

Camera interface

RL-LR10-TF

**Rear-view camera-input
and
video-in-motion
compatible with Landrover
touch-screen navigation systems
model 2010-2011**

Only for vehicles WITHOUT factory rear-view camera

Contents

1. Prior to installation

- 1.1. Delivery contents
- 1.2. Check compatibility of vehicle and accessories
- 1.3. Setting the Dip-switches of the CAN-Box TV-400/500
- 1.4. Pin-assignments

2. Connection schema

3. Installation

- 3.1. Interconnecting CAN-box, harness and radio module
- 3.2. Connection to rear-view camera

4. Activation of the video-in-motion function

5. Specifications

6. Technical support

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 SW-version and HW-version of the interface boxes, and store this manual for support purposes.



1.2. Check compatibility of vehicle and accessories

Requirements

Vehicle Range Rover (Vogue) L322 (2010-2012), Range Rover Sport L320 (2010-2011), Discovery4 L319 (2010-2011)

Navigation Touch-screen navigation version 2

Limitations

After-market rear-view camera Only compatible with NTSC-cameras.

1.3. Setting the dip switches of the CAN-box TV-400/500

TV-400

All vehicles dip 1 ON, dip 2 ON, dip 3 ON



Note: Setting dip 1 to ON codes the factory rear-view camera input which is located on the 6pin male connector of the factory monitor. When reverse gear is engaged, the navigation will automatically switch to this input. On vehicles with factory rear-view camera set Dip 1 to ON, too.

TV-500

Vehicle/ navigation	Dip 1	Dip 2	Dip 3	Dip 4	Dip 5	Dip 6
Video-in-motion permanent	ON	ON	OFF	OFF	ON	ON
Video-in-motion selective*	OFF	ON	OFF	OFF	ON	ON

* With dip1 to OFF the included green cable is used to activate the video-in-motion function

Note: Dip switch functions of the TV-500

Dip 1 – activation TV-free

Dip 2 – rear-view camera existing

Dip 3 – TV icon simulation

Dip 4 – no function

Dip 5 – termination resistor CAN-Bus

Dip 6 – termination resistor CAN-Bus

Setting dip 2 to ON codes the factory rear-view camera input which is located on the brown Fakra male connector of the factory monitor. When reverse gear is engaged, the navigation will automatically switch to this input. On vehicles with factory rear-view camera set Dip 2 to ON, too.

1.4. Pin-assignments

Pin-assignment vehicle connector Range Rover Vogue

Cable colour	Assignment
● Yellow/White	CAN-HIGH Pin 9
● Yellow/Blue	CAN-LOW Pin 10

Pin assignment vehicle connector Sport & Discovery

Cable colour	Assignment
● Yellow/White	CAN-HIGH
● Yellow	CAN-LOW

No liability for vehicle wire colors and pin definition! Possible changes by the vehicle manufacturer. The given information must be verified by the installer.

Pin-assignment of the CAN-Box TV-400/500 (Molex 8pin)

Cable colour	Pin-No.	Assignment
● Yellow	Pin 4	CAN-HIGH – connection to the head-unit
● Blue	Pin 3	CAN-LOW – connection to the head-unit
● Yellow/Black	Pin 8	CAN-HIGH – connection to the vehicle
● Blue/Black	Pin 7	CAN-LOW – connection to the vehicle
● Red	Pin 1	+12V permanent
● Black	Pin 5	Ground
● Green	Pin 6	Activation of the video-in-motion function (+12V = TV-free activated)
● White	Pin 2	Trigger output (+12V DC 500mA)

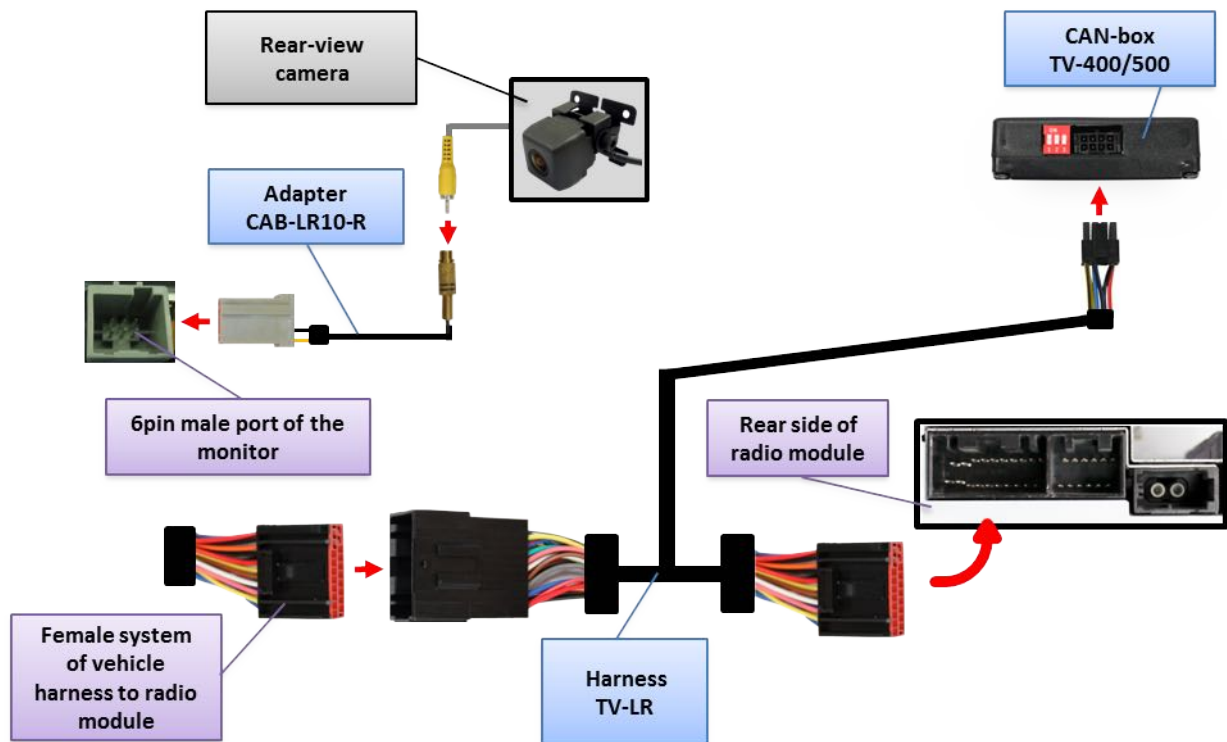
Assignment 6pin male port of the monitor



Pin 2: Video-signal rear-view camera

Pin 5: Video-signal ground rear-view camera

2. Connection schema

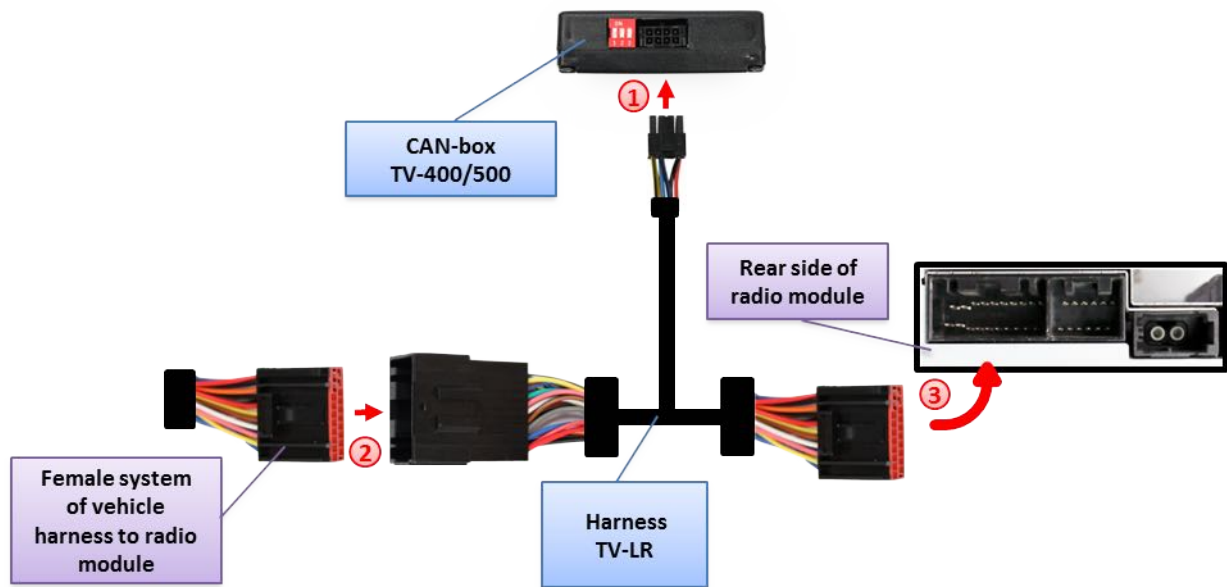


3. Installation

Switch off ignition and disconnect the vehicle's battery! If according to factory rules disconnecting the battery has to be avoided, it is usually sufficient to put the vehicle in sleep-mode. In case the sleep-mode does not show success, disconnect the battery with a resistor lead.

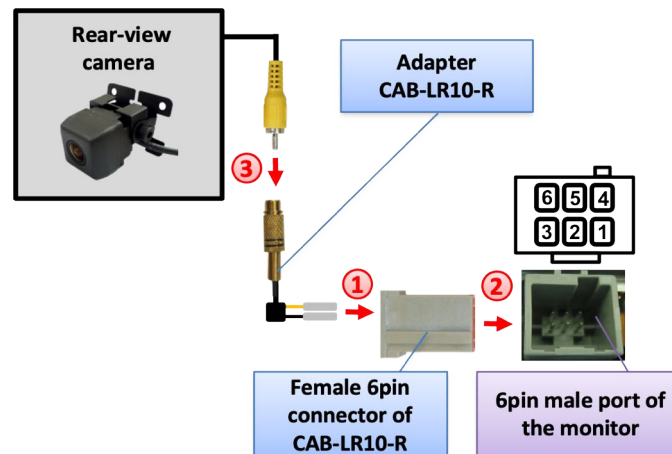
Place of installation is on rear of the radio module and behind the factory navigation monitor. On Range Rover Vogue the radio module is a hide-away box which is located behind the glove box, on Range Rover Sport and Discovery 4 the radio module is located behind the factory navigation monitor.

3.1. Interconnecting CAN-Box, harness and radio module



- ① Connect female 8pin Molex connector of harness TV-LR to male 8pin Molex connector of CAN-box TV-400/500.
- ② Transfer female system-connector of vehicle harness from rear of radio module into male system-connector of harness TV-LR.
- ③ Plug female system-connector of TV-LR into male socket on the rear of radio module.

3.2. Connections to rear-view camera



- ① Pin coloured video-signal (black video-signal ground) with bare contact of adapter CAB-LR10-R into pin 2 (pin 5) of the female grey-red 6pin connector. Use red front is to lock the pins in the connector.
- ② Connect female grey-red 6pin connector to 6pin male port of the monitor.
- ③ Connect the video RCA of the rear-view camera to female RCA connector of adapter CAB-LR10-R.

Note: Only compatible with NTSC-cameras.

If the factory Adventure-camera is installed, there is already a female grey-red 6pin connector on the factory vehicle harness which is connected to the male 6pin port on the backside of the factory monitor. In this case pin the two bare contacts into the female grey-red 6pin connector of the vehicle harness instead of the supplied one.

4. Activation of the video-in-motion function

TV-400

The video-in-motion function is activated permanently without disturbing the navigation performance.

Note: The loose white and green cable are not required and must be isolated.

TV-500

The video-in-motion can be activated and deactivated by Dip 1 or alternatively by the included loose green cable in connection with a switch (not included in delivery).

Video-in-motion permanent

With dip1 to ON the video-in-motion function is activated permanently without disturbing the navigation performance.

Video-in-motion selective

With dip1 to OFF the included green cable is used to activate the video-in-motion function.

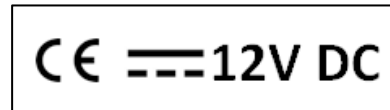
Connect a switch to the green cable and connect the green cable to +12V ACC.

- +12V = TV-Free is activated
- 0V = TV-Free is not activated

Note: The loose white cable is not required and must be isolated.

5. Specifications

Operation voltage	10.5 – 14.8V
Stand-by power drain	<2mA
Operation power drain	~60mA
Power consumption	~0,08W
Temperature range	-30°C to +80°C
Weight	44g
Measurements (box only) W x H x D	70 x 20 x 47 mm/ 76 x 27 x 54 mm



6. Technical support

Caraudio-Systems Vertriebs GmbH
manufacturer/distribution
In den Fuchslöchern 3
D-67240 Bobenheim-Roxheim

email support@caraudio-systems.de

Legal disclaimer: Mentioned company and trademarks, as well as product names/codes are registered trademarks ® of their corresponding legal owners.