CARAUDIO-SYSTEMS

dvbLOGiC DVB-T Tuner

DVB-MFD3-R2

Compatible with navigation systems
Volkswagen RNS510, RNS810
Skoda Columbus
Seat Trinax

Only for vehicles WITH factory rear-view camera WITHOUT camera control-box

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 by OEM buttons, e.g. DVD-player, USB/iPod devices, …
- • 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 max. 1A) to switch on connected devices
- • video-in-motion

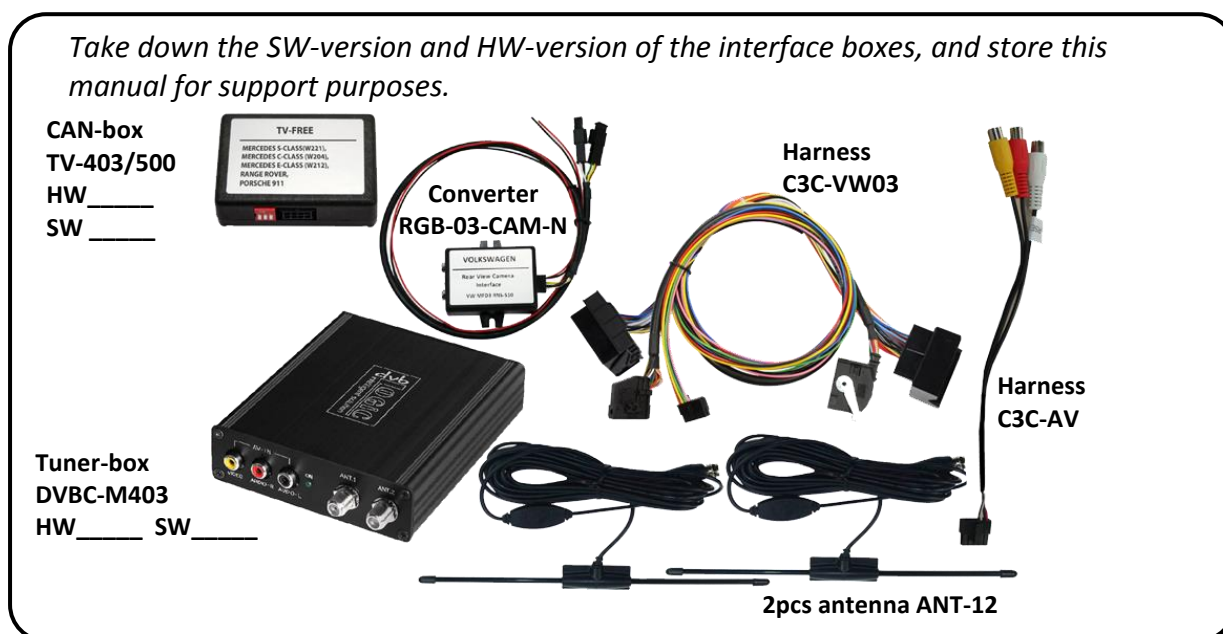## Contents

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.

CAN-box
TV-403/500
HW_____
SW _____

Converter
RGB-03-CAM-N

Harness
C3C-VW03

Harness
C3C-AV

Tuner-box
DVBC-M403
HW_____   SW_____

2pcs antenna ANT-12

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*   Volkswagen, Seat and Skoda
>   **With factory rear-view camera without camera control box**
>
> *Navigation*   MFD3/RNS510, RNS810, Trinax or Columbus navigation
>
> **Limitations**
>
> *Factory-TV-tuner*   Must NOT be installed.
>
> *Teletext*   Teletext of the dvbLOGiC can only be used with the
>   optionally available DVB-IRSET remote control set.

1.3. Setting the dip switches of the CAN-box TV-403/500

TV-403

All vehicles	dip 1 ON, dip 2 OFF, dip 3 OFF
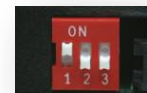
TV-500

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

Note: Dip switch functions of the TV-500
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

## 1.4. Setting the dip switches of the tuner-box DVBC-M403

The default dip switch settings of the tuner-box
need to be changed. 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
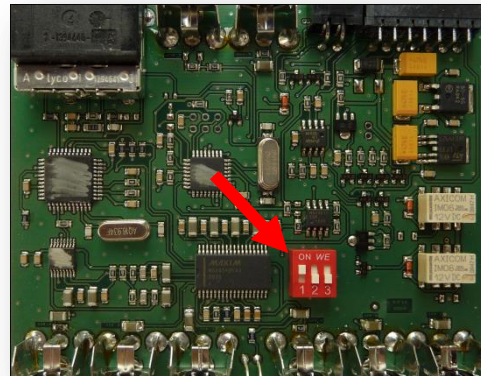
1.4.1. Automatic switching to rear-view camera

In order for the dvbLOGiC to automatically switch to factory rear-view
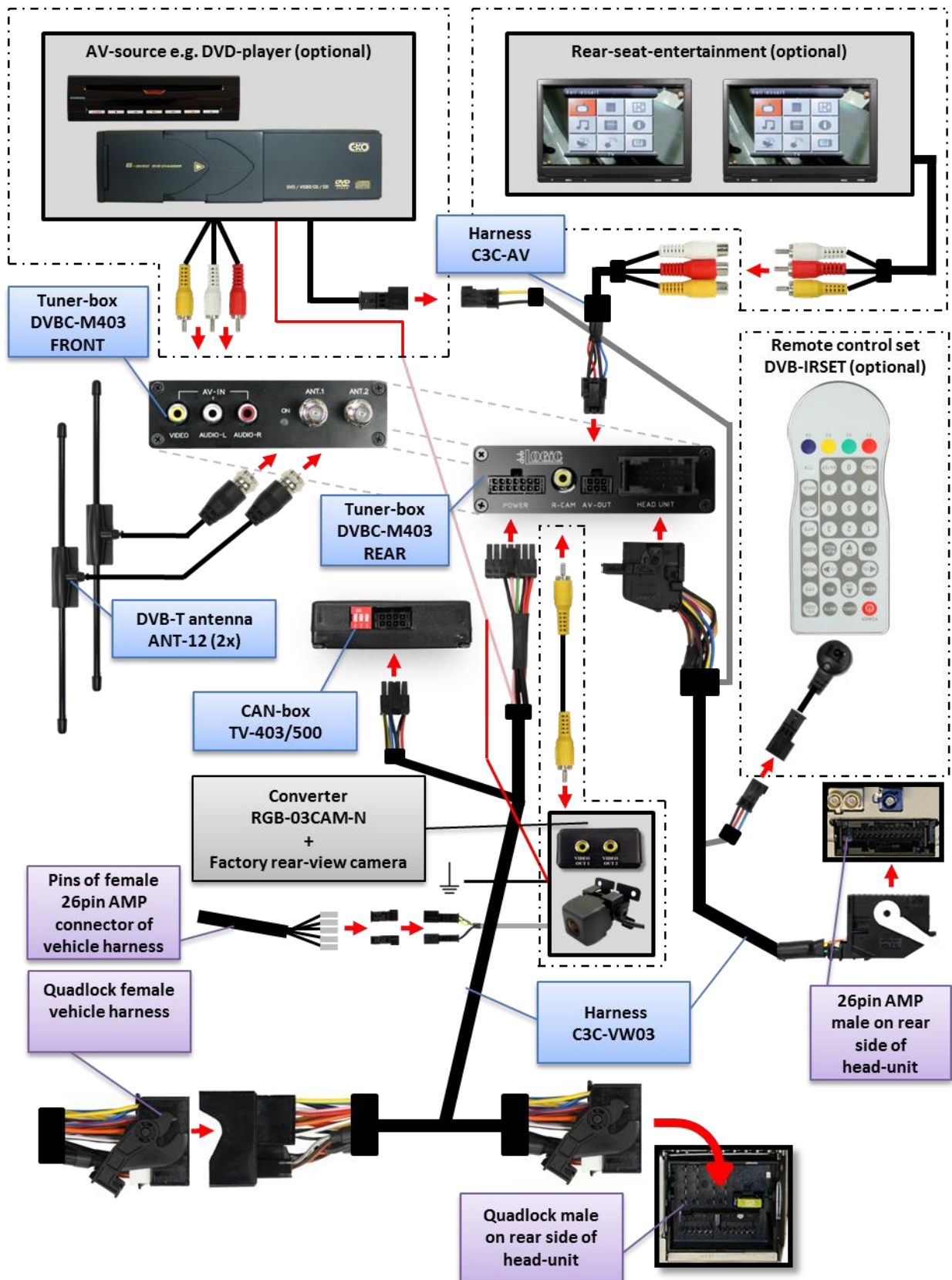camera on engaged reverse gear,
set dip2 = ON (up).
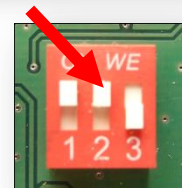
**dip switches
of tuner-box**

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. Connection schema

AV-source e.g. DVD-player (optional)

Rear-seat-entertainment (optional)

Harness C3C-AV

Tuner-box DVBC-M403 FRONT

Remote control set DVB-IRSET (optional)

AV-IN — VIDEO AUDIO-L AUDIO-R — ANT.1 ANT.2

Tuner-box DVBC-M403 REAR

POWER R-CAM AV-OUT HEAD UNIT

DVB-T antenna ANT-12 (2x)

CAN-box TV-403/500

Converter RGB-03CAM-N + Factory rear-view camera

VIDEO OUT 1 VIDEO OUT 2

Pins of female 26pin AMP connector of vehicle harness

Quadlock female vehicle harness

Harness C3C-VW03

26pin AMP male on rear side of head-unit

**Quadlock male on rear side of head-unit**

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 behind the head-unit.

Hinweis: Es ist möglich, dass nach der Installation ein mehrfaches Umschalten auf das Kamerabild durch Einlegen des Rückwärtsgangs (zu Testzwecken) nicht möglich ist! In diesem Fall muss das Fahrzeug bis zu einer Geschwindigkeit von 25km/h bewegt werden, um die volle Funktionalität zu erreichen.

3.1. Interconnecting tuner-box, CAN-box and harnesses
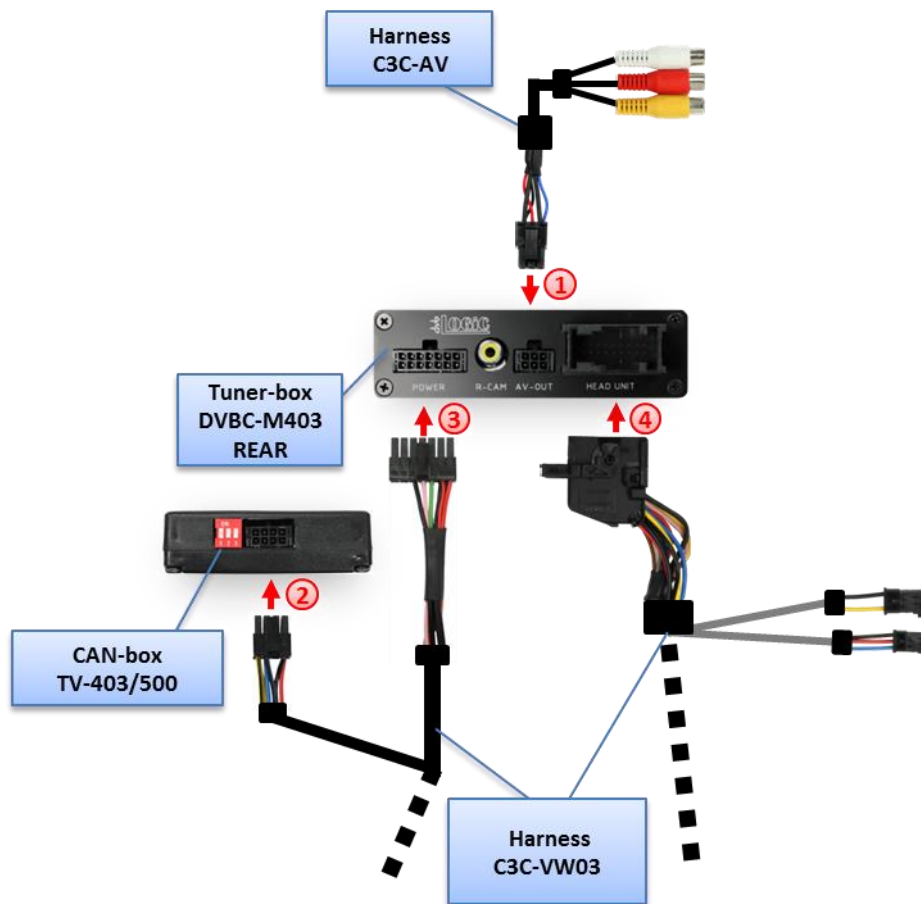
① Plug harness C3C-AV into 6pin Molex of tuner-box DVBC-M403.

② Plug harness C3C-VW03 into 8pin Molex of CAN-box TV-403/500.

③ Plug harness C3C-VW03 into 14pin Molex of tuner-box DVBC-M403.

④ Plug female 18pin AMP-connector of C3C-VW03 into male 18pin AMP-socket of tuner-box DVBC-M403.

3.2. Connections to head-unit

Remove the head-unit from the dash-board.
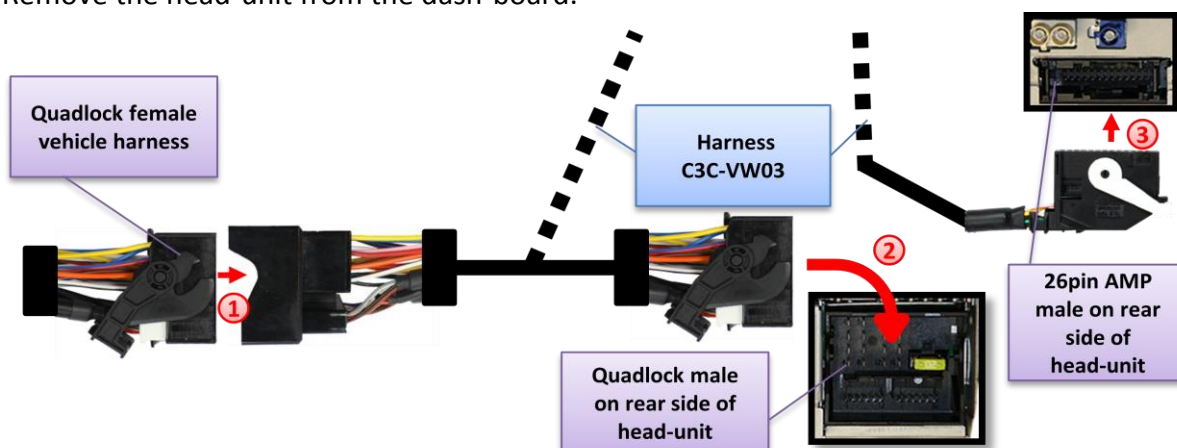
① Transfer female Quadlock connector from the back of the head-unit to male Quadlock connector of harness C3C-VW03.

② Plug female Quadlock connector of C3C-VW03 into male Quadlock socket of head-unit.

③ Remove female 26pin AMP-connector of factory harness from the male 26pin socket of head-unit and plug female 26pin AMP connector of C3C-VW03 into the head-unit.

④ Remove insert from female 26pin AMP connector of factory harness.
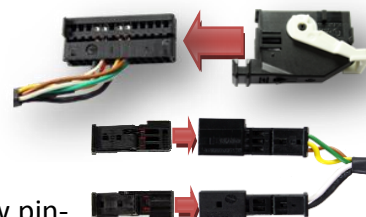
⑤ Transfer pins from the female 26pin AMP connector of factory harness into the female 2pin and 3pin AMP connectors of RGB-03-CAM-N harnesss, using the below pin-configuration table as reference. If there is additional pins to the pins in the below table, transfer them from the female 26pin of the vehicle harness into the same empty slots of the female 26pin of harness C3C-VW03. Plug female 2pin and 3pin AMP connectors in their male counterparts of the RGB-03-CAM-N harness.

Signal	vehicle female 26pin AMP	RGB-03-CAM-N - female 2pin AMP	
RGB - sync	pin 12	→	pin 1
RGB – ground	pin 11 or pin 24	→	pin 2
Signal	**vehicle female 26pin AMP**	**RGB-03-CAM-N - female 3pin AMP**	
RGB-signal – green	pin 13	→	pin 1
RGB-signal - red	pin 26	→	pin 2
RGB-signal - blue	pin 25	→	pin 3

Note: We strongly recommend to make notes of the color configuration before removing pins from the female 26pin AMP connector of the vehicle harness!

Use exclusively the pin number configuration of this schema. On some vehicle connectors the plastic is marked incorrect!
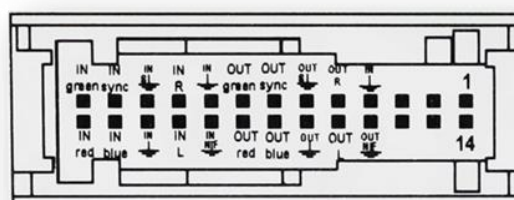
3.3. Antennas and optional IR-remote control set
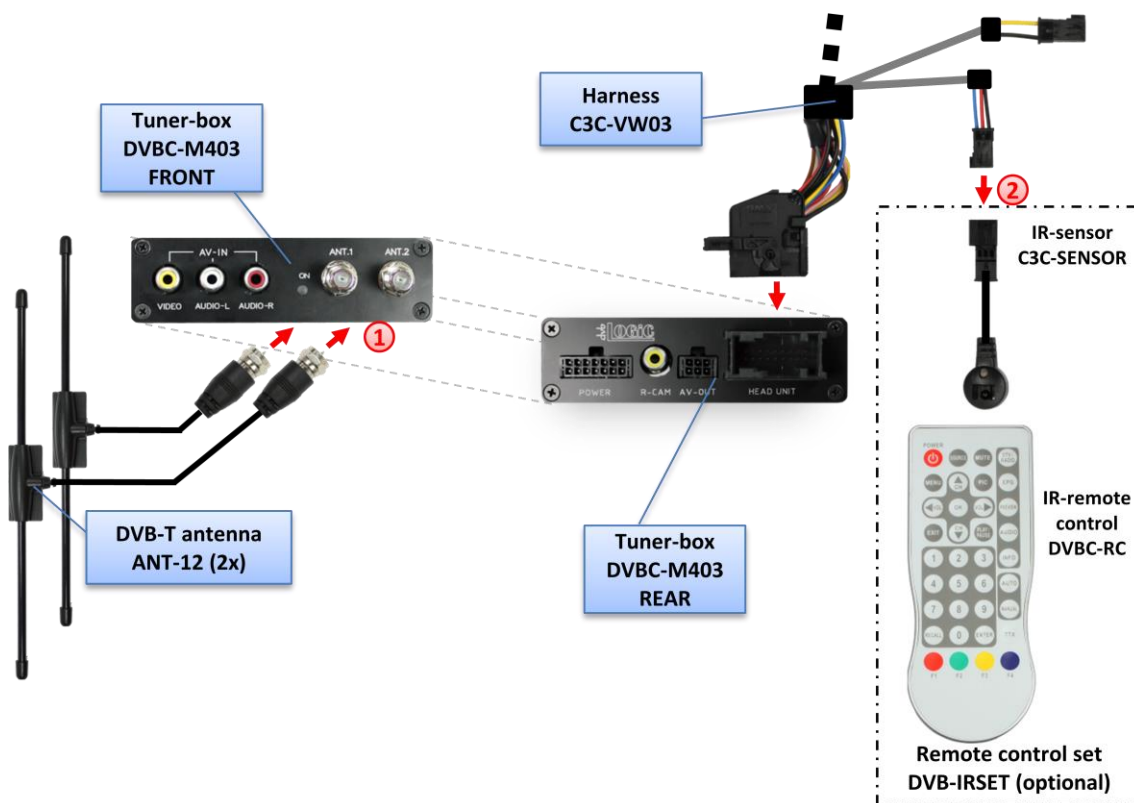
① Mount antennas ANT-12 and connect them to the female f-plug connectors on front of tuner-box DVBC-M403.
We strongly recommend to first test the reception quality of the chosen mounting position of the antennas before final installation! See "Appendix C – Antenna positioning" for additional information.

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-VW03 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.

3.4. Connecting peripheral devices

It is possible to connect an after-market AV-source and rear-seat-entertainment 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.

3.4.1. 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 (appendix A) 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.
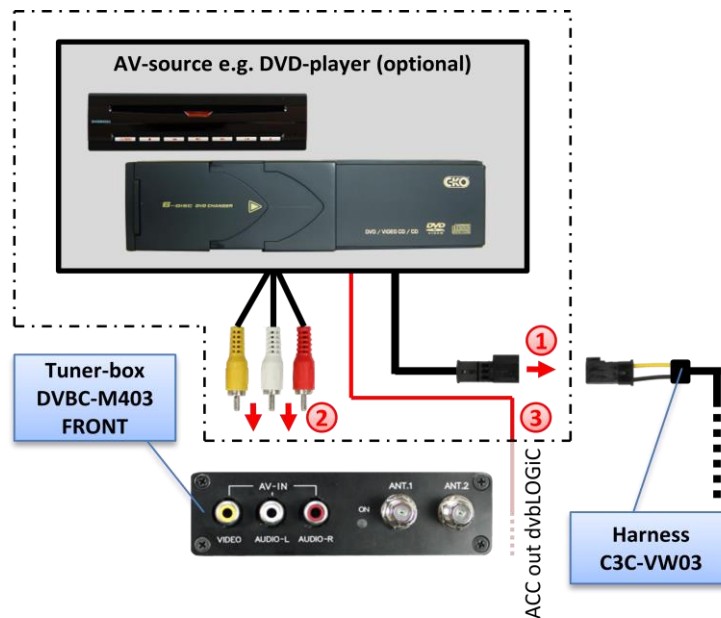

① Using the respective STA-xxx IR-control cable, interconnect the yellow female 3pin AMP connector of harness C3C-VW03 and the IR-port of the AV-source.

② Using an RCA-cable, interconnect the female RCA-port AV-IN of the tuner-box DVBC-M403 with the AV-output of the AV-source.

③ The pink ACC-output wire (+12V max 1A) of harness C3C-VW03 can be connected to the ACC-input wires of the connected device to switch it on. It carries +12V when the head-unit is running.

3.4.2. 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.

3.4.3. Factory-rear-view camera integration
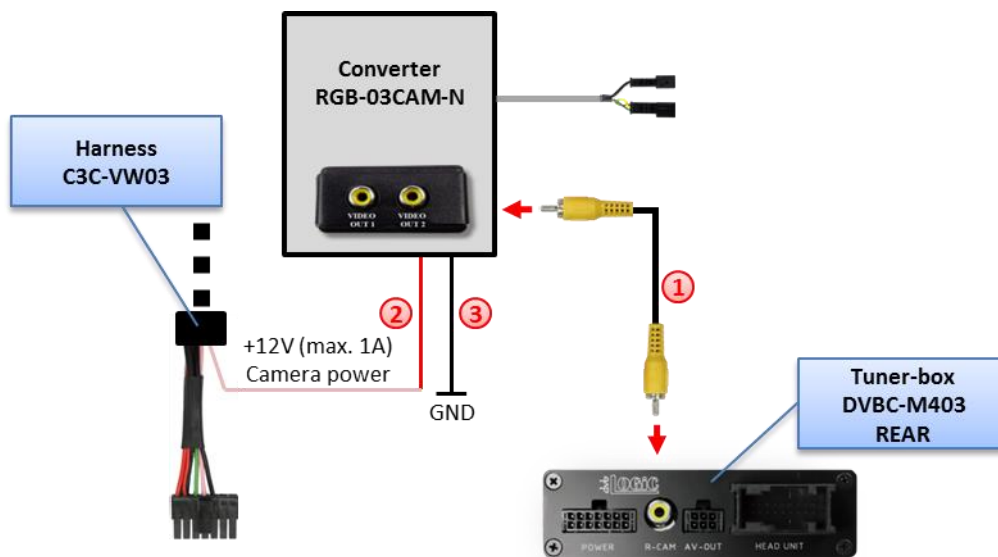
① Using a RCA cable (not included), connect female video RCA of converter RGB-03-CAM-N to female video RCA connector R-CAM IN of tuner-box DVBC-M403.

② Connect the pink wire (+12V max. 1A) of C3C-VW03 to the red power supply wire of RGB-03-CAM-N harness.
The green and the white wire are not connected and have 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).

③ Connect black wire of RGB-03-CAM-N harness to ground.

3.4.4. After-market rear-seat-entertainment
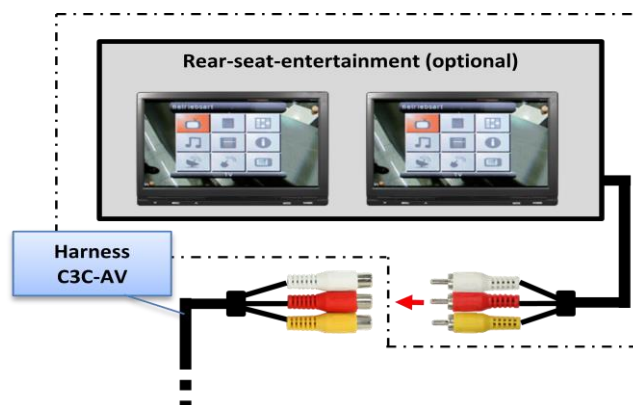
① Using RCA-cables, connect the rear-seat-entertainment to the female RCA-connector VIDEO OUT of tuner-box DVBC-M403.

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.

4. Operation

4.1. Activation of the video-in-motion function

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

4.2. Selecting the dvbLOGiC as current AV-source

Push the **MEDIA** button of the head-unit and then select **VIDEO** to choose the dvbLOGiC as current AV-source.

4.3. Switching between internal DVB-T and AV-input

After selecting the dvbLOGiC as current AV source, tap on the touch-screen to receive the options menu. Select **Senderliste** (channel list) to open the remote function menu. Select **Switch AV1/AV2** to switch between internal DVB-T (AV1) and AV-IN (AV2).

Note: If the AV-input is deactivated (see chapter 1.4.2.), it is not possible to switch to the dvbLOGiC's AV-input AV-IN (AV2).

4.4. Assigning device control for connected AV-source

After selecting the dvbLOGiC as current AV source, tap on the touch-screen to receive the options menu. Select **Extras** and then **V-text**.

Select **Seite** (page).

Enter "2", followed by the device-related IR-code as described in device control table (appendix A). Confirm with **OK**.

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.), it is not necessary, nor possible to assign device controls.

4.5. Remote functions

Remote functions can be executed by steering-wheel buttons, head-unit buttons and touch-screen.

4.5.1. Previous/next channel/track

To skip to previous or next channel (TV-mode) or track (DVD/USB/iPod®-modes), use the arrow buttons in the upper left corner of the head-unit, the arrow touch-screen buttons or the UP and DOWN buttons of the steering-wheel.

4.5.2. Other remote functions

When internal DVB-T or AV-input mode is activated, enter **Senderliste** (channel list). The menu which opens offers a range of commands for the active device. 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).
Select any button to execute the described function on the active AV-source.

Note: The volume of an optional connected USB-AV-port (DVBU) can be regulated by the right knob (possible only in the main menu).

4.5.3. Menu/setup navigation

To navigate through menu or setup options of the
AV-sources, it is necessary to see their picture/OSD,
which is not possible in the **Senderliste** (channel list).
Instead, after entering menu/setup, select **Extras** and
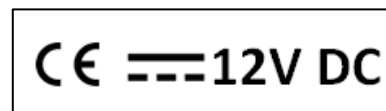then **V-Text**.

Now menu navigation is possible by the
arrow buttons in the upper left corner
of the head-unit (left/right)
and touch-screen:
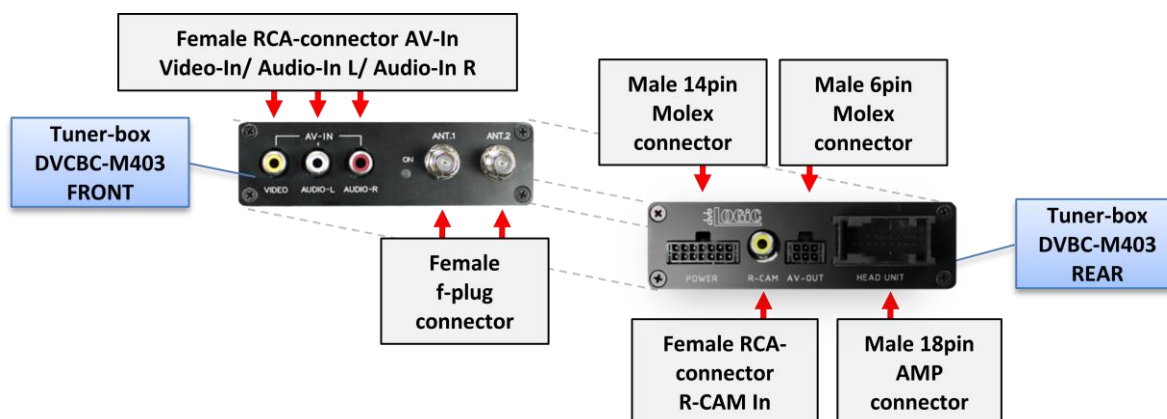Arrow up = UP, Arrow down = DOWN
Stopp = MENU/EXIT
Zoom = OK/Enter

Note: Left/right can also be used to adjust the preset volume of the internal DVB-T to match
it to the volume of the OEM modes.

5. 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

CE ===12V DC

6. Connections (Tuner-box)

Female RCA-connector AV-In
Video-In/ Audio-In L/ Audio-In R

Male 14pin
Molex
connector

Male 6pin
Molex
connector

Tuner-box
DVCBC-M403
FRONT

Tuner-box
DVBC-M403
REAR

Female
f-plug
connector

Female RCA-
connector
R-CAM In

Male 18pin
AMP
connector

7. Technical Support

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