

v.LiNK Video-inserter

VL3-MIB-4

Compatible with Audi vehicles with MMI Navigation Plus based on MIB

Bentley vehicles with MIB with 8" monitor

Lamborghini vehicles with MIB with monitor in instrument

Porsche vehicles with PCM 4.0

Seat vehicles with Media System Plus - MIB High/Standard

Skoda vehicles with MIB STD2 PQ/+NAV, Amundsen and Bolero

VW vehicles with MIB/MIB2/MQB High/Discovery Pro and

Standard/Composition Media



Video-inserter with 2 video + rear-view camera input and CAN control

Product features

- Video-inserter for factory-infotainment monitors
- 2 CVBS video-inputs for after-market devices (e.g. DVD-Player, DVB-T tuner, ...)
- Rear-view camera CVBS video-input
- Automatic switching to rear-view camera input on engagement of the reverse gear
- Activatable parking guide lines for rear-view camera (vehicle specific restrictions possible)
- Video-in-motion (ONLY for connected video-sources)
- Compatible with factory rear-view camera
- Video-inputs PAL/NTSC compatible

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Legal Information

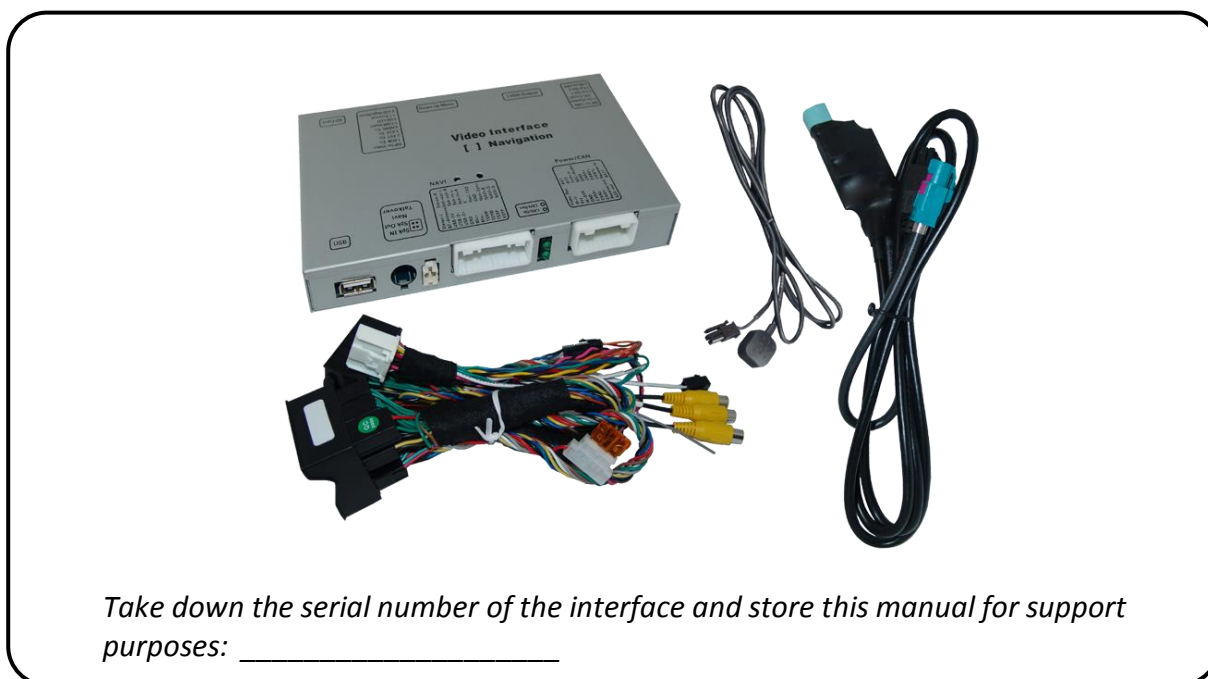
By law, watching moving pictures while driving is prohibited, the driver must not be distracted. We do not accept any liability for material damage or personal injury resulting, directly or indirectly, from installation or operation of this product. Apart from using this product in an unmoved vehicle, it should only be used to display fixed menus or rear-view-camera video when the vehicle is moving (for example the MP3 menu for DVD upgrades).

Changes/updates of the vehicle's software can cause malfunctions of the interface. Up to one year after purchase we offer free software-updates for our interfaces. To receive a free update, the interface has to be sent in at own cost. Wages for de-and reinstallation and other expenditures involved with the software-updates will not be refunded.

1. Prior to installation

Read the manual prior to installation. Technical knowledge is necessary for installation. The place of installation must be free of moisture and away from heat sources.

1.1. Delivery contents



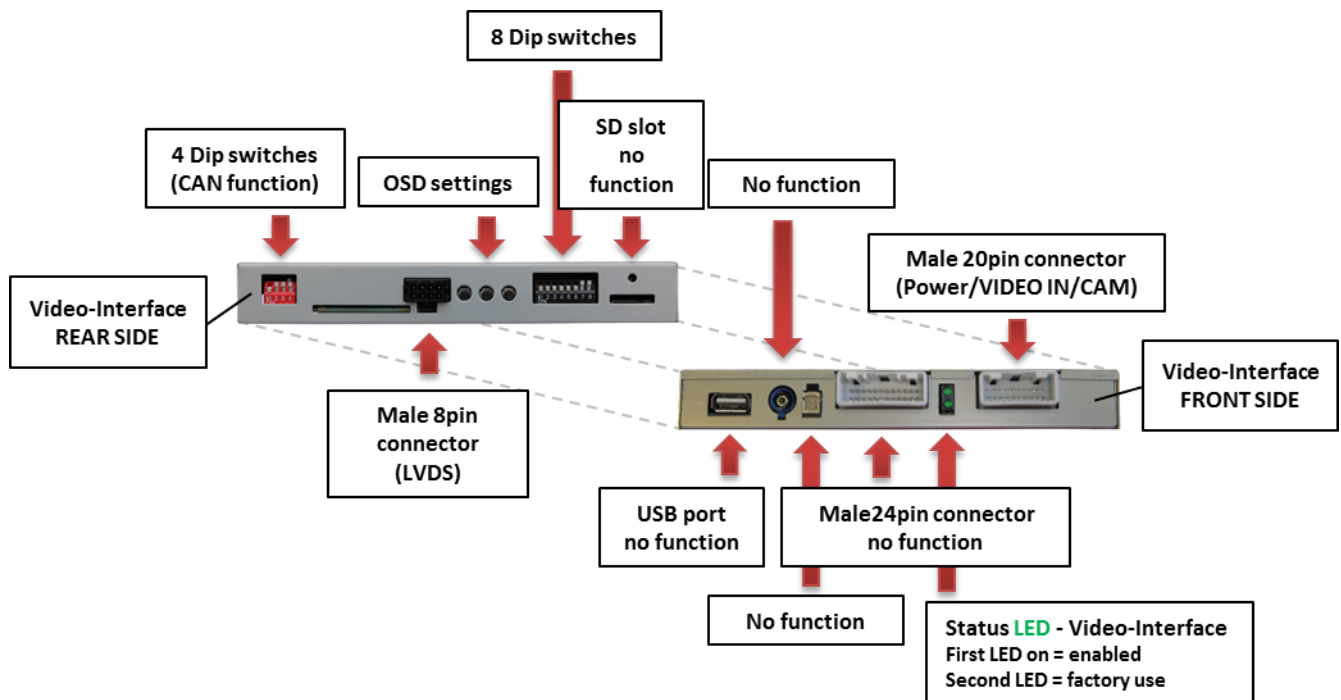
1.2. Checking the compatibility of vehicle and accessories

Requirements		
Brand	Compatible vehicles	Compatible systems
Audi	A3 (8V) from 05/2012-, A4 (8W) from 08/2015-, A5 (8T) from 07/2016-, A6 (4G) from 09/2014-, A7 (4G) from 05/2014-, Q2 (GA) from 09/2016-, Q5 from 2017-, Q7 (4M) from 03/2015-	MMI Navigation Plus with MMI Touch 7", 8" or 8.3" - MIB/MIB II Main-Unit
	A3 (8V) from 05/2012-, A4 (8W) from 08/2015-, A5 (8T) from 07/2016-, Q2 (GA) from 09/2016-, Q5 from 2017-, Q7 (4M) from 03/2015-	MMI Navigation 7" - MIB Std Nav/MIB Std Plus MMI Radio Plus 5.8" or 7" - MIB Entry Plus/MIB Std
	R8 (4S) from 05/2015-, TT (8S) from 07/2014-	MMI Navigation Plus - MIB II Main-Unit with monitor in instrument
Bentley	Bentayga	MIB with 8" monitor
Lamborghini	Huracan 2016-	MIB with monitor in instrument
Porsche	911 (991.2 face-lift) from 12/2015-, Cayenne, Macan and other vehicles with	PCM 4.0
Seat	Arona MY 2018-, Ateca (KH7) MY 2017-, Ibiza (6P) MY 2016-, Leon3 (5F) MY 2013-, Toledo4 (KG) MY 2016-	MIB/MIB2 High/Standard Navigations System Plus or Media System Plus 6.5inch or 8inch monitor
Skoda	Fabia3 (NJ) MY 2014-, Karoq (NU7) MY 2018-, Kodiaq (NS7) MY 2017-, Octavia3 (5E) MY 2012-, Rapid (NH1) MY 2016-, Superb3 (3V) MY 2015-	MIB/MIB2 - High/Columbus and Standard/Bolero/Amundsen - 5.8inch, 6.5inch or 8inch monitor NOT 2018 9.2inch
VW	Arteon (3H) MY 2018-, Crafter (SZ/SY) MY 2017-, Golf7 MY 2012-, Golf7 Sportsvan MY 2014-, Passat (B8) MY 2016-, Polo5 (6C) MY 2014-2017, Polo6 (AW1) MY 2018-, T-Roc (A11) MY 2018-, Tiguan2 (AD1) MY 2016-, Touran (5T) MY 2016-	MIB/MIB2 - High/Discovery Pro and Standard/Composition Media - 5.8inch, 6.5inch or 8inch monitor NOT 2018 9.2inch.
Limitations		
<i>Video only</i>	The interface inserts ONLY video signals into the infotainment. For inserting Audio signals either the possibly existing factory audio-AUX-input or a FM-modulator can be used.	
<i>Connecting 2 AV-sources</i>	If 2 AV-sources shall be connected to the infotainment the optional audio switch SW-A2X1 is available. It is controlled by the video interface.	
<i>Factory rear-view camera</i>	Automatically switching-back from inserted video to factory rear-view camera is only possible while the reverse gear is engaged. To delay the switch-back an additional electronic part is required.	

1.3. Boxes and connectors

1.3.1. Video Interface

The video-interface converts the connected after-market sources video signals into a LVDS signal which is inserted in the factory monitor using separate trigger options.



1.4. Settings of the 8 Dip switches (black)

Some settings must be selected by the dip-switches on the video interface. Dip position down is ON and position up is OFF.



Dip	Function	ON (down)	OFF (up)
1	No function	-	set to OFF
2	CVBS AV1-input	enabled	disabled
3	CVBS AV2-input	enabled	disabled
4	Vehicle specific settings	For Audi TT vehicles	all other vehicles
5	Rear-view cam type	after-market	factory or none
6	Monitor adjustment	Try all 6 possible combinations of Dips 6, 7 and 8 to receive the best picture (quality and size) or see chapter "Monitor adjustment (Dip 6-8)"	
7			
8			

See the following chapters for detailed information.

1.4.1.1. Enabling the interface's video inputs (dip 2-3)

Only the enabled video inputs can be accessed by switching through the interface's video sources. It is recommended to enable only the required inputs. So the disabled inputs will be skipped while switching through the video interfaces inputs.

1.4.1.2. Vehicle specific settings (Dip 4)

Set Dip switch 4 to **ON for Audi TT vehicles**. For all other vehicles it has to be set to OFF.

1.4.1.3. Rear-view camera setting (dip 5)

If set to OFF, the interface switches to factory LVDS picture while the reverse gear is engaged to display factory rear-view camera or factory optical park system picture.

If set to ON, the interface switches to its rear-view camera input while the reverse gear is engaged.

1.4.1.4. Monitor selection (Dip 6-8)

Dips 6-8 customize the monitor-specific video settings which sometimes even vary within head units of the same version, caused by different monitor specifications. It is necessary to try all possible combinations while a working video source is connected to the chosen input of the interface. One of the six combinations will show the best picture size and quality (some may give no picture). It is possible to first hot plug through the dip combinations. If there is no change of picture visible after trying all 6 options, retry and disconnect the 10pin plug of the Quadlock connector between every change of the dip setting.

Empirical value:

Vehicle	Monitor	Dip 4	Dip 6	Dip 7	Dip 8
VW Golf7	8"	OFF	OFF	OFF	OFF
	5.8"	OFF	OFF	OFF	ON
Audi A3 (8V)	7"	OFF	OFF	ON	OFF
	5.8"	OFF	OFF	ON	ON
Audi A4 (8W), A5 (8T)	8.3"	OFF	ON	OFF	OFF
	7"	OFF	OFF	OFF	OFF
Audi A6/A7 (4G)	8"	OFF	OFF	ON	ON
Audi Q7 (4M) Touch	8.3"	OFF	ON	ON	OFF
Audi Q7 (4M) MMI	7"	OFF	OFF	OFF	OFF
Porsche		OFF	OFF	OFF	OFF
VW Touran		OFF	OFF	OFF	OFF
Audi TT (8S)		ON	OFF	OFF	OFF

1.5. Settings of the 4 Dip switches (CAN functions – red)

All 4 dip-switches of the CAN-box have no function for normal use except Porsche vehicles with PCM 4.0 and must be set to OFF.



Dip position down is ON and position up is OFF.

Vehicle/Navigation	Dip 1	Dip 2	Dip 3	Dip 4
All vehicles	OFF	OFF	OFF	OFF
Porsche with PCM 4.0	OFF	ON	OFF	ON

After each Dip-switch-change a power-reset of the Can-box has to be performed!

2. Installation

To install the interface, first switch off the ignition and disconnect the vehicle's battery. Please read the owner's manual of the car, regarding the battery's disconnection! If required, enable the car's Sleep-mode (hibernation mode)

In case the sleep-mode does not succeed, the disconnection of the battery can be done with a resistor lead.

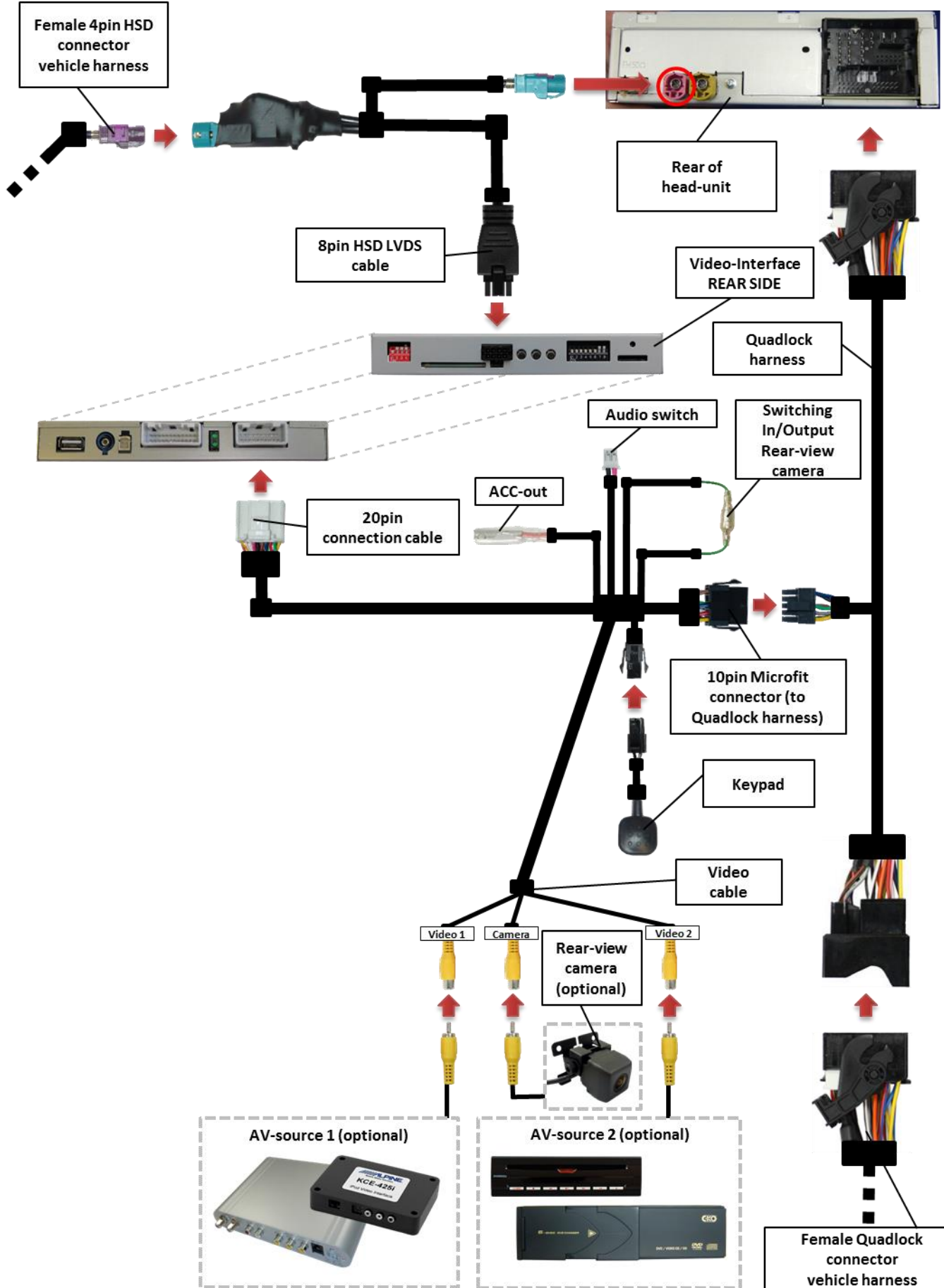
If the necessary stabilized power supply for the interface is not taken directly from the battery, the chosen connection has to be checked for being constantly stabile.

The interface needs a permanent 12V source!

2.1. Place of installation

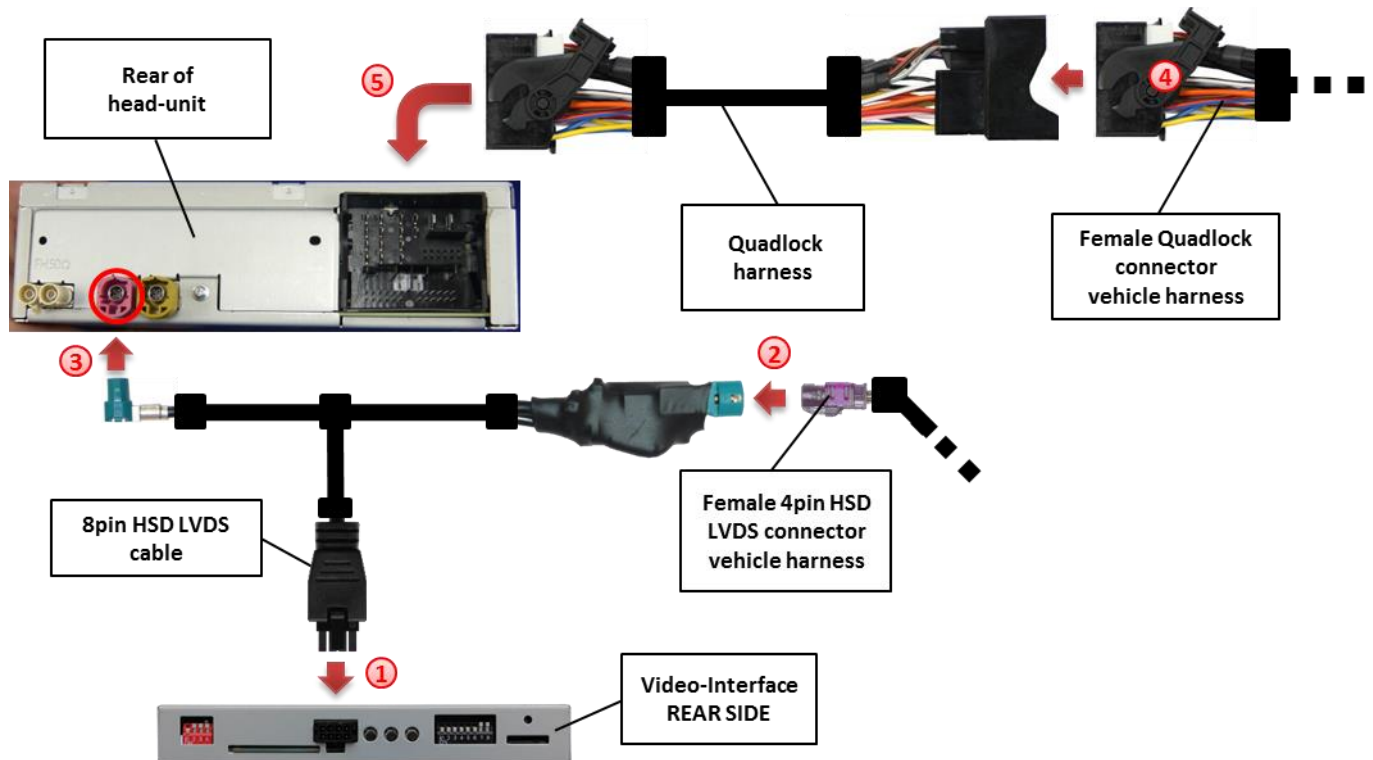
The interface is built to be connected behind the vehicle's head-unit.

2.2. Connection schema

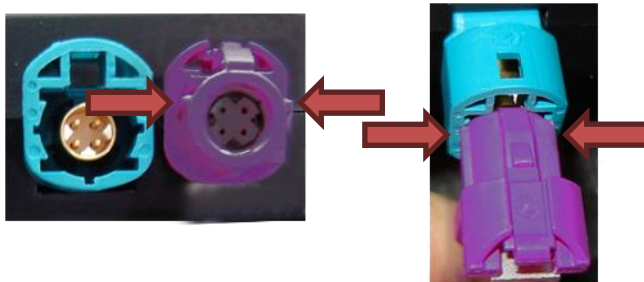


2.3. Connections to the head-unit

Remove head-unit.



- ① Connect female 8pin Micro-Fit connector of the 4pin HSD LVDS cable to male 8pin Micro-Fit connector of the video-interface.
- ② Remove female 4pin HSD LVDS connector from the rear of the head-unit and connect it to the male 4pin HSD LVDS connector of the 4pin HSD LVDS cable.



Note: The marked lug of the female 4pin HSD LVDS connector of the vehicle harness has to be cut off in some vehicles!

The colour of the female 4pin HSD LVDS connector in vehicles with 8" monitor is grey.

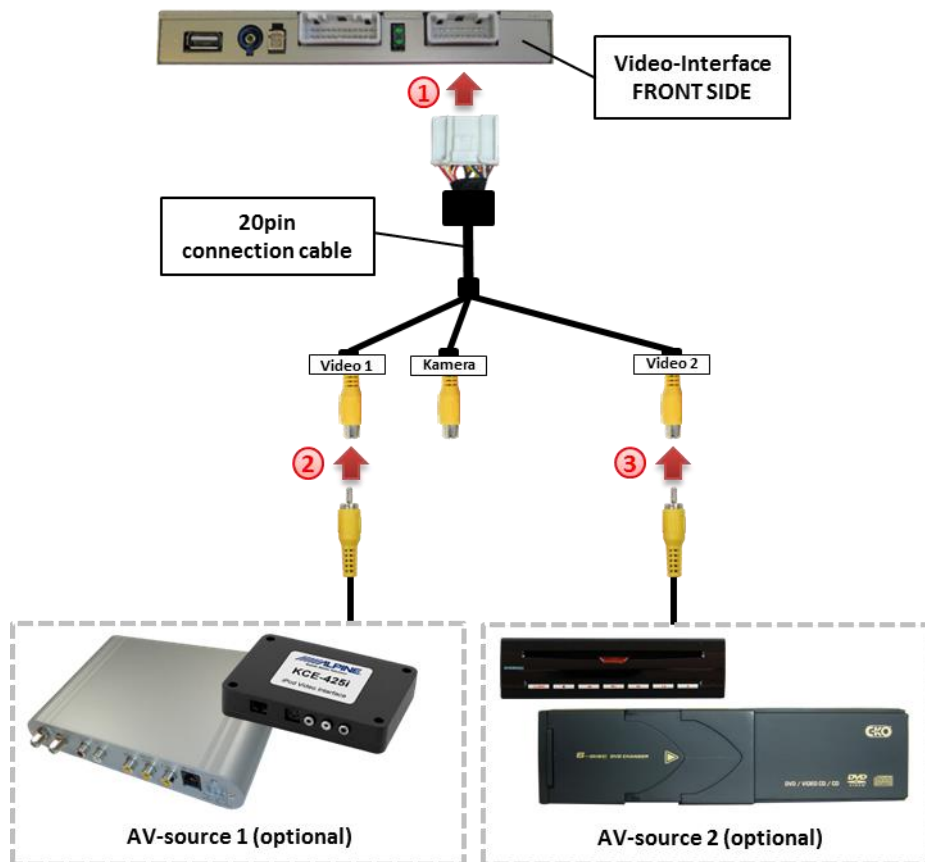
- ③ Connect female 4pin connector of the HSD LVDS interface cable to the male 4pin HSD LVDS connector of the head-unit (**pink or grey on VW vehicles**).
- ④ Remove the female Quadlock connector of the vehicle harness from the rear of the head-unit and connect it to the male Quadlock connector of Quadlock harness.
- ⑤ Connect female Quadlock connector of Quadlock harness to the male Quadlock connector of the head-unit.

2.4. Connecting peripheral devices

It is possible to connect two after-market AV-sources and one after-market rear-view camera to the video-interface.

Before final installation of the peripheral devices, we recommend a test-run to detect a incompatibility of vehicle and interface. Due to changes in the production of the vehicle manufacturer there's always a possibility of incompatibility.

2.4.1. Video-sources to Video IN1 and Video IN2



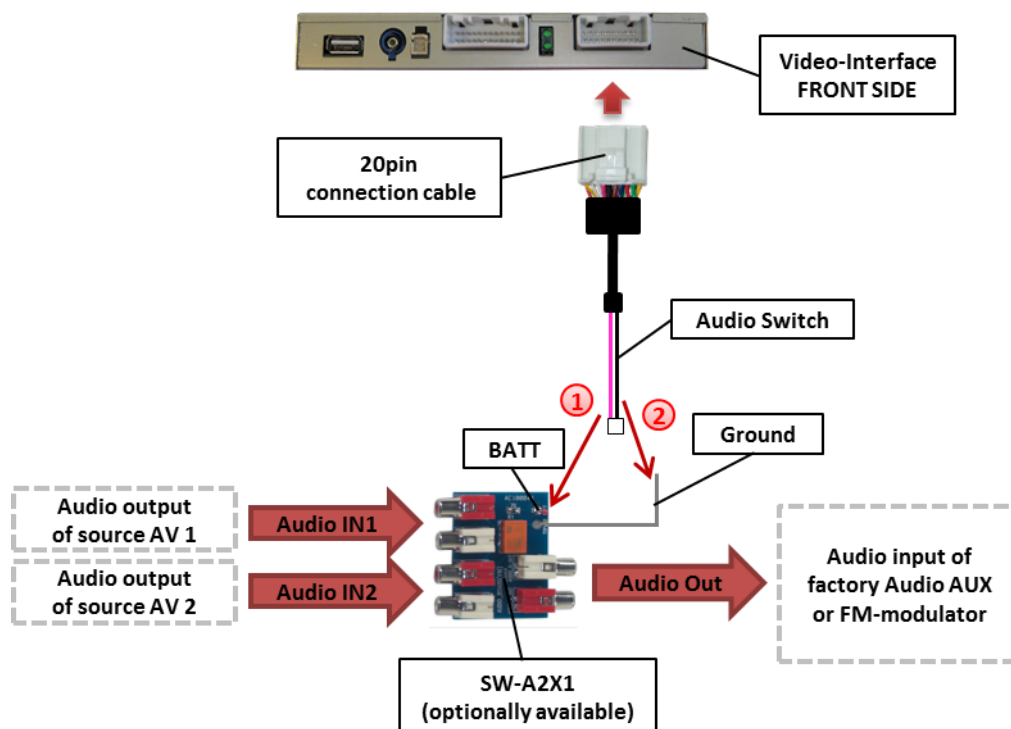
- ① Connect the female 20pin connector of the connection cable to the male 20pin connector of the video-interface.
- ② Connect the video RCA of the AV-source 1 to the female RCA connector Video IN1 of the 20pin connection cable.
- ③ Connect the video RCA of the AV-source 2 to the female RCA connector Video 2 of the 20pin connection cable.

2.4.2. Audio-insertion

This interface is only able to insert video signals into the factory infotainment. If an AV-source is connected, audio insertion must be done by factory audio AUX input or FM-modulator. The inserted video-signal can be activated simultaneously to each audio-mode of the factory infotainment.

2.4.2.1. Connection of 2 Audio sources

If two AV-sources shall be connected, the optionally available audio switch SW-A2X1 is needed. When switching the video interface from video-IN1 to video-IN2, the audio will also automatically be switched by the SW-A2X1.



- ① Connect the **pink** cable (Audio switch - power) of the 20pin connection cable to BATT of the external Audio switch SW-A2X1.
- ② Connect the **black** cable (Audio switch - ground) of the 20pin connection cable to the grey cable of the external Audio switch SW-A2X1.

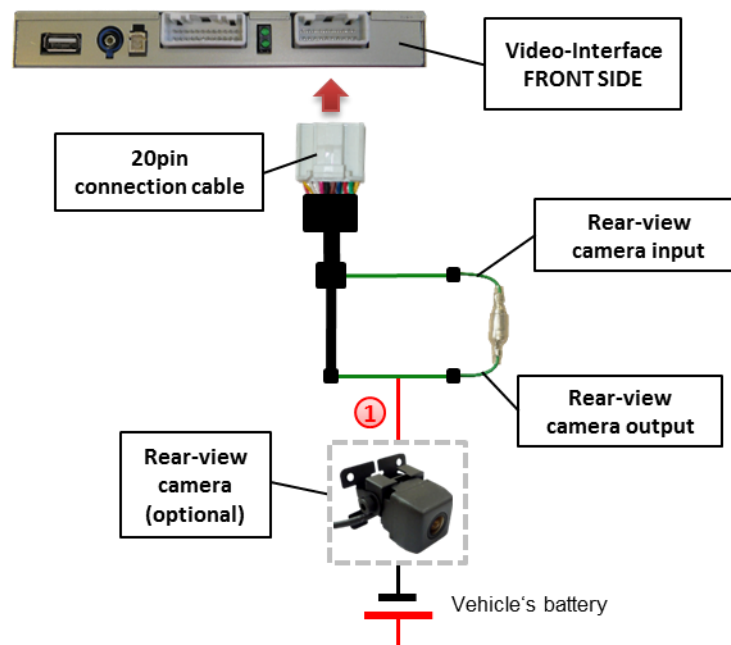
2.4.3. After-market rear-view camera

Some vehicles have a different reverse gear code on the CAN-bus which the video-interface is not compatible with. In this case there are two different ways of installation. If the video-interface is able to detect an enabled vehicle's reverse gear, the green wire of the 6pin to 12pin cable should carry +12V while the reverse gear is engaged.

Note: Do not forget to set dip5 of video-interface to ON before testing.

2.4.3.1. Case 1: CAN-box receives the reverse gear signal

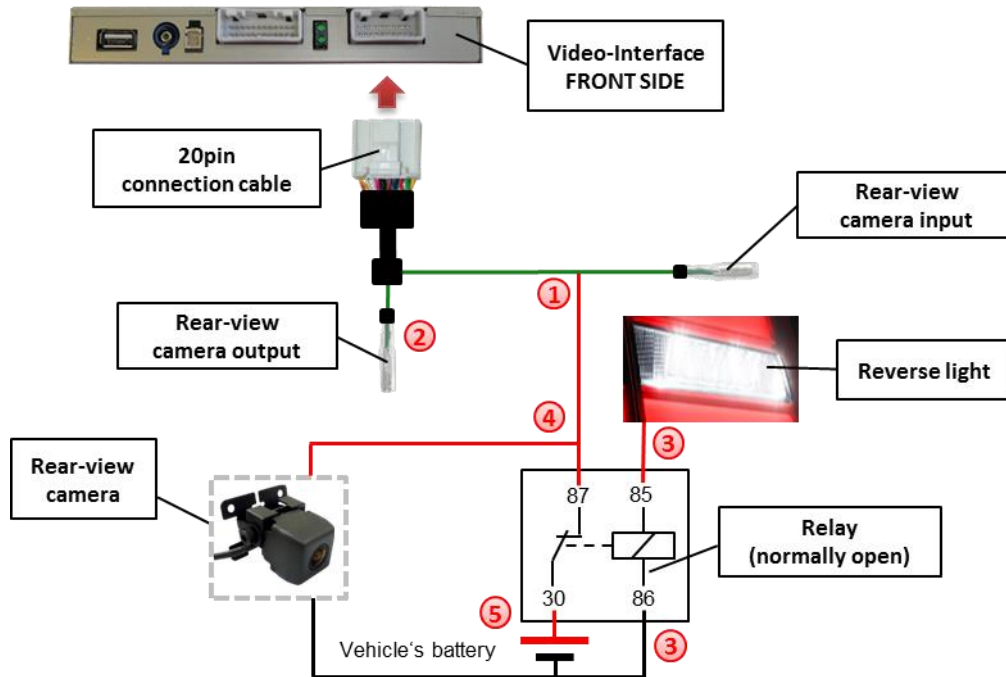
If the CAN-bus box delivers +12V on the green wire of the 6pin to 12pin cable while reverse gear is engaged, the video interface will automatically switch to the rear-view camera input CAM while the reverse gear is engaged.



- ① Additionally, the +12V (max. 500mA) power supply for the rear-view camera can be taken from the green wire of the 20pin connection cable.

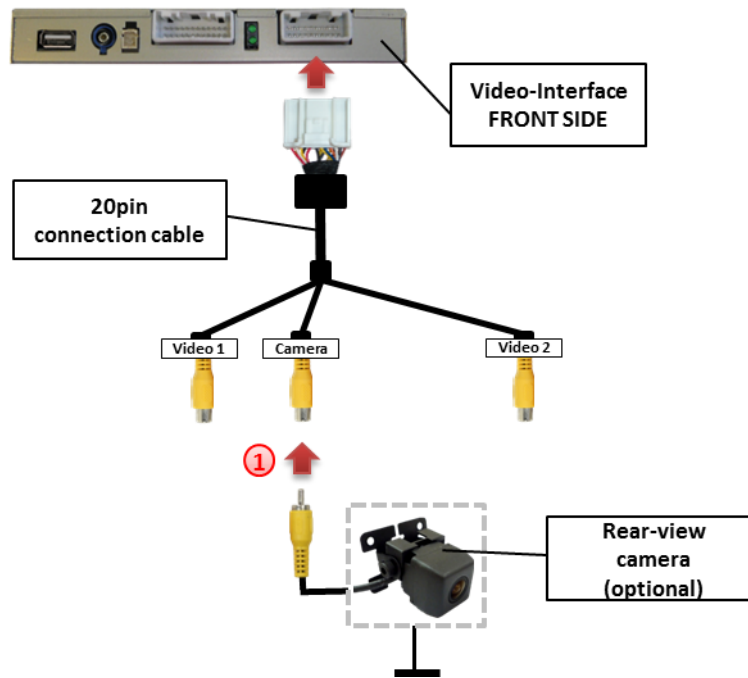
2.4.3.2. Case 2: CAN-box does not receive the reverse gear signal

If the CAN-bus interface does not deliver +12V on the green wire of the 20pin connection cable when reverse gear is engaged (not all vehicles are compatible) an external switching signal from the reverse light is required. As the reverse gear light signal contains electronic interference, a traditional open relay (e.g AC-RW-1230 with wiring AC-RS5) or filter (e.g. AC-PNF-RVC) is required. Below schema shows the use of a relay (normally open).



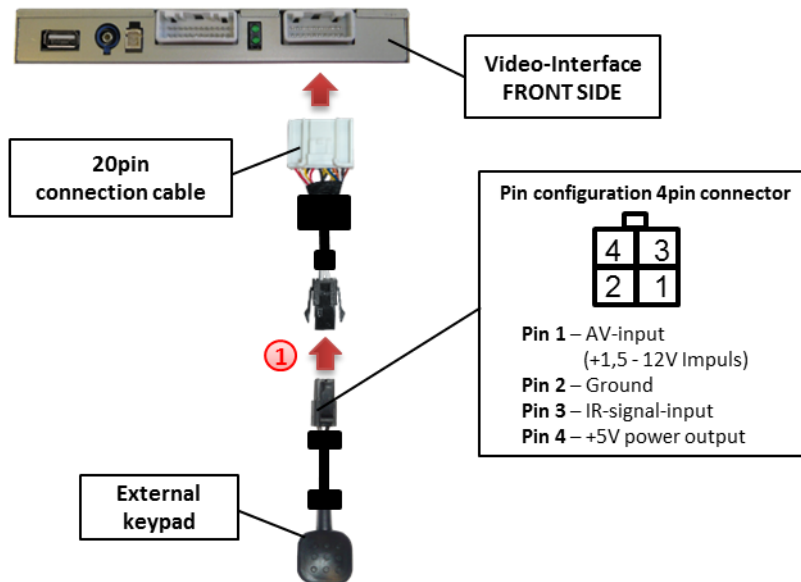
- ① Disconnect the green rear-view camera input cable of the 20pin connection cable from the rear-view camera output cable near the transparent plug.
- ② The green rear-view camera output cable of the 20pin connection cable is not used.
- ③ Connect the reverse gear light signal/power to coil (85) and ground to coil (86) of relay.
- ④ Connect the rear-view camera power wire and the green rear-view camera input cable of the 20pin connection cable both to output (87) of the relay.
- ⑤ Connect permanent battery power to input (30) of relay.

2.4.3.3. Video signal connection of rear-view camera



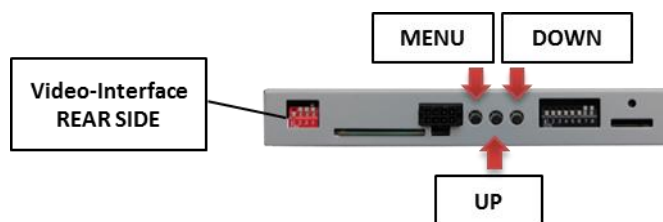
① Connect the video-RCA of the after-market rear-view camera to the female RCA port of the 20pin connection cable which is labeled as CAM.

2.5. Connecting video-interface and keypad



① Connect the female 4pin connector of the keypad to the male 4pin connector of the 20pin connection cable.

2.6. Picture settings and guide lines

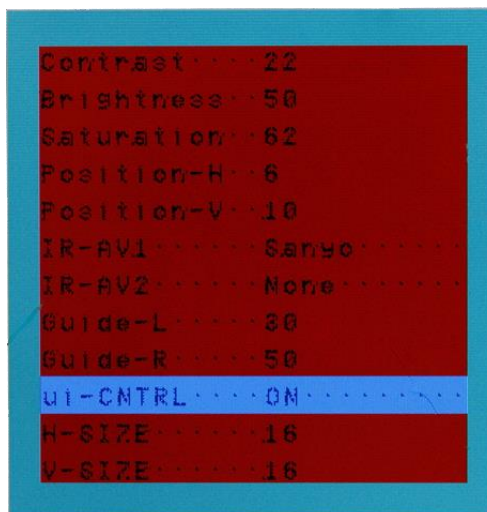


The picture settings are adjustable by the 3 push-buttons on the video-interface. Press the MENU button to open the OSD settings menu or to switch to the next menu item. Press UP and DOWN to change the selected value. The buttons are placed inside in the housing to avoid accidental changes during or after the installation. Picture settings must be done separately for RGB, AV1 and AV2 while the corresponding input is selected and visible on the monitor.

Note: The OSD menu is only shown when a working video source is connected to the selected video-input of the interface.

The following settings are available:

- Contrast
- Brightness
- Saturation
- Position H (horizontal)
- Position V (vertical)
- IR-AV1/2 (no function)
- Guide L/R (no function)
- UI-CNTRL (guide lines ON/OFF)
- Size H/V (picture size horizontal/vertical)



Note: If there is no communication between the CAN box and the vehicle`s CAN-bus (several vehicles aren`t compatible), the .reverse gear guide-lines can`t be shown during the vehicle`s operation, even if they once appear after having switched the system to powerless!

3. Interface operation

3.1. By factory infotainment button

One of the factory infotainment buttons can be used to execute interface functions.

For Skoda/Volkswagen/Audi vehicles

Press **MENU button** to switch the video-source

For Audi A3 vehicles

Press **NAVI** button to switch the video-source.

For Porsche vehicles

Press **NAVI** button to switch the video-source.

Each press will switch to the next enabled input. If all inputs are enabled the order is:

Factory video → video IN1 → video IN2 → factory video →...

Inputs which are not enabled are skipped.

Switchover by vehicle buttons isn't possible in all vehicles. In some vehicles the external keypad has to be used.

3.2. By keypad

Alternatively or additionally to the factory infotainment buttons the interface's external keypad can be used to switch the enabled inputs.

4. Specifications

BATT/ACC range	7V - 25V
Stand-by power drain	<30mA
Power	0.3A @12V
Video input	0.7V - 1V
Video input formats	PAL/NTSC
Temperature range	-40°C to +85°C
Dimensions video-box	155 x 22 x 90 mm (W x H x D)

5. FAQ – Trouble shooting Interface functions

For any troubles which may occur, check the following table for a solution before requesting support from your vendor.

Symptom	Reason	Possible solution
No picture/black picture (factory picture).	Not all connectors have been reconnected to factory head-unit or monitor after installation.	Connect missing connectors.
	No power on CAN-bus box (all LED CAN-bus box are off).	Check power supply of CAN-bus box. Check CAN-bus connection of CAN-bus box.
	CAN-bus box connected to CAN-bus in wrong place.	Refer to the manual where to connected to the CAN-bus. If not mentioned, try another place to connect to the CAN-bus.
	No power on video-interface (all LED video-interface are off).	Check whether CAN-bus box delivers +12V ACC on red wire output of 8pin to 6pin cable. If not cut wire and supply ACC +12V directly to video-interface.
No picture/black picture/white picture (inserted picture) but factory picture is OK.	No picture from video source.	Check on other monitor whether video source is OK.
	No video-source connected to the selected interface input.	Check settings dips 1 to 3 of video interface which inputs are activated and switch to corresponding input(s).
	LVDS cables plugged in wrong place.	Double-check whether order of LVDS cables is exactly connected according to manual. Plugging into head-unit does not work when the manual says to plug into monitor and vice versa.
Inserted picture totally wrong size or position.	Wrong monitor settings of video-interface.	Try different combinations of dips 7 and 8 of video-interface. Unplug 6pin power after each change.
Inserted picture double or 4 times on monitor.		
Inserted picture distorted, flickering or running vertically.	Video sources output set to AUTO or MULTI which causes a conflict with the interfaces auto detection.	Set video source output fixed to PAL or NTSC. It is best to set all video sources to the same standard.
	If error occurs only after source switching: Connected sources are not set to the same TV standard.	Set all video sources to the same standard.
	Some interfaces can only handle NTSC input.	Check manual whether there is a limitation to NTSC mentioned. If yes, set source fixed to NTSC output.
Inserted picture b/w.	Picture settings have not been adjusted.	Use the 3 buttons and the interface's OSD to adjust the picture settings for the corresponding video input.
Inserted picture qual. bad.		
Inserted picture size slightly wrong.		
Inserted picture position wrong.		
Camera input picture flickers.	Camera is being tested under fluorescent light which shines directly into the camera.	Test camera under natural light outside the garage.
Camera input picture is bluish.	Protection sticker not removed from camera lens.	Remove protection sticker from lens.

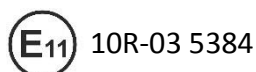
Symptom	Reason	Possible solution
Camera input picture black.	Camera power taken directly from reverse gear lamp.	Use relay or electronics to "clean" reverse gear lamp power. Alternatively, if CAN-bus box is compatible with the vehicle, camera power can be taken from green wire of 6pin to 8pin cable.
Camera input picture has distortion.		
Camera input picture settings cannot be adjusted.	Camera input picture settings can only be adjusted in AV2 mode.	Set dip 3 of video-interface to ON (if not input AV2 is not already activated) and connect the camera to AV2. Switch to AV2 and adjust settings. Reconnect camera to camera input and deactivate AV2 if not used for other source.
Graphics of a car in camera input picture.	Function PDC is ON in the interface OSD.	In compatible vehicles, the graphics will display the factory PDC distance. If not working or not wanted, set interface OSD menu item UI-CNTRL to ALLOFF.
Chinese signs in camera input picture	Function RET or ALL is ON (function for Asian market) in the interface OSD.	Set interface OSD menu item UI-CNTRL to ALLOFF or PDCON.
Not possible to switch video sources by OEM button.	CAN-bus interface does not support this function for vehicle.	Use external keypad or cut white wire of 6pin to 8pin cable and apply +12V impulses for AV-switching.
Not possible to switch video sources by external keypad.	Pressed too short.	For video source switching a longer press of about 2.5 seconds is required.
	SW-version of interface does not support external keypad.	Use OEM-button or cut white wire of 6pin to 8pin cable and apply +12V impulses for AV-switching.
Interface does not switch to camera input when reverse gear is engaged.	CAN-bus interface does not support this function for the vehicles.	Cut the green wire of the 6pin to 8pin cable and apply +12V constant from reverse gear-lamp signal. Use relay to "clean" R-gear lamp power.
Interface switches video-sources by itself.	CAN-bus interface compatibility to vehicle is limited.	Cut the grey wire of 6pin to 8pin and isolate both ends. If problem still occurs, additionally cut the white wire of 6pin to 8pin cable and isolate both ends.

6. Technical Support

Please note that direct technical support is only available for products purchased directly from NavLinkz GmbH. For products bought from other sources, contact your vendor for technical support.

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