

Tech Note No. 11

by Pete Stark

Adding MIDI to an organ seems to be on a lot of people's minds. There's unfortunately no cheap and fast way to do it; but there *are* ways to experiment with MIDI without spending an awful lot of money. Here's what you need.

First, you need something to take MIDI control signals and convert them to sound. These come in three forms:

(1) Self-contained sound modules typically come in a small box, the size of a CD player or tape deck. They have a MIDI input (a 5-pin DIN connector) and usually a stereo audio output. You connect the output to any hi-fi set and play. New sound modules can be quite expensive, but there have been tremendous changes in the last few years -- older modules used synthesized sounds, whereas the newer ones use samples of real instruments. The used or discontinued older ones are often available for a song, if you just look around (like a Roland MT-32 for \$50.) I recently saw brand new, but discontinued Roland CM-32P modules with sampled sound for \$150.

(2) Sound modules built into keyboards. Some of these have their own speakers, while the more expensive ones need connection to an external amp and speaker. I picked up a used Casio CT-640 keyboard for \$100 a few years ago. But beware -- if the keyboard doesn't have MIDI IN and MIDI OUT jacks, it isn't MIDI. The MIDI OUT jack outputs whatever you play on the keyboard to external devices, while the MIDI IN lets you send signals back in to be played by the sound module.

(3) Cheapest (if you have a PC-compatible computer, that is) is a sound card, such as a Sound Blaster, plugged into the computer, and feeding an external amp and speaker. Older synthesized sound cards are often available used for as little as \$10, as users upgrade to the newer sampled cards. (Some of the newer cards, such as the Sound Blaster AWE32, have very impressive sounds ... but they cost \$200 and up.) But make sure that the sound card has a 15-pin joystick connector on the back which also doubles as a MIDI port.

Next, you need a source of MIDI data. Here are the possibilities:

(1) A keyboard. If you get a keyboard with a built-in sound module, then you already have it. There are many keyboards available; the cheapest I've seen is made by Reveal (they make various computer add-ons). It's not that great, because it has only about 3 octaves of fairly small keys, but the price is right: I've seen it in one store for \$50, and in another (Sam's Warehouse Club) for \$70 minus a \$40 rebate, which would make it just \$30. Unlike some more expensive ones, this has no sound module, so you still need either a sound module or sound card.

(2) A computer. If you don't want to play on your own, you can have a computer play. There are thousands of MIDI music files, classical and popular, available on CD-ROMs, bulletin boards, and Internet sites.

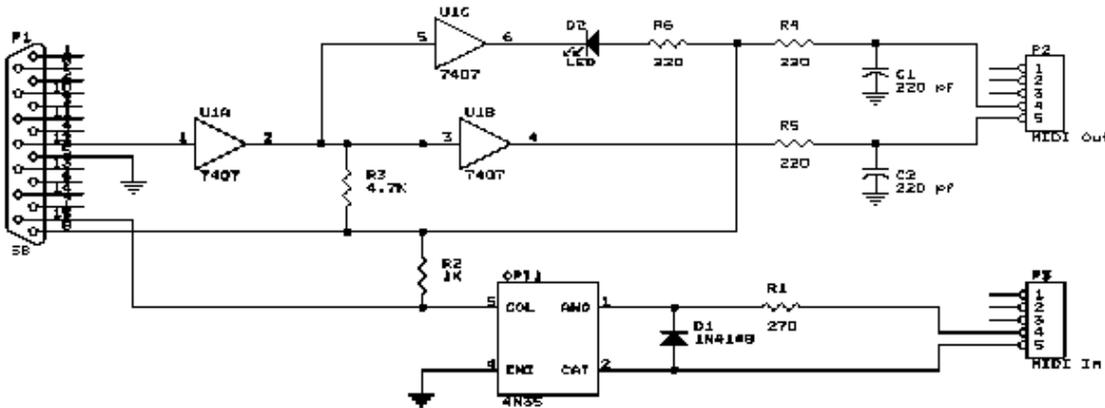
Next, you need some way of connecting the source (keyboard or computer) to the sound generator (module or card). Here are the possibilities:

(1) Nothing is needed to hook up a computer to a sound card -- it's all done with the software that usually comes with the card.

(2) Keyboard-to-sound-module connections require a MIDI cable, which has a 5-pin DIN connector on each end. Radio Shack has the connectors; all you need is two wires, connecting pin 4 to pin 4, and pin 5 to pin 5. Cheap.

(3) Keyboard-to-computer or computer-to-sound-module connections require a cable and a MIDI interface on the computer end. Many sound cards have the interface, but they need a special cable

which costs about \$20 (or use the diagram below if you'd like to make a Sound Blaster compatible cable.) Without a sound card, you need an MPU-401-compatible MIDI Interface card, costing \$50 to \$100, and a MIDI cable. If you have no empty slots, or if you have a laptop, there are interfaces that plug into a parallel port. Mine is a MIDIator from Key Electronics (817-560-1912), but there are others.



With the above, you pretty much have all you need to play. But if you have a computer, then you can do more:

(1) It's useful to have a sequencer program. It lets you input something from a keyboard, and save it as a disk file; read a file from a disk and play it on the sound card or module; type notes from sheet music into the computer's keyboard; look at the notes on the monitor screen and make changes; perhaps even print out your files as sheet music. Great if you make mistakes while playing -- play it into the sequencer, fix it on the screen, and have it come out perfect. My favorite inexpensive program is Powertrax Pro, by PG Music (1-800-268-6272) at \$30. (Make sure it works with your interface!)

(2) If you have a scanner, then a program called MIDISCAN lets you scan sheet music and convert it into MIDI files to be played. But the program is far from perfect and makes many mistakes, so be prepared to spend some time fixing them up later.