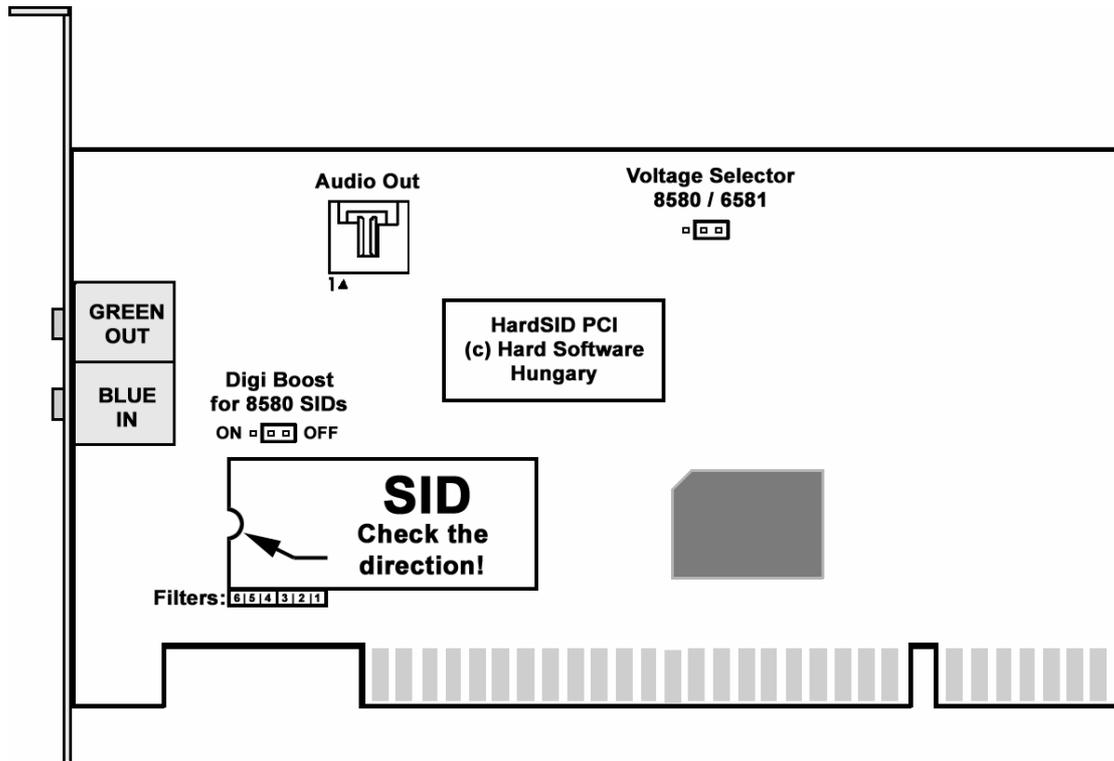


HardSID PCI user's guide

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www.hardsid.com

HardSID PCI user's guide



Installing the SID chip

Always install a perfect / tested SID chip! Using a damaged SID may damage your card. Installing the SID into the card is easy. You can simply plug the SID into the SID socket. Do it carefully, don't force the SID because it may cause broken pins!

If you buy your card with a SID chip from us, we'll send it to you configured well.
If you buy it without SID, we'll configure it for a 6581 chip by default.

See the following topics for custom setup:

Supported versions

The HardSID PCI supports both (6581 and 8580) versions of the SID chip.

The right direction

Please check the SID direction on the picture. **Always install your SID chip in the right direction or else you may damage the SID and your card.**



Setting the voltage

You have to set the voltage of the SID chip you install depending on its version (8580 or 6581) by setting the voltage jumper. Position "Left" is for the 8580, position "Right" is for the 6581.

You can see the voltage jumper layout on this picture:

Voltage Selector 8580 / 6581



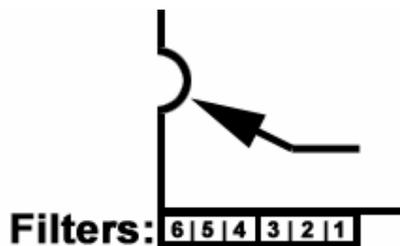
Installing the filter capacitors

The 6581 and 8580 versions of the SID chip are working with different filter capacitors.

The 6581 needs two 470pF capacitors. (one pair / 2 pieces are included in your package)
The 8580 needs two 22nF capacitors. (one pair / 2 pieces are included in your package)

You have to install the valid capacitors for every SID chip.

You can find the filter capacitor sockets at the bottom-left corner of the SID socket.



The SID needs two filter capacitors. There are three socket pins for both capacitors on the card. Pins 1-2-3 and pins 4-5-6 for the two filter capacitors.

Pins 1-2 and pins 4-5 are the same, since there are different capacitor layouts on the market. There are two-pin-wide and three-pin-wide ones. You have to install them aligned to the left. It means that if you install wide capacitors, you can install them into pins 1-3 and 4-6 as shown on the picture, but if you have two-pin-wide ones you can simply install them into pins 2-3 and 5-6.

Digi boost for 8580 SIDs

The 8580 SIDs are improved to perform their volume changes silently. Some C64 game/demo tunes are using the volume register to play digitized sounds on the 6581. These sounds are very silent on a 8580, because of the improved volume changing method.

Digi Boost for 8580 SIDs

ON OFF

You can enable a loud volume changing patch for your 8580 by enabling the digi-boost jumper at the top of the SID socket.

It is not recommended for MIDI users, because loud ticks will appear when you set the channel volume. Turn this on only if you know you really need it.

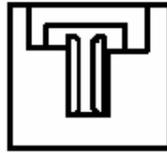
Don't use the digi boost together with the external inputs jack! It may damage your card.
The factory default is digi boosts OFF for the HardSID PCI.

Audio connectors

There are three connectors on the card. Two external jack plugs and one internal CD-audio connector.

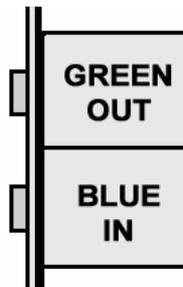
The internal connector:

Audio Out



- ? CD-audio connector with the mono sound of the SID on both sides (if you wish to connect your HardSID PCI to your other soundcard internally)

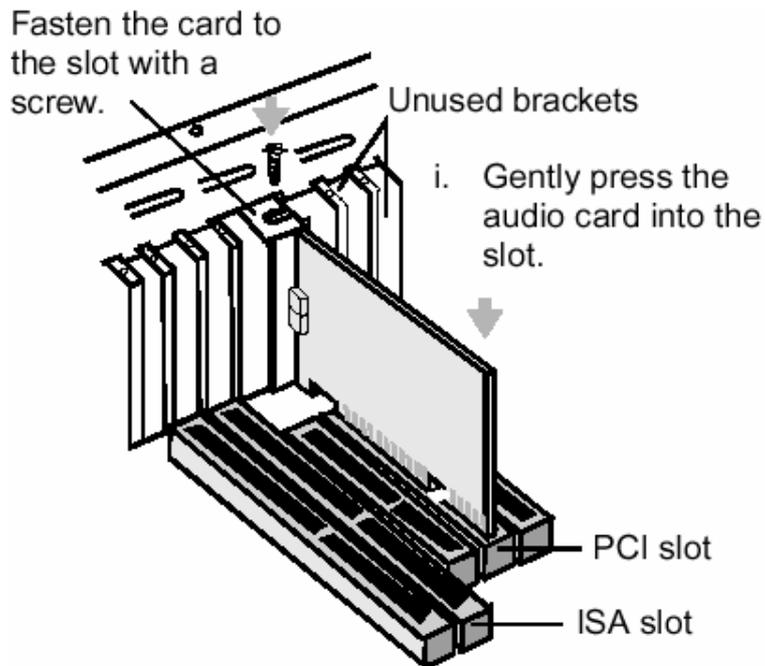
The external jacks:



- ? External Jack Output with the mono sound of the SID on both sides
- ? External Jack Input for external sound filtering (use it only with standard line-level outputs or you may damage your HardSID PCI!). It filters one side of your stereo input.

Installing the card

- ? Turn off your computer!
- ? Find an empty PCI-slot on your motherboard then install the card into it perfectly.
- ? Don't force the card, but place it as deep as you can into the slot.
- ? If you're ready, fix its position by screwing the card's back panel onto the computer's case.



Choosing between the outputs

Internal CD-audio output (Line Out)

Ideal for connecting the HardSID card to another soundcard. It can be connected to a soundcard using a standard CD-audio cable. (you can connect it for example to a CD-in or AUX connector)

A CD-audio cable has four pins. The pinout of a valid cable looks like this:
Left – Ground – Ground – Right.

This is a very comfortable and simple solution, but note:

- ? Your existing soundcard's noise will be added to the HardSID's sound, since the HardSID is connected to your soundcard.

External sound output

External output (green jack)

This is the best way of connection if you're using the HardSID PCI in a studio for professional recording/mixing/effecting.

The outputs is a stereo jack connector (with mono sound of the SID on both sides) which can be connected to a studio mixer, amplifier or anything else in your studio setup what has line-level input.

- ? No additional noise because of your other soundcard (there is only the noise of one SID chip which is very low using the SID version 8580)

IRQs and DMAs

The HardSID PCI **doesn't need any IRQs or DMAs**. So, there won't be conflicts because of that.

Turn off the amplifier and/or any connected equipment before you turn on the computer!

Installing the software

Download the compressed driver package(s) for your operating system(s) from www.hardsid.com "Download" menu.

Find the final place of the executables on your hard disk and unpack the contents there (For example: C:\HARDSID)! **NOTE: Don't move or remove this folder after the installation. All of your executables and data files will run/open from there!**

Since the HardSID PCI is a plug and play soundcard your operating system will recognize it and will ask you for the drivers.

If you didn't unpack your drivers yet when the operating system asked you for the drivers, simply delete the unknown or not perfectly installed HardSID PCI SoundCard from the Device Tree, unpack the driver package, and then restart your computer!

When the operating system recognizes your card and asks you for the drivers:

- ✍ Go to the step where you can select any driver from a list.
- ✍ Select “Sound, video and game controllers”.
- ✍ Click on the “Have disk” button.
- ✍ Enter the full path (browse) of the unpacked driver/application folder (for example: C:\HARDSID) and press Enter.
- ✍ Choose the “HardSID PCI SoundCard” and press Enter.
- ✍ Some dialogs will appear asking you if you really want to install this driver. Always click “Yes” or “Ok” to go on with the installation.
- ✍ You’ll have to **restart your computer** at this step. **(except on Windows XP)**
- ✍ This dialog will appear on your screen:



- ✍ If everything went Ok, all checkboxes on this dialog will be checked after a while and the dialog will close. It may ask you if you want to overwrite your existing MIDI Channel configuration. Clicking “Yes” is recommended if you don’t have an existing very special custom HardSID MIDI Channel setup.
- ✍ Windows 98 and ME will restart to make the installation finished. Windows XP and Windows 2000 won’t restart.
- ✍ The installation is ready now.

**NOTE: Don’t move or remove the installation folder. All of your executables and data files will run / open from there!
(C:\HARDSID for example)**

Re-detecting the SID chip on your card:

Run the HardSID Configuration Wizard and click “Next” until you get to the “Device setup” page:



Click "Auto-detect" then click "Start" to re-detect the SID chip on the HardSID PCI, then click "Next" and "Finish".

Installing and using the HardSID MIDI

Windows XP and Windows 2000

The Windows XP and Windows 2000 version of the HardSID Drivers has built-in MIDI driver. **No additional installation is required.**

Windows 98 and ME

Read the "HSMIDIINS9XME.TXT" in your HardSID folder (for example: C:\HARDSID) or see the instructions below:

- ✍ Go to the Control Panel
- ✍ Run the "Add new hardware" wizard
- ✍ Go to the page where you can select any hardware from a list
- ✍ Select "Sound, video and game controllers"
- ✍ Click on the "Have disk" button
- ✍ Enter the path of the MIDI driver (the MIDIDRV folder), and press ENTER
(For example: C:\HARDSID\MIDIDRV)
- ✍ You'll see the "HardSID MIDI Synth" in a popup window. Press ENTER
- ✍ Click Finish
- ✍ Choose YES on the computer restart confirmation dialog!

Getting started with HardSID MIDI

Please read the HardSID MIDI Documentation (HSMIDI.pdf or HSHELP.hlp) in your HardSID folder. (for example: C:\HARDSID)