

The Genelec 5051A is a very compact active subwoofer designed to complement up to five Genelec 6010A or 8020B active loudspeakers or a pair of the slightly bigger 8030A's. The 5051A extends the system's bass response down to 27 Hz and integrates perfectly with the main loudspeakers in any environment. The playback level for the whole system is conveniently controlled by the wireless remote volume control provided with the subwoofer.

The 5051A has an integrated bass management for the five main channels which directs the frequencies below 85 Hz to the subwoofer and higher frequencies through the output connectors to the main loudspeakers.

Installation

Before connecting the audio signals, ensure that all equipment is switched off.

The subwoofer is equipped with six RCA signal inputs (L, R, C, LS, RS and LFE/LINK IN) and two balanced XLR inputs (LEFT, RIGHT). These allow connecting the 5051A to a variety of line level audio sources with either unbalanced RCA or balanced XLR type audio connectors. Suitable sources are preamplifiers, computer sound cards, portable audio players, "PRE OUT" connectors on a Home Theater receiver, etc.

The L and R RCA inputs and outputs are working in parallel with LEFT and RIGHT XLR inputs and outputs.

As the 5051A contains its own amplifier, no separate power amplifier is needed. Never connect the 5051A to the loudspeaker outputs of a power amplifier, integrated amplifier or receiver.

Connecting a stereo system

Connect the audio signal cables from your source to the corresponding input connectors. The 5051A offers both balanced and unbalanced signal routes. For stereo signals, use either the LEFT and RIGHT XLR inputs or the L and R RCA inputs. Next, connect the subwoofer to the main loudspeakers with RCA or XLR cables from the corresponding output (OUT) connectors on the subwoofer to the signal inputs of the main loudspeakers.

You can also connect an unbalanced source to the RCA L and R inputs and use the parallel LEFT and RIGHT XLR output connectors as the outputs. This provides balanced signal from the subwoofer onwards, and facilitates easy connection to main loudspeakers with XLR inputs, such as the 8020B or 8030A.

Connecting a surround system

The 5051A has an integrated crossover network for the five main channels which directs the frequencies below 85 Hz to the subwoofer and higher frequencies through the output connectors to the main loudspeakers. When using a surround sound processor, select a loudspeaker setting "Large" for the channels routed through the subwoofer.

Connect the five main channel signal RCA cables from the signal source to the RCA input connectors L, R, C, LS and RS.

The LFE channel of the preamplifier or processor can be connected to the LFE IN/LINK IN connector. The LFE channel on the 5051A can reproduce signals up to 120 Hz.

Next connect the main loudspeakers to the corresponding L, R, C, LS and RS signal outputs on the subwoofer with RCA cables.

Once all connections have been made, the subwoofer and main loudspeakers are ready to be powered up.

Positioning in the room

The placement of the subwoofer in the room affects the overall frequency response and sound level of the system dramatically, as at low frequencies the effects of the room are strong. Even a slight change in the location of the subwoofer can cause a marked difference in the frequency balance and often patient and methodical experimentation and testing is needed to find the optimum placement.

The placement will also affect the bass roll-off rate and the phase difference between the main loudspeakers and the subwoofer. These effects can be compensated using the controls in the subwoofer but we recommend that at first you leave the switches untouched and concentrate on finding the position where the subwoofer gives the smoothest response, and only then use the controls to fine-tune the balance and phase alignment between the subwoofer and the main loudspeakers.

Start by placing the subwoofer close to the center of the front wall. We recommend a distance of less than 60 cm / 24" to the wall. This position gives increased acoustic loading and SPL due to the proximity of the front wall and floor. Ideally the subwoofer and main loudspeakers should be positioned symmetrically and at an equal distance from the listening position.

If the frequency balance is not quite right, try moving the subwoofer to the left or right along the wall so that different room modes are excited at different levels. Positioning the subwoofer close to a corner will boost the bass level at lower frequencies and may cause asymmetrical spatial imaging.

Although the 5051A is magnetically shielded, it may cause colour distortion if placed near to very sensitive CRT monitors or computer displays.

Using the 5051A with Genelec 6010A or 8020A/B and 8030A

When using the 5051A with Genelec 6010A there will be a 10 dB difference in sensitivity between the subwoofer and main loudspeakers, which needs to be compensated by setting the LEVEL -10 dB switch on the subwoofer's connector panel to "ON".

The factory default setting for this switch is "OFF", which is the correct setting to be used with Genelec 8020A/B or 8030A active loudspeakers.

If your system has both 6010A's and 8020A/B's or 8030A's, the LEVEL -10 dB switch on the subwoofer should be set to "ON" and the playback level on the 8020A/B's or 8030A's should be attenuated by turning the volume control knob on the front panel of the loudspeakers. Roughly half a turn (180°) anticlockwise is needed. (correct position needs to be checked!!).

Setting the subwoofer level

The rotary subwoofer level control is located on the connector panel of the subwoofer. The factory default input sensitivity is -6 dBu (9 o'clock (needs to be checked!!)). You can use this adjustment to match the subwoofer's playback level with the main loudspeakers.

Setting the Bass Roll-Off switches

The acoustic response of the subwoofer may have to be matched to the characteristics of the room and the positioning in which it will be used. To adjust the subwoofer to match these characteristics use the "BASS ROLL-OFF" control switches located on the connector panel. When all Roll-Off switches are 'OFF', a flat anechoic response is obtained.

Setting the phase control

The effect of incorrect phase alignment between the main loudspeakers and the subwoofer is a drop in the frequency response of the whole system at the main loudspeaker / subwoofer crossover frequency. The phase difference between the main loudspeakers and subwoofer at the listening position is dependent upon the distance from the listener to the subwoofer in relation to the main loudspeakers. To avoid phase differences between the left and right main loudspeakers and the subwoofer, the subwoofer should be placed close to the center of the front loudspeaker array.

Two phase matching switches in the crossover allow compensation for incorrect phase alignment. Four settings are provided between 0° and -270°.

Coarse phase correction method

Connect an audio frequency signal generator to a signal input on the subwoofer which has a main loudspeaker connected to the corresponding "OUT" connector. Set the generator to 85 Hz. If a signal generator is not available, it is possible to use an audio test recording which has a test frequency in the range 70 Hz to 100 Hz. Suitable test signals can be downloaded at www.genelec.com.

- Toggle the -180° phase switch 'ON' and 'OFF' and set it to the position which gives the lowest sound level at the listening position.
- Next toggle the -90° phase switch 'ON' and 'OFF', and again set it to the position which gives the lowest sound level.
- Finally, set the -180° phase switch to the opposite setting.

Using the 5051A subwoofer

When the subwoofer is powered up or after being disconnected from the mains supply, the green power indicator LED blinks and the subwoofer stays muted for approximately seven seconds. This is normal and after this the LED lights up and playback begins. If the subwoofer is not disconnected from the mains supply, this delay in powering up does not occur again.

The delay allows matching the remote control to a specific subwoofer unit (see chapter "Matching the remote control to the subwoofer" below). This is only necessary when there are several 5051A subwoofers within the range of the remote control (in adjacent rooms, for instance) and the user wishes to avoid the situation that more than one subwoofer reacts to the commands given by the remote control.

The playback volume can be adjusted with the + and - buttons on the remote control (see picture 5). The LED on the subwoofer connector panel blinks while the adjustment is being done and stops blinking when the minimum or maximum level of the adjustment range is reached.

The 5051A can be muted by a short push on the POWER/MUTE button. A new short push on the POWER/MUTE button or the + button resumes playback. The power indicator LED blinks approximately once per second to indicate that the subwoofer is in "mute" mode. Pushing the - button while the subwoofer is muted reduces the volume setting.

Switch the 5051A to stand-by mode by pushing and holding the POWER/MUTE button down until the power indicator LED switches off. Respectively, the subwoofer powers up again with a push on the POWER/MUTE button.

The 5051A is equipped with an automatic signal sensing function that switches the subwoofer to stand-by mode if no signal is present in the audio input for approximately One hour (1h). The subwoofer resumes playback automatically when it detects an audio signal being fed into any of the input connectors. Alternatively, the subwoofer can be activated by pushing any button on the remote control.

Automatic protection function

The 5051A has an integrated protection function that automatically reduces the playback volume to a safe level if the subwoofer is overloaded. This function overrides commands given with the remote control. The power indicator LED blinks in orange colour to indicate that the protection circuit is activated and changes colour to red if any button on the remote control is pushed while the protection circuit is active. After a safe volume level is reached the power indicator LED turns green and the subwoofer operates in normal fashion. Tässä tuotteessa on Genelecin perinteinen supparin suoja piiri ja anticlip toiminta., Keltainen ledi ilmaisee klipin ja punainen lämpösuojan päälle menemisen

Matching the remote control to the subwoofer

When shipped, the remote controls delivered with 5051A subwoofers will function with any other 5051A subwoofer as well. If this is not desirable, for instance when there are several 5051A subwoofers in the same premises, and the user wishes to avoid the situation that more than one subwoofer reacts to the commands given by each remote control, the remote controls can be matched to operate only one subwoofer. This can be done during the seven second delay in powering up that follows after connecting the subwoofer to the mains supply.

1. Disconnect the power supply from the mains connector for a moment and reconnect it or use power switch. The green power indicator LED will start blinking indicating the seven second delay.

2. During the delay, first press and hold down the volume + button on the remote control and then the volume - button. Keep both buttons pressed for a few seconds until the power indicator LED on the subwoofer stops blinking. This indicates that matching is completed .

Now the subwoofer should only respond to commands given by the matched remote control, and respectively, the matched remote control should not work with other 5051A units.

Using multiple subwoofers

Genelec 5051A subwoofer is equipped with a LINK OUT connector to provide an easy way of coupling two or more subwoofers together in high SPL applications. Connected as described below, the “master” subwoofer controls the volume of all subwoofers linked to it through this connector.

Connect an RCA cable from the LINK OUT connector of the “master” subwoofer to which the main loudspeaker channels are connected, to the LFE / LINK IN connector of the other, “slave” subwoofer and turn the LINK IN dip switch on the “slave” subwoofer to “ON”.

In the LINK IN mode, the subwoofer level is set to maximum and the “slave” subwoofer does not react to volume control commands given with a remote control. It only follows the volume adjustment done in the “master” subwoofer.

When two subwoofers connected in this way are positioned close to one another, bass level increases by 6 dB. Three subwoofers give an SPL increase of 9.5 dB and four subwoofers 12 dB compared to a single subwoofer.

Phase and Bass Roll-Off adjustments should be done individually for each subwoofer in the chain, especially if they are not placed close together. To check the phase alignment for the “master” subwoofer switch off the “slave” subwoofer and follow the instructions given in the previous sections.

To adjust the phase alignment of the “slave” subwoofer, you need to switch off the “master” subwoofer, connect a signal cable from the “slave” subwoofer’s “C” channel output connector to the center channel loudspeaker and switch the LINK IN switch to “OFF”. This effectively changes the “slave” to “master” mode and the phase adjustment can be carried out. If you have a stereo system use either “L” or “R” channel to complete the adjustments. Return the connections and LINK IN setting on the “slave” subwoofer back to the “ON” mode after completing the adjustment.

Safety considerations

The Genelec 5051A complies with international safety standards. However, to ensure safe operation and maintain the equipment in safe operating condition the following warnings and cautions must be observed.

- Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.
- The battery shall not be exposed to excessive heat such as sunshine, fire or the like.
- Servicing and adjustment must only be performed by qualified service personnel.
- Opening the subwoofer is strictly prohibited except by qualified service personnel.
- Do not expose the subwoofer to water or moisture. Do not place any objects filled with liquid, such as vases on the subwoofer or near it.
- Note that the amplifier is not completely disconnected from the AC mains service unless the mains cable is removed from the amplifier or the mains outlet.

Warning!

This equipment is capable of delivering sound pressure levels in excess of 85 dB, which may cause permanent hearing damage.

FCC notice:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This product emits radio frequency energy, but the radiated output power of this device is below FCC radio frequency exposure limits. This equipment complies with FCC RF radiation exposure limits forth for an uncontrolled environment. Nevertheless, the device should be used in such a manner that the potential for human contact with the antenna during normal operation is minimized.

Changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.

Changing the remote control battery

The remote control battery can be changed by turning the battery cover on the back of the remote control anticlockwise. Use a small screwdriver under the right side of the battery (see picture 6) to wedge the battery out. Replace the battery with a similar CR2032 type battery. Insert the battery with the left side first as shown in picture 6 and close the battery cover.

Maintenance

There are no user serviceable parts inside the subwoofer. Any maintenance of the unit must only be performed by qualified service personnel.

Guarantee

This product is supplied with two year guarantee against manufacturing faults or defects that might alter the performance of the unit. Refer to supplier for full sales and guarantee terms.

EC Declaration of Conformity

This is to certify that the Genelec Active Subwoofer 5051A conforms to the following standards:

Safety:

EN 60065: 2002 + A1:2006 /
IEC 60065:2001 7th Edition + A1: 2005

EMC:

EN 55020: (2002) + A1 : 2003
EN 55013: (2001)+ A1 : 2003
EN 61000-3-2 (2000)
EN 61000-3-3 (1995)

The product herewith complies with the requirements of The Low Voltage Directive 2006/95/EC and EMC Directive 2004/108/EC

Signed:

Position: Ilpo Martikainen
Chairman of the Board
Date: 26-May-2008