

Audio-interface MOST-RCA 2.0 (Adapter for RCA output)



Fig.1. Adapter MOST-RCA 2.0



Fig.2. Adapter MOST-RCA 2.0 (jumpers, connectors "Power" and "MOST")

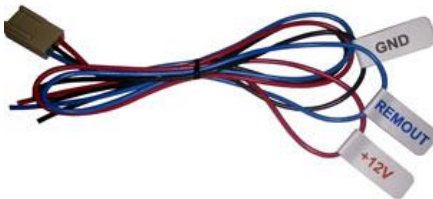


Fig.3. Power cable

Adapter MOST-RCA (Fig.1) is designed to provide RCA (analog) outputs in automotive audio systems with optical MOST bus. It allows you to use non-standard audio amplifier (amplifiers) instead of the original. Compatible with cars:

- Audi A4, A5, A6, A8, Q5, Q7 (MMI 2G/3G/3G+, up to 2014)
- BMW (E60, E70, E90, F10, F30...), except E65
- Land Rover (Freelander 2, Discovery 3, 4), Range Rover
- Mercedes Benz (2009+)
- Porsche
- Volvo (S40, S60, S80, XC60, XC70, XC90)
- VW Touareg NF (3G+)

Package contents

- Adapter Most-RCA 2.0 (Fig.1)
- Power cable (connector with red, black and blue wires) (Fig.3)
- Jumpers - 3 pcs.
- Quick guide.

Depending on the vehicle, possibly additionally required (sold separately):

○ **Optical cable (0,8m) with connector**

- ✓ for system MMI 3G+ (Audi or VW Touareg NF).
- ✓ for BMW or MB (if original amplifier is missing).
- ✓ for Volvo (during the procedure «serial number assignment»),

○ **Only optical connector**

for BMW or MB (if the original amplifier is present).

Description

Audio-interface MOST-RCA:

- 1) emulates a original audio amplifier.
- 2) select the main stereo signal from the optical stream, as well as additional audio signals from the phone, navigation system, parking sensors and other messages.
- 3) performs mixing of additional signals to the main signal in the respective proportions for each audio channel using digital mixers.
- 4) allocates a separate channel for the subwoofer and controls the level of this channel (if there is adjustment of the subwoofer).
- 5) generates on their outputs analogue outputs signals to standard RCA amplitude of 2V.
- 6) when using it, the system saves all adjustments and the performance of additional components (sat NAV, phone module, etc.).

The adapter allows a precise assignment of all service and information signals by the respective acoustic channels (front, rear, left and right). Supported "Fader" (front/rear), balance and all frequency adjustments.

Adapter (in addition to the optical connector MOST) contains control output "Remout" and three pairs of RCA connectors (output on the acoustics front (FR and FL), rear acoustics (RR and RL) and the subwoofer (SR and SL)). The maximum amplitude of the output signal is 2 volts, which is consistent with inputs of modern amplifiers. The frequency response of the subwoofer output has a cutoff frequency of 100Hz, which is provided by a digital filter of second order.

The final link adapter to convert the audio signal from digital form to analog using high quality 24-bit digital to analogue Converter BURR-BROWN.

Connection

Attention: Color of wires of the power cable does not match the color of the regular car wiring. Incorrect connection of the supply leads to the device failure.

- 1) set the jumpers according to Fig.4.
- 2) to connect the adapter to the car system has:
 - connector "MOST" (Fig.2). Before connecting remove the cover.
 - connector "Power" and Power cable:
 - Red wire (+12V Battery).
 - Black wire (Ground, GND).
 - Blue wire (REMOUT for control).
- 3) RCA connectors must be connected to a aftermarket amplifier.

Notes for BMW: an additional mode of the adapter (Fig.4 is indicated as a BMW Park Mode). This mode should be used if you want to change the volume of the signal (parking sensors and system messages). Read more about this mode in the Appendix to this manual.

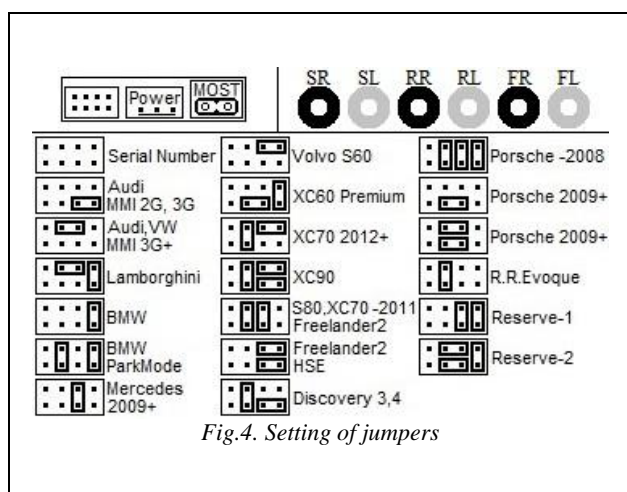


Fig.4. Setting of jumpers

Notes for Volvo and Land Rover (if you have activated component protection):

- before connecting the adapter must be assigned to the adapter serial number (a marker of activity of the protection components is the cessation of broadcast audio adapter in 20-40 seconds after turning on the system).

For the assignment you need to set the jumpers to position «Read Serial Number», then, not disconnect the original amplifier, connect the adapter to the optical interface MOST and turn on audiosystem. After you enable the adapter «read» the serial number of original amplifier and store it in its non-volatile memory. This procedure usually takes less than 20 seconds, a sign of the end of the procedure «Read Serial Number» is the formation of pulses with an interval of 1 second on the line Remout (blue wire). After that you should disable original amplifier, set the jumpers to a position corresponding to the car and use the audio interface in the system instead of the original amplifier.

The operation of the adapter

When you turn on the original head unit audio interface "MOST-RCA" is initialized in the interface MOST like a original audio amplifier and emulates his work, takes information from the head unit about the regulations and forms necessary messages to the head unit. After all the sound interface circuit enters the working state and the broadcast audio signal on the RCA outputs, is formed a control signal REMOUT to enable the amplifier.

When you turn off the audio system first, remove control voltage from the output of the REMOUT, then the audio circuit are transferred to the standby mode, thus avoiding spurious clicks when switching on and off.

When the MOST bus is inactive, the interface adapter is in "sleep" mode, like other components in MOST systems, while consuming less than 0.5 mA.

Special mode (only for BMW)

If you want to change the volume levels of parking sensors and system messages, you should use an additional mode of the adapter MOST-RCA (in the figure 3 labeled as "BMW Park Mode")

To set the desired volume of the parking sensors and signals:

- 1) set the jumpers to position BMW (one jumper).
- 2) turn on the system.
- 3) not turning off the system, add a jumper (in accordance with figure 3 the position of "BMW Park Mode").
- 4) adjust the level of the lower border signals by adjusting low frequency timbres. Below this situation, the signal level will not drop ever.
- 5) install attenuation additional signals relative to the level of the main channel by adjusting the timbres of the upper frequency (weakening of the signal levels of the parking sensors and of the system with respect to the main music signal).
- 6) Turn off the system. Wait until the car "fall asleep".
- 7) Operation with the set parameters is possible if the position of jumpers "BMW Park Volume". To return to the default settings again, set the jumpers to the normal position "BMW" (fig.4)

General specifications

Dimensions adapter:	110 x 80 x 27 mm
Power supply voltage:	8 ... 16 volts
Current consumption in sleep mode:	less than 0.5 mA
Analog output signal:	RCA 2 VRMS
Flatness in the frequency range 20Hz...20KHz:	less than 0.5 db
Permissible load on the RCA outputs:	not less than 1 KOhm
The number of bands equalizer:	5 bands
EQ adjustments Depth:	+/- 15db
Depth adjustment of bass and treble:	+/- 12db
Threshold of anti-clipping:	+2db

Features sound processor (STA309A)

Bit Sound Processor:	24 bit
Dynamic range:	no less than 100 db
Number of active channels concurrently:	5 channels (1-stereo and 4-mono)

DAC characteristics (PCM1680)

Conversion type:	Delta-Sigma
Bit Converter:	24 bit
Dynamic range:	no less than 105 db
Total harmonic distortion:	0,002%

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