

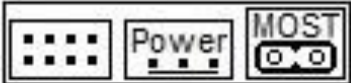
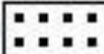






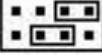
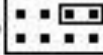

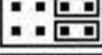


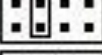



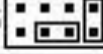






**Audio-interface MOST-RCA 3.0  
(Adapter for RCA outputs)**

Service manual

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		SR	SL	RR	RL	FR	FL
00	 Serial Number	01	 Mercedes 2008+	14	 Porsche 2009+		
06	 Audi 2G	03	 Mercedes -2009	0B	 Porsche -2008		
11	 Audi 3G+ VW Touareg NF	1D	 Mercedes NTG1 w211, w220	05	 Volvo S60		
13	 Lamborghini Audi 3G+	07	 Freelander 2 HSE	0D	 XC70 2012+		
02	 BMW E/F series	08	 RR Evoque RR Sport 2013+	0F	 XC90, S40		
0A	 BMW E/F series spec.mode(park)	09	 Freelander 2 S80/XC70 -2011	16	 XC60 Premium		
15	 BMW E65/E66 HU audio - OFF	0E	 Discovery 3.4 RR Sport -2012	Setting of jumpers [02_18]			
17	 BMW E65/E66 HU audio - ON	1E	 Reserve	Установка перемычек			

Setting of jumpers

## Chapter 1. Description

Adapter MOST-RCA 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.

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.).
- 7) play sound from a DVD source is only possible in Stereo mode. The device has no built-in decoder, 5.1 multichannel audio, so when you try to play 5.1 audio no signal and certainly won't be.

## Compatibility

Cars with interface Most-25:

- Audi (A4, A5, A6, A8, Q5, Q7 with MMI 2G/3G/3G+, up to 2014)
- BMW (E/F series - E60, E65, E70, E90, F10, F30...)
- Land Rover (Freelander 2, Discovery 3 and 4, all Range Rover)
- Mercedes Benz
- Porsche
- VW Touareg NF (3G+)
- Volvo (S40, S60, S80, XC70, XC90). For Volvo XC90 (with parktronic) need special version Most-RCA 3.0 (PARK)

## Package contents

- Adapter Most-RCA 3.0
- Power cable
- Jumpers - 3 pcs.
- Quick guide

*Depending on vehicle specification, 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).*

## Chapter 2. 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 the picture.
- 2) to connect the adapter to the car system has:
  - connector “MOST”. Before connecting remove the cover.
  - connector “Power” and Power cable:
    - ✓ Red wire (+12V Battery).
    - ✓ Black wire (Ground, GND).
    - ✓ Blue wire (REM.OUT for control, remote output).
- 3) RCA connectors must be connected to a aftermarket amplifier.

**Notes for BMW:** an additional mode of the adapter (BMW spec.mode (park)). 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 Applications.

**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.

## Chapter 3. How the adapter works

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.

Device (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 (DAC) BURR-BROWN.

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.

## Applications

### 1. Special mode 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

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 (position "BMW spec.mode (park)").
- 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 spec.mode (park)". To return to the default settings again, set the jumpers to the normal position "BMW"

### 2. 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

### 3. Characteristics of the 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)

### 4. DAC characteristics (PCM1680)

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

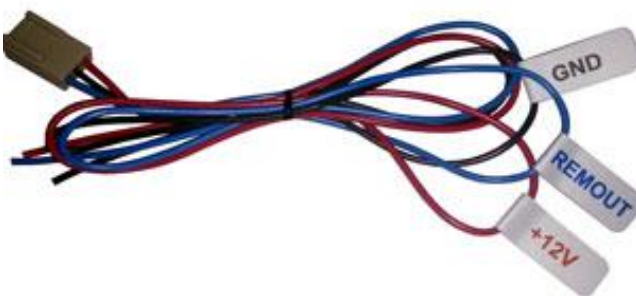
### 5. Images



*Fig.1. Adapter MOST-RCA  
(RCA outputs)*



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



*Fig.3. Power cable*



*Fig.4. Adapter MOST-RCA*