VRFBM-77C

Front and Rear-View Integration Interface for F-Series BMW
with 6.5", 7", 8.8" & 10.25" Monitor and 4+2 Pin LVDS Connector

PRODUCT FEATURES:

- With OE type Dynamic Parking Guide Lines
- On-screen display and setup
- 2 trigger outputs (+12V max. 1A), separately adjustable switching events (CAN, ACC, rear-view camera, reverse gear)
- Rear-view camera input
- Front camera input
- Front camera input can also be used as an Auxiliary Video Input
- Automatic switching to rear-view camera input on engagement of reverse gear from all operation modes
- Forced rear-view camera option (only on vehicles with PDC button)
- Manual return from rear-view and front camera (cancellation of automatic switching)
- Picture-in-picture mode combining after-market rear-view and front camera picture(s) with factory parking sensor graphics
- Compatible with all factory video accessories (e.g. rear-view camera, DVD-changer, etc.)
- Plug & Play installation

COMPATIBLE RADIOS:

- For the F-series BMW with navigation system or radio and 6.5", 7", 8.8" or 10.25" monitor with 4+2pin HSD2 LVDS connector

NOTES:

- On i3 installations, part# HAR-i3 is required to install the interface. The interface module is installed/mounted under the rear seat and you will need to run the HAR-i3 towards the rear seat.
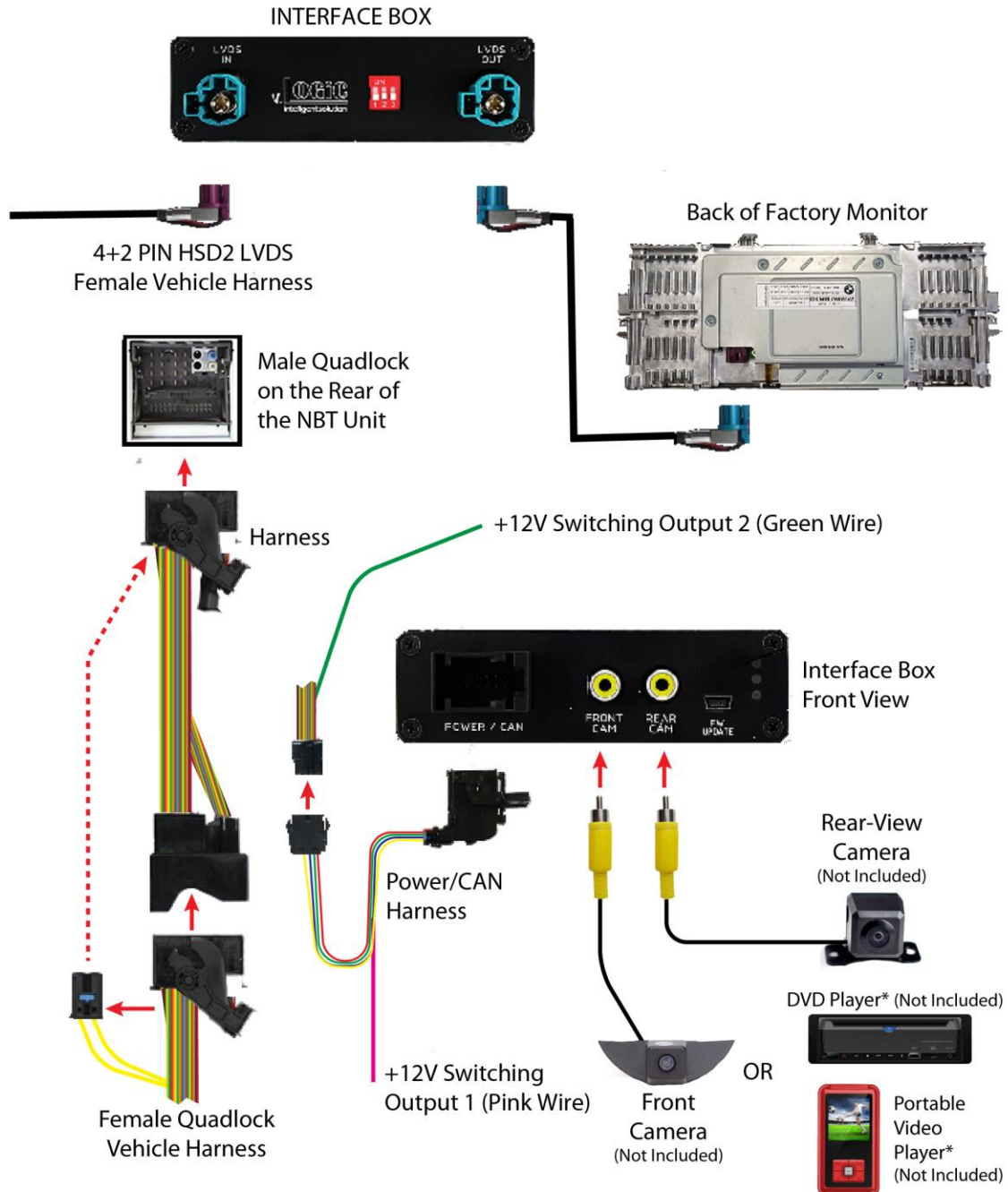
PARTS INCLUDED:

BM-77C Module

BM-77C Harness

4+2 PIN HSD2 LVDS Cable

Power/CAN Harness

VRFBM-77C

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INSTALLATION DIAGRAM:

INTERFACE BOX

Back of Factory Monitor

4+2 PIN HSD2 LVDS
Female Vehicle Harness

Male Quadlock
on the Rear of
the NBT Unit

Harness

+12V Switching Output 2 (Green Wire)

Interface Box
Front View

Rear-View
Camera
(Not Included)

Power/CAN
Harness

DVD Player* (Not Included)

Female Quadlock
Vehicle Harness

+12V Switching
Output 1 (Pink Wire)

Front
Camera
(Not Included)

OR

Portable
Video
Player*
(Not Included)

rev.122617

VRFBM-77C

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INSTALLATION INSTRUCTIONS:

## 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.

Vehicle/ Navigation	Dip 1	Dip 2	Dip 3
6.5" monitor.	OFF	OFF	No function
7" monitor	OFF	OFF	No function
8.8" monitor	ON	OFF	No function
10.25" monitor (ver.1)	ON	OFF	No function
10.25" monitor (ver.2)	ON	ON	No function

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

Note: The interface is installed on the backside of the head unit and needs a constant +12V power source.

Connecting Interface box and harnesses
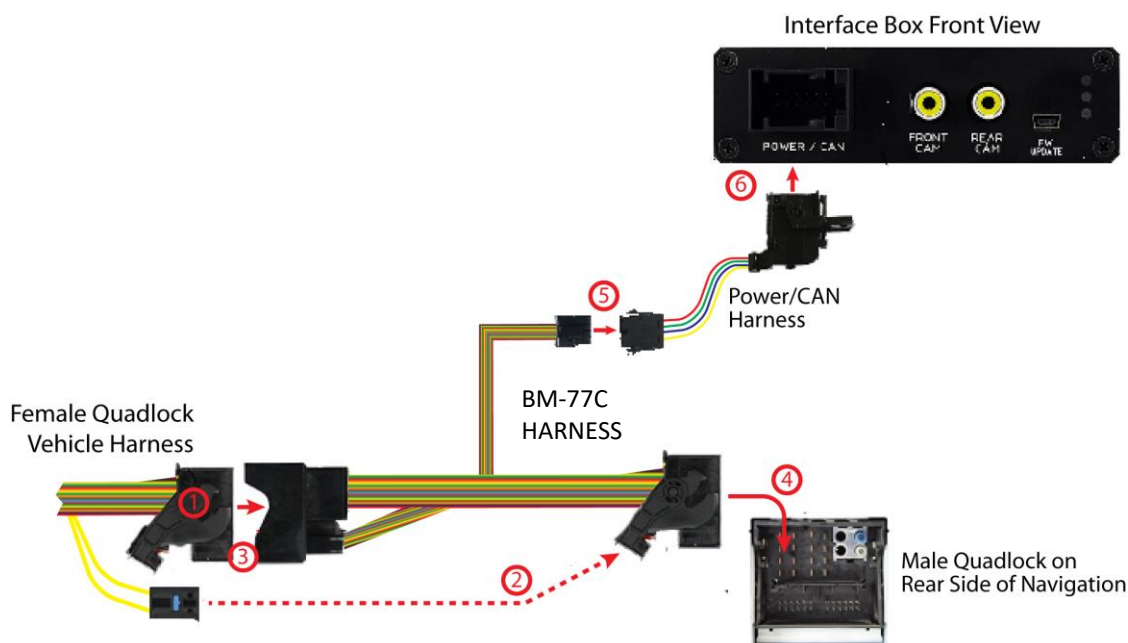
①	Remove the female Quadlock connector of the vehicle harness from the rear of the navigation computer.
②	Remove optical leads from the female Quadlock connector of the vehicle harness and insert them into the female Quadlock connector of BM-77C harness at the same position.
③	Connect the female Quadlock connector of vehicle harness to the male Quadlock connector of the BM-77C harness.

rev.122617

VRFBM-77C

Front and Rear-View Integration Interface for F-Series BMW
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(4) Connect the female Quadlock connector of BM-77C harness to the male Quadlock connector of the navigation computer.

(5) Connect the female 8 pin molex connector of the BM-77C harness to the male 8 pin molex connector of the Power/CAN harness.

(6) Connect the female 12pin AMP connector of the Power/CAN harness to the front side of the VRFBM-77C interface box.

LVDS Connection

Back of Factory Monitor

4+2 HSD2 LVDS Cable

Interface Box Front

4+2 HSD2 LVDS Female Vehicle Cable
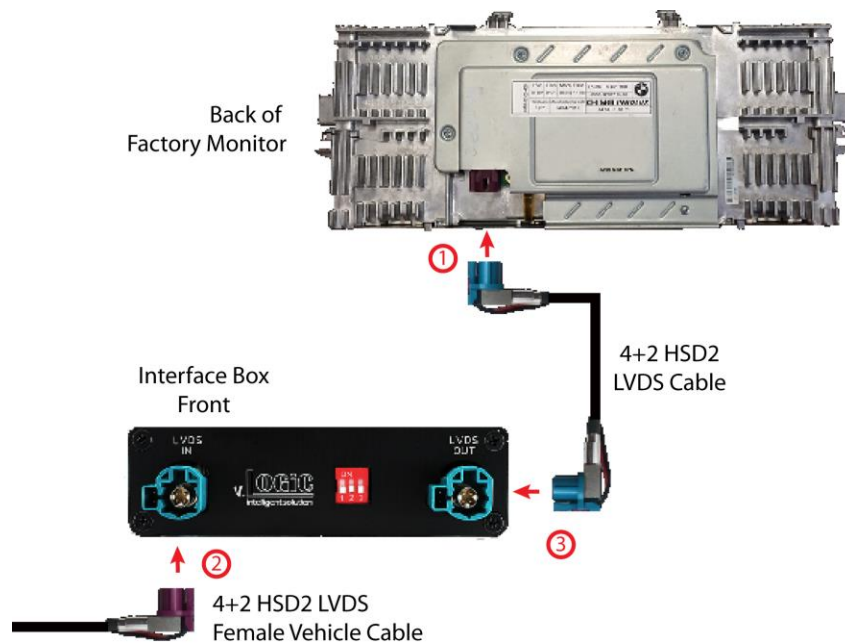
(1) Connect the female 4+2pin HSD2 LVDS connector of the LVDS cable to the male 4+2pin HSD2 LVDS connector (LVDS-OUT) on the front of the VRFBM-77C interface box.

(2) Remove the female 4+2pin HSD2 LVDS connector of the vehicle harness from the factory monitor and connect it to the male 4+2pin HSD2 LVDS connector (LVDS-IN) on the front of the VRFBM-77C Interface box.

(3) Connect the second female 4+2pin HSD2 LVDS connector of the LVDS cable the male 4+2pin HSD2 LVDS connector of the factory monitor.
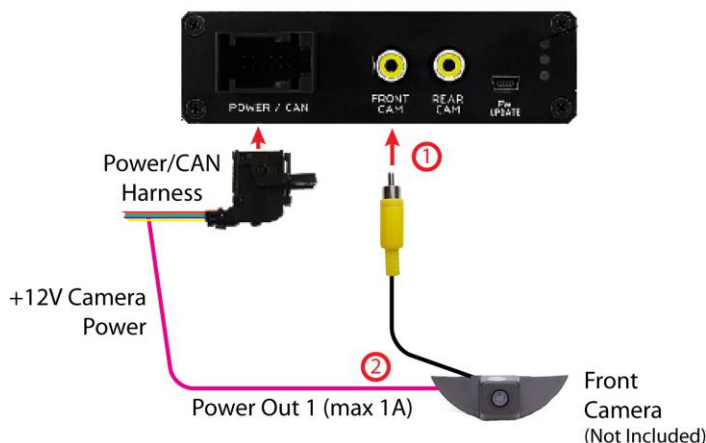
VRFBM-77C
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LEDs of the Interface-box

- 🔵 **Valid input source**
- 🟢 **CAN ok**
- 🔴 **Power**

Connection to the aftermarket front camera

Power/CAN Harness

+12V Camera Power

Power Out 1 (max 1A)

Front Camera (Not Included)

① Connect the video RCA of the after-market front camera to the female RCA connector "FRONT CAM" of the interface box.

② The pink wire of the Power/CAN harness can be used for +12V electric power supply (max. 1A) of the aftermarket front camera. Configure in the OSD-menu "MISC", Menu item "POWER OUT 1" the designated electric power supply (see chapter "Configurable switching outputs").

Settings for connecting an aftermarket front camera

You have to configure some settings in the OSD-menu's INPUTS and MISC if you want to connect an aftermarket front camera (Operation of the OSD: see chapter "OSD-Operation").

VRFBM-77C
Front and Rear-View Integration Interface for F-Series BMW
with 6.5", 7", 8.8" & 10.25" Monitor and 4+2 Pin LVDS Connector

OSD Menu	Menu item	Setting	Description
INPUT	FVC	OFF	No front camera connected
		ON	Switches to front camera if parking process is enabled and reverse gear is released
OPTION	PARK LOGIC	PDC	For vehicles with PDC button. Enabled while parking process and up to 12 mph or together with PDC if existing
		RGEAR	Enabled while parking process
		RGEAR+SPEED	Enabled while parking process and up to 12 mph
		RGEAR+TIME	Enabled while parking process and up to 20 second
	PARK CAM	ON	OEM PDC display of the vehicle

NOTES:

1) 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 12mph, the ignition is switched off and on OR the PDC will be disabled and enabled again, if present.

2) In case the image freezes in the Front View Camera mode, press the "Park Assist" button to go back to the radio mode.

Connection to the aftermarket rear-view camera
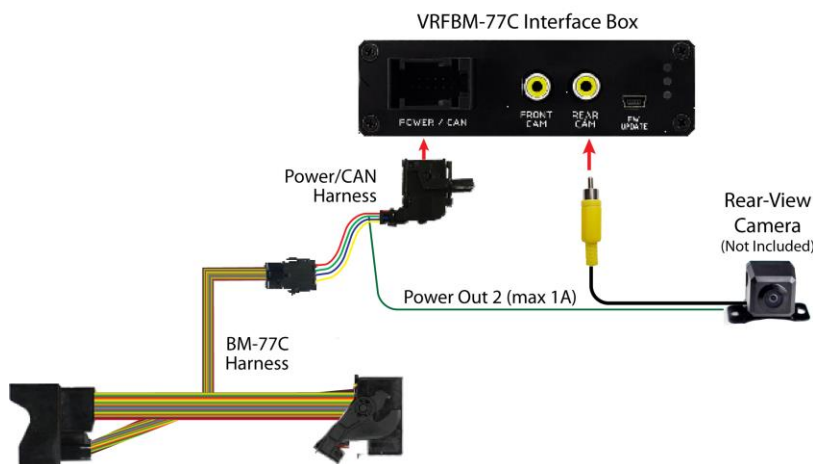
1) Connect the video RCA of the after-market rear-view camera to the female RCA connector "REAR CAM" of the interface box.

2) The green wire of harness Power/CAN harness can be used for +12V electric power supply (max. 1A) of the after-market rear-view camera. Configure in the OSD-menu "MISC", menu item "POWER OUT 2" the designated electric power supply (see chapter "Configurable switching outputs").

VRFBM-77C

Front and Rear-View Integration Interface for F-Series BMW
with 6.5", 7", 8.8" & 10.25" Monitor and 4+2 Pin LVDS Connector

Settings for connecting an aftermarket rear-view camera

You have to configure some settings in the OSD-menus INPUTS and MISC if you want to connect an after-market rear-view camera (Operation of the OSD: see chapter "OSD-Operation").
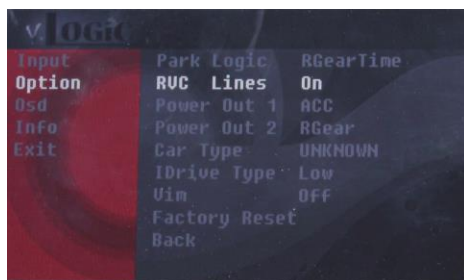

OSD Menu	Menu item	Setting	Description
INPUT	RVC	OFF	No rear-view camera connected
		ON	Switches to rear-view camera if reverse gear is engaged and/or PDC-display is displayed
		OEM	If a factory rear-view camera is existing, the interface turns off, if PDC or reverse gear is enabled and it displays factory rear-view camera and/or PDC-display
OPTION	PARK LOGIC	PDC	For vehicles with PDC button. Enabled while parking process and up to 12 mph or together with PDC if existing
		RGEAR	Enabled while parking process
		RGEAR+SPEED	Enabled while parking process and up to 12 mph
		RGEAR+TIME	Enabled while parking process and up to 20 second
	PARK CAM	ON	OEM PDC display of the vehicle

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

Dynamic Parking Guide Lines

0You have to configure some settings in the OSD-menu
OPTION if you want to activate Dynamic Guide Lines.

rev.122617

VRFBM-77C
Front and Rear-View Integration Interface for F-Series BMW
with 6.5″, 7″, 8.8″ & 10.25″ Monitor and 4+2 Pin LVDS Connector

OSD Menu	Menu item	Setting	Description
OPTION	RVC LINES	OFF	Dynamic Guide lines deactivated
		ON	Dynamic Guide lines activated
	iDrive Type	Low	5 Button iDrive
		High	7 Button iDrive

Configurable Trigger Outputs
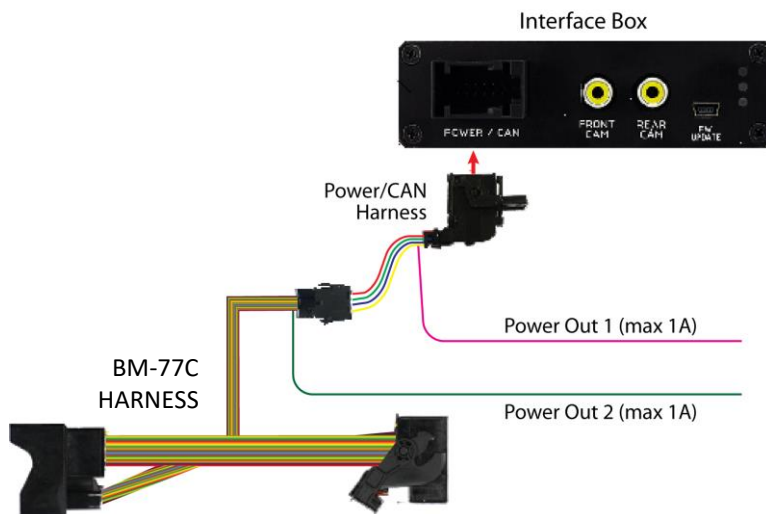
① You can configure both +12V trigger outputs separately. The Pink wire is POWER OUT 1 and the Green wire is POWER OUT 2.

Note: You can configure the both trigger outputs in the OSD-Menu MISC separately (Operation of the OSD: see chapter "OSD-Operation").

OSD Menu	Menu item	Setting	Description
OPTION	POWER OUT1 (pink) POWER OUT2 (green)	CAN	+12V when the interface is on (red LED on)
		ACC	+12V when ignition is on
		CAM	+12V when the rear-view camera input is activated
		RGEAR	+12V when reverse gear is engaged
		AVS	+12V when interface video-source is active (for external audio switch)
		OFF	Trigger output deactivated

VRFBM-77C

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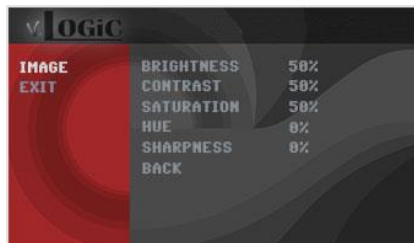
Picture settings

You can change the picture settings in the OSD-menu IMAGE (activation only from interface AV level possible).

◦ Brightness
◦ Contrast
◦ Saturation
◦ Hue
◦ Sharpness

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

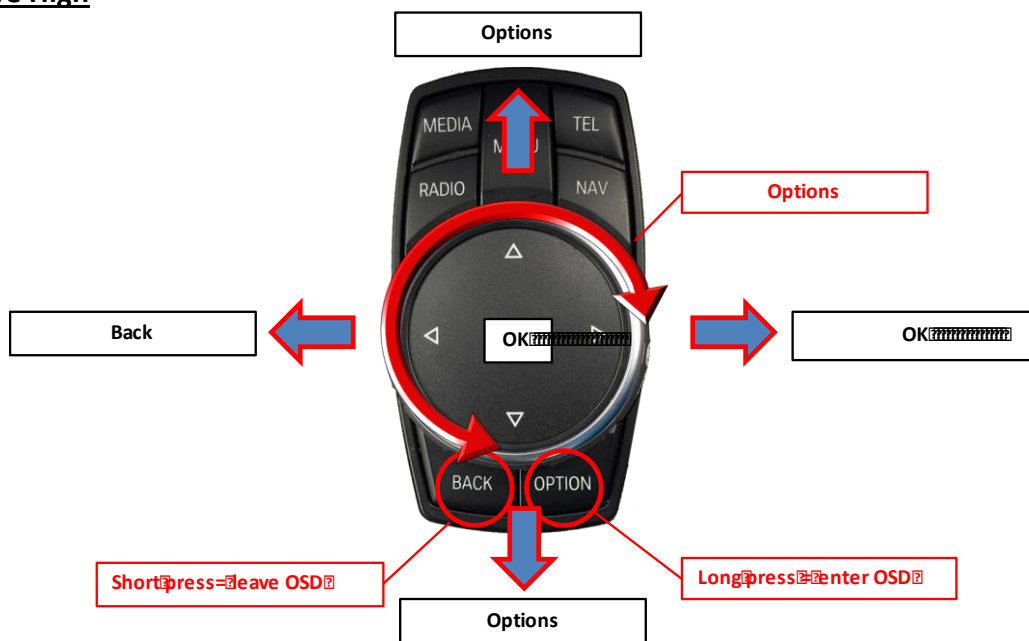## Operation

OSD – On-Screen Display

You can change the basic configurations of the interface in the OSD (on screen display) which can be controlled with the iDrive.

iDrive High

Options

Options

Back

OK

OK

Options

Short press= leave OSD

Long press = enter OSD

VRFBM-77C

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iDrive Low

Options

Back

OK

Short press= leave OSD

Long press = enter OSD

iDrive selection

OSD menu, "OPTION" – "IDRIVE" is for setting the right iDrive control knob.

OSD-menu	Menu item	Setting	Explication
OPTION	IDRIVE	LOW	Vehicles with iDrive Low control knob
		HIGH	Vehicles with iDrive High control knob

iDrive High   iDrive Low

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OSD – Additional setting options

The following settings in the OSD-menus OPTION and OSD can be configured over and above the described settings in this manual (Operation of the OSD: see chapter "OSD-Operation")

OSD-menu	Menu item	Setting	Explication
OSD	POS. X	0-xxx	Horizontal position of the OSD
	POS. Y	0-xxx	Vertical position of the OSD
	SIZE	SMALL	Small OSD menu windows
		LARGE	Large OSD menu windows
INFO	VERSION	X.XX.XX	Displays the current SW-version
OPTION	FACTORY RESET		Resetting to factory settings

Video-In-Motion function

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

rev.122617

VRFBM-77C
Front and Rear-View Integration Interface for F-Series BMW
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OSD Menu	Menu item	Setting	Description
OPTION	VIM	ON	Video-in-motion activated
		OFF	Video-in-motion deactivated

Selecting the interface as current video-source

A long press of the **MEDIA** button **OR** the **AUDIO** button, respectively, is used to choose the interface as current video source.

A short press of the **MEDIA** button **OR** the **AUDIO** button will switch the video sources. Each short press will switch to the next enabled input. If all inputs are enabled the order is:

Rear Cam → Front Cam → …

Inputs which are not enabled are skipped.

NOTE: A short press of either the **BACK / RADIO** / **MENU** / **TEL** / **NAV** button will exit to the factory screen.

VEHICLE APPLICATIONS:

2015 – 2016	i3*		2014 – Up	4 Series
2016	M2		2012 – Up	M3 / 3 Series
2016	X1		2014 – Up	2 Series
2010 – Up	X3		2012 – Up	1 Series
2014 – Up	X4		2010 – Up	5 Series
2014 – Up	X5		2011 – Up	6 Series
2015 – Up	X6		2008 – 2015	7 Series
2015 – Up	M4			

*On i3 installations, part# HAR-i3 is required to install the interface. The interface module is installed/mounted under the rear seat and you will need to run the HAR-i3 towards the rear seat.