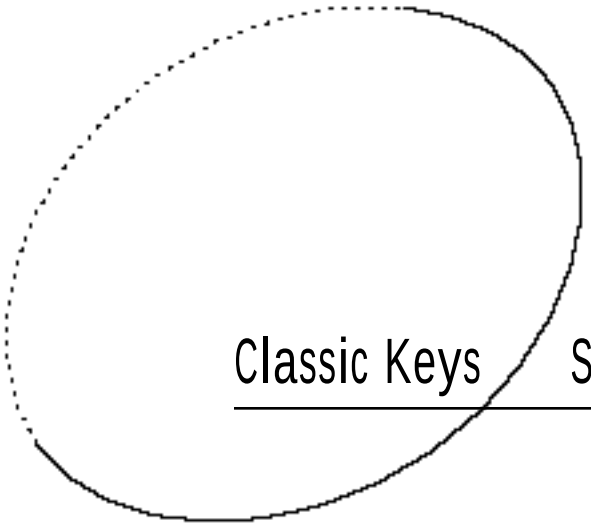


Classic Keys STEP-BY-STEP

7 Step-By-Step

This section is an introduction to the Edit menu, explains the concept of Sound Splicing Synthesis, and contains specific programming examples and tips.

LINKING PRESETS

Linking presets is a quick and easy way to create new sounds by “layering presets” and also to “split” the keyboard into sections containing different sounds.

LAYERING TWO PRESETS

1) Select the first preset you wish to layer.
2) Press the Edit button.
3) Use the data entry control to move through the screens until you find one of the “LINK” screens.
4) Move the cursor to the second line of the display, then select the preset that you want to be linked with this preset. You may want to play the keyboard as you scroll through the various presets in order to hear the results.
5) If you want the link to be a permanent part of the preset, be sure to “SAVE PRESET”.

CREATE A SPLIT KEYBOARD USING LINKS

1) Follow steps 1 through 4 at left.
2) Now set the range of the linked preset while still in the LINK menu. Press Enter.
3) Now use the data entry control to move through the screens to KEY RANGE.
5) Set the range of the preset so that it fills the remaining range of your keyboard.
6) Save the preset.

EDITING PRESETS

The easiest way to make a preset is to edit an existing preset. This is also an excellent way of becoming familiar with Classic Keys. If you don't like what you hear, simply change the preset and Classic Keys reverts back to the original sound. Changes are not made permanent until you Save them using the "SAVE PRESET" function, which is the last screen in the Edit menu. Let's experiment and modify a few parameters of an existing preset. We'll start with functions that have an obvious effect on the sound like Instrument select, Coarse Tuning, Chorus, and Reverse Sound.

First, choose a preset that strikes your fancy and press the Edit button.

CHANGING THE INSTRUMENT

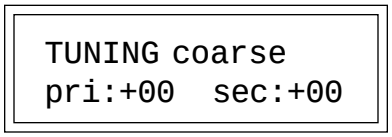
This is probably the easiest way to modify existing presets. Scroll through the Edit menu functions until you come to:

Move the cursor down to the bottom line (using the cursor button) and change the primary instrument with the data entry control. Play the keyboard as you scroll through the various instrumens. When you find an interesting instrument, move the cursor back up to the first line and select:

Repeat the process for the secondary instrument. Find an instrument that sounds good when combined with the first one you selected. You can probably see that with all these great instruments to work with, you really can't go wrong. Now let's play with the tuning.

CHANGING THE TUNING OF AN INSTRUMENT

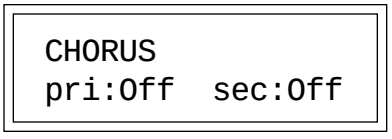
Scroll through the Edit menu functions until you come to:



If the numbers are "00" as in the example above, it means that the instruments are tuned to concert pitch (A=440 Hz). Each whole number in coarse tuning represents a semitone interval. To tune one or both of the instruments up an octave, move the cursor to the number (using the cursor button) and set the number to +12 using the data entry control. Try tuning one of the instruments to a perfect fifth above the other. Simply set the coarse tuning to +7.

CHORUS

This is an easy one. With the cursor on the top line of the display, turn the data control until you find CHORUS. Chorus can be turned on or off for each of the primary and secondary instruments. Chorus works by doubling the instruments and detuning them slightly. Try it.



REVERSING THE SOUND

A simple concept. The instrument sounds can be played in reverse. This will normally make an instrument sound quite a bit different. It also virtually doubles the number of raw instruments you have to work with, and it's fun.

```
REVERSE SOUND
pri:Off  sec:Off
```

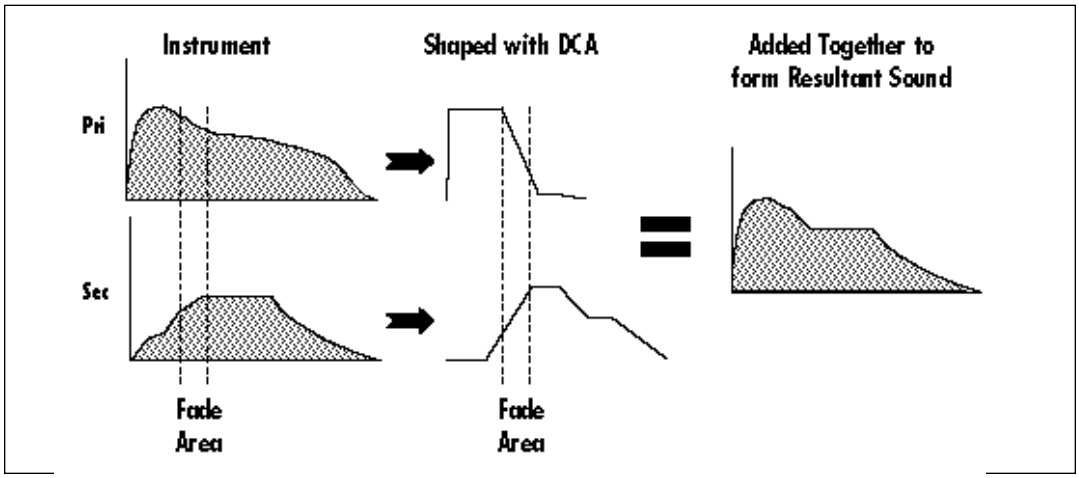
You're probably getting the idea by now. Remember not to change presets or the preset will return to normal. If you want to save your creation, select the last screen in the Edit menu and select a destination preset location for your masterpiece, then press Enter. That's it.

The previous examples were offered solely to pique your curiosity. By all means, go ahead and experiment with any of the other functions. Some of the best sounds have been discovered by accident. If it sounds good ... Do it!

SOUND SPLICING SYNTHESIS

Oh, no! Not another form of synthesis to learn. Relax. It's easy. Sound Splicing Synthesis is actually just a form of additive synthesis. Only, instead of building a sound from simple sine waves, Classic Keys starts with complete sampled sounds or complex waveforms and combines all or part of these together to form a new sound. The process is illustrated below.

The envelope generators controlling the DCAs (digitally controlled amplifiers) can be used to fade between two instruments (primary and secondary) during the course of a note. This powerful technique allows you to combine elements of different instruments together to form completely new sounds. New sounds that are totally natural, because they are based on natural sounds. Classic Keys also contains many digitally generated waveforms that can be combined with other digital waves or with sampled instruments in order to change the character of the sound, perhaps to add a digital "edge" or add more bottom. In addition to the envelope generators, parameters such as Delay, Sample Start, and Crossfade allow you to further control the blend of primary and secondary instruments.



Portions of two sounds are dynamically crossfaded in order to produce a new sound containing elements of both.

CREATING A NEW SOUND

As an example, let's add a sampled flute attack to a Mini Moog synthesizer sound to create a sort of Flute Synth. Start with one of the default presets and change only the parameters listed in the chart below. The flute instrument is shaped by the Alternate Volume Envelope so that only the breathy attack "chiff" is heard (a short Decay with the Sustain set to zero). Also the attack time has been set to 2 to soften the breath sound a bit.

The Mini Moog 1 instrument serves as the body of the sound. The delay parameter is used to delay the onset of the Mini Moog until the flute sound has died away. The Attack parameter of the Secondary Alternate Volume Envelope is set so that the Mini Moog will smoothly fade in as the Flute is fading out. Lastly, the volume of each instrument is adjusted to balance the sound.

Primary	Secondary
Instrument: Flute	Instrument: Mini Moog 1
Volume: 127	Volume: 91
Alt Envelope: On	Alt Envelope: On
A H D S R 02 02 16 00 16	A H D S R 12 00 43 59 40
Delay: 000	Delay: 003

REVERB SPACES

The reverb spaces allow you to add reverb ambience to Classic Keys drums. By layering an instrument containing only reverb with a "dry" drum instrument, the effect of real reverb is created. In addition, the reverb spaces can be shaped and filtered just like any other instrument. There are eleven reverb spaces (instruments 76-84, 86, 88) in Classic Keys.

Using the reverb spaces is easy. Use one of the default presets as your starting point. Set up the Edit menu parameters as in the chart below and change only the parameters specified.

All we have done here is layer a drum kit with a reverb space, then adjust the volumes slightly. That's all there is to it! Try out all the different reverb spaces and note the differences. The reverb decay time can be shaped using the Alternate Volume Envelope.

The reverb spaces can be further shaped using Reverse, Chorus, or any of the other modulation parameters. How about using the Auxiliary Envelope to control the pitch of the reverb? You can do all kinds of new things with this reverb.

Primary	Secondary
Instrument: Drum Kit 1	Instrument: Medium Room
Alt Envelope: Off	Alt Envelope: Off
Volume: 100	Volume: 127

USING CLASSIC KEYS WITH A SEQUENCER

We thought you'd never ask. Classic Keys was designed from its conception with multi-timbral sequencing in mind. Just take a look at the main screen.

```
C01 Vol127 Pan+0
000⁰Preset Name
```

The preset for each MIDI channel is selected from the main screen. Press the cursor button to move the cursor up so that it is underneath the channel number.

```
C01 Vol127 Pan+0
000⁰Preset Name
```

Turn the data entry control and you will see that every MIDI channel has a preset assigned to it. Just select a preset for each of the MIDI channels. It's simple! In order to respond to multiple MIDI channels, Classic Keys must be in Multi-Mode. Multi-Mode is selected in the Master menu. Press the Master menu button and use the data entry control to scroll through the screens until you find MIDI MODE.

```
MIDI MODE    ID
Multi        00
```

Move the cursor down to the second line and change the mode to Multi as shown. Classic Keys will now respond to multiple MIDI channels.

MORE ADVANCED SEQUENCING

Pre-Sequence Setup

Suppose that you want to have your sequencer set up everything for you before the start of the song. Good idea. This will make the Classic Keys setup procedure automatic and prevent the wrong presets from playing.

The basic idea of a pre-sequence setup is to send out MIDI information just before the start of the song. This MIDI information will select all the proper presets, adjust the mix, and pan positions of each preset.

Note: Classic Keys setup information should be transmitted from the sequencer before the song actually starts, perhaps during a lead-in measure or countdown. DO NOT send setup information just before the first beat of the song or MIDI timing errors could result.

Initial Setup

In the Master menu:

1) Turn ON Multi-Mode
2) Turn ON Preset Change enable for each channel.
3) Turn OFF MIDI Enable on MIDI channels that are to be used for other synthesizers.

PRESET, VOLUME & PAN SETUP

Program your MIDI sequencer to transmit the following information before the song starts.

1) Select the proper presets for each MIDI channel used on Classic Keys.
2) Send MIDI volume information (controller #7) for each MIDI channel used on Classic Keys.
3) Send MIDI pan information (controller #10) for each MIDI channel used on Classic Keys.

Now your song will play perfectly every time using the proper presets, volumes and pan positions. In addition, presets, volumes and pan positions (or anything else for that matter) can be adjusted in realtime during the song. Note: If the wrong presets are being selected, check the MIDI Program -> Preset Map.

To carry the pre-sequence setup even further, you can even include preset data for each preset used in the sequence. See page 30 for details.

USING THE 32 CHANNELS

As stated earlier, Classic Keys has 32 independent audio channels which are utilized as needed. With 32 channels and 512 presets, you have a universe of sonic textures at your disposal. But you have probably noticed that many of the best sounding presets in Classic Keys are linked with other presets or have chorus applied to them in order to make them sound larger. While this is fine when the preset is played solo, you may begin to run out of channels when Classic Keys is played multi-timbrally. Linking and chorusing cause twice as many channels to be used by the preset. Learn to "budget" your output channels for maximum efficiency.

CHANNEL RIPOFF

When Classic Keys uses up all its 32 channels and needs more, it steals a channel from the key that has been held the longest. This is commonly known as "channel ripoff". You will most commonly encounter this ripoff when using Classic Keys in multi-timbral mode. To eliminate ripoff you must either, play fewer notes, use simpler sounds, turn off doubling (pri/sec, chorus, or linked presets), or use MIDI overflow to another Classic Keys.

INSTRUMENT DEFINITION

If your sequence has an instrumental section using numerous chords it may be advantageous to use a basic preset without links or chorus. A preset will sound much different alone than when combined with an ensemble. Try to resist the temptation to make every sound as fat as possible or you can wind up with "MIDI Soup", a huge, stifling sound with every possible audio frequency filled. A solo saxophone in a band isn't chorused and it sounds great. Each voice in your composition should have it's own identity. Save the monster sounds for solos or dramatic effects.