CHAPTER 3

CONNECTIONS

BASIC MIDI HOOKUP

MIDI is an internationally-accepted protocol that allows musical-related data to be conveyed from one device to another. See the MIDI Supplement in Appendix B if you are not familiar with how MIDI works.

The QS has three MIDI connectors which provide the following functions:

- MIDI IN   This port is for receiving MIDI information (notes, program changes, etc.) from a source such as another QS or MIDI keyboard, controller, or computer.

- MIDI OUT   This port is for transmitting MIDI information to another MIDI keyboard, sound module, or computer.

- MIDI THRU   This port is for passing on (echoing) MIDI information received by the MIDI IN port. In simple MIDI setups, the THRU port is used to connect additional devices that will all be "listening" to the same source.

To play the QS from a MIDI control device (keyboard, drum pad, guitar or bass controller, sequencer, etc.), connect the control device's MIDI OUT to the QS's [MIDI IN]. The illustration below depicts a master QS connected to a slave QS. When both are set to a common MIDI channel, you can hear both when playing the master QS's keyboard.
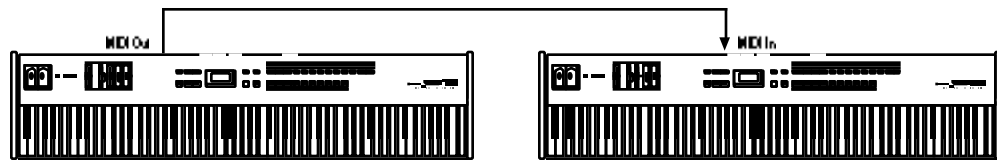

The QS's [MIDI OUT] connector sends MIDI data from the QS's keyboard to other MIDI devices, but can also send *System Exclusive* data (see the MIDI supplement) to a storage device for later recall.

If you are using the QS in the middle of the MIDI chain (example: as the second unit of a three device chain), connect the QS' [MIDI THRU] to the third device's MIDI IN connector in order to route the first device's MIDI out information to the third device.

USING AN EXTERNAL SEQUENCER

The QS can generate MIDI signals that are recorded by a sequencer. On playback, the sequencer sends this data back into the QS, which then serves as a multitimbral sound module (in Mix Mode). The sequencer can generate data over several channels; in Mix Mode, the QS can be programmed so that individual Programs play sequenced data on specific channels. *Example:* If the sequencer transmits a piano part over channel 1, a bass part over channel 2, and a drum part over channel 10, you could set up a QS Mix so that a piano sound plays only the MIDI data assigned to channel 1, a bass sound plays only the MIDI data assigned to channel 2, and drums play only the MIDI data assigned to channel 10. The QS can store up to 100 User Mixes.

Connect the sequencer's MIDI Out to the QS's [MIDI IN], and the QS's [MIDI OUT] to the sequencer's MIDI In. This allows the QS to send data to the sequencer for recording, and play back data from the sequencer.
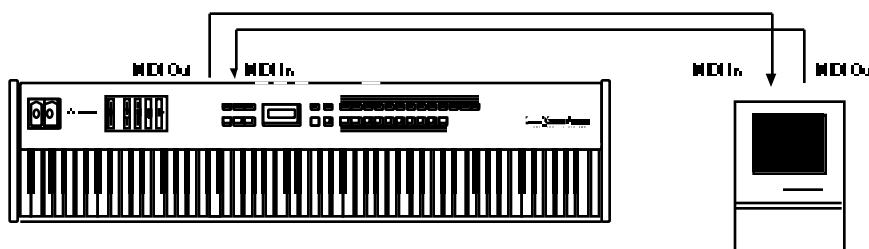
ABOUT THE KEYBOARD MODE

In a Mix, the QS's keyboard may be set up in several ways using the Keyboard Mode parameter found on Page 6 of Global Edit Mode. You need to determine which way is best for your application. The Keyboard Mode parameter determines how the keyboard will function with regard to MIDI:

• The keyboard sends on only one MIDI channel and the sequencer is used to set the MIDI channel of each track (Keyboard Mode = OUT 1 – OUT 16).

• Or, the keyboard is split or layered, sending on many MIDI channels at once, and the sequencer records each channel onto a different track (NORMAL).

• Or, the keyboard only sends on one MIDI channel, but you change the channel on the QS for each separate track on the sequencer (CH SOLO).

In OUT 1 – OUT 16 mode, you will not hear the QS unless your sequencer echoes the MIDI data back to the QS's MIDI IN. This is a way of verifying that the sequencer is set to receive properly. Depending on the capabilities of your sequencer, it may "auto-channelize" the echoed MIDI back to the QS on a different MIDI channel (usually, the MIDI channel that the selected record track is assigned to). In NORMAL or CH SOLO mode, the QS sounds are internally played from the QS keyboard, so any echo features of the sequencer should be turned off.

When using the QS with a MIDI sequencer, the usual choice for the Keyboard Mode is "OUT 1." This is equivalent to turning the QS's local control off and transmitting on channel 1. For more information, see page 41.

USING A COMPUTER

The QS can communicate directly with a computer via its [SERIAL PORT] connector. This eliminates the need for an additional computer-MIDI interface, as well as the MIDI cables to connect to it. The [SERIAL PORT] can be set to one of two modes, depending on the computer you are using. The mode is selected using the switch directly next to the [SERIAL PORT] connector.

Set the [SERIAL PORT]switch to...	If using a...
PC	IBM® PC or compatible
MAC	Macintosh™

If you already have a MIDI interface for your computer, then you will want to use the QS's MIDI connectors to connect the QS to your computer interface's MIDI IN and OUT connectors using the method described in the previous section. *Note:* If you are already using the QS's [SERIAL PORT] to connect to your computer, it is not necessary to connect the MIDI ports to the computer as well.

IBM® PCS AND COMPATIBLES

This connection will require a special cable with a DIN8 connector on one end and either a DB9 or DB25 connector on the other end, depending on the type of connector you are using on the PC. You can purchase this cable through Alesis Product Support (DIN8-to-DB9 cable: part number 15-00-0009; DIN8-to-DB25 cable: part number 15-00-0025). Some PCs will have both connectors available, so you'll have to identify which connector is currently not in use.

Connect the DIN8 end of the cable to the QS's [SERIAL PORT] connector and the other end to the serial port of your computer. If your computer has more than one serial port, refer to the setup of your MIDI software to determine which port it is using.

Alesis provides a MIDI serial driver that works with Windows 3.1, Windows NT and Windows 95. This can be found on the QS CD-ROM disk that came with your QS package (located in the \ALESIS\ASDWIN\ directory). If you don't have a CD-ROM drive connected to your computer, you can call Alesis Product Support and order the Windows MIDI driver on a 3-1/2 inch floppy disk. This driver is used to send and receive midi data your QS6 and the computer via a serial port connection. Once the MIDI driver has been successfully installed, you need to indicate to the driver which connector port the QS is using.

WINDOWS 3.1: From your Windows 3.1 Control Panel, open the "Drivers" applet. Add an Unlisted or Updated driver and select or browse to the appropriate path for Windows to find the "ASDWIN" OEM setup info. Follow the instructions given by windows to install the driver.

SETUP FOR WINDOWS 95: Open Control Panels. Select "Add New Hardware". Select "NO" to NOT have windows auto-detect hardware. Select "Sound, Video, Game controllers" as hardware type. When prompted for device, select "Have Disk". Navigate to the OEM setup in the "ASDWIN" directory. Follow the Win95 instructions from there.

Please refer to the "READ_ME" file which accompanies the Alesis MIDI driver.

MACINTOSH™

Connect one end of a DIN-8 cable to the QS's [SERIAL PORT] connector and the other end to either the MODEM serial port or the PRINTER serial port, depending on which one you are using for sequencing.

MIDI sequencing software for the Macintosh typically defaults to using the MODEM port, but in actuality can be set to use either the MODEM or the PRINTER port, or both. If you have a printer connected, you will want to use the MODEM port; conversely, if you have a modem connected but do not have a printer, you will want to connect to the PRINTER port. If, however, both a printer and modem are connected, you will need to either temporarily disconnect one of them (preferably the modem; especially if the printer uses AppleTalk, since AppleTalk must be disabled to use the PRINTER port for MIDI) or purchase a multiple serial port box that will allow you to switch between the modem and the QS.

MASTER CONTROLLER FOR LIVE USE

Most live applications use the QS to generate sounds, with (possibly) the MIDI output driving other MIDI devices, such as an S4 Plus rack unit, QuadraVerb 2, and other keyboards and sound modules, etc.

To drive MIDI controlled devices from the QS, patch the QS's [MIDI OUT] to the MIDI device's MIDI IN If there are more than one MIDI device, patch the first device's MIDI THRU to the second device's MIDI IN, the second device's MIDI THRU to the third device's MIDI IN, etc.

J *Caution:* Do not attempt to connect more than three or four units together using the "Thru" connectors as this may impede the MIDI data flow to the connected devices. Instead, insert a MIDI patch-bay to the QS's [MIDI OUT] so that all devices receive its MIDI information simultaneously.

In Program Mode, the QS sends and receives MIDI information on only one MIDI channel at a time. In Mix Mode, however, the QS can transmit on as many as 16 MIDI channels, each with its own keyboard range (for more information on Program Mode and Mix Mode, see Chapter 4).

When using the QS as a master keyboard to play other MIDI devices, be sure the Keyboard Mode is set to "NORMAL." The Keyboard Mode parameter is found on Page 6 of Global Edit Mode (for more information, see Chapter 8). It is also possible for the QS to transmit volume and pan settings via MIDI (as controllers 7 and 10, respectively). This occurs whenever a new Program is selected, or when a new Mix is selected. In the case of a Mix, the volume and pan settings may be transmitted for each Channel (up to 16) used in the selected Mix.

PEDAL AND FOOTSWITCH HOOKUP

The QS keyboard has two pedal jacks, [PEDAL 1] and [PEDAL 2], that accept a Roland model EV-5 (or equivalent type) volume control pedal, or a standard switch pedal. Normally, [PEDAL 1] acts as a volume pedal for the entire instrument, but both pedals can be assigned to modulation functions within a program. *Example:* The pedal could control Vibrato or Lezlie Speed.

The [SUSTAIN] footswitch jack accepts a momentary footswitch unit, included with the unit. This provides the same function as the sustain (or damper) pedal on a standard keyboard. You can use either a normally closed or normally open momentary contact footswitch. Plug it into the rear panel [SUSTAIN] footswitch jack

before powering up the QS; on power up, it will automatically sense the footswitch polarity and calibrate itself accordingly.

J   *If your footswitch seems to respond backwards (notes sustain unless the footswitch is pressed), turn off the QS, make sure the footswitch plug is fully inserted into the footswitch jack, then turn the power back on. Also, make sure the footswitch is not held down when powering up the QS.*

DIGITAL AUDIO/OPTICAL HOOKUP

The QS can output digital audio directly into an Alesis ADAT or ADAT-compatible multitrack digital recorder via fiber optic cable.

The digital connector follows a proprietary Alesis format that carries all four audio outputs of the QS (Main and Aux, Left and Right) on a single fiber optic cable. Either pair of outputs can be converted into standard AES/EBU or S/PDIF stereo digital audio format by using the Alesis AI-1 interface. Fiber optic cables of various lengths are available from your Alesis dealer. However, the shorter the cable, the better. The model OC cable is 5 meters long and is the maximum length recommended.

To hook up the optical cable between the QS and an ADAT or AI-1:

¿   Remove the two pieces of clear plastic, tubular sleeving (if present) that protect the tips of the optical cable plug.

¡   Insert one cable end into the QS [DIGITAL OUT] and the other end into the ADAT or AI-1 DIGITAL IN.

To test the cable and QS digital output, plug one cable end into the QS. The other end should emit a soft red light (it is not dangerous to look directly at this light).

RECORDING DIGITAL AUDIO

Once the fiber optic connection is made between the QS and ADAT or an AI-1, the QS will output audio on the first four channels of the digital bus (the bus is capable of handling eight channels of digital audio). The MAIN [LEFT] and [RIGHT] outputs are routed to channels 1 and 2, while the AUX [LEFT] and [RIGHT] outputs are routed to channels 3 and 4. Note that the [VOLUME] slider controls the level of all analog and digital output channels simultaneously. Set the volume to maximum for most applications.

When recording to ADAT (or some other digital audio recorder), it will be slaving to the digital clock accompanying the digital audio emanating from the QS. This clock can be set to either 48kHz or 44.1kHz, as determined by the Clock function (found in Global Edit Mode). The Clock function has four settings: Int 48kHz, Int 44.1k, Ext 48kHz and Ext 44.1k. The default setting is Int 48kHz. which is suitable when the digital recorder is using the 48kHz sample rate. However, if the recorder is using the 44.1kHz sample rate, the Clock function should be set to Int 44.1k. This ensures that the QS will be in tune with previously recorded material. See page 119 in Chapter 8 for more information on the Clock parameter.

48 KHZ IN

If your ADAT system has an Alesis BRC Remote Controller, the QS's digital clock must be synchronized to the clock coming from the BRC. This requires that a connection be made providing the clock signal to the QS and that the QS's Clock function be set to either one of its two external settings (Ext 48kHz or Ext 44.1k).

Connect a BNC-to-BNC cable (such as the Alesis BN cable) between the BRC's 48 kHz CLOCK OUT and the QS's [48 KHZ IN]. Set the Clock function to either Ext 48kHz if the BRC is set to 48kHz, or Ext 44.1k if the BRC is set to 44.1kHz. For more information about the Clock function, see page 119 in Chapter 8.
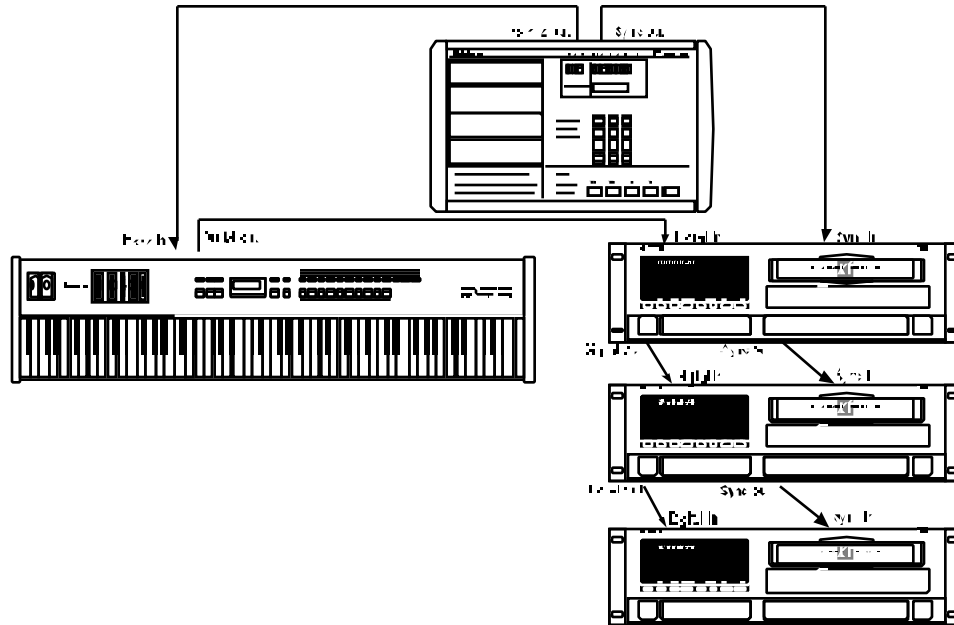
Tip: With this type of connection, the ADAT tracks will remain in tune with the QS even when the BRC's pitch value is adjusted.

Note: When using only one or more ADATs without the BRC, it is not necessary to connect the 48 kHz Clock.