

## **TV-Free** Universal video-in-motion Interface

### **TF-U501**

## **Non plug & play version for low speed CAN**

### **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.

## Contents

### 1. Prior to installation

- 1.1. Delivery contents
- 1.2. Pin-assignments
- 1.3. DIP switch functions of the TV-501

### 2. Installation

### 3. Specifications

### 4. Technical support

## 1. Prior to installation

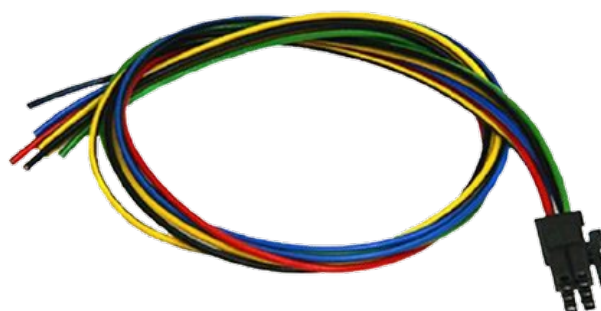
Read the manual prior to installation. Technical knowledge is necessary for installation. The place of installation must be free of moisture and away from heat sources.

### 1.1. Delivery contents

*Take down the SW-version and HW-version of the interface-boxes, and store this manual for support purposes!*

**CAN-box TV-501**  
HW \_\_\_\_\_ SW \_\_\_\_\_

**Harness**  
TV-UNI



## 1.2. Pin-assignments

### Pin-assignment harness TV-UNI



Pin-assignment male 8pin connector of TV-500

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)

## 1.3. DIP switch functions of the TV-501

DIP 1 – activation TV-free

DIP 2 – no function

DIP 3 – no function

DIP 4 – no function

DIP 5 – CAN-bus termination resistor on the vehicle side

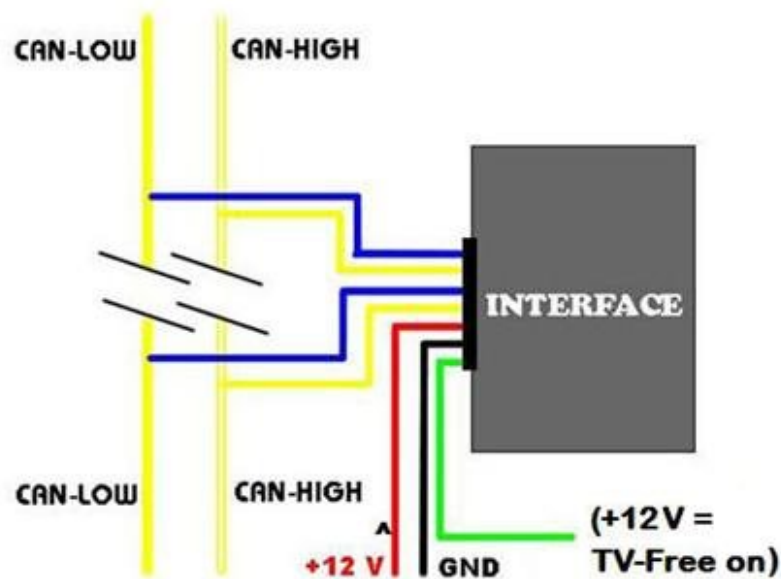
DIP 6 – CAN-bus termination resistor on the head-unit side

## 2. 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.**

Install the interface at the CAN bus connection of the respective navigation system. Separate the two CAN BUS cables (CAN-HIGH and CAN-LOW) from the navigation system and connect them to harness TV-UNI (see picture below).

Connect the **red wire** to **+12V permanent** and connect the **black wire** to **ground**.



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.

**\*Exception: On vehicles/navigation systems with DIP 1 must be set to OFF and video-in-motion activation performs selectively by vehicle button, the activation by green cable isn't possible!**

## Vehicles with BMW Professional CCC/CIC:



Place of installation is at the back side of the navigation unit.

### Compatible vehicles

BMW 1series (E81/82/87/88), 3series (E90/91/92/93), 5series (E60/61), 6series (E63/64), X5 (E70), X6 (E71), Z4 (E89) Mini R56 from about 10/2006

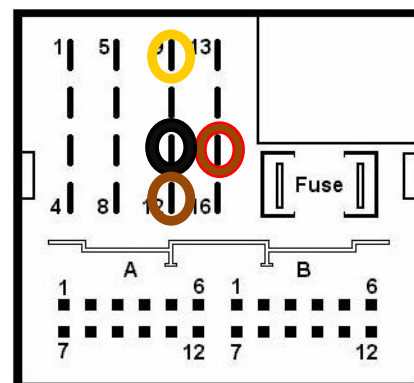
### Navigation

Navigation system **Professional** CCC (older 1/2-button iDrive or CIC (newer 8-button iDrive) with 6.5" or 8.8" monitor

Vehicle/ navigation	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6
Vehicles with CIC	ON	OFF	OFF	OFF	OFF	OFF
Vehicles with CCC	OFF	OFF	OFF	OFF	OFF	OFF

Cable colour	Assignment
●● Brown/Red	+12V permanent 15
● Brown	Ground Pin 12
● Black	CAN HIGH Pin 11
● Yellow	CAN LOW Pin 9

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



On vehicles with CIC the video-in-motion function is activated permanently without disturbing the navigation performance.

On vehicles with CCC press the menu-button or the iDrive wheel for about 3 seconds while in **main menu** to activate/deactivate the video-in-motion function. When the ignition is off, the video-in-motion interface will be automatically disabled.

Alternatively for CCC it is possible to set DIP-switch 1 of the CAN box TV-401 to ON. But then the navigation performance is disturbed on the first few kilometres of driving.

## Vehicles with BMW E65 Professional



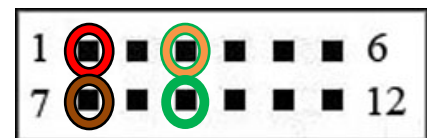
Place of installation is at the back side of the navigation unit.

*Compatible vehicles*

BMW 7series (E65/66)

Vehicle/ navigation	DIP 1	DIP 2	DIP 3	DIP 4	DIP 5	DIP 6
All vehicles	ON	OFF	OFF	OFF	OFF	OFF

Cable colour	Assignment
● Red/Black	+12V permanent Pin 1
● Brown/Black	Ground Pin 7
● Orange/Green	CAN HIGH Pin 3
● Green	CAN LOW Pin 9

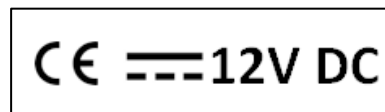


**No liability for vehicle wire colors and pin definition! Possible changes by the vehicle manufacturer. The given information must be verified by the installer.**

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

### 3. 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	76 x 27 x 54 mm



### 4. Technical support

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

email [support@caraudio-systems.de](mailto:support@caraudio-systems.de)

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