

**Триома**

Разработка и производство  
интерфейсных адаптеров



## **USB-adapter SKIF-Volvo**

Quick guide

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## Chapter 1. Description

The adapter is designed to playback regular car audio system, the audio files recorded on a USB-stick as well, using accessories Trioma with a variety of external sound sources. In the audio system, it connects to the MOST optical interface, emulates the work of the standard CD-drive and provides additional features. The adapter may operate in conjunction with a CD drive and without it. The operation of the adapter is generally similar to that of a CD changer

- [Volvo XC90/S40/V50](#) (2002-2012)
- [Volvo XC70/S80](#) (2007-2011)
- [Land Rover Freelander 2](#) (2006-2012)
- [Range Rover Vogue](#) (2005-2009)

### Adapter features

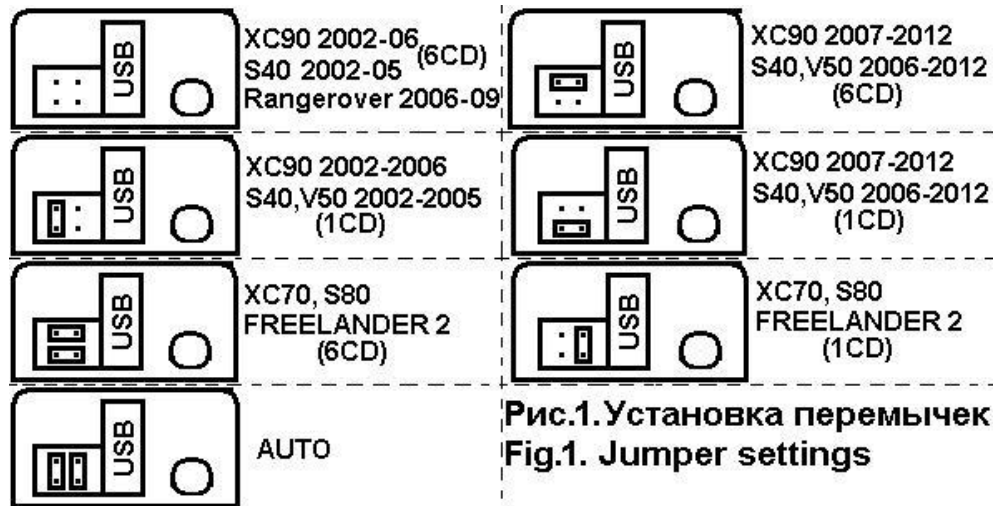
- it plays MP3, WMA and AAC files from USB flash drives.
- it controls the folders (up to 15) and files (up to 99 in each folder) using the buttons on the head unit and steering wheel.
- it works with a regular CD drive.
- it permits arbitrary names of folders and files, as well as the presence of non-music files and folders.
- it displays the number of folders and files, and their names (if supported by the car radio).
- it displays Russian characters (if supported by the car radio). Otherwise, they will be broadcast in their respective Latin.
- The adapter remembers the exact playback location when the system is turned off or when the flash drive is removed.
- Connector for connection of accessories Trioma (AUX, Bluetooth module)
- The ability to customize, fast start, easy algorithm updates.

## Chapter 2. USB-flash. «Invisibility» of the adapter

The valid file system of the flash drive is FAT16 or FAT32. If the flash drive is not connected (or faulty or it is in NTFS or there are no readable audio files on it), the adapter is completely disconnected from the MOST interface (becomes invisible). In this case, the standard CD drive works (if available). **To listen through the additional port on the external audio sources (AUX, Bluetooth), a USB drive must be connected to the adapter and it should be at least two of an mp3 file !!!**

## Chapter 3. Connection and operation

1) The adapter has a platform for jumpers. By default, they are set to AUTO position (Fig.1), at which the adapter automatically determines the type of system and is configured to the appropriate mode. But still it is desirable to install them in accordance with the car and the car-radio before connecting the adapter.



2) Connect the power cable of the adapter to the wiring: black wire – GND (ground), red wire - BATT (+12V, constant). **Improper connection of the power cable leads to failure of the adapter or to its incorrect operation !!!**

3) Remove the plug from the connector port of the adapter. Use the optical cable (included) to connect the adapter to the MOST ring (note – the arrows on the connectors indicate the direction of the signal). If the regular CD drive is not needed, you can use the connector connected to it with optical cable (see Protection of components). How to take apart the connector and rearrange it if necessary, optical cables, see Application 2.

The adapter is integrated into the MOST interface between the head unit (display module) and the standard CD drive. In the absence of the regular drive adapter is installed in any place of the interface MOST. The branch in the optical ring is made at the connector of the head unit (display module) or at the connector of the CD-drive. **Optical cables should be connected to the connectors so that the optical signal spreads from the head unit to the adapter, from the adapter to the CD drive, from the CD drive on to the MOST ring.**

### Auto-setting. Protection of components

To perform auto-tuning of parameters is necessary:

- prepare the flash drive in accordance with the requirements of compatibility and write on it a few mp3 files;
- to switch the system to the connected USB flash drive or connect the USB flash drive after turning on the system (the system can be in any of the modes - FM, AM, CD, AUX);



- wait for the end of system initialization (not less than 10sec);
- remove the USB flash drive from the USB connector. After about 10sec happens adapter`s autoconfiguration and interface reinitialization MOST (if briefly lost sound);
- connect a flash drive and to ensure the correct functioning of the device.

In Volvo XC90 and S40 may be active **Protection of components**, which complicates the integration of new devices. In this case, it is necessary to carry out the procedure of assigning the adapter serial number. This procedure is carried out simultaneously with auto settings, with jumpers on the adapter can be installed in the appropriate position or AUTO.

## Adapter operation

The USB mode is equivalent to mode regular CD-drive (CDC). The folders on the flash drive correspond to the drives, and the files correspond to the tracks. All CDC functions are applicable to the adapter - rewind inside the track, random play, repeat, scan. The maximum number of files in a folder is 99, the number of folders is up to 15. Files in the root of the flash drive are considered to be located in a folder named "Root".

After restarting, the system starts in the mode in which it was turned off.

The order of playback of files in folders and the order of folders depend on their physical location on the flash drive (the earlier the file is created, the smaller its number and the sooner it will be played, the folder - similar).

## Switching between the adapter and the original CD-drive

It is carried out by connecting/disconnecting the flash drive. The CD drive becomes active 10 seconds after eject, the adapter is completely disconnected from the MOST bus (turn invisible) and it enforces the initialization of the interface. Connecting the flash drive turns the adapter into an active state.

## Switching between a USB-flash drive and an additional port

Such switching is carried out by the button "Eject". In Range Rover Vogue USB flash drive is enabled by selecting CD1, additional port – a selection of CD4.

## Function «SuperSelect»

For easy folder management, the adapter supports the SuperSelect function. It allows the track selection buttons combined with fast playback, along with their main purpose, to select folders forward and backward:

**Switching tracks** - a short press on the button.

**Fast playback** - hold the button for more than 2 seconds.

**Folder switch** - if the button is held for less than 2 seconds. The adapter tells you when the button is released by lowering the sound level.

Folder management has features depending on the type of CD-drive and the presence/absence of browsing mode in the system (the window for selecting folders and files using the cursor, opened by the button «ENTER»):

1) **in systems with 6-disk drive and browser support:** the selection of folders from the 1st to the 15th is carried out through the browser window using the cursor or using the SuperSelect function. Also, in most cases, the first 6 folders can be selected directly with the buttons from 1 to 6. In systems with browser support, disc-1 is always considered active on the display.

2) **In systems with 6-disk drive and lack of browser support:** the first 6 folders are bound to 6 disk management buttons similar to 6 drives of the standard drive. Advanced selection of all folders from the 1st to the 15th on the principle of forward /backward folder is possible using the function SuperSelect. If the folder number from 1 to 6 is active, the number in the disk-position on the regular display corresponds to the folder number, if the folder number is greater than 6, the disk-position is substituted value 6.

3) **In systems with 1-disk drive and support for browsing:** the selection of folders from the 1st to the 15th is carried out through the browsing window using the cursor or using the SuperSelect function.

4) **In systems with 1-disk drive and lack of browser support,** the choice of all folders from the 1st to the 15th on the principle of forward/backward folder is possible only with the SuperSelect function.

5) **In Range Rover Vogue:** you can switch folders with 1st to 15th buttons Folder+, Folder- or with the help of the SuperSelect function.

## Chapter 4. User settings

The user can change some settings of the adapter by placing a folder with a special name in the root of the flash drive. The setting will be valid for the flash drive on which the corresponding folder is created.

Folder name: SETNSD - disables the "SuperSelect" function.

Folder name: SETNBR - disables browser window support (for some systems that do not support browsing)

Folder name: SETRUS - enables support for Russian characters (for systems that support Russian tags).

## Chapter 5. Verifying and updating the software

If you want to know the version of the current software you need to connect a USB flash drive, which contains only one mp3 file, and run the adapter to play. On 5sec in the current time will be replaced by the version of the adapter.

To update the software of adapter you need:

- 1) prepare a clean USB stick and write on it one mp3 file.
- 2) make sure that the file is being played adapter and, if necessary, to verify the version of the current software, as described above;
- 3) add this flash the update file;
- 4) connect to the adapter ordinary (another) USB flash drive with mp3 files and play;
- 5) remove «playing» stick and not earlier than 2sec, but not later than 10sec, insert the USB flash drive with update file;
- 6) during the upgrade process, the display of the head unit remains static display the last status. If it is not, and instead plays a recorded on a flash drive mp3 file, then the adapter is not updated. You must correct the errors and repeat the procedure. During the procedure of upgrade you can to switch mode the head unit with the CDC on the RADIO;
- 7) not later than 20sec, the upgrade process should be completed;
  - if the head unit is in CDC mode, then, in most cases, starts recorded on a flash drive mp3 file;
  - if the head unit is in RADIO mode, then, in most cases, at the completion of the update process will be logged intermittent loss of sound. From RADIO mode, you can switch to the CDC, in this case, should be reproduced is recorded on a flash drive mp3 file;
- 8) during playback on the prepared USB flash drive mp3 file, you can immediately see the software version of the adapter;
- 9) to re-start the upgrade procedure, you can retrieve and pause from 2 to 10 seconds, re-insert the USB flash drive with update file.

### Notes on the upgrade procedure of the software

- If USB stick with update file was inserted earlier than 2sec, the adapter may not start the upgrade procedure.
- If the adapter was without USB stick more than 10sec regardless of the mode (CDC or RADIO), you must set the adapter to a working state by connecting some USB flash drives with mp3 files. After that you can make the upgrade procedure.
- Sometimes after a forced initializing interface MOST can be reset audio channels (observed as a mute). In this case, you should switch modes (CDC-RADIO-CDC) or to turn off and to turn on the head unit.

## Application 1. Compatible accessories

**The AUX adapter** to connect any external audio source - phone, player, GPS, etc. The adapter has connector minijack of 3.5 "male". The adapter length is 1.5 m.

**Bluetooth module «BMT»** is used for wireless reception of audio signal from the paired device (listening to music, "hands - free", Command support - switching tracks, play/pause, remove/hang up). Hands-free mode only works when the adapter is in the additional port mode (i.e. when listening to FM radio or flash drive the module is not active).

## Application 2. How to disassemble the optical connector

**Note:** the arrows on the connectors indicate the direction of the optical signal.



1. Slightly bend the latch of the inner section



2. Remove the inner section of the connector



3. Half to pull the plastic blue holder



4. Slightly bend the latch and release optical cable

## Application 3.

### Adapter connectors:

- 1) power connector
- 2) connector MOST (with blank)
- 3) port for accessories Trioma
- 4) platform for jumper settings
- 5) USB connector

### Package contents:

- adapter Skif-Volvo;
- USB extension cable;
- power cable;
- optical cable (0.8m);
- jumpers (2pcs);
- quick guide.