness at the back of the head unit and connect it to the male 4pin HSD LVDS of the LVDS1 cable.

③ Connect the female 4pin HSD LVDS connector of the LVDS1 cable to the male 4pin HSD LVDS connector (LVDS-OUT) on the rear of the VRFBM-77EF module.

④ Connect the female 4pin HSD LVDS connector of the LVDS cable to the grey male 4pin HSD LVDS connector on the rear of the headunit.

Connection to iDrive on F-Series Vehicles

① Remove the iDrive from the center console and unplug the existing flat female 10pin or 4pin cable connector.

② Remove Pin 3 (Green/Orange) CAN-High and Pin 4 (Green) CAN-Low from the female cable connector.

③ Plug Yellow (CAN High) and Blue (CAN Low) wires (with terminals) of the Power/CAN harness into Pin 3 (CAN-High) and Pin 4 (CAN-Low) of the female cable connector.

④ Plug the Green/Orange wire (CAN-High) and Green cable (CAN-Low) of the vehicle harness into Pin 1 and Pin 2, respectively, of the included female 2 pin AMP connector.

⑤ Connect female 2 pin AMP connector to 2pin AMP connector (Yellow/Black and Blue/Black cable) of the Power/CAN harness.
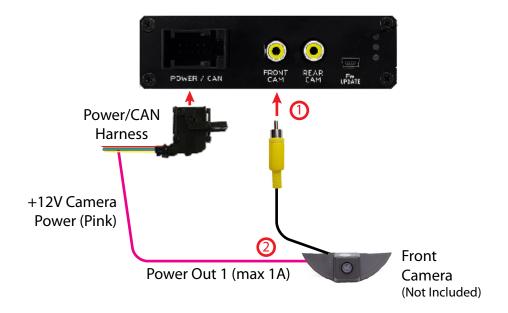
VRFBM-77EF Interface

F-Series
Power/CAN2
Harness

CAN-Low (Blue)
CAN-High (Yellow)

Female 10-Pin
iDrive Connector

⑤

④

CAN-Low Pin 4 (Green)
CAN-High Pin 3 (Green/Orange)

Connection to the Aftermarket Front Camera

Power/CAN Harness

+12V Camera Power (Pink)

①

② Power Out 1 (max 1A)

Front Camera (Not Included)

1 Connect the video RCA of the aftermarket front camera to the female RCA connector "FRONT CAM" of the VRFBM-77EF module.

2 The PINK wire of the Power/CAN harness can be used for +12V power supply (max. 1A) of the aftermarket front camera. Configure in the OSD-menu "MISC", menu item "POWER OUT 1" the designated power supply (see chapter "Configurable Switching Outputs" on page 8).

OSD Settings for Front Camera

Configure settings in the OSD menu's MISC and INPUTS if an aftermarket front camera will be used. See OSD Operation section for instructions on how to use the OSD Menu.
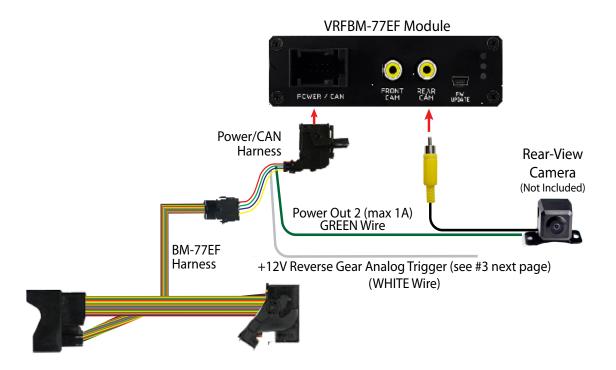
OSD Menu	Menu Item	Setting	Description
INPUTS	FRONT CAM	OFF	No Front camera connected
		ON	Switches to front camera if parking process is enabled and reverse gear is released
	REVERSE LOGIC	Intelligent	For vehicles with PDC button. Enabled while parking process and up to 12 mph or together with PDC if available
		GearOnly	For vehicles without PDC button. Enabled while parking process and up to 12 mph
MISC	OEM PDC CAR	Horizontal	Vehicles with horizontal OEM PDC display
		Vertical	Vehicles with vertical OEM PDC display

Note: You can deactivate the enabled parking process by pressing the iDrive or by enabling other modes (e.g. radio). After deactivation you cannot enable the parking process again until the vehicle is driving faster than 12 mph and the ignition is switched off and on, or the PDC be disabled and enabled again.

Connection to the Aftermarket Backup Camera

VRFBM-77EF Module

Power/CAN Harness

BM-77EF Harness

Power Out 2 (max 1A) GREEN Wire

+12V Reverse Gear Analog Trigger (see #3 next page) (WHITE Wire)

Rear-View Camera
(Not Included)

1 Connect the video RCA of the aftermarket rear-view camera to the female RCA connector "REAR CAM" of the VRFBM-77F interface box.

2 The green wire of the BM-77EF harness can be used for +12V power supply (max. 1A) of the aftermarket rear-view camera. Configure in the OSD-menu "MISC", menu item "POWER OUT 2" the designated electric power supply (see chapter "Configurable Switching Outputs").

3 On some vehicles the reverse light signal does not exist on the CAN-Bus. Connect the white wire of the BM-77EF harness to the reverse light signal (+12V of reverse light) if the system does not switch to the rear-view camera automatically after the described OSD-setup.

OSD Settings for Backup Camera

Configure settings in the OSD menu's MISC and INPUTS if an aftermarket front camera will be used. See OSD Operation section for instructions on how to use the OSD Menu.

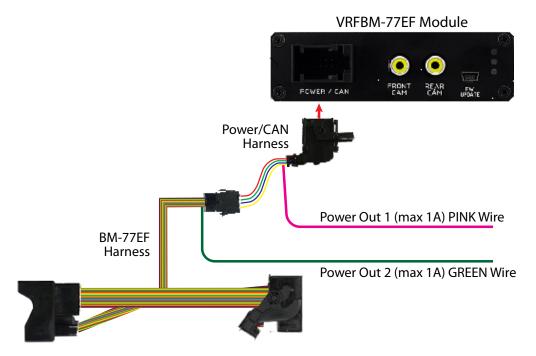| OSD Menu	Menu Item	Setting	Description
INPUTS	REAR CAM	OFF	No Rear camera connected
		ON	Switches to Rear camera if reverse gear is engaged and/or PDC display is displayed
		OEM	If a factory rear-view camera is connected. Interface turns off, if PDC or reverse gear is enabled and it displays factory rear-view camera and/or PDC-display
	REVERSE LOGIC	Intelligent	For vehicles with PDC button. Enabled while parking process and up to 12 mph or together with PDC if available
		GearOnly	For vehicles without PDC button. Enabled while parking process and up to 12 mph
MISC	OEM PDC CAR	Horizontal	Vehicles with horizontal OEM PDC display
		Vertical	Vehicles with vertical OEM PDC display

Note: You can deactivate the enabled parking process by pressing the iDrive or by enabling other modes (e.g. radio). After deactivation you cannot enable the parking process again until the vehicle is driving faster than 12 mph and the ignition is switched off and on, or the PDC be disabled and enabled again.

Configurable Trigger Outputs

VRFBM-77EF Module

Power/CAN Harness

Power Out 1 (max 1A) PINK Wire

BM-77EF Harness

Power Out 2 (max 1A) GREEN Wire

You can configure the both +12V trigger outputs separately.

PINK Wire = POWER OUT 1
GREEN Wire = POWER OUT 2

OSD Menu	Menu Item	Setting	Description
INPUTS	POWER OUT 1 (PINK Wire)	CAN	+12V when the interface is on (Red LED on)
		Ignition	+12V when ignition is on
		Rear Cam	+12V when the rear-view camera input is activated
	POWER OUT 2 (GREEN Wire)	Reverse Gear	+12V when reverse gear is engaged
		OFF	Trigger output deactivated

Display Settings

Picture Format

You can change the picture format by long press of the CD Button (BMW with 8-button iDrive) or by long press of the Menu Button (2-button iDrive in Mini) while in the respective video mode. The following options are available:

2 Button iDrive

8.8" and 10.2"   24:10 Ultrawide Screen:
◦ FULL   = 24:10 interface full screen mode
◦ Zoom   = 24:10 interface full screen mode zoom
◦ 16:9   = 16:9 interface picture central
◦ 4:3   = 4:3 interface picture central
◦ AV + LVDS   = 16:9 interface picture on left side, factory picture on right side
◦ LVDS + AV   = 16:9 factory picture on left side, interface picture on right side

6.5" and 7"   16:9 Screen:
◦ FULL   = 16:9 interface full screen mode
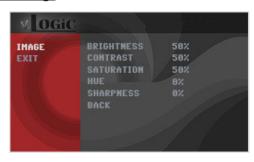◦ ZOOM   = 16:9 interface full screen mode zoom
◦ 4:3   = 4:3 interface picture central

Note: The picture format will be retained for each AV source separately.

8 Button iDrive

Picture Settings

◦ Brightness
◦ Contrast
◦ Saturation
◦ Hue
◦ Sharpness

OPERATION

OSD - On Screen Display
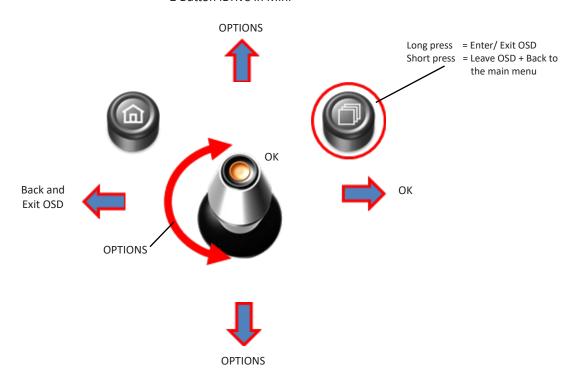
You can change the picture settings in the OSD Menu IMAGE

OSD Operation

You can control the OSD by using the iDrive.

8 Button iDrive

Options

CD   TEL
RADIO   NAV

Options

Back + leaving OSD

OK

BACK   OPTION

Long press = enter/ leave OSD
Short press= leave OSD + back to the main menu

Options

Long press = enter/ leave OSD
Short press= leave OSD + back to the main menu

2 Button iDrive in Mini

OPTIONS

Long press = Enter/ Exit OSD
Short press = Leave OSD + Back to the main menu

OK

Back and
Exit OSD

OK

OPTIONS

OPTIONS

Additional OSD Settings

The following are additional settings that can be set in the OSD Menu.

OSD Menu	Menu Item	Setting	Description
MISC	H POSITION	0-xxx	Horizontal position of the OSD
	V POSITION	0-xxx	Vertical position of the OSD
	VERSION	X.XX.XX	Displays the current SW-version
	FACTORY RESET		Reset to Factory Settings

Video In Motion Function

Activate and deactivate the Video In Motion function in the OSD Menu

OSD Menu	Menu Item	Setting	Description
MISC	VIM	ON	Activate Video In Motion
		OFF	Deactivate Video In Motion

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

Selecting the VRFBM-77EF as Video Source

8 Button iDrive

2 Button iDrive

A Long press of the CD Button or the Menu Button will select the interface as the current video source.

A Short press of the CD Button or the MENU Button will switch the video sources (cameras or other video source). Each short press will switch to the next enabled input. If all inputs are enabled the order is:

FRONT CAM ➝ REAR CAM ➝ ...

Inputs which are not enabled are skipped.

VEHICLE APPLICATIONS:

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

CIC Navigation Screen

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