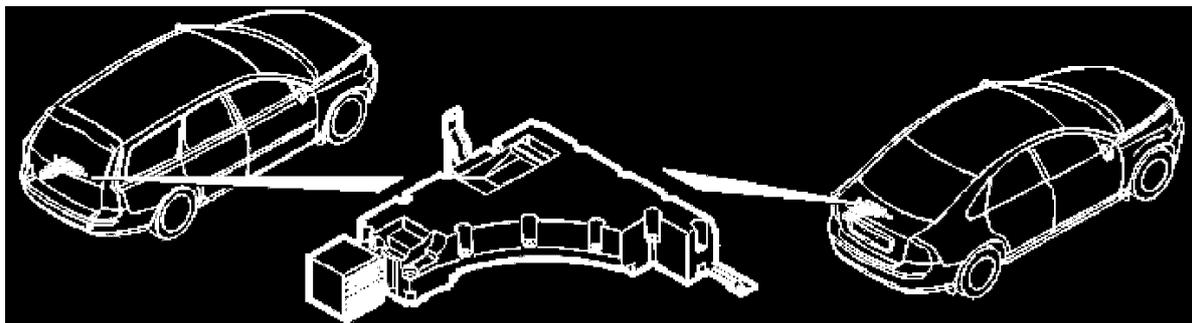


Signal Processing Module: Description and Operation

Subwoofer Module (SUB)

System overview

Control module



The primary task of the subwoofer module (SUB) is to manage sound reproduction from the audio module (AUD) to the bass loudspeaker.

The bass loudspeakers and amplifier are integrated into the control module. This means that the whole unit must be replaced when replacing the control module.

The subwoofer module (SUB) only functions if the audio module (AUD) is connected to the MOST network.

The suspension module (SUM) checks activations and input and output signals via an integrated diagnostic system. A diagnostic trouble code (DTC) is stored if the control module detects a fault. Any diagnostic trouble codes (DTCs) are stored in the control module memory.

The subwoofer module (SUB) uses the MOST network to communicate with other control modules.

In order to work correctly on the MOST network, the infotainment control module (ICM) checks that the serial number in the subwoofer module (SUB) is correct. The subwoofer module (SUB) will not function if the serial number is incorrect. Try switching the ignition off and on if there are problems when replacing the control module.

A simple way to check whether the subwoofer module (SUB) is functioning is to switch the radio on and then change the volume. The volume from the subwoofer module (SUB) should rise and fall with the changes.

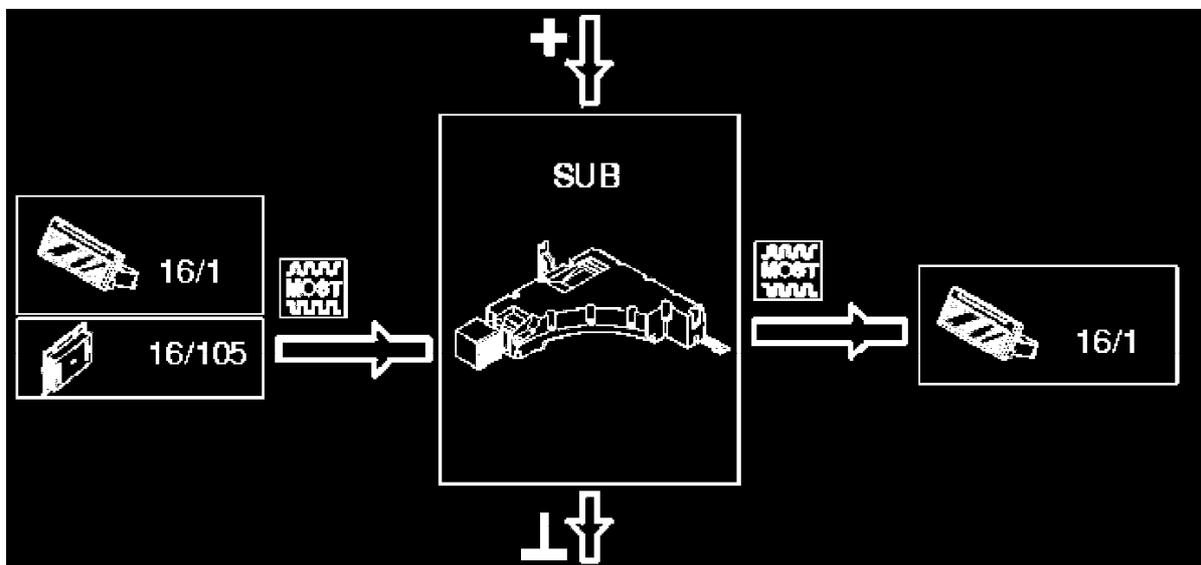
NOTE: Ensure that the bass loudspeaker is selected in the infotainment control module (ICM).

The subwoofer module (SUB) is on the left-hand side in the cargo compartment.

Signals

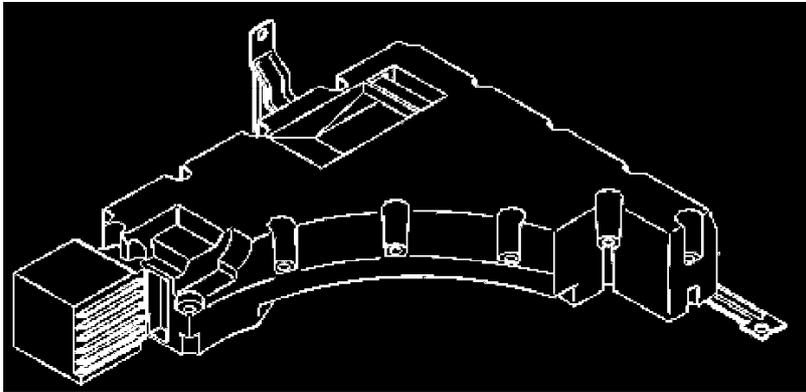
The table below summarizes the input signals to and output signals from the subwoofer module (SUB). The signal types are divided into directly connected signals and MOST communication. The illustration below displays the same information with the Volvo component designations.

Input signals	Output signals
Directly connected: -	Directly connected: (Power supply unless otherwise stated) -
Via MOST communication: (ring network) <ul style="list-style-type: none"> ■ Infotainment control module (ICM) (16/1) main control module ■ Audio module (AUD) (16/105). 	Via MOST communication: (ring network) <ul style="list-style-type: none"> ■ Infotainment control module (ICM) (16/1), main control module.



Design

Control module



The subwoofer module (SUB) contains:

- a loudspeaker element
- an amplifier.

The loudspeaker element is an 8 inch bass loudspeaker with two voice coils. The impedance is **4 ohms** for each voice coil. The amplifier has two channels, one for each sound axis. The output from each channel on the amplifier is **70 W** at **4 ohms**. Power booster amplification is set so that the acoustic output from the subwoofer module (SUB) matches the other loudspeaker channels.

When transferring sound signals to the subwoofer module (SUB), the infotainment control module (ICM) allocates a channel on the MOST network. The audio module (AUD) transmits sound signals to the subwoofer module (SUB) via the MOST network. All filtering and sound treatment of the sound signal takes place in the audio module (AUD). Volume control takes place in the subwoofer module (SUB).

The volume of the subwoofer module (SUB) is raised or lowered using the volume knob on the infotainment control module (ICM). The infotainment control module (ICM) transmits a request on the MOST network to the subwoofer module (SUB), which then processes the request and actively raises or lowers the volume.

The limiter function in the subwoofer module (SUB) does not permit an increase in the output level if this would lead to a fall in sound quality.

The subwoofer module (SUB) is powered via the central electronic module (CEM).