r.LiNK Video-inserter

RL2-GVIF

for Chevrolet, Lexus and Toyota vehicles with GVIF technology and for Land Rover and Jaguar with touch-screen navigation version 1 and 1.1

Video-inserter for front- and rear-view camera input and additional video source

Product features

- **Video-Inserter for Factory-Infotainment Monitors**
- **Rear and Front Camera FBAS Input**
- **FBAS Video Input for After-Market Devices (e.g. DVD-Player, DVD-Tuner)**
- **Automatic Switching to Rear View Camera, Input by Engagement of Reverse Gear**
- **Manual Switching to Front Camera by Keypad or factory button**
- **Activatable Parking Guide Lines for Rear-View Camera (not all vehicles)**
- **Video-in-motion (ONLY for connected video-sources)**
- **AV-inputs PAL/NTSC compatible**

Version 08.07.2016

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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. This product should only be used while standing or 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. We offer free software-updates for our interfaces for one year after purchase. To receive a free update, the interface must be sent in at own cost. Labor cost for and other expenses 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

Take down the serial number of the interface and store this manual for support purposes: _____

1.2. Checking the compatibility of vehicle and accessories

Requirements

Vehicle	Chevrolet Camaro model years 2013-2014
	Lexus LS/GS/RX/ES/IS, monitor and head-unit must be **separate units and connected with a GVIF cable**!
	Toyota Landcruiser, Prius and other vehicles from 2007 with GVIF technology, monitor and head-unit must be **separate units and connected with a GVIF cable**!
	Jaguar XF X250, XK X150 (Modelljahre 2007-2011)
	Land Rover Range Rover (Vogue) L322 (2005-2009), Range Rover Sport L320 (2005-2009), Discovery 3 L319 (2004-2009), Freelander 2 L359 (2007-2012) **Only Jaguar and Land Rover vehicles with factory navigation!**
Head-unit/monitor	Chevrolet with 7" MyLink Lexus and Toyota with GVIF-technology Jaguar with touch-screen navigation version 1.1 (menu 2) Land Rover with touch-screen navigation version 1 and 1.1 (menu 2)

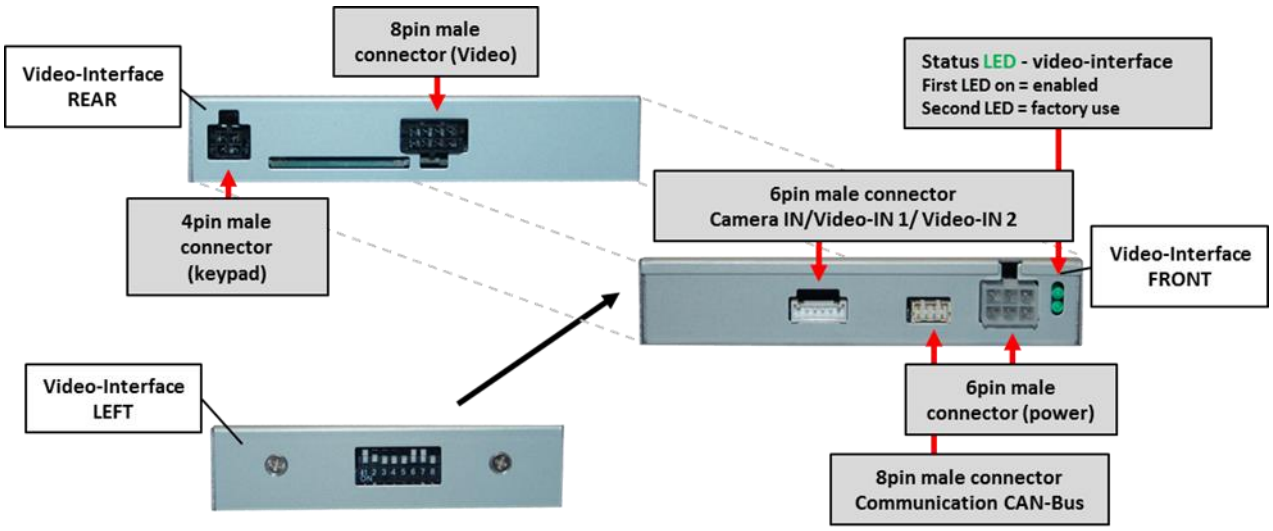
Limitations

Video only	The interface inserts ONLY video signals into the infotainment. For sound use the possibly existing factory-audio-AUX-input or a FM-modulator.
Video insertion Jaguar/LR	The inserted video can only be seen in map mode of the factory navigation (the automatically switching to an after-market rear-view camera, too).
Jaguar/LR with Touch-screen version 1	Blue GVIF connectors of vehicle and interface must be cut and soldered (exchanged for each other).
Factory rear-view camera	Automatic switch-back from inserted video to factory rear-view camera only while reverse gear is engaged. To delay the switch-back time, additional electronics is required.

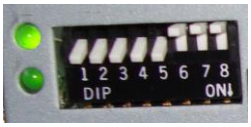
1.3. Boxes and connectors

1.3.1. Video-interface

The video-interface converts the connected after-market sources video signals to an GVIF signal which is the inserted into the factory monitor on certain trigger options.



1.4. Dip-switch settings



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 OFF
2	Input Front Camera	enabled	disabled
3	Video 2	enabled	disabled
4	No Function		Switch to OFF
5	Rear-view cam type	After-Market	Factory or none
6	No function	-	Set OFF
7	Monitor selection	Try all 4 possible combinations of dip 7 and 8 to find the best picture (quality and size)	
8			

See 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 when switching through the interface's video sources. It is recommended to enable only the required inputs for the disabled will be skipped when switching through the video-interfaces inputs.

1.4.1.2. 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 witches to its rear-view camera input CAM while the reverse gear is engaged.

1.4.1.3. Monitor selection (dip 7-8)

Dip 7 and 8 are for monitor-specific video settings which cannot be predicted as even within the same head-unit version, the monitor specifications may vary. It is necessary to try all possible combinations (both OFF, both ON, 7 OFF and 8 ON, 7 ON and 8 OFF) - while a working video source is connected to the chosen input of the interface - to see which combination gives the best picture quality and size (some may give no picture). It is possible to first hot plug through the dip combinations, but if you do not experience any change of picture after trying all 4 options, retry and disconnected the 6pin power plug of the video-box between every change of the dip setting.

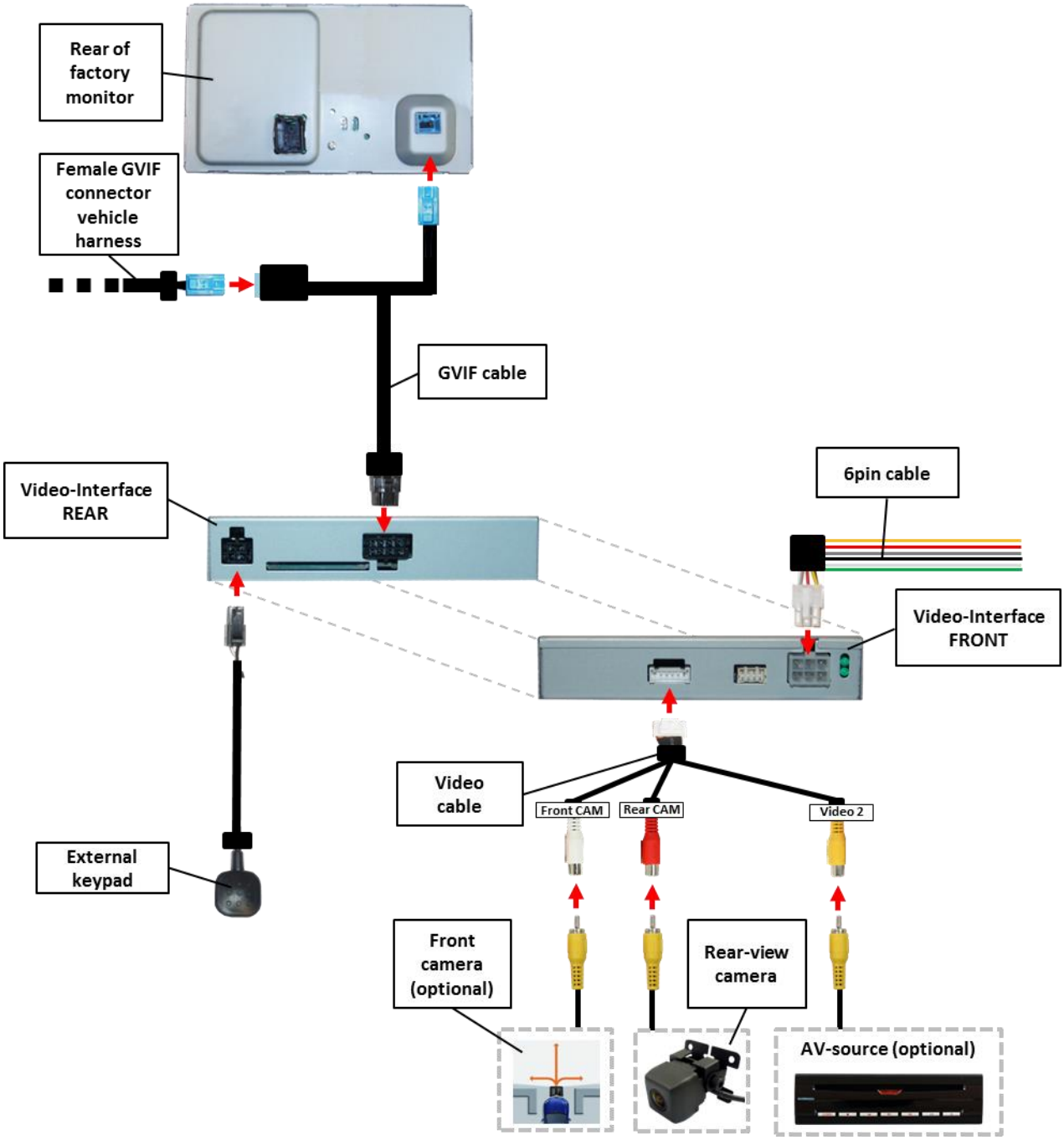
2. Installation

Switch off ignition and disconnect the vehicle's battery! The interface needs a permanent 12V source. If according to factory rules disconnecting the battery is to be avoided, it is usually sufficient to put the vehicle is sleep-mode. In case the sleep-mode does not show success, disconnect the battery with a resistor lead.
If power source is not taken directly from the battery, the connection has to be checked for being start-up proven and permanent.

2.1. Place of installation

The interface is installed on the backside of the factory monitor.

2.2. Connection schema



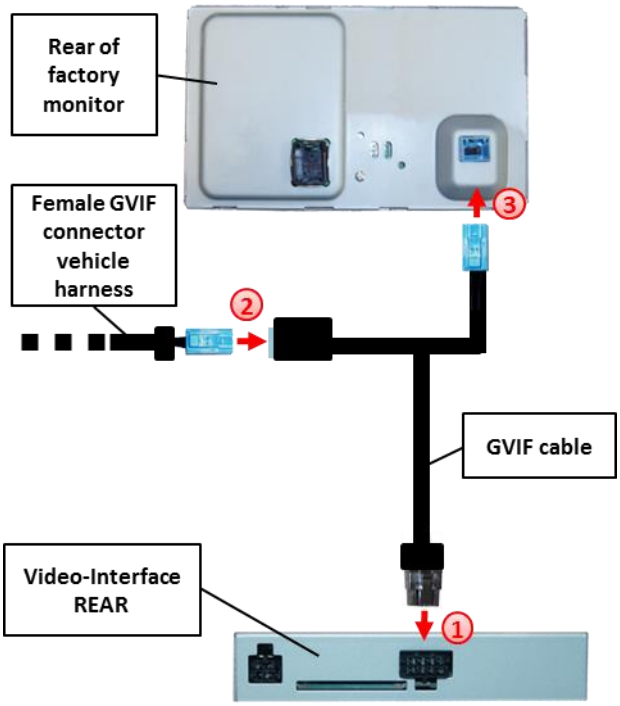
2.3. Connecting video-interface and 6pin cable

1. Connect white female 6pin Molex connector of the 6pin to 8pin cable to the male 6pin Molex connector of the video-interface.

   Note: Check LEDs on video-interface after reconnecting the battery, one must be on.

2.4. Connections to the factory monitor

Remove factory monitor.



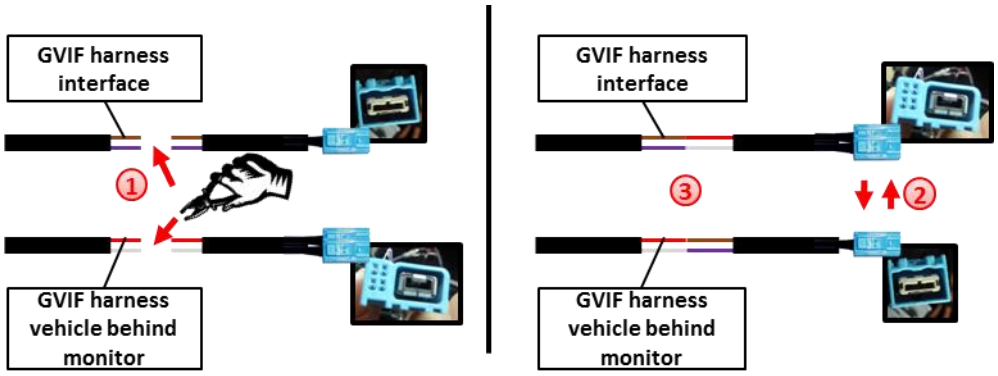
1. Connect female 8pin connector of the GVIF cable to the male 8pin connector of the interface.

2. Remove female GVIF connector from the rear of the factory monitor and connect it to the GVIF connector of the GVIF cable.

3. Connect female GVIF connector of the GVIF cable to the male GVIF connector of the factory monitor.

2.4.1. Special case 1: Jaguar and Land Rover with touch-screen version 1

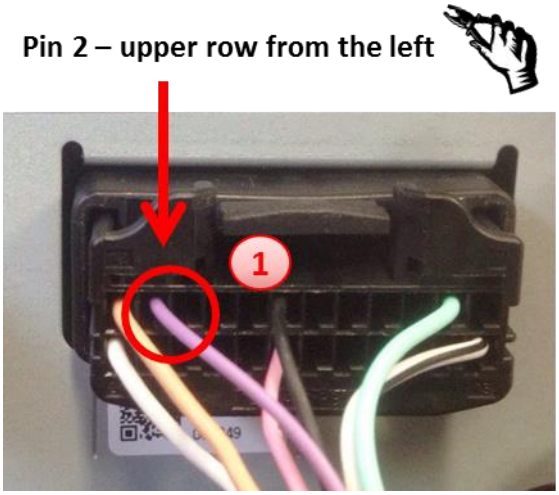
Blue GVIF connectors of vehicle and interface must be cut and soldered (exchanged for each other).



1. Cut the GVIF connectors of vehicle and Interface.
2. Exchange the GVIF connectors of vehicle and Interface.
3. Solder the GVIF connector of the vehicle to the harness of the interface and the GVIF connector of the interface to the harness of the vehicle. Connect the red wire to the brown wire and the white wire to the purple wire.

2.4.2. Special case 2: Lexus/Toyota – picture is blinking after installation

On some vehicles (Lexus/Toyota) the picture is blinking after installation. An additional cable at the power connector of factory monitor needs to be cut in this case.



1. Cut the cable at pin 2 of the upper row from the left side and isolate both ends.

Note: Cable colour of pin 2 may vary.

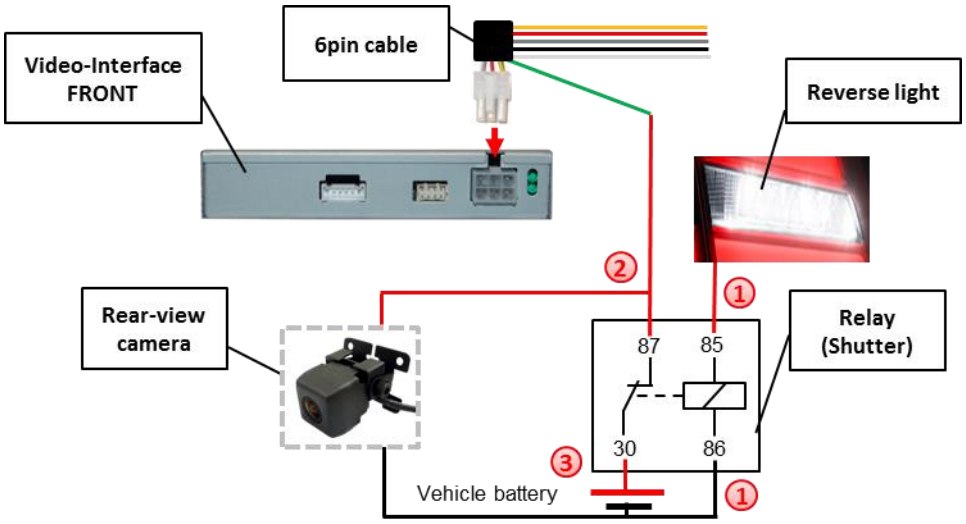
2.5. Connecting peripheral devices

It is possible to connect an after-market rear-view camera, an after-market front camera and an after-market AV-source to the video-interface.

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

2.6.1 After-market rear-view camera

For switching to rear-view camera when reverse gear is engaged an external switching signal from the reverse gear light is required. As the reverse gear light signal contains electronic interference, a normally 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).

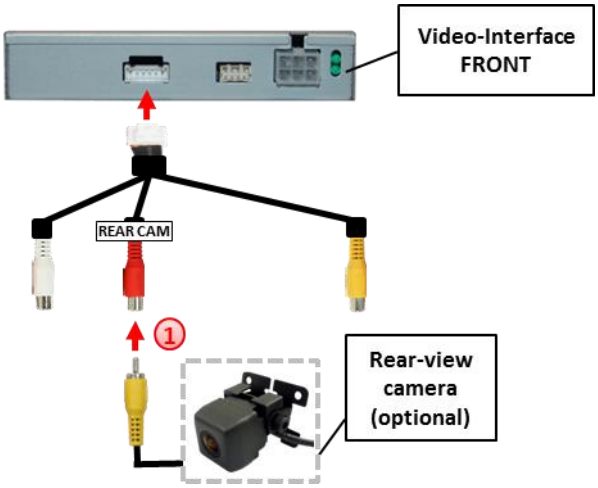


1. Connect reverse gear light signal/power to coil (85) and ground to coil (86) of relais.
2. Connect rear-view camera power and green wire (video interface side) of 6pin to 8pin cable to output (87) of relay.
3. Connect permanent battery power to input (30) of relay.

Note: Set Dip 5 to ON.

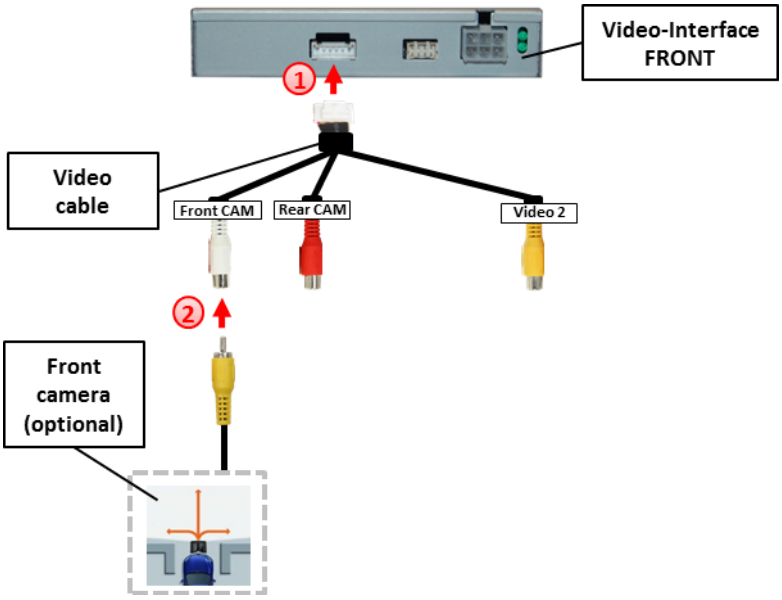
On Jaguar and Land Rover the automatically switching to an after-market rear-view camera is only possible in navigation mode.

2.6.1.3 Video Signal Connection to Rear View Camera



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

2.6.2 After Market Front Camera

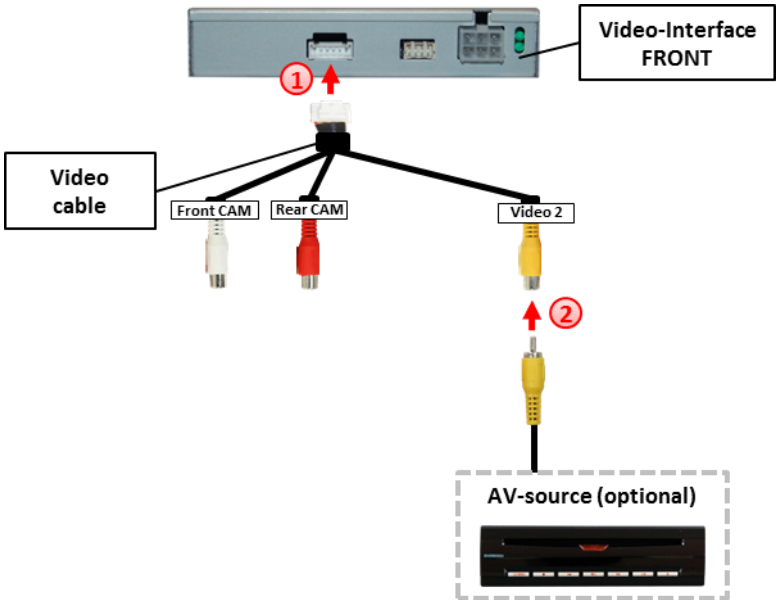


1. Connect 6pin male connector of video cable to 6pin female connector of video interface

2. Connect male RCA of front camera to the white female RCA “Front Cam” of video Cable

Note: There is no automatic switch to front camera. Only manual switching by keypad or “hang up” key.

2.6.3 After Market Video Source



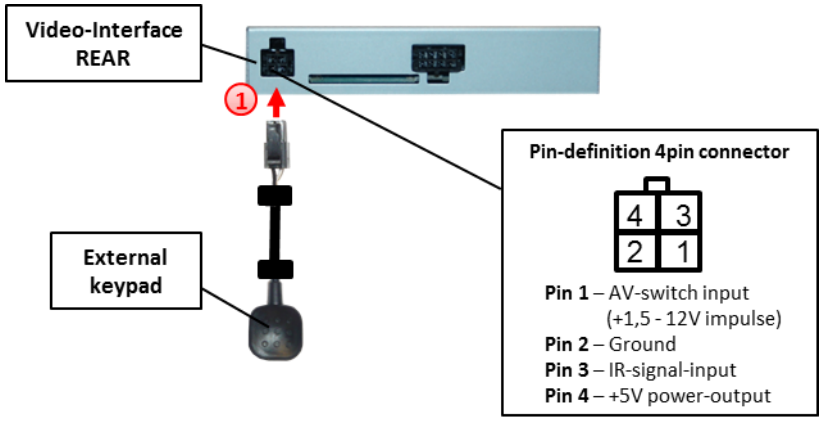
1 Connect 6pin male connector of video cable to female 6pin connector of video interface

2 Connect video RCA of video source to yellow RCA “Video2” of video cable.

2.6.4 Audio Insertion

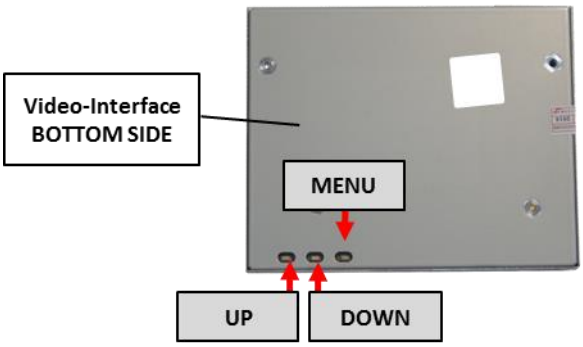
This interface can only insert video signals into the factory infotainment. If an AV-source is connected, audio insertion must be done by factory audio AUX input or FM-modulator. The inserted video-signal can be activated simultaneously to each audio-mode of the factory infotainment.

2.7 Connection Video Interface and external keypad



1 Connect 4pin female Microfit connector of external keypad to male 4pin Microfit connector of video interface

2.8 Picture settings and guide lines



The picture settings are adjusted by the 3 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 change the selected value. The buttons are embedded in the housing to avoid accidental changes during or after installation. Picture settings must be done separately for RGB, AV1 and AV2 while the corresponding input is selected and visible on the monitor. AV2 and CAM share the same settings which must be adjusted in AV2.

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:

Brightness
Contrast
Saturation
Position H (horizontal)
Position V (vertical)

3. Interface operation

The interface's **keypad** can be used to execute interface functions.

Short press keypad to switch the video-source.

Each repetition will switch to the next enabled input. Inputs which are not enabled are skipped.

Note: The white wire of the 6pin cable can be used with a +5-12V pulse to switch the video-sources alternatively.

4. Specifications

BATT/ACC range	7V ~ 25V
Stand-by power drain	<10mA
Power consumption	4,8W
Video input formats	PAL/NTSC
RGB-video amplitude	0.7V with 75 Ohm impedance
Temperature range	-40°C to +85°C
Weight	278g
Dimensions (box only) B x H x T	113 x 22 x 92 mm

CE ⎓12V DC

5. Frequently asked questions

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.
Inserted picture b/w.	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 qual. bad.	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 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.

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.
	Pressed too short.	For video source switching a longer press of about 2.5 seconds is required.
Not possible to switch video sources by external keypad.	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" 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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