



SQ-R

Synthesizer Sound Module

**Musician's Manual
Version 1.00**

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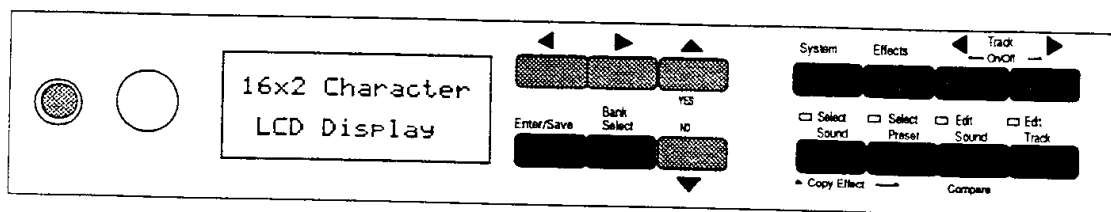
Appendix — SQ-R MIDI Implementation

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The Front Panel — Communicating with the SQ-R

Everything you do on the SQ-R — whether it's selecting a sound, editing that sound, adjusting the tuning, etc. — is controlled from the front panel using the following controls:

- The 32 character LCD display
- The *Select Sound* and *Edit Sound* buttons
- The *Select Preset* button
- The *Edit Track* button
- The two *Track* buttons
- The *System* button
- The *Effects* button
- The *Enter/Save* button
- The *Bank Select* button
- The *Left/Right* and *Up/Down Arrow* buttons



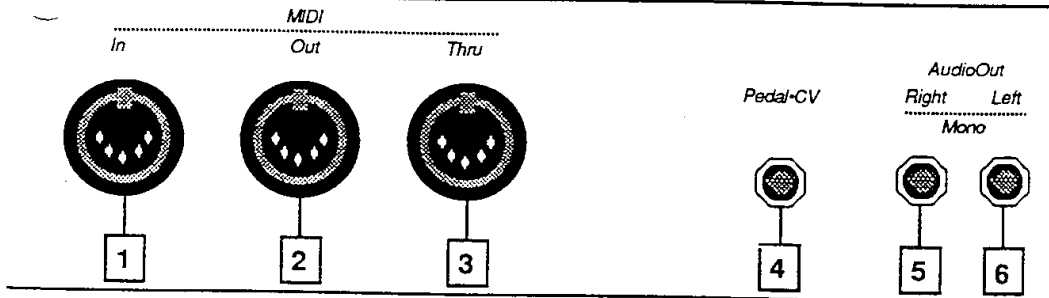
The SQ-R's user interface is designed to enable you to get around the instrument quickly and easily, whether selecting and playing sounds, or setting up and editing presets.

In order to accomplish this, the SQ-R is *always* in one of four *modes*. These are:

- 1 — Sound Select Mode
- 2 — Sound Edit Mode
- 3 — Preset Select Mode
- 4 — Track Edit Mode

You select these modes by using the following four *Mode Buttons* (once you have activated any of the SQ-R's modes using the buttons described below, you can use the *Bank* button and the *Left/Right Arrow* buttons to move around inside the selected mode):

Rear Panel Connections



1) MIDI In

Receives MIDI (Musical Instrument Digital Interface) information from other MIDI instruments or computers. This is the jack you will use to "drive" the SQ-R.

2) MIDI Out

Sends out MIDI information to other instruments and computers.

3) MIDI Thru

"Passes on" all MIDI information received by SQ-R to other devices. Information generated by the SQ-R itself does not go to this jack — the Thru jack merely echoes what comes in at the MIDI In jack.

4) Pedal/CV

This jack is for connecting an optional ENSONIQ Model CVP-1 Control Voltage Foot Pedal, which is assignable as a modulator to various parameters within the SQ-R. The pedal gives you a handy alternative modulation source when, for example, you would want to use a mod wheel but both hands are busy. A CV pedal plugged into this jack can also act as a volume pedal, controlling the overall volume level of the SQ-R.

Pedal/CV Specs: 3-conductor (Tip=control voltage input, Ring=2 KOhm resistor to +12 Volts, Sleeve= ground). 68 KOhm input impedance, DC coupled. Input voltage range=0 to 10 volts DC. Scan rate=32mS (maximum recommended modulation input= 15 Hz). For use with an external control voltage, use a 2-conductor cable with the voltage on the tip and the sleeve grounded.

5) Right/Mono Output

To operate the SQ-R in stereo, connect this output to a channel of your mixer and pan that channel right. Note that *either* of the audio outputs can be used as a mono output. If you want to use this jack to listen to the outputs in mono, make sure that nothing is connected to the Left/Mono Output jack.

6) Left/Mono Output

When operating the SQ-R in stereo, connect this output to a channel of your mixer and pan that channel left. To use this jack to listen to the outputs in mono, make sure that nothing is connected to the Right/Mono Output jack.

Select Sound Button

Pressing the *Select Sound* button, located in the far left position in the bottom row of four buttons, displays the current track number and ON/OFF status, the sound location and name, lights its LED and places the SQ-R in Sound Select Mode. Whenever you would like to change a sound, this mode must be activated. After pressing the *Select Sound* button, using the *Bank Select* button in conjunction with the *Left/Right* and *Up/Down Arrow* buttons will select any of the available sounds.

If the MIDI In Mode is OMNI or POLY, only one track at a time can be played, effectively making this the "solo" track button. Any program changes received through MIDI while the SQ-R is in Sound Select Mode (with MIDI In set to OMNI or POLY) will select a new sound and its effect for the current track.

When the MIDI In Mode is set to MULTI, program changes received will select a new sound, but the effect will not change unless the program change is preceded by the load effect program change (see *Section 3 — Presets* for further details).

Edit Sound Button

Pressing the *Edit Sound* button, located in the third position in the bottom row of four buttons, lights its LED and places the SQ-R in Sound Edit Mode. This is where all sound editing is done. From this mode you can choose waveforms, change envelopes, etc. Pressing the *Bank Select* and *Up/Down* and *Left/Right Arrow* buttons takes you to the individual parameters within the Sound Edit Mode. An edited sound can be compared with the original sound by pressing this button while Sound Edit Mode is active.

Select Preset Button

Pressing the *Select Preset* button, located to the right of the *Select Sound* button, lights its LED and places the SQ-R in Preset Select Mode. The display will show the current preset location, the status of each track, and the name of the preset. After pressing the *Select Preset* button, the *Up/Down* and *Left/Right Arrow* buttons can be used to select and play any available preset.

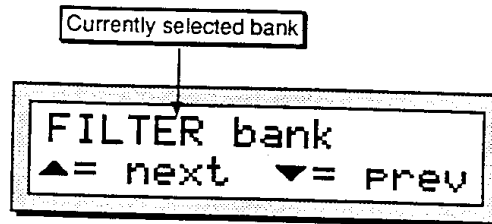
The track status display also functions as a MIDI receive indicator. When a key down is received on a specified track, the track number will change to a musical note. When all keys are up on the specified track, the number will be redisplayed.

For more information see *Section 3 — Presets*.

Edit Track Button

Pressing the *Edit Track* button, located in the far right position in the bottom row of four buttons, lights its LED and places the SQ-R in Track Edit Mode. This mode is used for such tasks as setting MIDI channel and program number, track volume, panning, etc. Using the *Bank Select* and *Left/Right Arrow* buttons will select the individual parameters or commands within the Track Edit Mode. The effect is not changed when entering this mode.

ote: If the MIDI In Mode is set to OMNI or POLY, only the current track is heard in Track Edit mode.



If the *Left* or *Right Arrow* button is pressed while the *Bank Select* button is held down, the previous or next screen within that bank will be displayed without the bank name screen.

Left/Right Arrow Buttons

The *Left/Right* buttons serve two functions. When the SQ-R is in either of the Select modes the *Left/Right Arrow* buttons select Sound or Preset locations by ten. For example, from sound INT 21 (Internal sound #21) the *Right Arrow* takes you to sound INT 31 and the *Left Arrow* takes you to sound INT 11. This allows you to move through the sounds and presets more quickly.

When in either of the Edit Modes, the *Left/Right Arrow* buttons select the next or previous parameter within the currently selected parameter bank.

Up/Down Arrow Buttons

The *Up/Down* buttons also serve two functions. When the SQ-R is in either of the Select modes the *Up/Down Arrow* buttons select Sound or Preset locations by one. For example, from sound INT 21 (Internal sound #21) the *Up Arrow* takes you to sound INT 22 and the *Down Arrow* takes you to sound INT 20.

When in either of the Edit Modes, the *Up/Down Arrow* buttons select the values within the currently selected parameter.

Volume Knob

The Volume Knob, located to the left of the LCD display, controls the overall volume output of the SQ-R. Under normal circumstances, turn the volume knob *all the way up*. As with any digital musical instrument, the SQ-R will give the best results if you keep the volume as high as possible without overloading your sound system and use the volume control on your mixer or amp to adjust its level.

Headphones

Also found on the front panel is the headphone jack, located to the left of the volume knob. To listen to the SQ-1 in stereo through headphones, plug the headphones into this jack. Headphone volume is controlled by the volume knob on the front panel. (Note that plugging headphones into this jack *does not* automatically turn off the audio in the regular left and right outputs.)

Parametric Programming

The method used to modify or edit sounds, presets and system parameters is called *Screen-driven Parametric Programming*, which sounds like a mouthful, but don't worry. Once you've grasped a few basic concepts you'll find that operating the SQ-R is quite simple, given its many capabilities.

You may have already encountered some form of parametric programming on other synthesizers. What this means is that instead of having a separate knob or slider for each function, you have *Arrow buttons* which adjust the value of whichever parameter you select.

This approach has many advantages, the most obvious of which is that it greatly increases the amount of flexibility and power that can be fit into a single rack-space package.

Screens

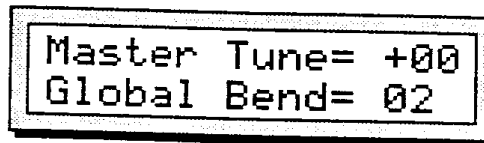
The 32-character LCD display makes it possible to display information in *Screens*. Each time you press one of the front panel buttons, you are in effect "tuning in" that function's screen. Once you have tuned in the screen you want, the display shows you which parameters are controlled from that screen.

Multiple Parameters

Some of the SQ-R screens contain more than one editable parameter. When a screen with multiple parameters is displayed, the *Left/Right Arrow* buttons are used. These buttons scroll through the parameters shown on the selected screen then continue on to the next screen.

Changing a Parameter

Suppose you want to adjust the master tuning of the SQ-R. This is a System parameter, so you first need to get to the System Bank. This is located by pressing the *System* button. The display shows the following screen:



```
Master Tune= +00
Global Bend= 02
```

The Master Tune parameter comes up in the display. The value segment of the display will now be flashing, telling you that it has been *selected*, and can be modified.

The value of the currently selected parameter on a screen is always flashing.

Once you have selected a parameter to be modified, use the *Up/Down Arrow* buttons to adjust its value:

- Pressing the *Up/Down Arrow* buttons will increase or decrease the value one step at a time. Continuing to hold down either button will cause it to accelerate and run quickly through the values.

Hint:

There is a quick way to center or "zero out" the value of any parameter which has a center value, as the Master Tune parameter does. While holding down the *Down Arrow* button, press the *Up Arrow* button, then quickly release both buttons. This automatically sets the parameter value to its center value.

Additionally, you can reach the maximum and minimum values of any parameter by pressing either the *Up Arrow* (for maximum) or *Down Arrow* (for minimum) button and, while continuing to hold it down press either of the *Left* or *Right Arrow* button.

If you select another screen, change some parameter on that screen, and then return to the Master Tune Screen, the parameter you had last selected will still be flashing. The SQ-R always "remembers" which parameter was last selected on a given screen.

Be sure that the parameter you want to edit is selected before pressing the *Up/Down Arrow* buttons. There is *always* a parameter selected on any given screen.

Playing Sounds

Sound Memory

Each SQ-R sound is a complex structure consisting of up to three voices per key and a programmable effects setup. The SQ-R can give you access to up to 340 different sounds from which to choose at any time:

- ROM — 80 sounds are permanently stored in its *ROM Memory*. These sounds can be either Standard sounds or Drum sounds. (See Sections 6 and 7 for details.)
- INT — 80 sounds can be stored in the SQ-R *Internal Memory* (RAM). Like the ROM sounds the INT sounds are contained within the SQ-R; but unlike the ROM sounds they can be replaced.
- CARD A and B — 80 additional sounds can be stored in both Group A and B of a sound card plugged into the card slot. As with the Internals, sounds stored in the Card can be Standard or Drum sounds.
- DRUM BANKS — Sound Banks 8 and 9 each contain ten dedicated Drum kits. These drum kits are available whether you're currently in the Internal, ROM, or Card sound banks. The Drum kits in Banks 8 and 9 are also permanently stored in ROM memory and cannot be modified or replaced.

Selecting a Sound

To select a SQ-R sound:

- Press the **Select Sound** button. This places the SQ-R in Sound Select mode and the Select Sound LED will light. Once in Sound Select mode, it is not necessary to press the **Select Sound** button again to select a new sound.
- Use the **Up/Down** and **Left/Right Arrow** buttons to select different sounds within a particular sound group (for example, the internals).

The **Up/Down Arrow** buttons scroll through all the sounds within the current sound group one at a time. The **Left/Right Arrow** buttons move through the sounds by ten. For example, from sound INT 21 (Internal sound #21) the **Right Arrow** takes you to sound INT 31 and the **Left Arrow** takes you to sound INT 11. This allows you to move through the sounds more quickly.

The arrows will scroll through all sounds within the current sound group and then continue scrolling up through the dedicated Drum kits. Try selecting and playing a few different sounds.

Choosing Internal, ROM, Card and Drum Sounds

Three methods can be used to choose between Internal, ROM and Card A and CARD B sound groups. The top line of the screen tells you the group and location of the sound.

- The **Select Sound** button — Repeatedly pressing the **Select Sound** button will step through the various sound groups.
- The **Bank** button — As with the **Select Sound** button, repeatedly pressing the **Bank** button will step through the various sound groups.
- **Direct Dialing** — You can reach any of the sound groups directly by pressing the **Select Sound** button, and while continuing to hold the **Select Sound** button down, press **System**, **Effects**, or the **Left/Right Track** buttons. These buttons take you to the Internal, ROM, Card A, and Card B sound groups respectively.

Note:

These sound groups contain 80 sounds each, located in Banks 0-7. Banks 8 and 9 will always call up the dedicated Drum kits.

Hint: There is a quick way to center or "zero out" the value of any parameter which has a center value, as the Master Tune parameter does. While holding down the **Down Arrow** button, press the **Up Arrow** button, then quickly release both buttons. This automatically sets the parameter value to its center value.

Additionally, you can reach the maximum and minimum values of any parameter by pressing either the **Up Arrow** (for maximum) or **Down Arrow** (for minimum) button and, while continuing to hold it down press either of the **Left** or **Right Arrow** button.

If you select another screen, change some parameter on that screen, and then return to the Master Tune Screen, the parameter you had last selected will still be flashing. The SQ-R always "remembers" which parameter was last selected on a given screen.

Be sure that the parameter you want to edit is selected before pressing the **Up/Down Arrow** buttons. There is *always* a parameter selected on any given screen.

Memory Cards

Memory cards can be used to add more sounds to the SQ-R and allow you to store your sounds and presets. Before you can access sounds and presets from a card, you must first insert an ENSONIQ SC or ISC series card, an MC-32 or 64 RAM card, or other SQ card into the Card slot, with the label facing up. Take care to insert the card straight into the slot in a continuous fashion.

Cards can be inserted or removed at any time (except while you're writing sounds to them), even when the power is on, without doing any harm to the SQ-R or the card. For more information regarding cards, see Section 8 — Storage.

Reinitializing the SQ-R

The great power and flexibility of the SQ-R lies in the fact that it is really a computer — a computer disguised as a keyboard instrument, but a computer nonetheless. The software that operates the SQ-R is very sophisticated. In fact, there is a 128K computer program that runs inside the SQ-R (the Operating System code). That's as much as some personal computers. If you have ever used a computer, you should be familiar with the need to occasionally reboot your system when you get an error message, etc. Reinitializing the SQ-R is the equivalent of rebooting your computer.

There are many things that can happen to the SQ-R (or any computer system) that might scramble the system software — voltage surges, power failures, static electricity, etc. As with any computer, very infrequently some unforeseen event or combination of events can cause the software to become confused with strange and unpredictable results. Sometimes computers that appear to be broken have no hardware problem, just corrupted data in the internal RAM (Random Access Memory). Sometimes, simply turning the SQ-R power off and then on again will cure the problem. If that doesn't work, perhaps what is needed is to reinitialize the unit.

When to Reinitialize:

If your SQ-R begins to behave in peculiar ways, if the display shows words or lines that shouldn't be there, if you start getting Unexpected Event messages, if the edit functions start doing unpredictable things, try reinitializing the SQ-R before you seek factory service.

Warning:

When you reinitialize your SQ-R all your current internal sounds and presets will be lost. (The 80 ROM (Read Only Memory) sounds are automatically loaded back into the internal memory after reinitializing.) Therefore good backup habits should be an important part of your routine. Save any important data to a storage card or MIDI Sys-Ex before reinitializing the SQ-R.

To Reinitialize the SQ-R:

- Press the *System* button.
- While holding down the *System* button, press the *Down Arrow* button.
- The display reads "Re-initialize all RAM?"
- Press the *Up Arrow* button. The *Up Arrow* button also acts as a *Yes* button to respond to questions on the display (the *Down Arrow* button acts as *No*).

If reinitializing your SQ-R does not correct the problem, then contact an authorized ENSONIQ Repair Station.

Low Battery Voltage — When to Replace the Battery

The reason that the SQ-R "remembers" sounds and other parameters, even when the power is off, is that all of its internal RAM is "battery-backed-up." The battery that keeps the SQ-R memory intact is located inside the SQ-R, and when it becomes discharged, it must be replaced by an authorized ENSONIQ Repair Station.

The battery that came in your SQ-R is good for up to five years. You will know when it needs replacing, because the SQ-R will tell you so. One day you will switch the power on, and instead of its usual wake-up message, the display will read:

WARNING! Battery low
see manual.

Press any button to commence normal operation. Then, make sure that all sounds and presets are saved to a storage card, and take the SQ-R to an authorized ENSONIQ Repair Station as soon as possible to have the battery replaced.

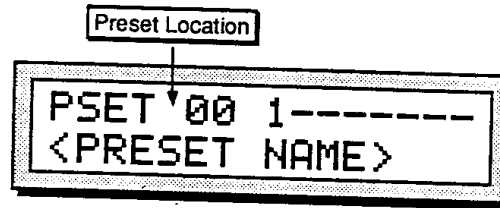
SQ-R Accessories

These optional accessories are available from your ENSONIQ dealer:

- **CVP-1 PEDAL** — A *Control Voltage Foot Pedal* which can be assigned as a modulator within the voice section of the SQ-R or used as a volume pedal.
- **MC-32 and MC-64 RAM Cards** — For storing the sounds and presets you create or edit. Sounds and presets can be saved to the MC-32 or MC-64 in the same manner as saving data to internal memory.
- **SC series ROM Cards** — Contains 160 factory-programmed sounds. Unlike the MC-32 and MC-64, the sounds in SC cards are stored permanently and cannot be replaced.
- **ISC series ROM Cards** — Contains 160 sounds programmed by leading sound developers from around the world. Unlike the MC-32 and MC-64, the sounds in ISC cards are stored permanently and cannot be replaced.

Selecting Presets

Press *Select Preset*. The LED above the *Select Preset* button lights and the following screen appears:



Whenever the *Select Preset* LED is solidly lit, this indicates that the SQ-R is in Preset Select mode, and the *Up/Down* and *Left/Right Arrow* buttons will now select presets (rather than selecting sounds, as they do when the *Select Sounds* LED is lit). The *Left/Right Arrow* buttons move through the presets in increments of 10, while the *Up/Down Arrow* buttons scroll through each preset individually.

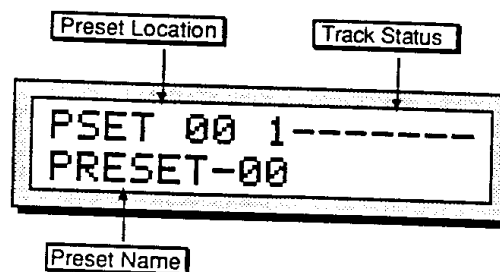
Each time a new preset is selected, the following things occur:

- a new preset effect is loaded,
- new sounds are loaded into each track and program changes are sent via the MIDI Out jack on any track in which the status is set to MIDI or BOTH, and
- MIDI Volume, Timbre, and a sustain release command are sent via the MIDI Out jack on any track in which the status is set to MIDI or BOTH.

Editing Presets

Presets are at the foundation of many of the most powerful features of the SQ-R, such as multi-timbral sound generation and Smart Transmit. Editing presets enables that power to be extremely flexible.

One of the most basic editing features is the process of turning individual tracks on and off within a preset. While this can be done from the MIDI Status parameter in the PARAMeter bank (discussed later in this section), there is a very quick method to accomplish this from the Preset Select screen. Let's look at it again:



Across the lower line, the display shows the name of the preset. On the top line you see the current preset's location and the status of each track.

Track Status

When on this screen, the two *Track* buttons are used to turn the individual tracks on and off. This is done by using either of the two *Track* buttons to select the desired track, then pressing both *Track* buttons simultaneously to change the status. When a track is on, the track number appears in the indicator on the screen. When a track is turned off, a dash (—) appears in that track's indicator.

The track status indicators have another important purpose. When a channel is receiving incoming MIDI data, the status indicator for that track will change to a musical note. This allows you to determine which tracks are receiving MIDI.

Compare — Using the Select Preset Button

Once a track status has been changed, the bottom line of the Preset Select screen changes. Where originally the preset name appeared, the display now reads "**EDITED PRESET**", indicating that a parameter within the preset has been changed from its current setting. In fact, when *any* parameter within a preset is changed, returning to the Preset Select screen will indicate you are currently working with an edited preset.

To hear the original, unchanged preset, press the *Select Preset* button. You will hear the original preset and see the screen with its original settings. Press *Select Preset* again to return to your edited preset. You can toggle back and forth between the original and the edited sound as often as you like.

Edit Preset Buffer

You can edit a preset, while keeping the original preset intact, because the edited version is kept in a special area of memory called the *Edit Preset Buffer*. Whenever you change any parameter of a preset, the altered preset is put in the edit preset buffer, replacing whatever was previously there. Only one preset at a time can reside there — the buffer always contains the results of your last edit.

When you press the *Select Preset* button, you are alternating between the preset in the original memory location and the preset in the edit preset buffer. We refer to the preset in the edit buffer as the *Edit Preset*.

You can return to the edit preset, even after selecting another preset (as long as you don't change any parameters there) by pressing the *Select Preset* button. This puts you back in the edit buffer, and any changes you make will affect the edit preset.

As with sounds, the rule of thumb is this: Whichever preset you hear, that's what you're editing.

If you like the results of the changes you have made to a preset, you should rename it and save the new preset permanently, to another location. The procedure for this is covered under "Saving a New Preset Into Memory" later in this section.

Abandoning Your Edits

If you decide, while editing a preset, that you're not happy with what you've done, and you want to start over with the original preset:

Press the *Select Preset* button so the Preset Select screen displays the original preset name. Then you can start editing the preset again from scratch. You will lose the one you were working on before.

Saving a New Preset Into Memory

After creating a new preset, or editing an existing preset to better suit your needs, it must be saved into a memory location in order to be available for future access. New or edited presets can be saved into any one of the 80 preset locations with the following procedure.

- 1) Check the Preset Select screen to make sure that the Edited Preset is displayed. If not, press the *Select Preset* button. This indicates that the preset you're hearing is in the edit buffer.
- 2) Press the *Enter/Save* button. This tells the SQ-R that you've finished editing and are ready to save the preset to a memory location. The display will read "Save Preset <PRESET NAME>?" The name listed is the name of the preset you began with when editing.
- 3) Select a name of up to 16 characters for your new preset using the arrow buttons. The *Left/Right Arrow* buttons select the character to be edited, while the *Up/Down Arrow* buttons scroll through the letters, numbers, and icons that can be used to name the preset.
- 4) Press the *Enter/Save* button.
- 5) Select a memory location for your preset using the *Left/Right* and *Up/Down Arrow* buttons. These buttons will select the presets currently residing in internal memory.

Look for a memory location that contains a preset that you no longer want or use. Presets that are in memory can be "auditioned" at this point by pressing the *Select Preset* button to toggle between the preset listed on the screen and the preset in the edit buffer.

- 6) When a location has been found, press the *Enter/Save* button. The display will show a momentary "SAVED" message before returning to the Preset Select mode.

Hint:

If you would like your edited preset to be saved in its present memory location, simply "double-click" the *Enter/Save* button. As in the above procedure the display will momentarily read "SAVED" and then return to the Preset Select mode.

Copying an Existing Preset to Another Location

Sometimes you'll want to take an existing preset, one that you haven't been editing, and simply copy it to another memory location. For example, you might want to put several presets used within the same tune in order, for easy access during performance.

- Select the preset you want to copy.
- Press *Enter/Save*. The display shows "Replace edit preset?"
- Press *Yes*. The selected preset now resides in the edit buffer. Now proceed from step three as described above to write the preset to the new location.

About Tracks

In the SQ-R, the term *track* refers to one of the eight internal "channels," each containing a sound and a complete set of performance parameters, including volume, pan, controller settings, MIDI channel, keyboard range, and others.

When the SQ-R is controlled from an external MIDI sequencer, the various tracks of the sequencer can be assigned to different MIDI channels, which in turn control the sounds played by the SQ-R. Each MIDI channel can be thought of as an extension of the sequencer's track.

Whether playing from a MIDI controller, retransmitting MIDI to a remote device, or receiving MIDI from an external sequencer, we describe this logical construct, comprised of a MIDI channel and a program and various performance parameters, as a track.

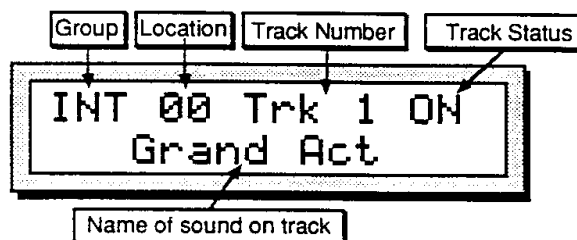
Each SQ-R Preset has eight independent polyphonic *Tracks* which are selected from the two *Track* buttons. Let's take a look at the Preset Tracks:

- Press *Select Preset*. This puts the SQ-R in Preset Select mode.
- Press the *Edit Track* button. This takes you to the first Track. Pressing either of the two *Track* buttons will scroll through the other seven tracks.

Replacing the Sound on a Track

Once you have pressed the *Edit Track* button entered Track Edit mode, you can select a screen which lets you change the SQ-R sound on a track with a sound of your choice:

- 1) Press *Edit Track*, then press either of the two *Track* buttons to select the track in which you wish to replace the sound. The screen displays the track number on the upper line.
- 2) Press either the *Right* or *Left Arrow* button repeatedly until you see the following screen:



This screen has three *active* parameters and two *display only* parameters. The Track Number and two sound location parameters, Group and Location, are active, and can be selected and modified on this screen.

- 3) Use the *Left/Right Arrow* buttons to toggle between the Group and Location parameters, and use the *Up/Down Arrow* buttons to select a new sound for the track. The Group parameter scrolls between INT, ROM, CARD A, and CARD B (CARD sounds appear only if a sound card is installed) sound groups. The Location parameter scrolls through the individual sounds within the selected group. Notice that as you select new values for this parameter, the display only Sound Name parameter changes as well. This parameter tells you the name of the sound in that location.

While on this screen, you can use either of the two *Track* buttons to select other tracks for replacing sounds. Track Number is the third active parameter on the screen.

Putting a Sound onto a Track along with its Effect

To copy a sound *along with* its effect into the track/preset (replacing the current preset effect with the one in the sound):

- With the track selected that you wish to replace the sound on, press *Select Sounds*.
- Use the *Up/Down* and *Left/Right Arrow* buttons to find the sound/effect combination.
- Press and hold the *Select Sounds* button, and *while holding it down*, press the *Select Preset* button. The sound now appears in the selected Track, with the effect placed globally in the preset.
- Press the *Edit Track* again to return to the track editing functions. The Edit Track LED will light solidly to indicate its return to normal functions.

Layering Sounds in a Preset

In a preset, a maximum of seven sounds may be layered with the selected sound. You can have up to eight sounds layered (stacked) on one key, or up to eight different sounds split across the keyboard by using the Key Range function described later in this section. Layering works only when the SQ-R is in OMNI, POLY, or MONO A MIDI In modes (System bank).

To layer sounds in presets:

- Press *Select Preset*, then select one of the 8 tracks.
- Press both *Track* buttons simultaneously for each track you wish to layer. If a track is layered, it can be un-layered by pressing both track buttons.

Pressing both *Track* buttons in MULTI toggles the track status between *OFF* and LOCAL.

Using Effects with Presets

All eight tracks in a preset share the same effects program. If this effect is incompatible with any sounds in the preset (such as a delay which you want only on a selected sound), there are several options:

- Set the effects routing to DRY for any of the programs which are incompatible. (See Output Screen in the Mix Bank later in this section.)
- Change the preset effect to be something more suitable. (See Replacing the Sound earlier in this section.)

About Performance Parameters

A group of Performance Parameters is associated with each preset track. These parameters control various aspects of the track, including some important and useful sound controls which may be easily adjusted during performance. The settings of these parameters are saved with every preset. These instantly recallable presets include an effect setup and eight sounds on eight tracks with a full set of programmable performance parameters, including key ranges, transpositions, and others. The settings of all performance parameters are saved for each track and are maintained while the power is off.

The Performance/Track Parameters for each Preset are contained within two banks:

Parameter Bank:

KeyRange	set track key ranges
Transpose	key number transposition
MIDI Channel	track MIDI channel number
MIDI Bank	track MIDI bank number
MIDI Program	track MIDI Program number
MIDI Status	enable or defeat MIDI function
Pressure	type of pressure responded to (MIDI only)
SustainPedal	enables or disables the sustain pedal

Mix Bank

Volume	overall track volume adjust
Pan	stereo panning control for track sound
Output	controls routing of track to effects
Timbre	programmable sound variation control
Release	sound release time adjust

Holding down the **Bank Select** button displays the name of the current bank while the button is held, returning to the previous display once the button has been released. If the **Up** or **Down Arrow** buttons are pressed while the **Bank Select** is held, the previous or next bank within that mode will be displayed and selected (the **Effect** button still selects the Effect bank, however).

These parameters can be used to create complex performance set-ups for your SQ-R and other MIDI equipment. A full discussion of the performance/track parameters and their functions appears later in this section.

Unless otherwise noted in the detailed descriptions which follow, use the **Up/Down** buttons to adjust the value of the parameter.

Performance Parameter Banks (Parameter and Mix)

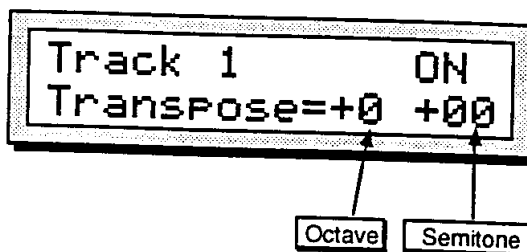
In order to edit any of the performance parameters described below, you must first press the *Edit Track* button. The LED above that button will light, indicating that the SQ-R is in Preset Edit mode.

Parameter Bank

The parameter bank is used to define performance controls within each track of a preset.

Transpose
Parameter Bank

The top line of the display indicates the track which is being edited and the play status of the track. This line is the same on each screen within the bank.



Transpose

Each track can have its pitch transposed (raised or lowered) by octaves and semitones within an eight octave range. The transpose setting affects both the pitch played by local SQ-R voices and the key number transmitted via MIDI.

Ranges: Octave parameter -4 to +4 octaves
 Semitone parameter -11 to +11 semitones

Warning:

You should take care never to transpose a track whose status is MIDI or BOTH while that track is receiving incoming MIDI data. This could cause the key-up events to be missed, causing notes to "hang."

KeyRange
Parameter Bank

Track 1	ON
KeyRange=C2	C8

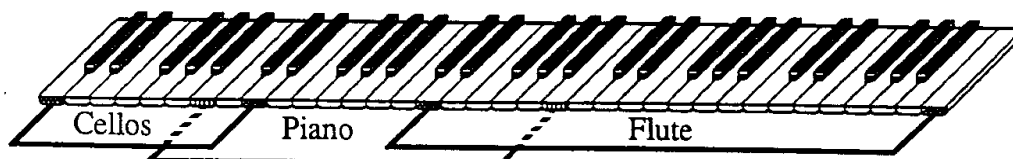
Key Range

Each track has its own independent Key Range within which the track will play. Key Ranges can be used to create simple two-sound splits, or to create more complex keyboard layouts. Key Ranges control which keys will be sent out via MIDI (with Retransmit = ON in the System Bank) as well as which notes received from MIDI In will trigger local voices on the SQ-R.

You can divide the keyboard into as many as eight different key ranges by using the eight preset tracks. In addition, you can set the Key Range so that each range overlaps the next, producing "layered" ranges in which you would hear the sounds from more than one track.

Range: A0..C8

The illustration below shows an example of three tracks with overlapping key ranges. The Piano is layered with, and partially overlaps, the Cellos on the lower end and the Flute on the upper end.



In order to set a Key Range from the keyboard of the controller, make sure the EditKeyrange parameter is ON (see *Section 2 — System Control* for more details), then:

- Play the key on the keyboard that you want to be the *lowest* key of the range. The flashing will automatically move to the right for the High Key of the range.
- Play the key for the *highest* key of the range. The new values for the range will be displayed and the flashing will stop.
- If you wish to change the range, simply reselect this parameter and repeat the process.

Warning:

If the Key Range parameter is accidentally set to where the High Key is *below* the Low Key, then the track will not play. To correct this situation, re-select the Key Range parameter and reset the key range values.

SustainPedal
Parameter Bank

Sustain Pedal

The Sustain parameter allows you to determine whether each of the individual tracks will respond to sustain controller events. The effect of all sustain commands received from MIDI is controlled by this switch. There are two settings for this switch:

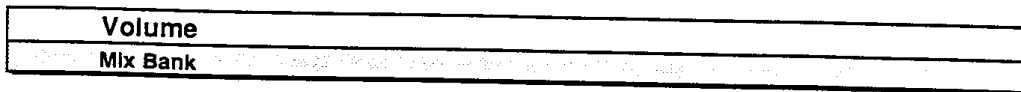
- **ON** sustain events will affect all notes played within the active key range for this track. Sustain events will be retransmitted if the Retransmit parameter is ON.
- **OFF** sustain events will have no effect on the notes played on this track. Sustain events will not be retransmitted, even with the Retransmit parameter set to ON.

For example, it may be useful to turn off sustain events on a track set up as a bass sound in a split keyboard configuration. This allows you to play staccato bass lines on the lower part of the keyboard while playing chords on the upper part of the keyboard and using the sustain pedal. The bass notes will not be affected by the sustain pedal because the track is set to OFF, but the chords will sustain.

Mix Bank

The Mix bank is used to control the output aspects of the sounds in presets and sequences. Parameters found in the Mix bank include volume, panning, output, timbre, etc.

To enter the Mix bank from the Parameter bank, hold down the **Bank Select** button. The screen displays the name of the current bank, which should be PARAM. While the button is held, press the **Up Arrow** button.

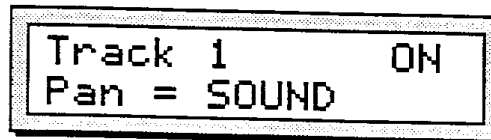
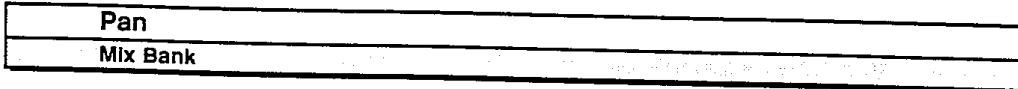


Volume

The Volume screen enables you to make volume changes to the individual tracks, allowing you to balance the SQ-R sounds and/or control the volume of external MIDI devices.

Range: 0 to 99

All tracks whose MIDI Status is set to MIDI or BOTH will send a MIDI Volume Change message (controller #7) with the indicated value whenever this parameter is edited. Preset tracks will also send the current volume for each track when a preset is selected.



Pan

The Pan screen gives you control over the placement of the track's sound in a stereo field.

When a track is set to SOUND, the voices of a sound are panned according to the settings originally programmed in the Output bank for each voice. Setting this parameter to any other pan value will override the original settings and will force ALL of the voices of the program to be panned to that location.

Range: -98 (hard pan left) to +99 (hard pan right).

A setting of +00 places the sound in the center of the stereo field. The minimum setting is SOUND which indicates that the individual voice's pan settings will be used.

Output
Mix Bank

Output

Normally, different voices in a sound are assigned to the three different busses, as set in the Output bank. On this screen you can override the normal effects routing of the program for each track. This may be useful when two sounds are split or layered in a performance preset, and the effect is not appropriate for both.

The available settings are:

- DRY forces all voices to the dry bus
- FX1 forces FX2 voices to FX1; FX1 and DRY are unaffected
- FX2 forces FX1 voices to FX2; FX2 and DRY are unaffected
- VOICE uses normal voice routing
- CONTROL uses normal voice routing and also routes controller information to the effect. This is the default setting in the track after copying a sound to a track.

Timbre
Mix Bank

Timbre

The Timbre parameter provides an easy way to make useful changes to the character of a sound without getting into more complex programming. This performance parameter uses the *Up/Down Arrow* buttons to control various aspects of the sound, depending on what the programmer has decided would be useful.

As one of the voice modulation sources, TIMBRE can be assigned to anything that can be modulated in a program or effect. The Timbre control can be connected to parameters such as filter cutoff, waveform modulation, LFO depth, and others. It is a good idea to experiment with the Timbre setting to hear what it has been programmed to do in each program.

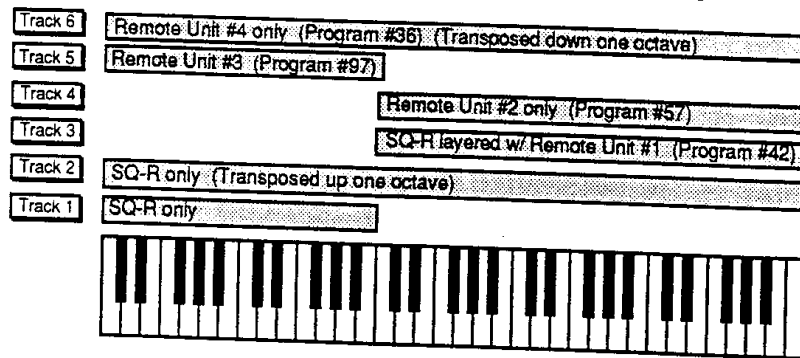
Range: 00 to 99

All tracks whose MIDI Status is set to MIDI or BOTH will transmit a MIDI Continuous Controller message (controller #71) with the indicated value whenever this parameter is edited.

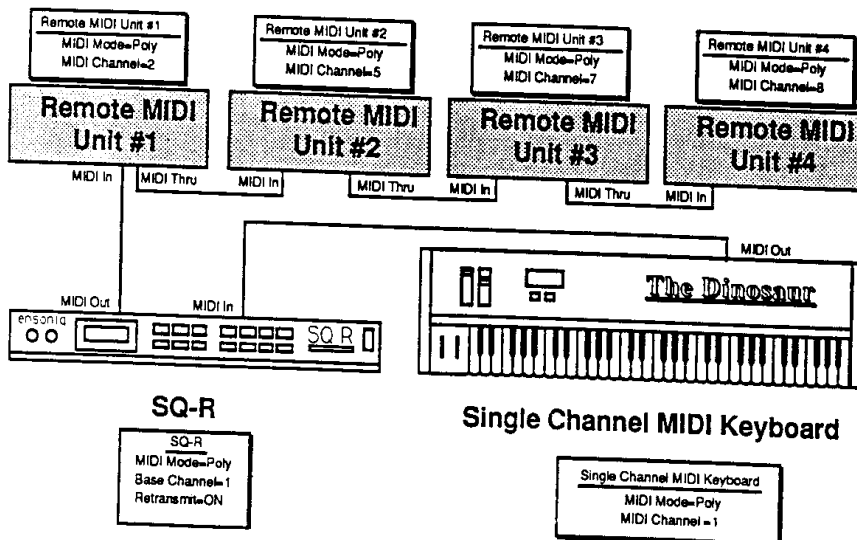
The Smart Transmit Function — The SQ-R's Controller Capabilities

The SQ-R's Smart Transmit Function is a unique and powerful feature which allows the SQ-R to add new MIDI master controller features to any keyboard hooked up to it. Connect your favorite keyboard and it becomes an 8 zone controller with independent control over volume, transpose, key range, MIDI channel, program change remapping, and sustain pedal on/off. The major advantage of the Smart Transmit function is that it gives you the power and flexibility of a controller keyboard, even if your MIDI keyboard lacks these multi-channel abilities.

Let's take a look at how to implement and utilize the Smart Transmit function. First, we'll need to determine which SQ-R sounds and external MIDI devices should play across specific areas of the keyboard. For example:



The next step is to make MIDI connections between all the modules and set their System controls to receive MIDI. The diagram below illustrates the connections and MIDI settings:



With the MIDI connection made and the parameters set properly, the final step is to select the proper settings in the PARAM bank.

The chart below shows the settings that would be used to create the multi-timbral split/layer combination in this example. Refer to the descriptions earlier in this section for detailed information on each of the parameters.

Track	1	2	3	4	5	6	7	8
Goal	Play SQ-R Sound	Play SQ-R Sound	SQ-R + MIDI Ch. 2	Play MIDI Channel 5	Play MIDI Channel 7	Play MIDI Channel 8	OFF	OFF
Transpose	+0 +00	+1 +00	+0 +00	+0 +00	+0 +00	-1 +00	N/A	N/A
Key Range	C2-B3	C2-C7	C4-C7	C4-C7	C2-B3	C2-C7	N/A	N/A
MIDI Channel	N/A	N/A	2	5	7	8	N/A	N/A
MIDI Program	N/A	N/A	042	057	097	036	N/A	N/A
MIDI Status	LOCAL	LOCAL	BOTH	MIDI	MIDI	MIDI	OFF	OFF

Remember: You must have the Retransmit parameter in the System bank set to ON in order for Smart Transmit to work. Also remember to have the cables to any external MIDI devices connected to the SQ-R's MIDI Out, *not* the MIDI Thru jack.

After setting up these parameters, save the preset, giving it a name that describes the set-up. Once this is done, whenever you select the preset, either from the front panel or via a program change, each track with MIDI or BOTH status will send the appropriate program changes, volumes, etc. to the receiving instruments on its MIDI channel (tracks with LOCAL status will set up with correct parameters as well).

Pressure

The SQ-R's Smart Transmit function also allows you to retransmit (and in some cases alter) the type of pressure a track receives, using the Pressure parameter. The chart below shows the relationship between type of pressure received, track pressure type (Pressure parameter setting), and the type retransmitted:

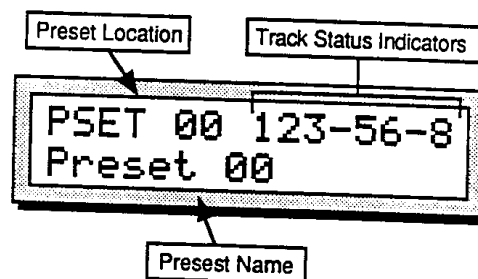
When the SQ-R receives:	with Pressure set to:	The SQ-R will Retransmit:
Channel	None	No Pressure
Channel	Channel	Channel Pressure
Channel	Key	No Pressure
Key	None	No Pressure
Key	Channel	Channel Pressure
Key	Key	Key Pressure

MULTI Mode — Receiving on up to eight MIDI channels

Most of the previous discussion of presets has involved using the SQ-R in OMNI or POLY mode, in which they act as performance setups for creating complex splits and layers while sending to the SQ-R on a single MIDI channel.

However, when you select MIDI Mode=MULTI in the System Bank, the eight tracks of the current preset become like eight "virtual synthesizers," each receiving on its own MIDI Channel, but sharing the same 21 voices and the same effects set-up. To set the SQ-R for multi-timbral reception:

- Press *System*, then scroll right to MIDI Mode. Set to MIDI Mode=MULTI. The eight preset tracks will now each receive on its own MIDI channel, which you can select independently for each track.
- Press *Select Preset*. The eight Track Status indicators in the upper right of the display now indicate which tracks are enabled to receive and which are not. For example:



Any tracks which are On (indicated by the track number showing) are enabled to receive MIDI data. Tracks which are Off (indicated by a dash instead of a number) will not receive. In the above illustration, Tracks 1,2,3,5,6 and 8 are On and will receive on their own MIDI Channels; tracks 4 and 7 are Off, and will not receive any MIDI data.

By leaving some tracks on and turning others off you can determine how many MIDI channels (up to eight) the SQ-R will respond to. This allows you to use presets to create custom setups for different multi-timbral applications.

- By pressing *Edit Track* and scrolling to the MIDI Channel parameter, you can now select the Track MIDI Channel parameter, discussed earlier in this section, and assign the desired MIDI Channel to each track that is enabled.
- In a default SQ-R Preset the eight tracks are set to MIDI Channels 1-8 respectively, but these assignments are completely programmable, and can be changed to any channels you wish.

A Few Important Points About Multi Mode

- When the SQ-R is in MULTI mode, the sound you hear will always be the sound on the track whose MIDI channel is being received, even if you have a different track displayed.
- Only one track can receive on a given MIDI Channel. If two (or more) tracks are set to the same MIDI Channel, the lower-numbered track will receive on that channel and any higher-numbered track(s) set to the same channel will not receive at all.
- Each of the eight Preset tracks is completely independent and polyphonic. The SQ-R's *Dynamic Voice Assignment* means each track can have up to all 21 voices if it needs them. If all 21 voices are in use and a track needs a voice, it will "steal" the voice from the oldest note (or the one with the lowest voice priority).
- The eight tracks respond independently to MIDI program changes, allowing you to assign a new sound to a track via MIDI. The selected program's effect does not come with it — all of the eight tracks in the Preset share the same effects setup, which can normally be changed only by editing the effect from within Preset or by using the Copy Effect function from Sound Select mode.
- You can, however, cause a sound's effects set-up to become the Preset effect (which will then be applied to all eight tracks) by sending program change # 124 immediately before the program change which selects the new sound for the track (see "Receiving Program Changes" earlier in this section).
- In MULTI mode, if the Preset Prog parameter in the System bank is set to On, incoming program changes on the SQ-R's base MIDI channel will select new presets. Any individual track set to the same MIDI channel will *not* respond to program changes. Therefore:
 - > If you wish to change Presets via MIDI while in MULTI mode, you should set the base channel to one not used by any of the tracks.
 - > If you don't wish to change presets while in MULTI mode (as is often the case) simply set the Preset Prog parameter in the System Bank to Off.

I DIDN'T
SCAN EFFECTS
CHAPTER
(CHAP. 4)

Section 5 — Programming the SQ-R

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What is a Sound?

SQ-R Sounds are divided into two categories; *Standard Sounds*, which are dynamic structures made up of three *voices* and an *effect*, and *Drum Sounds*, which feature 17 voices and an effect. Drum Sounds have slightly different programming features due to having the added voices.

Standard Sounds and Drum Sounds each have their own programming guidelines. See Sections 6 and 7 for details. This section of the manual will cover the "common ground" between the two types of sounds.

Voices and Polyphony

When referring to the number of voices in a SQ-R sound, we are *not* talking about polyphony (as in "you can only play so many notes," see below). We are referring to the number of voices that will sound on each MIDI note received as you play the sound.

The SQ-R has a total of 21 voices which are dynamically assigned among the different sounds that you play. How many voices a sound uses on each MIDI note received depends on the sound. Many sounds use only one voice — in the case of these sounds you can play 21 notes before "voice stealing" occurs. On sounds that use two voices, you can play 10 notes before any voices are stolen. Three voices, seven notes. Up to three voices can be active in one Standard sound.

Drum Sounds are inherently "one voice" sounds and always use only one voice per MIDI note received.

Bear in mind that the SQ-R is "smart" about voice allocation — there are many things that a programmer can do to increase the apparent polyphony of a sound and to minimize the effects of voice stealing. For example:

- As soon as a voice is done playing (either because it reached the end of the wave or because the volume envelope went to zero) that voice becomes free and a new note can use that voice rather than stealing one that is still sustaining. See "Voice Triggering/Stealing Notes," in Section 6.
- Also, you can assign low, medium or high priority to each voice in a sound, which allows you to control how voices are reassigned. See Output Bank in Section 6.

Compare — Using the Edit Sound Button/LED

As soon as you change any parameter in a sound, the LED above the *Edit Sound* button will begin flashing. It will remain flashing until you select another sound or save (write) the newly edited sound into memory. This is a constant reminder that something in the sound has been changed.

To hear the original, unchanged sound, press the *Edit Sound* button. The Edit Sound LED will remain lit without flashing and you will hear the original sound and see the screen with its original settings. Press *Edit Sound* again to return to your edited sound. You can toggle back and forth between the original and the edited sound as often as you like.

Edit Buffer

You can edit a sound, while keeping the original sound intact, because the edited version is kept in a special area of memory called the *Edit Buffer*. Whenever you change any parameter of a sound, the altered sound is put in the edit buffer, replacing whatever was previously there. Only one sound at a time can reside there — the edit buffer always contains the results of your last edit.

When you press the *Edit Sound* button, you are alternating between the sound in the original memory location and the sound in the edit buffer. We refer to the sound in the edit buffer as the *Edit Sound*.

You can return to the edit sound, even after selecting another sound (as long as you don't change any parameters there) by pressing the *Edit Sound* button. This puts you back in the edit buffer, and any changes you make will affect the edit sound.

The rule of thumb is this: Whichever sound you hear, that's what you're editing.

If you like the results of the changes you have made to a sound, you should rename it and save the new sound permanently, to another location. The procedure for this is covered under "Saving a New Sound Into Memory" later in this section.

Abandoning Your Edits

If you decide, while editing a sound, that you're not happy with what you've done, and you want to start over with the original sound:

Press the *Edit Sound* button so the Edit Sound LED remains lit. Then you can start editing the sound again from scratch. You will lose the one you were working on before.

Saving a New Sound Into Memory

After creating a new sound, or editing a current sound to better suit your needs, it must be saved into a memory location in order to be available for future access. New or edited sounds can be saved into any one of the 80 internal sound locations with the following procedure.

- 1) Check to make sure that the Edit Sound LED is flashing. If not, press the *Edit Sound* button. This indicates that the sound you're hearing is in the edit buffer.
- 2) Press the *Enter/Save* button. This tells the SQ-R that you've finished editing and are ready to save the sound to a memory location. The display will read "Save Sound <SOUND NAME>?" The name listed is the name of the sound you began with when editing.
- 3) Select a name of up to 16 characters for your new sound using the arrow buttons. The *Left/Right Arrow* buttons select the character to be edited, while the *Up/Down Arrow* buttons scroll through the letters, numbers, and icons that can be used to name the sound.
- 4) Press the *Enter/Save* button.
- 5) Select a memory location for your program using the *Left/Right* and *Up/Down Arrow* buttons. These buttons will select the sounds currently residing in internal memory.

Look for a memory location that contains a sound that you no longer want or use. Sounds that are in memory can be "auditioned" at this point by pressing the *Edit Sound* button to toggle between the sound listed on the screen and the sound in the edit buffer.

- 6) When a location has been found, press the *Enter/Save* button. The display will show a momentary "SAVED" message before returning to the Sound Select mode.

Hint:

If you would like your edited sound to be saved in its present memory location, simply "double-click" the *Enter/Save* button. As in the above procedure the display will momentarily read "SAVED" and then return to the Sound Select mode. INTERNAL sounds that come with the SQ-R are duplicates of the ROM sounds, so that you can safely create new sounds (or edit existing ones) without losing the factory sounds.

Copying an Existing Sound to Another Location

Sometimes you'll want to take an existing sound, one that you haven't been editing, and simply copy it to another memory location. For example, you might want to put the six most commonly used sounds in the same bank, for easy access during performance.

- Select the sound you want to copy.
- Press *Enter/Save*. The display shows "Replace edit sound?"
- Press *Yes*. The selected sound now resides in the edit buffer. Now proceed from step three as described on the previous page to write the sound to the new location.

I DID NOT SCAN

CHAPTER 6:

"STANDARD PROGRAMMING"

IF YOU'D LIKE A PHOTO COPY OF

IT - EMAIL

ME AT

sf@sm@sctn.net

I DID NOT SCAN
CHAPTER 7: "DRUM SOUND
PROGRAMMING"

IF YOU'D LIKE A PHOTO COPY OF
IT - EMAIL

ME AT
sfØsm@sctn.net

Section 8 — Storage Functions

The Storage functions on the SQ-R found in the System Bank enable you to:

- transfer Sounds or Preset data to or from SQ-R-compatible memory cards, and
- transmit dumps containing Sounds or Preset data via MIDI system exclusive messages.

Memory Card Storage:

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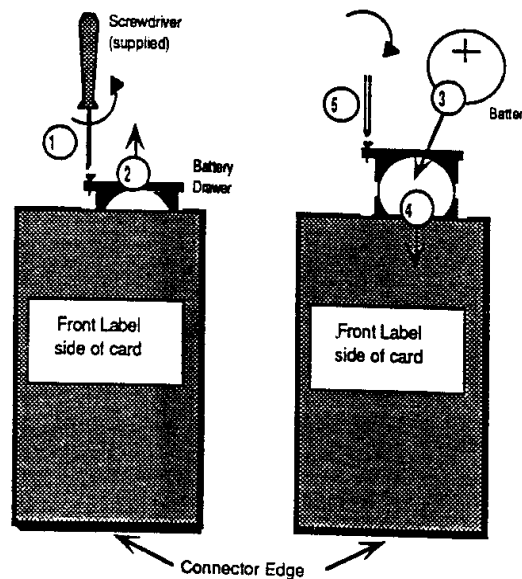
Memory Card Storage

The SQ-R uses credit-card-type memory cards for sound and preset storage. Only ENSONIQ memory cards, or cards approved by ENSONIQ, can be used with the SQ-R. Similar memory cards sold for use with other manufacturers' products may be incompatible with the SQ-R, and may cause damage to the card or to the SQ-R itself.

Installing the Battery in a RAM Card

To maximize battery life, MC-32 and MC-64 RAM Cards are shipped with the battery not installed. Before using these cards, you must first install the battery, following the instructions below.

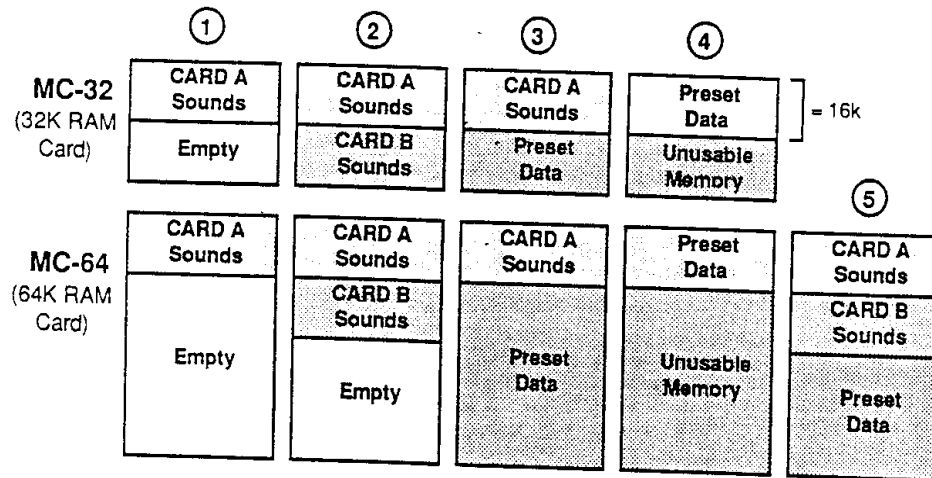
1. Using the supplied screwdriver, loosen the battery-drawer screw. Do not try to remove the screw; it remains attached to the battery drawer.
2. Pull gently on the plastic tab at the top of the card to open the battery drawer to the position shown at the far right. (Do not try to pull it out any further.)
3. Insert the Battery in the Battery Drawer with the flat (+) side of the battery facing up.
4. Slide the the battery drawer closed.
5. Retighten the battery drawer screw to lock the battery drawer.



Memory Card Configurations

ENSONIQ MC-32 and MC-64 RAM Cards can be used to store up to two banks of sounds (which we refer to as CARD A and CARD B) and/or preset data.

There are a number of different ways that a memory card can be configured, depending on which size card it is, and what type of data is stored to the card first. The drawing below shows the possible configurations for the two types of cards:



Possible RAM Card Configurations

- Starting from a blank memory card, copying the internal sounds (INT) to CARD A (described later in this section) will format the card, and will put 80 sounds in CARD A, leaving the rest of the card memory empty, as shown in Configuration 1 above.
- Once you have copied sounds into CARD A, you can copy another bank of sounds to CARD B (Configuration 2) or you can save the internal preset memory to the card (Configuration 3).
- Starting from a blank memory card, saving the internal preset memory to the card (described later in this section) will format the card, but will leave the remaining memory unusable, as neither sounds nor additional preset memory can be saved. Obviously, this is not recommended. (Configuration 4)
- Additionally, with an MC-64 only, it is possible to copy sounds to both CARD A and CARD B and still have 32K of additional card memory for preset storage (Configuration 5).

Important:

The amount of the card memory allocated to preset storage depends on what portion of the card is empty, or unused, at the time you first save presets to the card. That is, when you save presets to the card, the SQ-R will allocate all available card memory for preset storage. Thus, if you want to use the entire card memory (either an MC-32 or MC-64) for presets, be sure not to store any sounds to the card. If there are sounds already on the card, you can erase them by removing the battery for approximately 1 minute, then replacing it.

It is also important to note that sounds stored to a RAM card can be played directly from the cartridge, while preset data stored to the card must be transferred to the internal preset memory before it can be used.

Formatting a Blank Memory Card

When you first install the battery in a RAM card, the card will not be recognized by the SQ-R until it is formatted. *Formatting a card is done by simply storing a sound bank or preset data to the card.* With a new card, you first decide whether you want to use it to store sounds, presets or both (see the note on the previous page) and then format it, either by copying the internal sounds to Card A, or by saving the internal preset memory to the card.

SOUNDS

Copying Sounds Between Internal and Card Memory

The functions described here are used to do "bulk copies" of the 80 INT sounds to the memory card, or vice-versa. Also, as noted above, it is necessary to copy the internal sounds to Card A before the card can be used to store sounds at all. If you wish to copy a single sound to a different location, use instead the procedure described in Section 5.

To Copy sound banks between Internal and Card memory:

- Press the *System* button.
- Press the *Right Arrow* or *System* button repeatedly until the display reads:



Press ENTER to
Store Sounds

- Press *Enter/Save*. The display now lets you choose which type of storage to use.
- Use the *Up/Down Arrow* buttons to select "Storage Type=MEMORY CARD," as shown below:



Storage Type =
MEMORY CARD

- Press *Enter/Save*. The display now offers four choices:
 - "Operation = COPY INT TO CARD A" — this command copies the entire contents of the eight INT Sound Banks (0-7) to CARD A.
 - "Operation = COPY INT TO CARD B" — this command copies the entire contents of the eight INT Sound Banks (0-7) to CARD B.
 - "Operation = COPY CARD A TO INT" — this command copies the entire contents of the eight CARD A Sound Banks (0-7) to the Internal (INT) memory.
 - "Operation = COPY CARD B TO INT" — this command copies the entire contents of the eight CARD B Sound Banks (0-7) to the Internal (INT) memory.

- Once you have selected the operation you want from the four options above, press *Enter/Save*.
- If the card was blank or unformatted and you chose COPY INT TO CARD A, the display asks "Card is wrong type, erase?" Press *Yes*.
- The copy function is almost instantaneous. The display will read "Command Successful" after the sounds have been copied.

Sound Storage Prompts and Error Messages


- "Sorry! Install a RAM Card First." — You will get this message if you attempt to copy INT TO CARD A or INT TO CARD B when there is no card installed, or when a ROM (Read Only Memory) card is installed.
- "Sorry! Install a Card First." — You will get this message if you attempt to copy CARD A TO INT or CARD B TO INT when there is no card installed.
- "Sorry! Write to Card A first." — You will get this message if you attempt to copy INT TO CARD B before you have copied sounds to CARD A. CARD A must be written before you can copy sounds to CARD B.
- "Sorry! Card B is empty." You will get this message if you attempt to copy CARD B TO INT when the card is formatted but does not contain sound data in Card B.
- "Erase preset data on card?" If you attempt to copy INT TO CARD B with a card which already has preset data stored in the area normally occupied by Card B sounds, you will get this message. Press *Yes* to proceed, or *No* to cancel the command.
- "Sorry, write to card failed." — This message will appear whenever the SQ-R fails to verify data that it has written to the card. It could mean that the card is a ROM card and cannot be written. It might also mean that the card is write-protected or possibly defective.
- "WARNING! Battery low. See manual." — If this message appears when a RAM card is inserted into the card slot, it means that the battery in the card is getting low and should be replaced as soon as possible. To replace the battery, you can use essentially the same procedure outlined earlier in this section under "Installing the Battery in a RAM Card." Also, if you replace the battery *while the card is plugged into the SQ-R, with the SQ-R power on*, you will not lose the data stored on the card. This will not harm the card or the SQ-R. (Make sure, though, that you do not turn off the SQ-R's power while the card is installed with the battery removed, or any data on the card *will* be lost.)

PRESETS**Saving Preset Data to Memory Card**

You can save the contents of the SQ-R preset memory to a MC-32 or MC-64 RAM card.


To Copy sound banks between Internal and Card memory:

- Press the *System* button.
- Press the *Right Arrow* or *System* button repeatedly until the display reads:



Press ENTER to
Store Presets

- Press *Enter/Save*. The display now lets you choose which type of storage to use.
- Use the *Up/Down Arrow* buttons to select "Storage Type=MEMORY CARD," as shown below:



Storage Type =
MEMORY CARD

- Press *Enter/Save*. The display now offers two choices:
 - "Operation = COPY ALL TO CARD" — this command will copy the entire contents of the SQ-R preset memory to the RAM Card. This is the proper choice when you want to save, or "back up" your presets to the card.
 - "Operation = COPY ALL FROM CARD" — this command will copy preset data from the card into the internal preset memory. This is the proper choice when you want to reload data previously saved to the card.
- Once you have selected either COPY ALL TO CARD or COPY ALL FROM CARD, press *Enter/Save*.
- The copy function is almost instantaneous. The display will read "Command Successful" after the preset data have been copied.

Preset Storage Prompts and Error Messages

- "Sorry! Install a RAM card first." — You will get this message if you attempt to copy ALL TO CARD when there is no card installed, or when a ROM (Read Only Memory) card is installed.
- "Sorry! Install a Pset card first." — You will get this message if you attempt to copy ALL FROM CARD when the card installed is unformatted or contains only sound data, or there is no card installed.
- "Erase Sound data on Card B?" — This prompt occurs whenever you attempt to store preset data to a card which already contains sounds in Card B. Answer *Yes* to erase the sounds stored in Card B and use that memory for preset storage. If you answer *No*, the SQ-R will use the remaining space (MC-64 only) for preset storage.

For example, with an MC-32, if both Card A and Card B contain sounds, and you get you this message, answering *Yes* will erase the sounds stored in Card B and replace them with preset data. Answering *No* will effectively cancel the command.

With an MC-64, if both Card A and Card B contain sounds, and you get you this message, answering *Yes* will erase the sounds stored in Card B and allocate a full 48k bytes for preset storage (see Configuration 3 on p. 8-2). Answering *No* will leave the Card B sounds intact and allocate the remaining 32k of card memory for preset storage.

- "Sorry, write to card failed." — This message will appear whenever the SQ-R fails to verify data that it has written to the card. It could mean that the card is a ROM card and cannot be written. It might also mean that the card is write-protected or possibly defective.
- "Sorry, need more space on card." — This prompt means that the amount of data in the preset memory exceeds the available memory in the card. If you get this message, you could erase some presets, erase any sound data already stored on the card (by removing the battery), get a larger card, or use a different form of storage, such as MIDI Sys-Ex, described later in this section.
- "WARNING! Battery low. See manual." — If this message appears when a RAM card is inserted into the card slot, it means that the battery in the card is getting low and should be replaced as soon as possible. To replace the battery, you can use essentially the same procedure outlined earlier in this section under "Installing the Battery in a RAM Card." Also, if you replace the battery *while the card is plugged into the SQ-R, with the SQ-R power on*, you will not lose the data stored on the card. This will not harm the card or the SQ-R. (Make sure, though, that you do not turn off the SQ-1's power while the card is installed with the battery removed, or any data on the card *will* be lost.)

MIDI SYS-EX Storage

Sending MIDI Sys-Ex Messages to Another SQ-R or to a Storage Device

The SQ-R is able to send system exclusive dumps of Sounds, either singly or in banks, as well as preset dumps containing either the entire preset memory or the current preset. These dumps can be understood by another SQ-R, or can be recorded by a remote device which has MIDI Sys-Ex Recorder capabilities (such as the ENSONIQ EPS or VFX^{SD}), to be stored and later re-transmitted to the SQ-R.

Banks of sounds are always transmitted from the internal RAM memory (INT). If you want to send card data, use the Sound Storage function to transfer data from the card into the internal RAM first.

SOUNDS

Sending One or All Sounds out via MIDI Sys-Ex

- Press the *System* button.
- Press the *Right Arrow* or *System* button repeatedly until the display reads:

Press ENTER to
Store Sounds

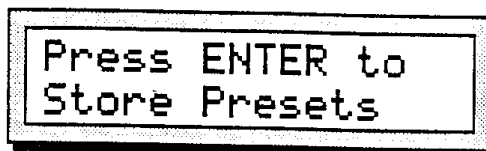
- Press *Enter/Save*. The display now lets you choose which type of storage to use.
- Use the *Up/Down Arrow* buttons to select "Storage Type=MIDI SYS-EX," as shown below:

Storage Type =
MIDI SYS-EX

- Press *Enter/Save*. The display now offers two choices:
- "Operation = SAVE INT TO MIDI" — this command transmits the entire contents of the eight Internal Sound Banks (0-7) as a system exclusive message. The dump contains data for the complete set of 80 Sounds.
- "Operation = SAVE SOUND TO MIDI" — this command will transmit the currently selected sound as a system exclusive message. The sound to be transmitted can be in any bank, including the INT, ROM, CARD A or CARD B banks.
- Once you have selected either SAVE INT TO MIDI or SAVE SOUND TO MIDI, press *Enter/Save*. The display will read "Please wait . . . sending data" while the sounds are being transmitted.

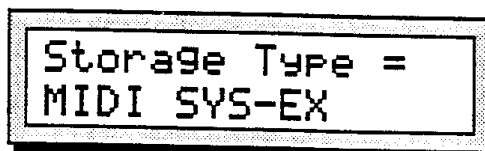
PRESET DATA**Sending Presets out via MIDI Sys-Ex**

- Press the *System* button.
- Press the *Right Arrow* or *System* button repeatedly until the display reads:



Press ENTER to
Store Presets

- Press *Enter/Save*. The display now lets you choose which type of storage to use.
- Use the *Up/Down Arrow* buttons to select "Storage Type=MIDI SYS-EX," as shown below:



Storage Type =
MIDI SYS-EX

- Press *Enter/Save*. The display now offers two choices:
- "Operation = SAVE CURRENT PRESET" — this command will transmit the currently selected preset as a system exclusive message.
- "Operation = SAVE ALL PRESETS" — this command will transmit the entire contents of the preset memory as a system exclusive message. The dump contains data for the complete set of 80 preset locations.
- Once you have selected SAVE ALL PRESETS, press *Enter/Save*. The display will read "Please wait . . . sending data" while the sounds are being transmitted.

Receiving MIDI Sys-Ex Messages

The receiving of data dumps is initiated automatically by system exclusive messages sent from the transmitting unit. No front-panel commands are necessary to receive dumps if the receiving of System Exclusive messages is enabled on the System bank (System Excl=ON).

When a single-sound message is received, three things happen:

- the display briefly says "Press ENTER to save new sound,"
- the new sound is placed in the edit buffer, and
- the SQ-R enters Sound Edit mode, with the *Edit Sounds* LED flashing, so that you can hear, edit and/or save the new sound which has been received.

When a one-preset message is received, three things happen:

- the display briefly says "Press ENTER to save new preset,"
- the new preset becomes the edit preset, and
- the SQ-R enters Preset Select mode, with the *Edit Preset* LED flashing, so that you can hear, edit and/or save the new preset which has been received.

SQ-R/SQ-1 Storage Compatibility

The SQ-R is related directly to the SQ-1; a keyboard version of the SQ-R featuring a built-in 16 track sequencer. The sounds on both instruments are identical in format, and are completely compatible. However, there are some minor differences in the way each instrument stores preset/sequencer data to memory card. Because of this, there is not 100% storage compatibility between them. Use the following guidelines to determine if the storage transfer function you wish to perform will be compatible or not.

MIDI SYSTEM-EXCLUSIVE

All System Exclusive data transfers are functional and compatible between the SQ-R and SQ-1:

- Sound data can be sent via Sys-Ex from an SQ-R to an SQ-1.
- Sound data can be received via Sys-Ex from an SQ-1 to an SQ-R.
- Preset data can be sent via Sys-Ex from an SQ-R to an SQ-1. Once in the SQ-1, track data can be added to these presets, becoming sequences.
- Sequence data can be received via Sys-Ex from an SQ-1 to an SQ-R. When received, the SQ-R ignores all track data, leaving the preset information.

MEMORY CARD

Most data saved to card on either the SQ-R or SQ-1 can be read and understood by the other. There is one exception, listed below:

- Sound data can be saved to a memory card from an SQ-R and read by an SQ-1.
- Sound data can be saved to a memory card from an SQ-1 and read by an SQ-R.
- Sequence data can be saved to a memory card from an SQ-1 and read by an SQ-R. When the data is loaded from the card, the SQ-R ignores all track data, leaving the preset information.
- *Preset data that is saved to a memory card from an SQ-R cannot be read by an SQ-1.*

If you wish to send preset information from an SQ-R to an SQ-1 (to be used as the basis for sequencing, or on its own), use the Sys-Ex transfer methods described earlier in this section.