

In-Car TV Tuner

Digital (DVB-T) TV Tuner for BMW IBUS

MCA-DVBT-TV-01

User Manual



MURA CAR ACCESSORIES

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Overview

Thank you for purchasing Mura Car Accessories TV Tuner. Our product is designed for vehicles operating on the BMW I-BUS protocol. Providing complete integration with OEM car head unit, MCA-DVBT-TV-01 offers an easy to control built-in digital (DVB-T) HD TV tuner along with a multimedia interface, allowing you to view and record your favorite TV shows when you are on the road.

Features

- High definition video output directly on existing car monitor screen
- Can be operated from existing car controls or by IR remote control
- Able to receive SD as well as HD broadcast
- USB host interface allows you to record streams on or view audio/video content from a memory stick
- Support for Rear View Backup camera
- Support for Auxiliary AV input for connecting external audio/video sources

Requirements

- MCA-DVBT-TV-01 is designed for vehicles with an IBus interface. The following car models implement this protocol:
 - BMW 7er E38 with Professional Navigation MK3/MK4
 - BMW 5er E39 with Professional Navigation MK3/MK4
 - BMW 3er E46 with Professional Navigation MK3/MK4
 - BMW X5 E53 with Professional Navigation MK3/MK4
 - BMW X3 E83 with Professional Navigation MK3/MK4
 - BMW Z4 E85 with Professional Navigation MK3/MK4
 - MG ZT / MG ZT-T with Professional Navigation MK3/MK4
- Your car must be equipped with an OEM navigation (MK3 or MK4)
- Your system must also include an OEM radio tuner (BM24, BM53, BM54)

- MCA-DVBT-TV-01 supports both 16:9 and 4:3 displays
- To benefit from the rear view camera feature, you must have one such camera installed on your car. The camera must implement either PAL or NTSC standards.
- For a Plug & Play installation you must already have an analog TV tuner properly installed on your car. This assures that the connections between the TV tuner, the navigation and the radio module are already in place. The analog tuner will however be removed. If you're not upgrading from an analog TV tuner, you will need to make the above mentioned connections yourself or seek guidance at a local service.
- Mura Digital TV tuner implements the DVB-T digital protocol. DVB-T is the most widely used protocol for digital television. If you are from North or South America (except Panama, Colombia, Trinidad and Tobago, Suriname, French Guiana and Falkland Islands) you need a tuner that implements a different protocol. For other countries, please check <http://www.dtvstatus.net/map/map.html> for an up-to-date list of countries who adopted DVB-T. Furthermore, the DVB-T2 is a slightly different protocol, that is not supported by MCA-DVBT-TV-01.
- MCA-DVBT-TV-01 supports free-to-air channels only. Pay-per-view channels are not supported by the current version of the tuner.

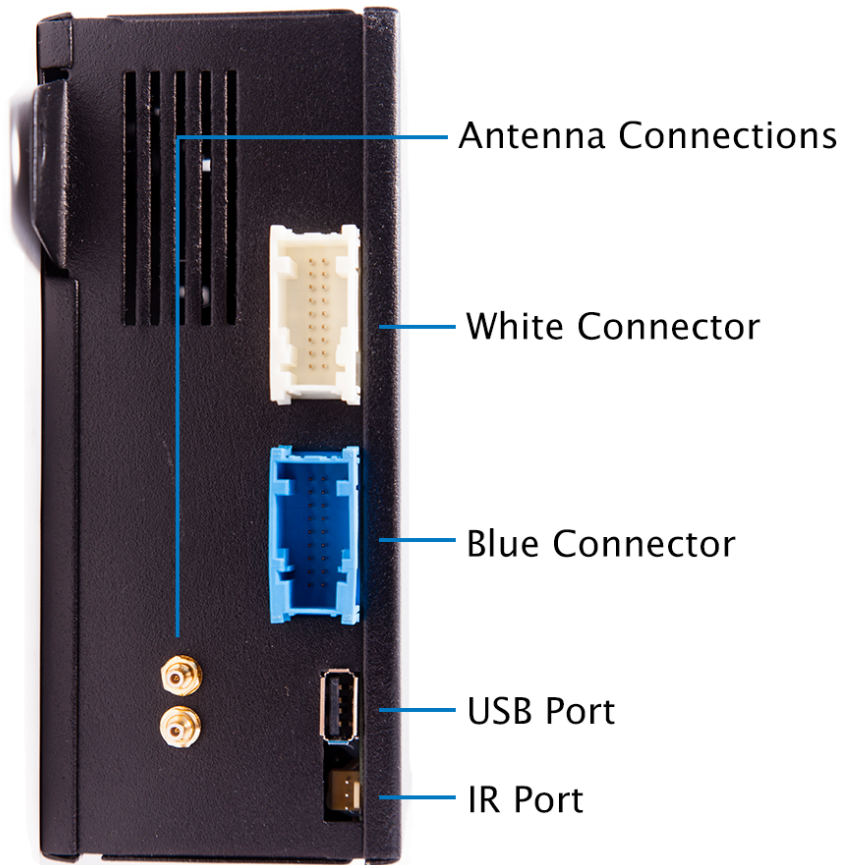
Package Contents

This package contains:

- 1 x MCA-DVBT-TV-01
- 1 x User Manual
- 1 x Remote Control
- 1 x IR cable (5m) with sensor
- 1 x USB cable (1.5 m)

Hardware

Rear Panel View



Port	Connection
Blue connector	Connects to car's blue connector
White connector	Connects to car's white connector

USB port	Connect USB data stick or extender cable for data stick
IR port	IR cable from present package
Antenna connectors	Connects to OEM car antenna connections

All TV module functions can be accessed using both remote control and OEM BMW head unit controls (similar to your old analog TV module).

Using IR Remote Control

Depending on the tuner version you are purchasing, you will receive one of the two following remote controls versions.



- AUDIO – Select Audio stream if multiple options available
- FAST SCAN – Fast (auto) search for stations
- EPG – Electronic TV guide
- SUBTITLE – Select subtitles stream if multiple available
- VOL- /VOL+ Increase/Decrease volume
- LIST – Display list of available programs
- CH+ /CH- Previous/Next channel
- TXT – Teletext

Remote Control version 1



AUDIO – Select Audio stream if multiple options available

SEARCH – Auto search for stations

EPG – Electronic TV guide

SUB – Select subtitles stream if multiple available

VOL-/VOL+ Increase/Decrease volume

LIST – Display list of available programs

CH+/CH- Previous/Next channel

TXT – Teletext

Remote Control version 2

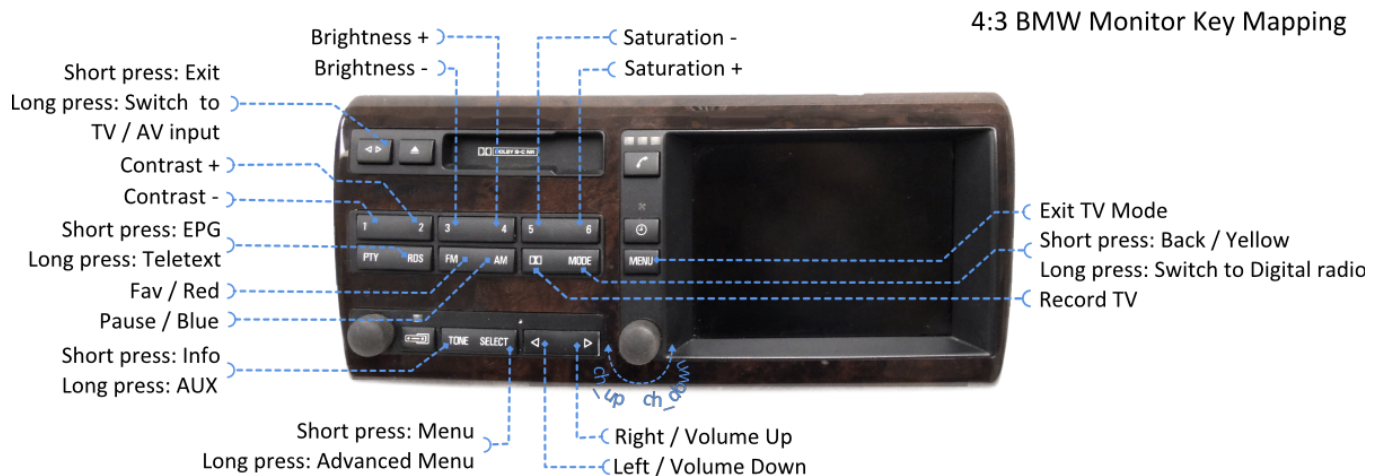
Using Board Monitor Display to Control TV functions

MCA-DVBT-TV-01 supports both 16:9 and 4:3 BMW OEM head units. Monitor buttons were mapped to TV tuner functions in such a way as to preserve the manner of operation from the old analog tuner. For the users who are migrating from an analog tuner, controlling Mura Digital TV tuner should be a familiar operation.

For 16:9 monitors please see the following mapping.



For 4:3 monitors, the key mapping is illustrated in the figure below:



Installation

MCA-DVBT-TV-01 is designed to replace your old, analog TV Tuner. Therefore, it makes use of existing setup which is assumed to have been put in place when you had your analog tuner installed. If this is not your case and this is your first TV tuner, installation will take additional steps for which external documentation should be available from your car manufacturer.

Installation overview

- If you already have an installed TV tuner (an old analog TV tuner for example), installing MCA-DVBT-TV-01 is a simple plug and play procedure.
- If this is the first TV module for your car, installation is similar to retrofitting an original TV tuner. We recommend you to follow the steps in the BMW retrofit documentation for your particular car model.

Replacing existing TV module with MCA-DVBT-TV-01

- Wait for navigation to shut down (for led to turn off). Depending on your car equipment, it should take around 1-5 min
- Disconnect the negative terminal of the car battery
- Remove the old TV module and put the MCA-DVBT-TV-01 in its place
- Connect the white and blue car cable connectors to corresponding connectors on MCA-DVBT-TV-01 panel
- Connect car antennae to corresponding connectors on MCA-DVBT-TV-01 panel
- If you wish to control the TV tuner via remote control, connect supplied IR cable to IR connector on MCA-DVBT-TV-01 and route IR cable so that the receiver ends up in a location that is most

convenient to you. You will need to be able to point the remote control towards this receiver.

- Connect USB cable to the USB port on MCA-DVBT-TV-01 and route the other end of the cable to a convenient position for when you want to use a USB stick
- Installation is now over. Reconnect the car battery.

The location where you can find your old TV tuner depends on your car model.

Software

MCA-DVBT-TV-01 announces itself to the car computer (just like the OEM analog TV tuner). This means that you will find it in the navigation System Menu, under the name 'Television'. The first time you access it after installation, you will be taken to an 'Installation Guide' which allows you to set OSD Language (menu language), Country and to search for available channels. After you perform the channel search, you can start enjoying digital TV in your car.

OSD Operation

Menu	Sub Menu	Description
Program	Program Edit EPG Sort LCN	
Picture	Aspect Ratio TV Format	e.g. 16:9, 4:3
Channel Search	Auto Search Manual Search Country Antenna Power	Automatic scan for channels Manual scan for channels
Time	Time Offset Country Region Time Zone	If set to 'Auto' there is no need to worry about the other features in this sub-menu
Option	OSD Language Subtitle Language Audio Language Digital Audio	Sets menu language If multiple options available, sel. lang. for subtitle and audio N/A (BMW audio is all analog)
System	-	Present version of TV tuner does not make use of 'System' functions.
USB	Multimedia Photo Configure Movie Configure PVR Configure	
USB Multimedia	→ Music Photo Movie PVR	Access to Music, Photo and Movie folders on your memory stick Access to streams recorded using MCA-DVBT-TV-01

Using OEM board monitor for menu navigation and control

The following instructions refer to controls described in section “Using Board Monitor Display to Control TV functions” on page 6. Mind that the names by which we refer to them differ from what appears on your board monitor, so please use the above mentioned picture to guide your through the following steps.

- Press **Menu** to enter and **Exit** to exit the menu
- Navigate by using left/right arrows
- Select desired submenu by pressing rotary button
- Navigate submenu by means of rotary button
- Once you get to desired option, change value by pressing left/right arrows

The following apply to USB Multimedia submenu only:

General controls:

- Hierarchical folder structure. Press rotary button to view folder contents.
- Once you get to the desired file, select it by pressing rotary button
- By default, audio/video file plays in preview mode. For full-screen mode, press **Fav/Red**.
- When viewing self recorded video streams, press **Pause/Blue** to pause

Start/Stop Recording:

- Press **Record TV** and recording starts.
- While recording a TV from channel, you can switch to watching a different program, provided the two belong to the same transponder
- If you try to navigate outside the current transponder while recording, you will not be allowed to continue navigation (Screen goes black and the text 'Recording' is displayed). Navigate back to previous channels.
- End recording by first navigating back to the program you are recording and then pressing **Exit**. The recording will then be saved to on your USB stick.

Delete recording:

- Navigate to the desired file
- Press **Pause/Blue**
- Confirm deletion by pressing the rotary button

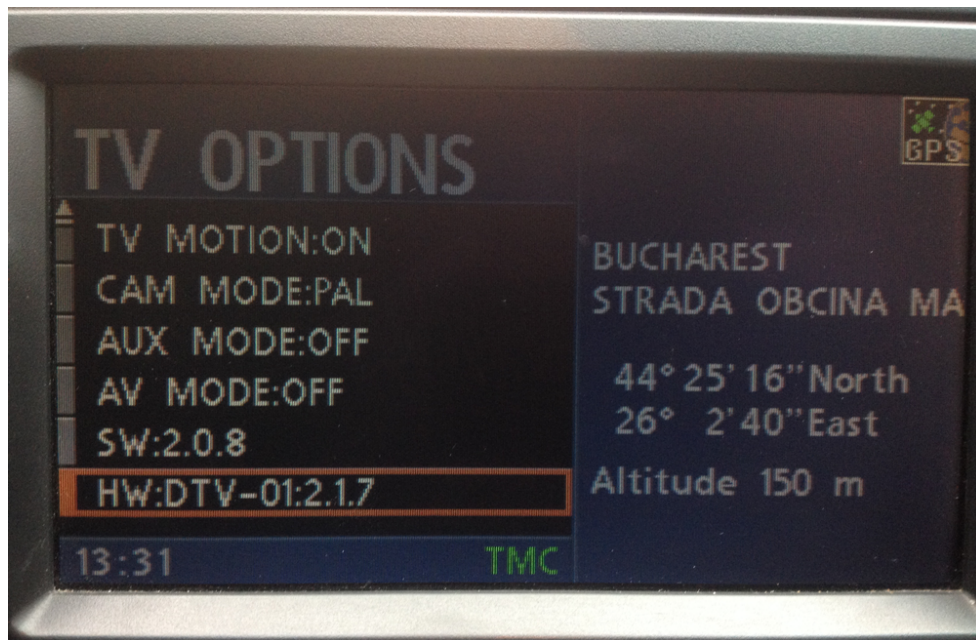
Using remote control for menu navigation and control

Menu navigating and control of TV tuner by means of remote control is, in our opinion, quite intuitive. If you encounter problems, please use the address at the end of this file for contacting our customer support.

Advanced Configuration Menu

To access the advanced configuration menu, switch to TV mode, then long press **SEL(ECT)** button. This menu allows the following settings to be made:

- TV motion: switch to **ON** if you want video output enabled while driving.
- CAM mode: **PAL / NTSC / OFF**. Choose whichever corresponds to your rear view camera type.
- AUX Mode: switch to **ON** as a first step in enabling stereo audio.
- AV Mode: **OFF / NTSC / PAL**. If unsure which option to choose, you should check the specifications of the device you wish to connect and see what type of output it delivers.
- SW and HW refer to Software and Hardware version of your module. This information will be asked when you contact customer support.



Mura Digital TV Tuner features stereo audio output.

To be able to use this feature, you need to have a BM54 radio module with AUX input.

The procedure to enable this feature is not so straightforward, due to the fact that audio TV input on BMW OEM radio modules is mono. Consequently, hardware modifications need to be made. These consist of pins re-routing and/or additional wiring. For instructions on this process, please contact us by sending an email to contact@mca.electricmura.ro or through our website, <http://mca.electricmura.ro>.

After performing the necessary hardware modifications, software configurations must also be made. First set AUX Mode to **ON** (see instructions above). Back to the menu of your navigation, press **MODE** button until AUX input is selected (you may need to press it multiple times). Next, enter TV mode, then long press **TONE** button on your navigation's controls. At this point, TV audio output is switched to radio auxiliary input (stereo).

Specifications

- Full compliance with HD DVB-T MPEG2/MPEG4 AVC/H.264 Standard
- High Doppler effect correction
- On screen channel information
- OSD Teletext (DVB ETS 300 706) and subtitle function support (EU model)
- VBI Teletext support (EU model)
- Fast scan for high speed driving and cross difference area

Supported video and audio formats for playing from a USB stick:

- Video: RMVB, RM, Sorenson H.263, H.264, MPEG-1,2,4, VC1, Divx, Xvid, AVS, JPEG
- Audio: MP2, MP3, AC3, LPCM, ADPCM, AAC, HEAAC, WMA
- Remark: Some formats need a license (for example: DivX, RMVB, AC3)

Receiving frequency range:

- UHF 470MHz ~ 862MHz;
- VHF 174MHz ~ 230MHz

RF Input level: 81dBm ~ -20dBm

RF Input connector: SMB terminal x2

Antenna power: 12V

Technical Support

MCA is committed to offering quality products, as well as quality information. If you need help with using Mura TV tuner, please contact our customer support at <http://mca.electrimura.ro/en>.

Warranty Information

This product is backed by a one-year warranty. In addition, MCA warrants its products against defects in materials and workmanship for the period noted following the initial date of purchase. During this period, the product may be returned for repair or replacement with an equivalent product. The warranty covers parts and labor costs only. MCA does not warrant its products against defects or damage arising from misuse, abuse, alteration or normal wear and tear.