dvbLOGiC DVB-T Tuner

DVB-E65

Compatible with BMW E65 Professional navigation systems with 8.8” monitor

Product features

- Full plug and play vehicle-specific dual DVB-T Tuner
- with two active DVB-T glass-mount antennas
- integrated into and controllable by vehicle infotainment
- AV-input with IR-control channel (optionally USB-AV-port DVBU-XXX instead AV-input)
- control of after-market devices, e.g. DVD-player, DVD-changer, USB/iPod devices, …
- after-market rear-view camera input
- automatic switching to rear-view camera input (only from dvbLOGiC mode)
- rear-view camera power (max 0.5A)
- rear-seat-entertainment AV-output for AV-sources connected to the dvbLOGiC
- optional remote control for full DVB-tuner functions/rear-seat-entertainment
- power on remote out trigger signal (+12V) to switch on connected devices

• **video-in-motion**

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-436
1.4. Setting the dip switches of the tuner-box DVBC-M436
1.4.1. Automatic switching to rear-view camera
1.4.2. Deactivating dvbLOGiC AV input

2. Installation

2.1. Installation of CAN-box TV-436
2.2. Installation of tuner-box DVBC-M436
2.3. Antennas and optional IR-remote control set
2.4. Connecting peripheral devices
2.4.1. AV-source
2.4.2. Installing AV-source's IR-sensor additionally
2.4.3. After-market rear-view camera
2.4.4. After-market rear-seat-entertainment
2.4.5. Factory nightvision, factory DVD-changer, factory rear-view camera

3. Operation

3.1. Activation of the video-in-motion function
3.2. Selecting the dvbLOGiC as current AV-source
3.3. Assigning device control for connected AV-source
3.4. Switching to internal DVB-T, AV-source or after-market rear-view camera
3.5. Button assignment table iDrive

4. Specifications

5. Technical support

Appendix A – Device control table
Appendix B – DVB-T function manual
Appendix C – Antenna positioning
Appendix D – DVBU optional USB-AV-port

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.



If remote function for a peripheral device shall be used, additional an IR-Remote cable and Y-adapter are needed, see chapter *AV-source*.

1.2. Check compatibility of vehicle and accessories

Requirements	
Vehicle	7series (E65/E66)
Navigation	Navigation system **Professional** E65 (older 1/2-button iDrive or CIC (newer 8-button iDrive) with 8.8” monitor
Limitations	
factory-TV-tuner	Must NOT be installed. If uninstalled, optical ring must be closed.
factory DVD-changer or factory nightvision	After-market rear-view camera cannot be connected to the dvbLOGiC interface.
Teletext	Teletext of the dvbLOGiC can only be used with the optionally available DVB-IRSET remote control set.
factory rear-seat-entertainment	Additional interface VL-RGB02-R is necessary
After-market rear-view cam	Only works from dvbLOGiC mode, not from OEM.
Factory PDC	If an after-market rear-view camera should be connected by the dvbLOGiC the visual PDC display must be deactivated occasionally or permanently for camera picture.

1.3. Setting the dip switches of the CAN-box TV-436

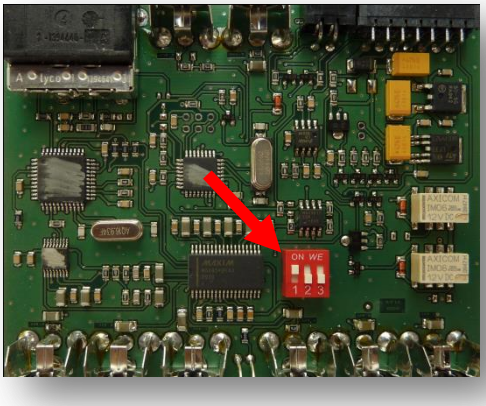
All vehicles — dip 1 ON, dip 2 OFF, dip 3 OFF



1.4. Setting the dip switches of the tuner-box

The default dip switch settings of the tuner-box need to be changed ONLY if a rear-view camera is or shall be connected or if the AV of the dvbLOGiC shall be deactivated. The dip switches are located **inside** the tuner-box. For changes it is necessary to open the box. Default settings are:

dip1 = ON, dip2 = OFF, dip3 = OFF

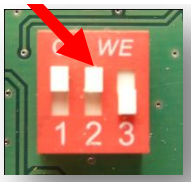


1.4.1. Automatic switching to rear-view camera

If an after-market rear-view camera shall be connected or a factory rear-view camera is connected, in order for the dvbLOGiC to automatically switch to its camera input, when reverse is engaged set dip2 = ON (up).

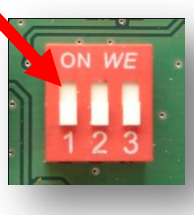
Note: Automatic switching works only from dvbLOGiC mode.

Dip switches of tuner-box



1.4.2. Deactivating dvbLOGiC AV input

If no peripheral AV-source shall be connected to the dvbLOGiC, we recommend to disable the AV-input, to avoid customers switching by mistake to black/no picture of the AV-input. In order to disable the AV-input of the dvbLOGiC,
set dip1 = OFF (down).



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.

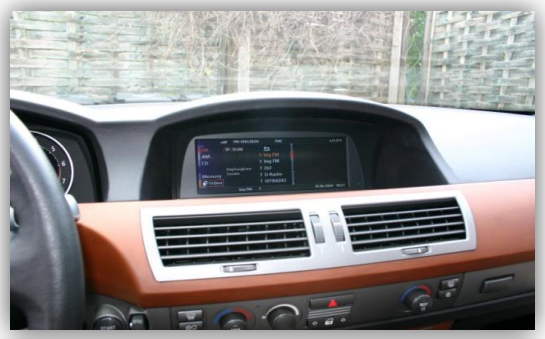
Complete and correct function of the interface is possible only when CAN **and** MOST® (tuner) connections are made properly. On vehicles without TV-icon, it will be coded automatically after installation.

Place of installation is at the rear of the navigation screen and at the rear of the navigation computer.

Note: The loose white and green cable of harness TV-BMW65 are not required and must be isolated.

2.1. Installation of CAN-box TV-436

The CAN interface is connected to the backside of the OEM screen.



Remove 3 TORX screws at the OEM screen.



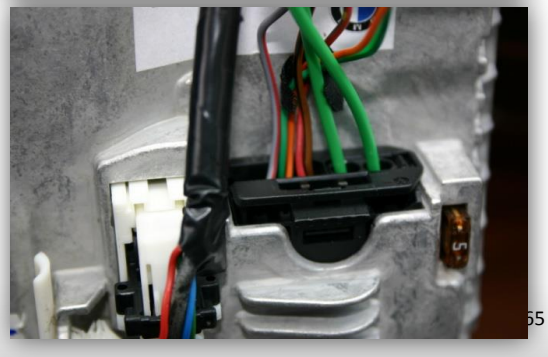
Remove cover grill (only plugged). Place soft towel beneath the navigation monitor to avoid scratches



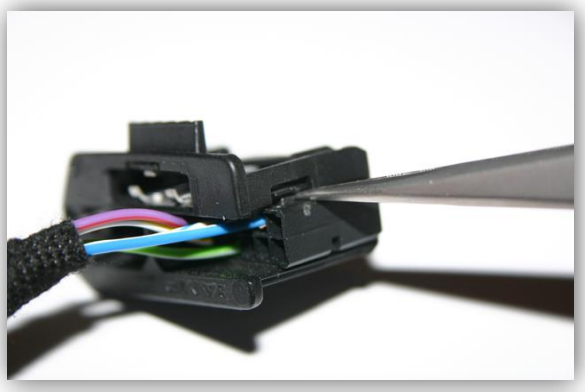
Flip down the board monitor. *NOTE*: The OEM screen gets stuck with its connector at the upper side of the cockpit. Insert a hard plastic sheet like a credit card to prevent cockpit from taking damage.



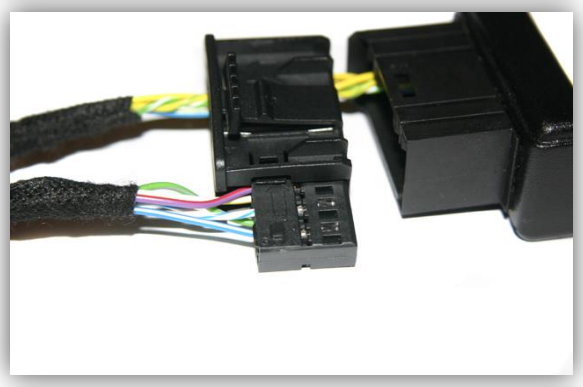
Remove the black connector at the backside of the screen as shown below.



Remove 12-pin insert from black vehicle harness connector.



Insert 12-pin insert into black connector of the CAN interface harness TV-BMW65.



Insert the completed black connector into CAN interface harness TV-BMW65.



Connect 12-pin insert from CAN interface harness TV-BMW65 into black connector from vehicle harness.



Insert completed connector into the plug on the backside of the navigation monitor.
Connect 8pin Molex connector of TV-BMW65 to CAN-box TV-436.

NOTE: *Pictures do NOT show the fibre optics connected in car!*

2.2. Installation of tuner-box DVBC-M436

The fibre optical interface installation is made at the navigation computer, which is located at the left side in the trunk behind a cover and has to be removed.



The video lead (red/colored - video signal, black - video ground) has to be removed from the white insert of C2C-BMW02. The white insert is not needed for E65/E66 installation.

Connect video lead of C2C-BMW02 to green 18-pin AMP connector
Video-signal (red) to chamber 3 of the green 18-pin AMP connector
Video-ground (black) to chamber 11 of the green 18-pin AMP connector

Remove fibre optics from black 20-pin plug and connect them as shown below. Then reconnect the fibre optics in the black 20-pin connector and connect the MOST to the tuner-box DVBC-M436.

Obey the direction arrows of the optical connectors!

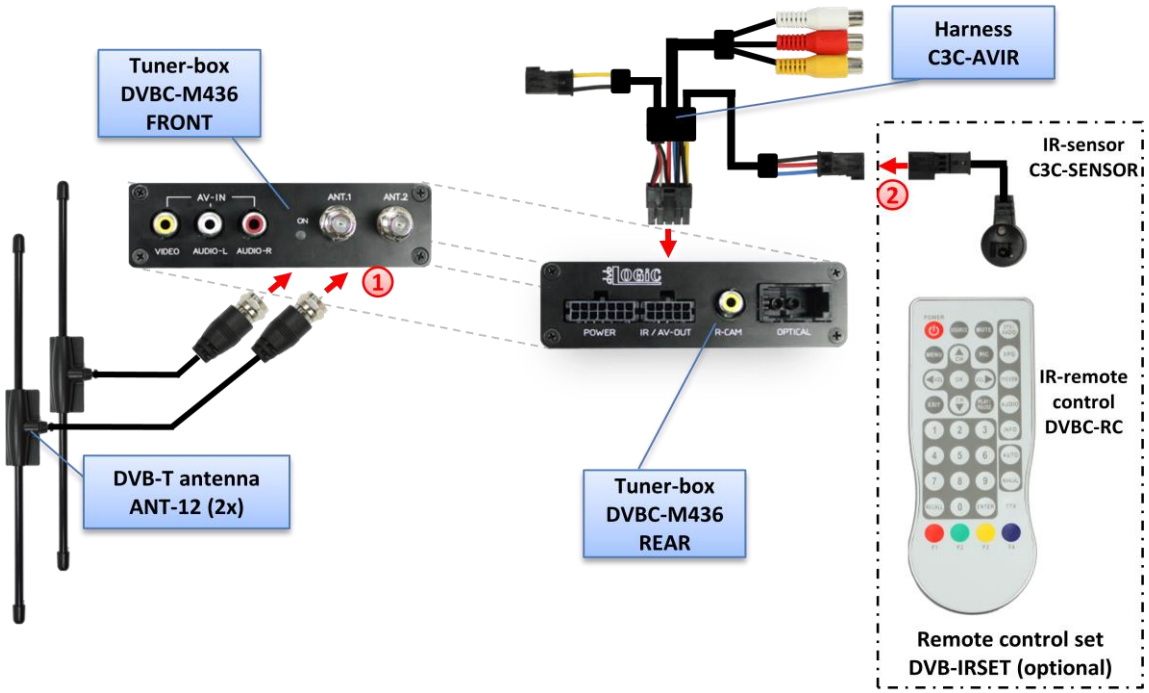
To black 20pin of navigation computer



14pin Molex connector

red – connect to +12V permanent current
black – ground
pink – remote signal +12V, high when navigation is on
white – The white wire is not connected and has to be isolated. In some cases it is possible that the automatic switching does not work. In this case connect the white wire to the reverse gear light (+12V).
green – camera power +12V (max 0.5A) on engaged reverse.

2.3. Antennas and optional IR-remote control set



1 Mount antennas ANT-12 and connect them to the female f-plug connectors on front of tuner-box DVBC-M436.
We strongly recommend to first test the reception quality of the chosen mounting position of the antennas before final installation! See "Appendix C – Antenna positioning" for additional information.

2 The DVB-IRSET consists of the external C3C-SENSOR IR-sensor and the DVBC-RC IR-remote control and can be used to control the dvbLOGiC's internal DVB-T tuner functions additionally to the control through the navigations buttons. Connect the C3C-SENSOR to the female black/red/blue 3pin AMP connector of harness C3C-AVIR and locate the sensor in an accessible place.

Note: To use the teletext function of the dvbLOGiC's internal DVB-T tuner, the DVB-IRSET is necessary to enter the page numbers.

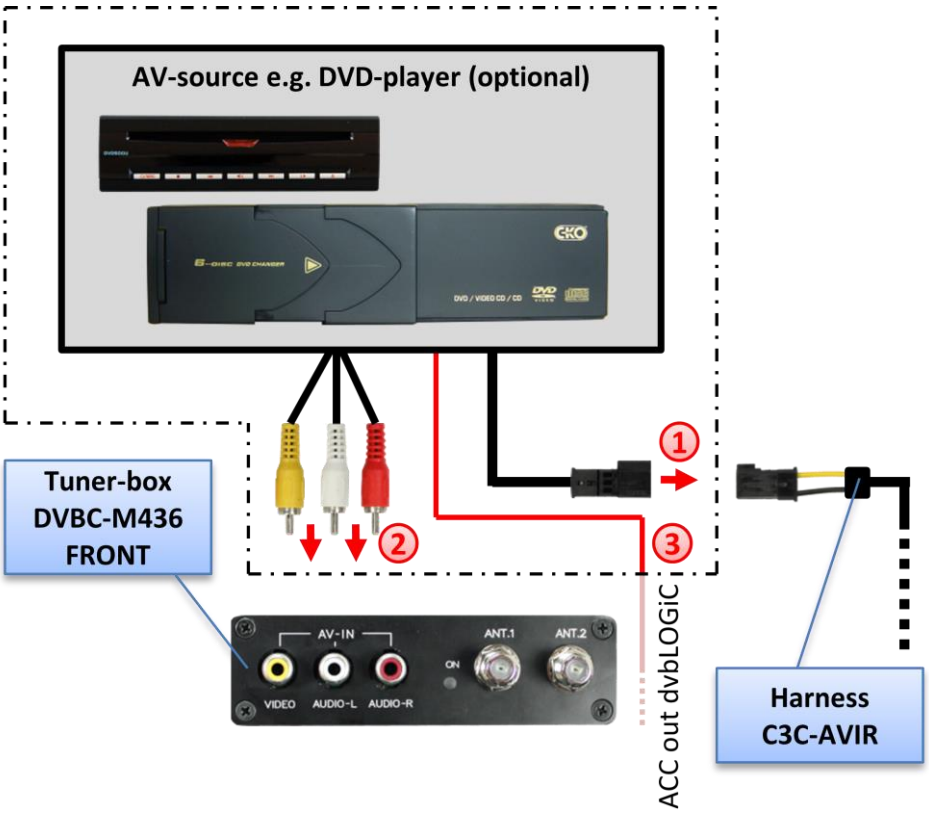
2.4. Connecting peripheral devices

It is possible to connect an after-market AV-source, after-market rear-view camera and rear-seat-entertainment to the dvbLOGiC Tuner. Also factory nightvision, factory DVD-changer or factory rear-view camera must be connected to the dvbLOGiC-Tuner.

Before final installation of the peripheral devices, we recommend to test-run the dvbLOGiC functions to detect incompatibility of vehicle, navigation, factory accessories or peripheral devices as soon as possible.

2.4.1. AV-source

The dvbLOGiC has the possibility to connect and remotely control by navigation buttons a pre-programmed device. The device list in the device control table shows the pre-programmed remote channels and the related IR-remote cables STA-xxx which must be ordered separately for the control of the device.



1. Using the respective STA-xxx IR-control cable, interconnect the yellow female 3pin AMP connector of harness C3C-AVIR and the IR-port of the AV-source.

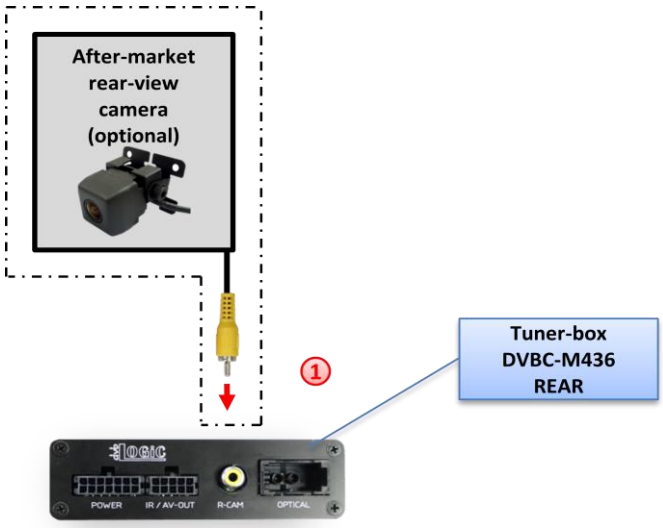
2. Using an RCA-cable, interconnect the female RCA-port AV1 of the tuner-box DVBC-M436 with the AV-output of the AV-source.

3. The pink ACC-output wire (+12V max 1A) of harness C2C-BMW02 can be connected to the ACC-input wires of the connected device to switch it on. It carries +12V when the navigation computer is running.

2.4.2. Installing AV-source's IR-sensor additionally

Additionally to the control via OEM navigation, it is possible to install the original IR-sensor of a connected device. By using the respective Y-adapter (e.g. STA-Y35MM or STA-RJ12) for the IR-Port of the connected device, the controls of navigation AND device's IR-sensor can be connected and used simultaneously. Installation of the IR-sensor is recommended as the controls via navigation are limited, and not all functions may be covered.

2.4.3. After-market rear-view camera



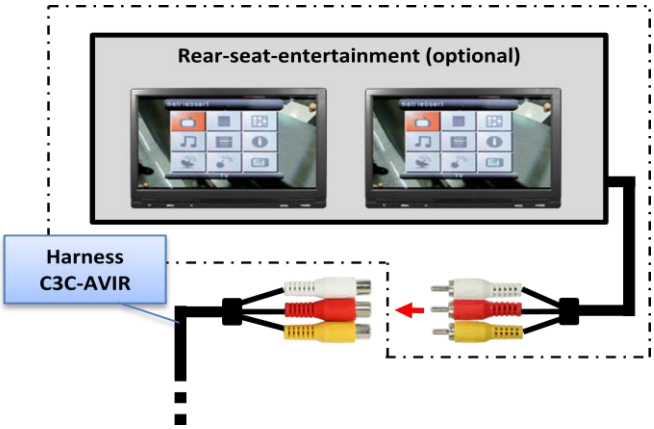
1. Connect the video RCA of the after-market rear-view camera to the female RCA connector R-CAM IN of tuner-box DVBC-M436.

2. The green wire of harness C2C-BMW02 can be used as +12V power (max 1A) supply for the rear-view camera.

   Note: Automatic switching to the camera-input when reverse gear is engaged works only in dvbLOGiC mode.

With an existing factory PDC the visual PDC display must be deactivated occasionally or permanently by iDrive while operating in the vehicle settings for camera picture. If needed the PDC display can be switched on by PDC button.

2.4.4. After-market rear-seat-entertainment



1. Using RCA-cables, connect the rear-seat-entertainment to the female RCA-connector VIDEO OUT of tuner-box DVBC-M436.

   Note: As the output is a full output, not shared with the video signal for the navigation system, splitting the video with an RCA Y-cable might give a good enough picture for two rear-seat-entertainment monitors. If not, or if connecting more than two monitors, use a video splitter.

2.4.5. Factory nightvision, factory DVD-changer, factory rear-view camera

On vehicles with factory nightvision, factory DVD-changer or factory rear-view camera, pin out the video-signal and video-signal ground from the green 18pin AMP connector of the vehicles harness (rear of navigation computer) and connect them by male RCA-connector to the R-CAM IN of tuner-box.

Navi	Video-signal	Video-signal ground
E65	Pin 3	Pin 11

The factory component will work as before.

3. Operation

3.1. Activation of the video-in-motion function

Tthe video-in-motion function is permanently active without disturbing the navigation performance.

3.2. Selecting the dvbLOGiC as current AV-source

In the vehicle's main menu, select **Infotainment** and then **TV** by iDrive to choose the dvbLOGiC as current AV-source.

3.3. Assigning device control for connected AV-source

After selecting the dvbLOGiC as current AV source, push iDrive knob to open the dvbLOGiC control menu. Select control levels setup "AV: RCxx" and assign related IR-code as described in device control table.



Note: The IR-control channel is preset to RC-Code 09 for the optional USB-AV-port (DVBU). If the AV-input is deactivated (see chapter 1.4.2.), the menu items "AV" and "AV: RCxx" will not be available.

3.4. Switching to internal DVB-T, AV-source or after-market rear-view camera

In the dvbLOGiC control menu, choose TV to enter internal DVB-T tuner mode, AV to enter AV-input mode (not available if AV-input is deactivated, see chapter 1.4.2) or REAR CAM to switch to the dvbLOGiC after-market rear-view camera-input (even if the automatic switching to the camera input is disabled, see chapter 1.4.1.). After selection the menu will close automatically and switch to the selected source. The iDrive knob, some multi-function-steering wheel buttons (MFSW) and some navigation buttons (HU) are now available for remote functions (see assignment table for iDrive below).
By pressing the iDrive-MENU-button, the system returns to the factory iDrive functions. By pressing the iDrive knob again, the dvbLOGiC control menu will be re-entered.

3.5. Button assignment table iDrive

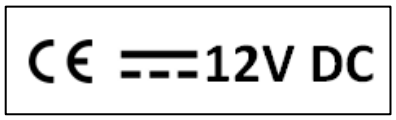
The button assignment table shows which functions of dvbLOGiC and additionally connected devices can be executed by iDrive. Once DVB-T or AV-input mode are activated the iDrive action in the left column will execute the function described in the corresponding device column. The function description equals the remote control buttons of the optional dvbLOGiC remote control or the additional device. On the additional device the writing may vary (e.g. AV instead of Source).

iDrive Action	Device				
	Internal DVB-T	**Internal USB**	**DVD on AV-input**	**DVC on AV-input**	**iPod interface on AV-imput**
MENU long	MENU	SETUP	Setup	Setup	Setup
MENU short	Return to factory iDrive functions	Return to factory iDrive functions	Return to factory iDrive functions	Return to factory iDrive functions	Return to factory iDrive functions
OPTIONS long *2	INFO	SOURCE	Audio	Audio	KCE: Light Bulb, Vlink: Subtitle
OPTIONS short *2	Signal strength		Subtitle	Subtitle	KCE: lower vol, Vlink: Display
ENTER long	POWER	POWER	Power	Power	Power
ENTER short	OK	OK / PLAY	OK	OK	OK
NORTH long	EPG	EXIT	Menu/PBC *1	Menu/PBC *1	Shuffle
NORTH short	UP	UP	Up	Up	Previous chapter
WEST long	EXIT	MEDIA	Play/Resume	Play/Resume	Play/resume
WEST short	LEFT	LEFT	Left	Left	Left
SOUTH long	SOURCE		Source	Source	Source
SOUTH short	DOWN	DOWN	Down	Down	Next chapter
EAST long	AUTO	POWER	Zoom	Next DVD or DVD selection menu	KCE: increase vol, Vlink: ESC
EAST short	RIGHT	RIGHT	Right	Right	Right
Left turn	Previous channel	Previous Track	Previous chapter	Previous chapter	Up
Right turn	Next channel	Next Track	Next chapter	Next chapter	Down
UP long on MFSW *3	SOURCE		Next DVD	Next DVD or DVD selection menu	Next DVD or DVD selection menu
UP short on MFSW *3	Previous channel	Previous Track	Previous chapter	Previous chapter	Previous chapter
DOWN long on MFSW *3	INFO	SOURCE	Next DVD	Next DVD or DVD selection menu	Next DVD or DVD selection menu
DOWN short on MFSW *3	Next channel	Next Track	Next chapter	Next chapter	Next chapter
LEFT long on HU *3	SOURCE		Next DVD	Next DVD or DVD selection menu	Next DVD or DVD selection menu
LEFT short on HU *3	Previous channel	Previous Track	Previous chapter	Previous chapter	Previous chapter
RIGHT long on HU *3	INFO	SOURCE	Next DVD	Next DVD or DVD selection menu	Next DVD or DVD selection menu
RIGHT short on HU *3	Next channel	Next Track	Next chapter	Next chapter	Next chapter

*1 DVD title menu *2 not available on all vehicles *3 multi function steering wheel and head-unit

4. Specifications

Operation voltage	10.5 – 14.8V DC
Stand-by power drain	<1mA
Operation power drain	~500mA
Power consumption	~6W
Temperature range	-30°C to +80°C
Weight	328g
Measurements (box only) B x H x T	140 x 30 x 105 mm



5. Technical Support

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

email support@caraudio-systems.de

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