c.LOGiC Interface

C2-MK-CD

Compatible with BMW Professional navigation systems without iDrive (MK2-MK4)

Product features

- **Full plug and play multimedia interface**
- **2 AV-inputs with separate IR-control channels**
- **control of after-market devices, e.g. DVB-T tuner, DVD-player, DVD-changer, …**
- **after-market rear-view camera input (optional adapter is necessary)**
- **automatic switching to after-market rear-view camera input**
- **rear-view camera power (+12V max. 1A)**
- **Rear-seat-entertainment video-output for Video-sources connected to the c.LOGiC**
- **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.

Interface-box
C2C-M700
HW_____ SW_____

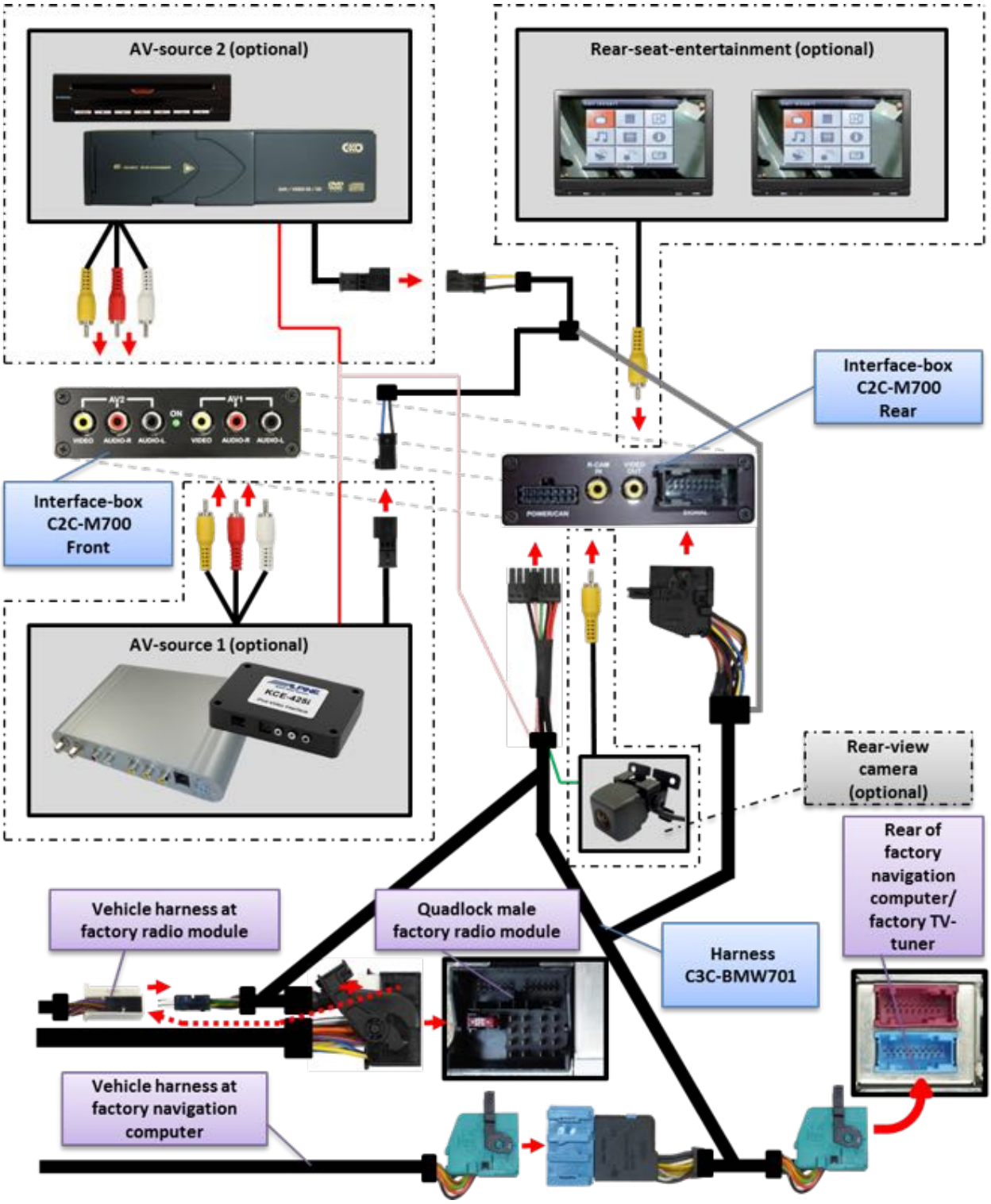
Harness
C3C-BM701

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

1.2. Check compatibility of vehicle and accessories

Requirements	
Vehicle	3series (E46), 5series (E39), 7series (E38), X5 (E53), X3 (E83), Z4 (E85/86) **without AUX-input at the radio module (till approx 09/2002),** Land Rover Range Rover (Vogue) L322 model years 2002-2005
Navigation	Navigation system Professional without iDrive (MK2-MK4) Navigation system Professional MK3 in Land Rover
Limitations	
Factory DSP amplifier	**With an existing factory DSP amplifier see chapter 3.3.1. before beginning the installation!**
After-market rear-view camera	BMW vehicles compatible with NTSC-cameras only.

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 at the navigation computer or the factory TV-tuner (if existing and not removed) and at the radio module.

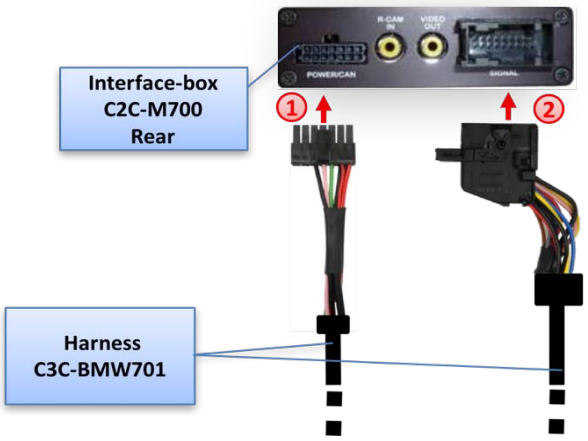
If there is a factory TV-tuner inside the car, you have to connect the harness C3C-BM701 to the TV-tuner and not to the navigation computer!

The radio module and navigation computer are located at the rear end for the **3series (E46)**, **5series (E39)** and **7series (E38)** on the left hand side the radio module of the 7series is located behind lining in the car wing).

The **X5 (E53)** radio module is located underneath the boot lining, next to the battery.

The navigation computer is located on the left hand side behind the boot lining.

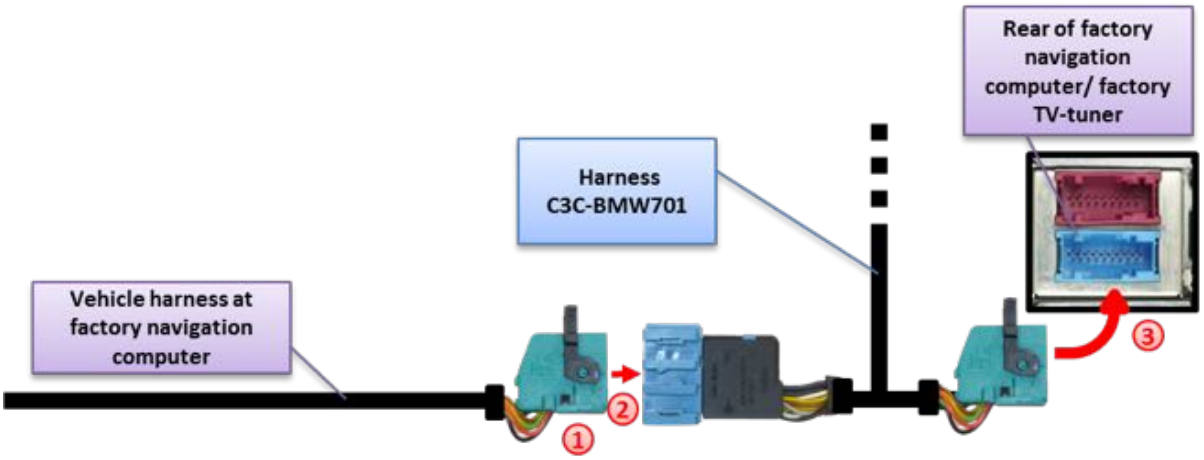
3.1. Interconnecting interface-box and harnesses



1. Plug harness C3C-BM701 into 14pin of interface-box C2C-M700.

2. Plug female 18pin AMP connector of C3C-BM701 into male 18pin AMP connector of interface-box C2C-M700.

3.2. Connections to the navigation computer or – if existing – to the TV-tuner



If there is a factory TV-tuner inside the car, you have to connect the harness C3C-BM701 to the TV-tuner and not to the navigation computer!

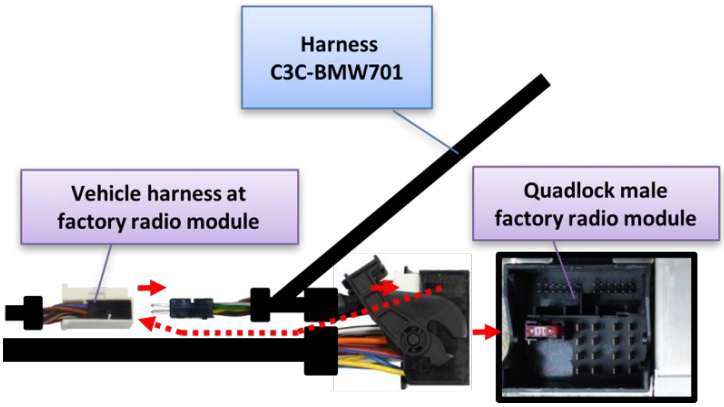
① Disconnect blue female 18pin connector of vehicle harness from the back of the navigation computer or the factory TV-tuner (if existing and not removed).

② Plug blue male 18pin AMP connector of harness C3C-BM701 into blue female 18pin AMP connector of vehicle harness.

③ Plug blue female 18pin AMP connector of harness C3C-BM701 into blue male 18pin AMP connector of navigation computer or of the factory TV-tuner (if existing and not removed).

Note: If an existing factory TV-tuner will be removed the optionally available harness CAB-BMW200 is necessary!

3.3. Connections to radio module



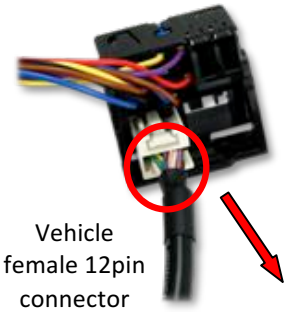
Picture exemplary for vehicles with Quadlock connector at factory radio module.

3.3.1. Exceptional case – Vehicles with factory DSP amplifier

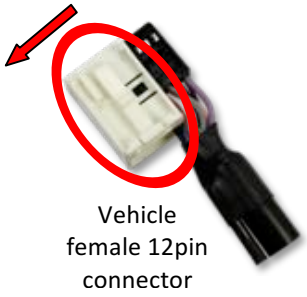
If the vehicle is with factory DSP amplifier, it is possible, that the CD-changer sound is not connected to the analogue input of the radio module, but to the digital input (44.1khz) of the factory DSP amplifier. In this case an analogue-digital converter or a digital output (44.1khz) of the source(s) is required and this part of the manual (connection at the radio module) can be skipped.
If the factory CD-changer is installed, it is possible to check prior to installation of the interface whether it is connected to the factory DSP amplifier with a digital coax cable. If no factory CD-changer is installed, it is possible to check whether the factory DSP amplifier has a digital connector (SMB). If so, it is only possible to check whether the system is coded to analogue or digital by try-and-error.

3.3.2. Radio module with Quadlock connector WITH factory CD-changer

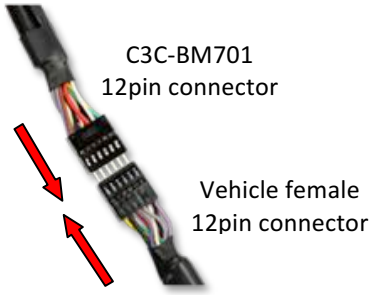
Loosen the female Quadlock connector to the radio module. Loosen the white female 12pin connector from chamber A of the female Quadlock connector.



Push the insert from female 12pin connector's plastic cap from the side.



Connect the female 12pin connector of the vehicle harness to the male 12pin connector of harness C3C-BM701. Make sure that the arrows on both black plastics are on the same side and pointing in opposite directions.



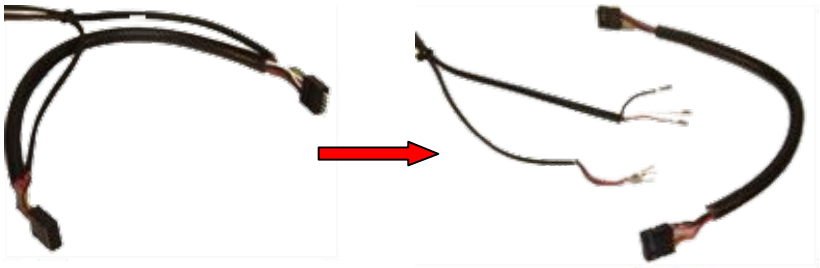
Insert the female 12pin connector of harnessC3C-BM701 into the white cap and connect it back into the female Quadlock connector. Connect the female Quadlock connector back into the radio module.

3.3.3. Radio module with Quadlock connector WITHOUT factory CD-changer

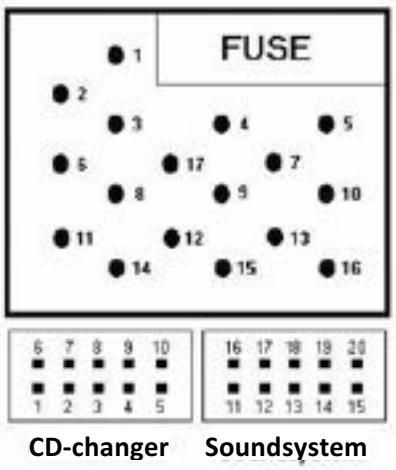
Installation is analogue to system with factory CD-changer. Only there is no female 12pin connector on the vehicle harness. The male 12pin connector of harness C3C-BM701 is not used and should be isolated.

3.3.4. Radio module with round-pin connector WITH factory CD-changer

Disconnect the audio cable from harness C3C-BM701 and remove pins from female and male 12pin connector.



Loosen the female round-pin connector from the radio module. Loosen the female 10pin CD-changer connector of vehicle harness of the female round-pin connector.



Pin the female pins of the audio cable of harness C3C-BM701into the female 10pin CD-changer connector and connect the corresponding female pins of the vehicle harness to the male pins of the audio cable of harness C3C-BM701. Make sure to isolate all connections.
Use following assignments:

Interface Audio-cable 10pinconnector	***Pin to female***
Red	Pin 2
White	Pin 1
Black	Pin 6

Connect female 10pin CD-changer connector into female round-pin connector and female round-pin connector back to the radio module.

3.3.5. Radio module with round-pin connector WITHOUT factory CD-changer

Installation is analogue to system with factory CD-changer installed. Only there is no female 10pin connector on the vehicles harness. Shorten the female 12pin connector for two chambers (after expelling all the pins). Obeying the above pin-configuration, pin the female pins of the audio cable of harness C3C-BM701 into the 10pin shortened female connector. The male pins of the audio cable of harness C3C-BM701 are not used and should be isolated. Connect female round-pin connector to radio module. Connect the shortened female10pin connector of harness C3C-BM701 to the CD-changer port of the radio module while making sure that the correct pins are used. Fasten the female 10pin connector in the round-pin connector to avoid later disengagement.

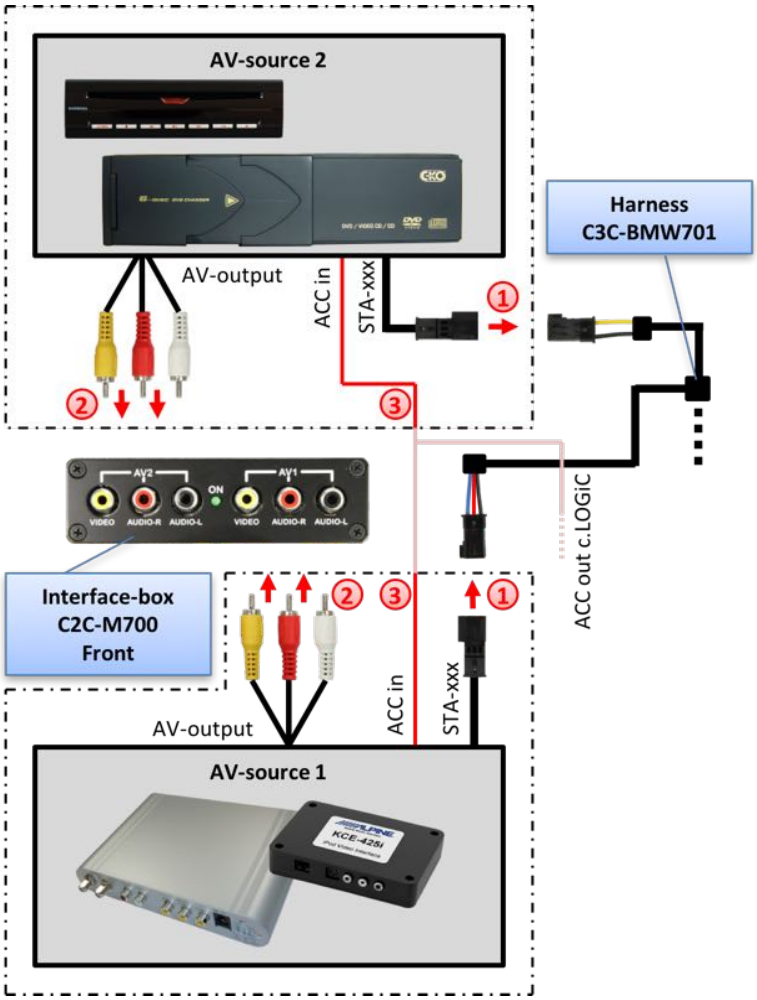
3.4. Connecting peripheral devices

It is possible to connect up to 2 after-market AV-sources, after-market rear-view camera and rear-seat-entertainment to the c.LOGiC.

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

3.4.1. AV-source(s)

The c.LOGiC interface has the possibility to connect and remotely control by navigation buttons up to 2 pre-programmed devices. 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 blue (yellow) female 3pin AMP connector of harness C3C-BM701 and the IR-port of the AV-source 1 (AV-source 2).

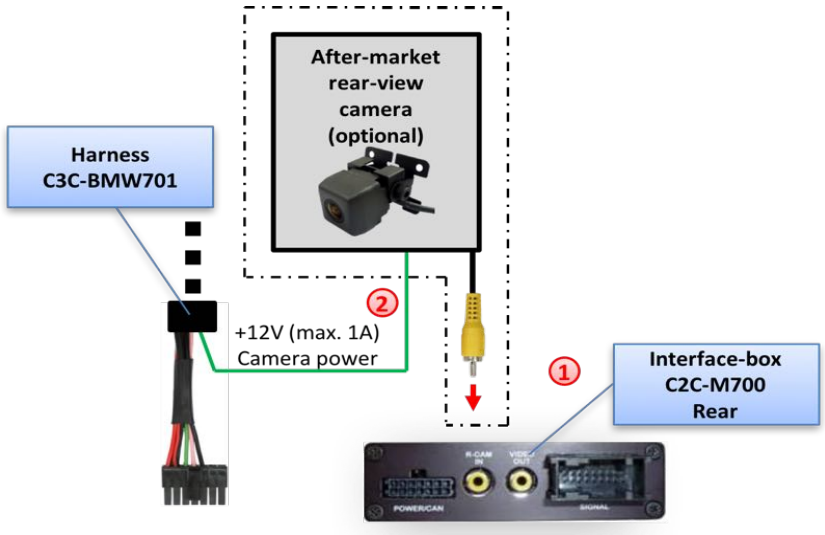
② Using an RCA-cable, interconnect the female RCA-port AV1 (AV2) of the interface-box C2C-M700 with the AV-output of the AV-source 1 (AV-source 2).

③ The pink ACC-output wire (+12V max. 1A) of harness C3C-BMW0x can be connected to the ACC-input wires of the connected devices to switch it on. It carries +12V when the navigation computer 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. After-market rear-view camera

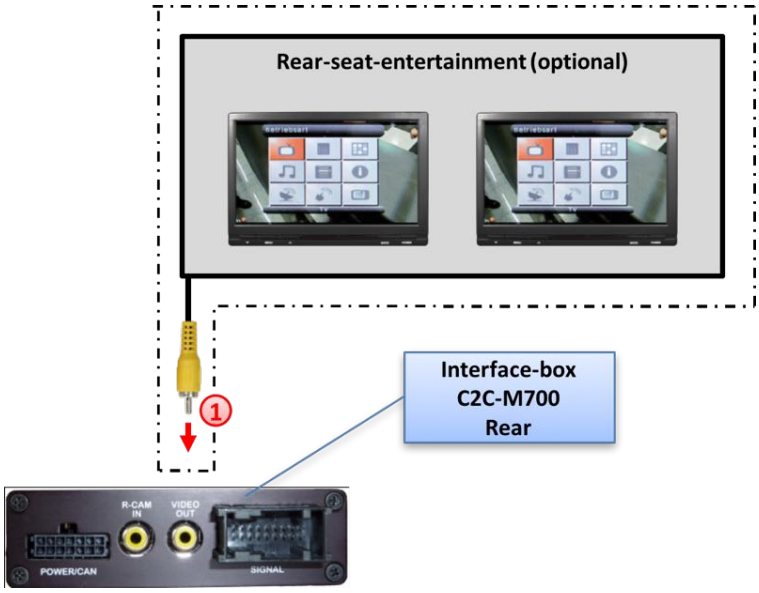


① Connect the video RCA of the after-market rear-view camera to the female RCA connector R-CAM IN of interface-box C2C-M700.

② Connect the green wire of C3C-BM701 to the camera power supply (+12V max. 1A) The green wire is high (+12V) when reverse gear is engaged.

Note: BMW vehicles compatible with NTSC cameras only.

3.4.4. After-Market rear-seat-entertainment



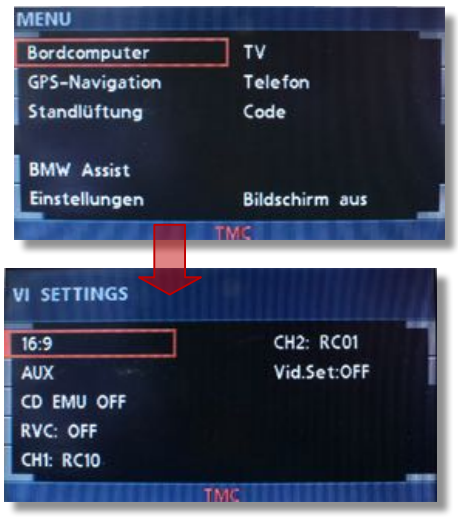
1 Using RCA-cables, connect the rear-seat-entertainment to the female RCA-connector VIDEO OUT of interface-box C2C-M700.

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.

3.5. System settings/VI SETTINGS

You must make some settings in the “VI SETTINGS“ menu to enable the c.LOGiC’s functions.

Press 3x the “MENU“ key to access the “VI SETTINGS“ menu of the c.LOGiC.
Use the right knob to make changes within the “VI SETTINGS“ menu.
Press 1x the “MENU“ key to exit the “VI SETTINGS“ menu.



3.5.1. Audio settings

It is necessary to set some audio settings to use the c.LOGiC interface.

On vehicles WITH factory CD-changer
set the audio setting to "**CD**" and "**CD EMU OFF**“.

On vehicles WITHOUT factory CD-changer
set the audio setting to "**CD**" and "**CD EMU ON**".

3.5.2. Assigning device control for connected AV-sources

Select control levels setup “CH1:RCxx” for AV1 and “CH2: RCxx” for AV2 in the “VI SETTINGS“ menu and assign related IR-codes as described in device control table by turning the right knob.

Note: The IR-control channel CH1 is preset to RC-Code 41 compatible DVB-T tuners and CH2 is preset to RC-Code 09 for the usbLiNK.

3.5.3. Rear-view camera function

Set the rear-view camera setting to “RVC: ON“ to use the rear-view camera input of the c.LOGiC. After the setting the automatic switching to rear-view camera input is activated when reverse gear is engaged.

Note: After the reverse gear is disengaged, the monitor stays on camera video until the vehicle reaches a speed of 10 km/h. To leave the camera video press the right knob.

3.6. DIP switch settings

The default DIP switch setting is (already set):

1+2 =OFF , 3 = ON
(default setting)

Check after installation the LED status on the C2C-M700 interface. For this, turn off the ignition. After about 1-5min. the status LED should turn off. If the status LED should not turn off, open the C2C-M700 housing, set the DIP switch "3" to OFF and connect the open white/black wire from C3C-M701 harness with ignition (+12V).

1+2+3 =OFF
(special case)

4. Operation

4.1. Activation of the video-in-motion function

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

4.2. Selecting the c.LOGiC as current AV-source

MODE - button

picture switch button

Selecting the c.LOGiC as current AV-source is activated by pressing the "MODE"-button (depending on the current mode of the system, it has to be pressed several times). After the first activation the system will switch the picture after a few seconds from c.LOGiC-video to factory-video by itself, the audio will still stay on c.LOGiC-audio. Use the picture switch button to select between factory-video and c.LOGiC-video. You can leave the c.LOGiC mode by pressing the "FM" or the "MODE" button.

4.3. Switching to c.LOGiC and factory CD-changer

The c.LOGiC and the factory CD-changer share a common address. The factory CD-changer can be used only when the c.LOGiC is switched off. To switch the c.LOGiC off or on longpress station button "**4**".

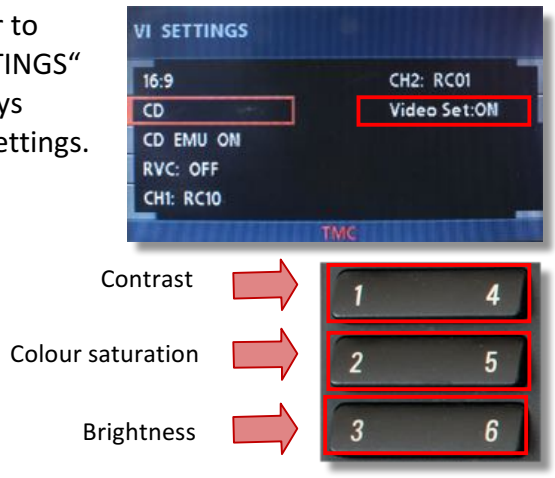
4.4. Switching to AV1 and AV2

In c.LOGiC mode longpress station button „**1**" to switch to AV1 or longpress station button "**2**" to switch to AV2.

4.5. Picture settings

The c.LOGiC has its own picture setting mode. In order to enter this mode, set to **"Video Set:ON"** in the "VI SETTINGS" menu. After switching to the Video/Audio level the keys **"1 <> 4"** , "**2 <> 5"** , "**3 <> 6"** can be used for picture settings. (each with short keypress).

You can deactivate the picture setting mode in the "VI SETTINGS" or by turning off ignition.



4.6. Button assignment table

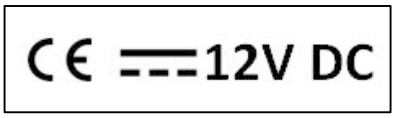
The button assignment table shows which functions of the connected devices can be executed by navigation buttons. Once an AV-input is activated, the navigation button in the left column will execute the function described in the corresponding device column. The function description equals the remote control buttons of the device's remote control. On the additional device the writing may vary (e.g. AV instead of Source).

Button assignment table c.LOGiC C2-MK-CD						
Navigation button	**DVB-T tuners**	**usbLiNK**	**DVD-player**	**DVD-changer**	**iPod®-control**	**Analog-tuner**
1		SOURCE	AV	AV	AV	Display
1 long	Selection TV/ image format	Selection TV/ image format	Selection TV/ image format	Selection TV/ image format	Selection TV/ image format	Selection TV/ image format
2		OK / PLAY	PLAY	PLAY	PLAY	SCAN
2 long	Selection AV2/ Image format	Selection AV2/ Image format	Selection AV2/ Image format	Selection AV2/ Image format	Selection AV2/ Image format	Selection AV2/ Image format
3	←	←	←	←	←	CH -
3 long	TEXT	EXIT	ZOOM	ZOOM		
4		POWER	POWER	POWER	POWER	POWER
4 long	Interface On/Off	Interface On/Off	Interface On/Off	Interface On/Off	Interface On/Off	Interface On/Off
5	EXIT	MEDIA	>>	>>	>>	MUTE
5 long	SCAN	VOL +	PBC	PBC		
6	→	→	→	→	→	CH +
6 long	EPG	VOL -	STOP	STOP		
7	↑	↑	↑	↑	↑	VOL +
8	OK	OK / PLAY	PLAY	PLAY	PLAY/ENTER	SCAN
8 long	MENU	SETUP	SETUP	SETUP	LAMP	ADJUST
9	↓	↓	↓	↓	↓	VOL -
10	CH -	TRACK -	TRACK -	TRACK -	TRACK -	CH -
10 long				DISC		
11	CH +	TRACK +	TRACK +	TRACK +	TRACK +	CH +
11 long				DISC		
12			TITLE	TITLE		
12 long			SUBTITLE	SUBTITLE		
13	INFO		DISPLAY	DISPLAY		
13 long	DTV/RADIO		AUDIO	AUDIO		

Note: On vehicles with factory CD-changer the control by number keys 1-6 is only possible if the CD-changer magazine is equipped with 6 discs!

5. Specifications

Operation voltage	10.5 – 14.8V DC
Stand-by power drain	<1mA
Operation power drain	230mA
Power consumption	3W
Temperature range	-30°C to +80°C
Weight	202g
Measurements (box only) B x H x T	90 x 30 x 105 mm



6. Technical Support

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