CRUX INTERFACING SOLUTIONS · v.LOGiC MULTIMEDIA INTEGRATION

Vehicle Applications

MERCEDES BENZ

2013 - Up B-class (W246)	2012 - Up E-class (W212)
2012 - Up C-class (W204)	2012 - Up E-class (C207)
2012 - Up C-class (C204)	2014 - Up GLA (X156)
Late 2014 CLA 250	2011 - Up GLK (W204)
2012 - Up CLS (C218)	2012 - Up ML (W166)
	2012 - Up SLK (R172)
	2013 - Up SL (R231)

Product Features

- With OE type parking Dynamic 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 *(Crux part# AUX-MB1, OBD2 Audio Aux coding, may be required to create an Auxiliary Audio Input).(Sold separately)*
- Automatic switching to rear-view camera input on engagement of reverse gear from all operation modes
- Forced rear-view camera option
- Manual return from rear-view and front camera (cancellation of automatic switching)
- Compatible with all factory video accessories (e.g. rear-view camera, DVD-changer, TV-tuner)
- Plug & Play installation

Navigation / Radio Compatibility

- 6" / 7" monitor and 4pin HSD LVDS connector
- COMAND Online NTG4.5, Audio20 NTG4.5

Parts Included

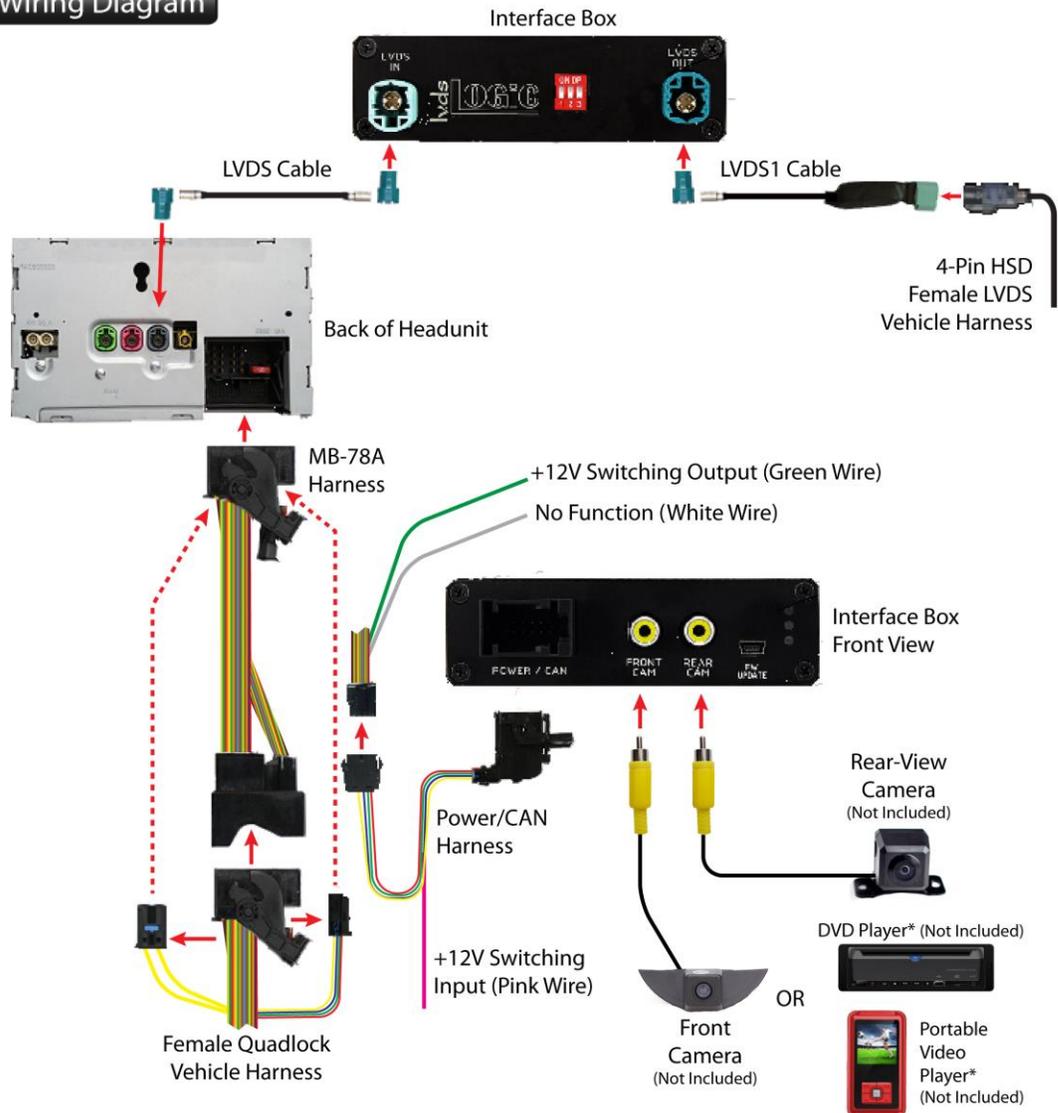Interface Box

MB-78A Harness

Power/CAN Harness

LVDS1 Cable (24")

LVDS Cable (32")

CRUX v.LOGiC — VRFMB-78A

Front and Rear-View Integration Interface for Mercedes Benz with COMAND Online NTG4.5 and Audio20 NTG45 Systems

Wiring Diagram

Interface Box

LVDS Cable

LVDS1 Cable

4-Pin HSD Female LVDS Vehicle Harness

Back of Headunit

MB-78A Harness

+12V Switching Output (Green Wire)

No Function (White Wire)

Interface Box Front View

Power/CAN Harness

Rear-View Camera (Not Included)

+12V Switching Input (Pink Wire)

DVD Player* (Not Included)

Female Quadlock Vehicle Harness

OR

Front Camera (Not Included)

Portable Video Player* (Not Included)

*Crux Part# AUX-MB1 may be required for vehicles without an Auxiliary Audio Input available.

## Installation Instructions

Setting the DIP switches of the Interface Box.

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

Device	DIP 1	
COMAND Online NTG4.5*	ON	7 inch Display
Audio20 NTG4.5 (1CD)*	OFF	6 inch Display

*Please see page 11 for radio pictures.

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

Connecting Interface box and harnesses
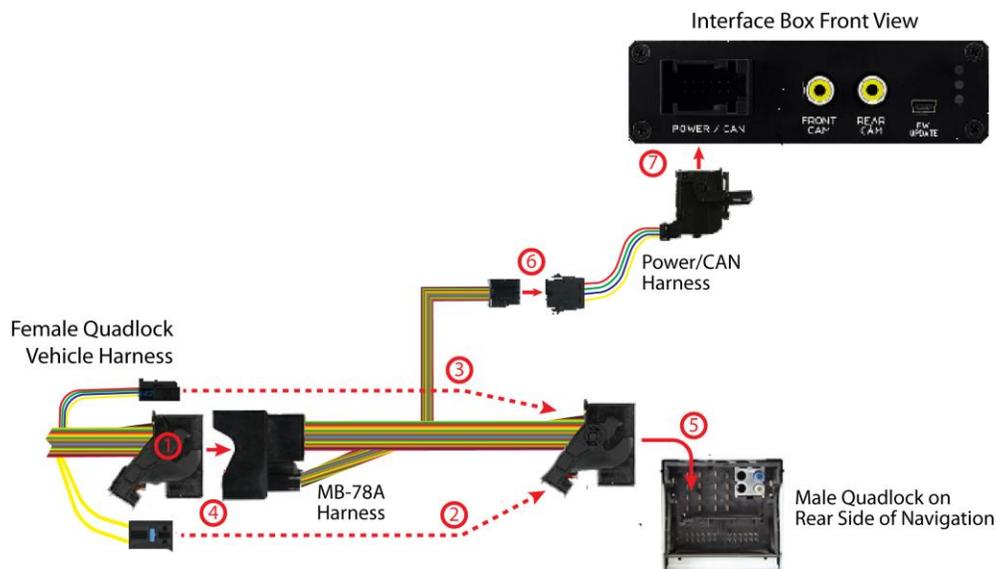
①	Remove the female Quadlock connector of the vehicle harness from the rear of the radio.
②	Remove optical leads from the female Quadlock connector of the vehicle harness and insert them into the female Quadlock connector of MB-78A harness at the same position.
③	Remove the 12 pin Quadlock plug inserts from the female Quadlock connector of the vehicle harness and insert them into the female Quadlock connector of harness TV-NTG2 at the same position
④	Connect the female Quadlock connector of vehicle harness to the male Quadlock connector of MB-78A harness.
⑤	Connect the female Quadlock connector of MB-78A harness to the male Quadlock connector of the radio.
⑥	Connect the female 8 pin molex connector of the MB-78A harness to the male 8 pin molex connector of the Power/CAN harness.
⑦	Connect the female 12 pin AMP connector of the Power/CAN harness to the front side of the VRFMB-78A interface box.

LEDs of the Interface-box

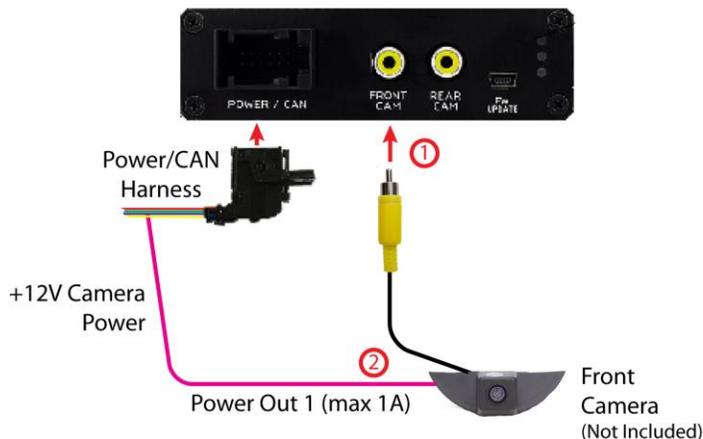● **Valid input source**
● **CAN ok**
● **Power**
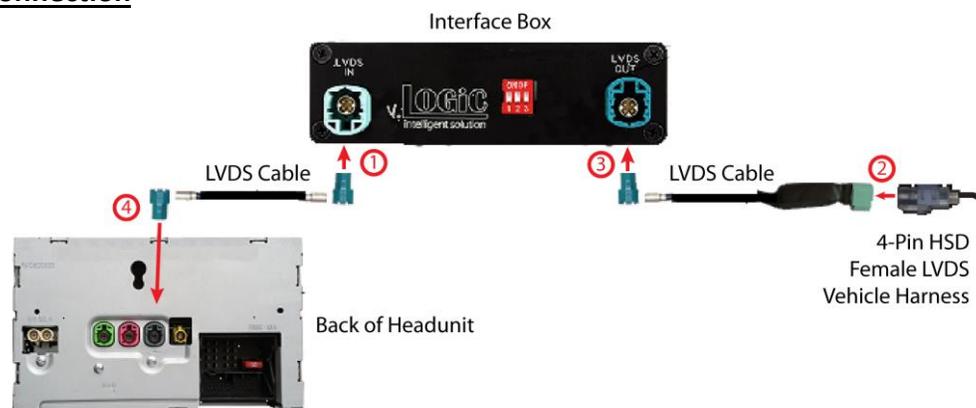
LVDS Connection

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 VRFMB-78A interface box.
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 LVDS cable.
③	Connect the female 4pin HSD LVDS connector of the LVDS cable to the male 4pin HSD LVDS connector (LVDS-OUT) on the rear of the VRFMB-78A interface box.
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 head unit.

VRFMB-78A
Front and Rear-View Integration Interface for Mercedes Benz
with COMAND Online NTG4.5 and Audio20 NTG45 Systems

Connection to the after-market front camera

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").

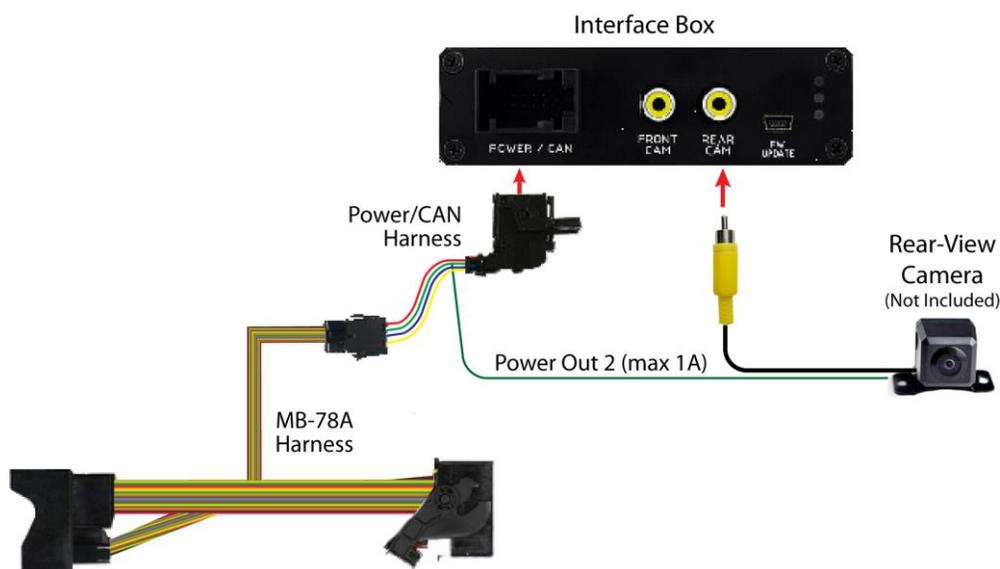## Settings for connecting an aftermarket front camera

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").

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	RGearOnly	Enabled while parking process
		RGearSpeed	Enabled while parking process and up to 18 mph
		RGearTime	Enabled while parking process and up to 20 second

Note: You can deactivate the enabled parking process by pressing the "right arrow" button on steering wheel. After deactivation you cannot enable the parking process again until the vehicle is driving faster than 18 mph or the ignition is switched off.

## Connection to the after-market 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").

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## 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").
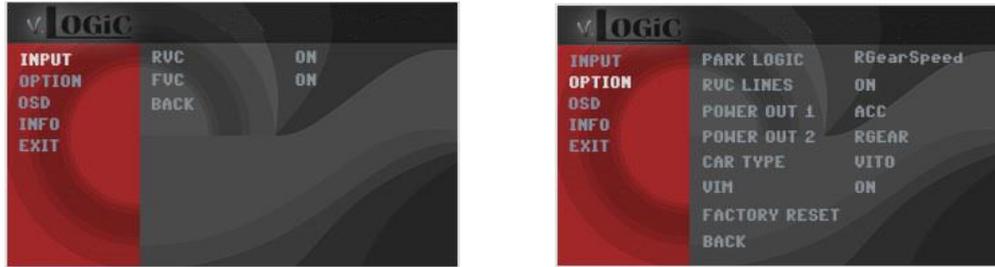
OSD Menu	Menu item	Setting	Description
INPUT	RVC	OFF	No rear-view camera connected
		ON	Switches to rear-view camera if reverse gear is engaged and/or PDC-display is displayed
		OEM	If a factory rear-view camera is present The interface turns off, if reverse gear is enabled and it displays factory rear-view camera
OPTION	PARK LOGIC	RGearOnly	Enabled while parking process
		RGearSpeed	Enabled while parking process and up to 18 mph
		RGearTime	Enabled while parking process and up to 20 second
	RVC LINES	OFF	Interactive lane lines deactivated
		ON	Interactive lane lines activated

Note: You can deactivate the enabled parking process by pressing the "right arrow" button on steering wheel. After deactivation you cannot enable the parking process again until the vehicle is driving faster than 18 mph or the ignition is switched off.

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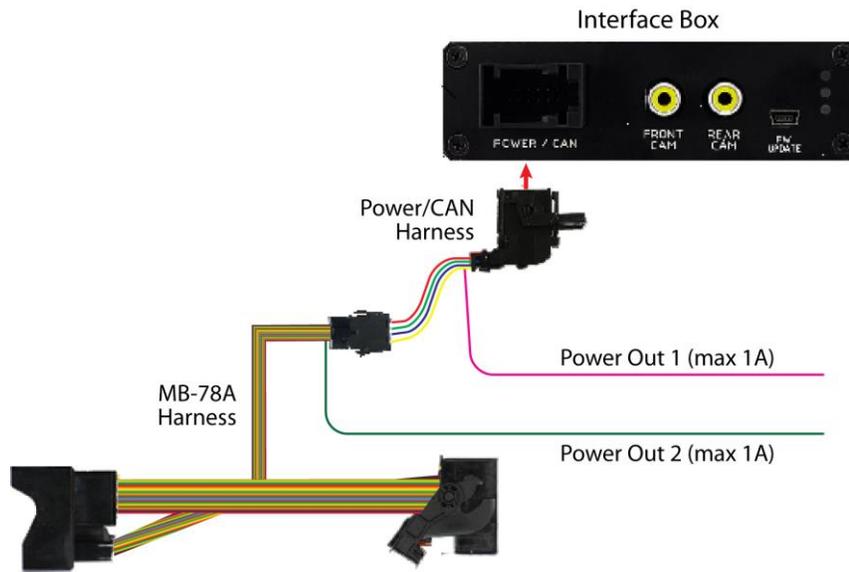
(1) You can configure both +12V trigger outputs separately. The Pink wire is POWER OUT 1 and the Green wire is POWER OUT 2.

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)	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
	POWER OUT2 (Green)	RGEAR	+12V when reverse gear is engaged
		AVS	+12V when interface video-source is active
		OFF	Trigger output deactivated

Dynamic Guide Lines

You have to configure some settings in the OSD-menu OPTION if you want to activate dynamic guide lines (Operation of the OSD: see chapter "OSD-Operation").
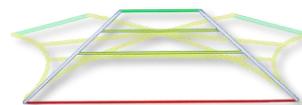
OSD Menu	Menu item	Setting	Description
OPTION	RVC LINES	OFF	Dynamic Guide lines deactivated
		ON	Dynamic Guide lines activated
	CAR TYPE	A/B/C/CLA/CLS/ E/G/GLA/GLC/ GLE/GLS/SL/SLC/V/	Vehicle type selection

Picture settings

You can change the picture settings in the OSD-menu IMAGE (activation only from interface AV level possible).
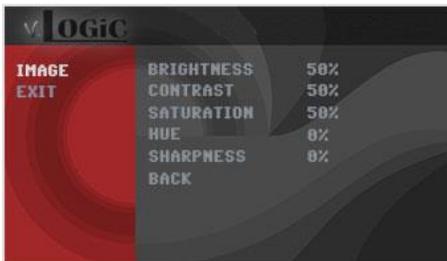
◦ Brightness
◦ Contrast
◦ Saturation
◦ Hue
◦ Sharpness

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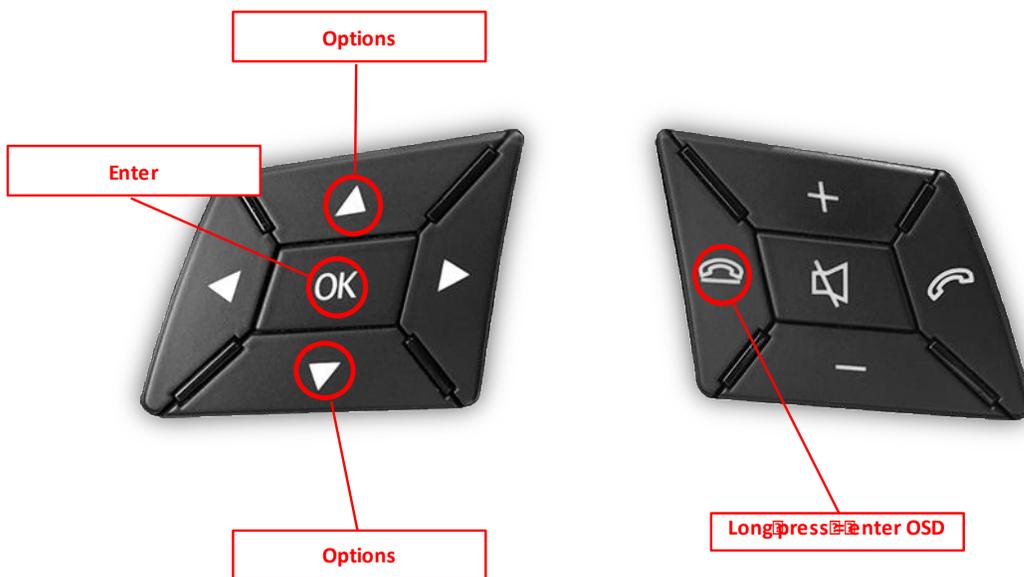
Operation

OSD – On-Screen Display

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

OSD – Operation

You can control the OSD by the steering wheel buttons. Set the "radio level" in instrument cluster before you start the OSD control.

Options

Enter

Options

Long press = enter OSD

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	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 windows
		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	FACTORY RESET		Resetting to factory settings

Selecting the interface as current AV-source

Long press = enter / leave interface level

Short press = switch video sources
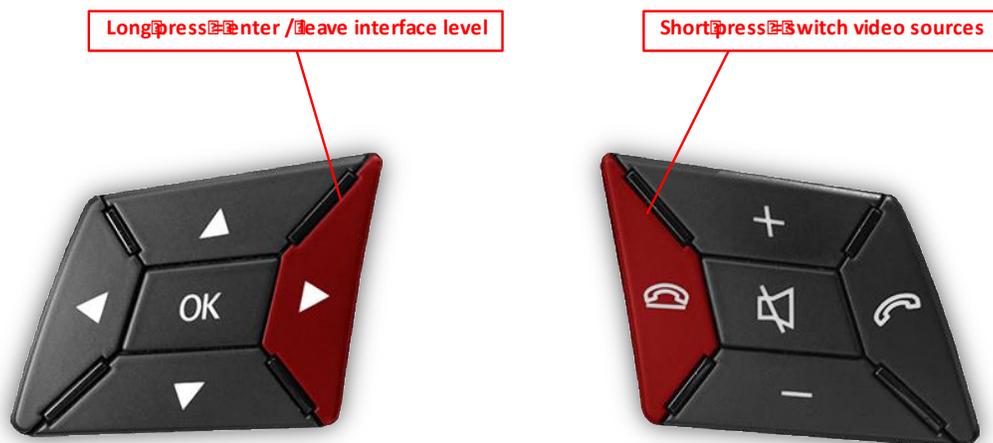
Long press of the "right arrow" button to choose the interface as current video source.

Short press of the "hang-up" button switch the video sources (cameras). 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.