

GETTING AROUND

on the E4K

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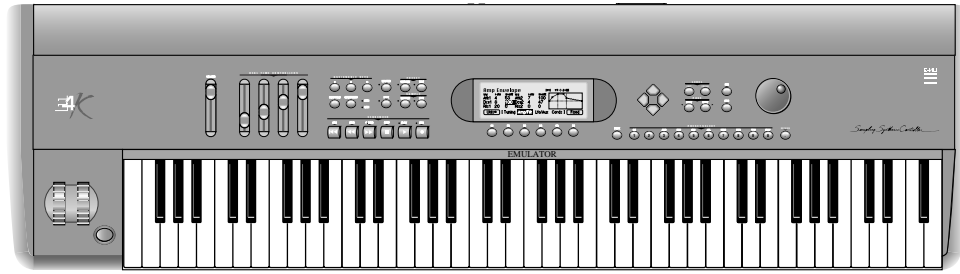
• F1499 Rev. A

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- Getting Around
- SoundSprinting
- RT Controllers
- Bookmarks
- Demo Sequences
- Sound Designing
- Sequencer
- Controller Charts



WELCOME

If you have just met the E4K for the first time, we suggest that you follow through these “guided tours” until you get familiar with the way the E4K operates.

THE EMULATOR FOUR MODULAR SYSTEM

The E4K is divided up into six main modules and each module contains a particular group of functions. To access a module, you simply press the module button and a page of choices appears. The six modules are as follows:

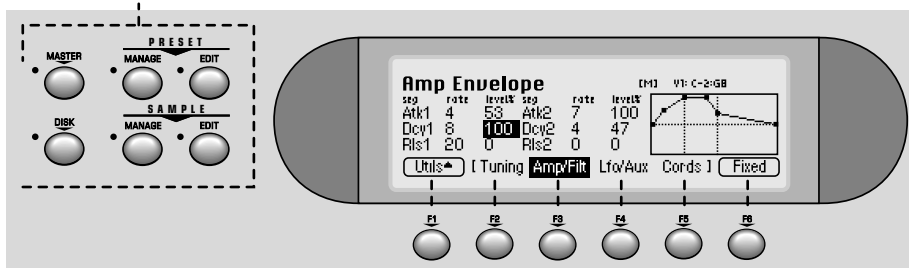
- **Disk Module:** The disk module controls all disk operations such as loading and saving banks, presets and samples. It also contains several utilities to format and backup the hard disk.
- **Master Module:** This module contains functions that affect the entire machine: Memory status, master tuning, erase bank, name bank, output levels, miscellaneous functions, master MIDI settings. In addition, the Master module contains the master effects settings and the sequencer submodule. The effects and the sequencer are also accessible via dedicated front panel buttons.
- **Sample Manage Module:** This is where you go to record your own samples. You can also rename, copy, erase or place them on the keyboard.
- **Sample Edit Module:** With this module, you can loop (with several automatic looping options) or edit the length of a sample. This module also contains many types of digital signal processors which actually modify the raw sample data. Fortunately, the E4K contains an “Undo” function which lets you restore the original sample if you aren't happy with the results.
- **Preset Manage Module:** This module handles the preset “housekeeping” chores such as naming, erasing, copying and exporting.
- **Preset Edit Module:** This is the synthesizer module where raw samples are turned into expressive new instruments. Samples can be arranged on the keyboard, switched or crossfaded in just about any possible way. Digital Modular Synthesis is term we use to describe the E4K's powerful synthesis engine. *Any* modulation source can be connected to any destination through the use of virtual patch cords. There are 58 modulation sources and 55 destinations on the E4K, including Z-plane filters, complex envelopes, LFOs and modulation processors, which allow complex synthesis models to be built.

Activating Modules and Selecting Functions

Each module has an associated switch. These are grouped on the left side of the display. Pressing the associated switch activates the module and is indicated by an LED next to the switch. Upon activation the top line of the display will show the module identifier.

Once the module has been activated, the function keys below the display are used to select the function located directly above it. You can think of the E4K like a book— each time you press a function key, you are turning to another page in the book. The module select keys are like chapters in the book.

Module Select Keys



Function Keys

When you're finished with a module, either press its button again to deactivate, or simply activate a new module. Any time you make a mistake, get confused or otherwise “get lost in the module”, you can bail out by simply deactivating, then reactivating the module.

Main Screen

When all the module LEDs are off, you are in the main preset selection screen (shown below). This screen can also be accessed by pressing the Exit key repeatedly from wherever you are.



Press and hold this key for two seconds to display the menu bar at the bottom of the display instead of the arrow.

Hot Tip...

If you want to “Lock” the Sprint, Load, Save and Multi keys on the Main screen instead of the arrow key, simply **press and hold the arrow key for two seconds**. To hide the menu options again, press **Hide**.

LOADING & PLAYING SOUNDSPRINTS

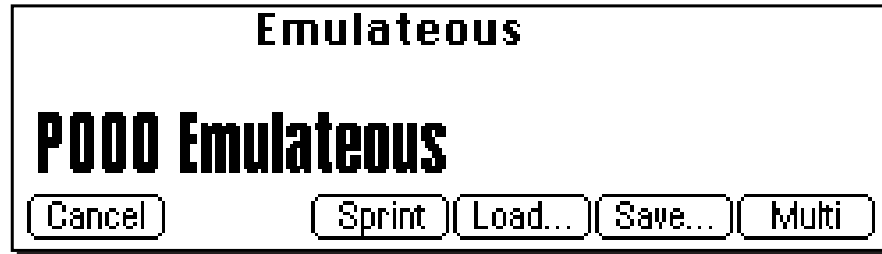
Normally when using a sampler, you must load a bank of presets into memory before playing. The E4K can also be used this way, but for browsing presets there is a much better way. *SoundSprint* is a new routine which allows you to load presets quickly into memory one at a time as you browse through them.

► **To Access Presets Via SoundSprint:**

1. Turn on the E4K and wait for it to come up. The E4K power switch is located on the rear panel adjacent to the power cord. The display will appear as shown below.
2. Press the **Arrow** function key (F6) in the lower right corner of the display.



3. A row of soft-keys will appear along the bottom of the display. Press



Sprint (F3) to access SoundSprint mode. After pressing Sprint, the following screen will appear.



4. You are now in SoundSprint mode. Notice that the **Disk LED** is lit, indicating that you are in the Disk module. You could have arrived at this same screen via the disk module and preset browser. The Sprint key is simply a direct jump to the Sprint page.

Tip: You could also press Assignable key 3 to instantly jump to the sprint page. Don't hold the key too long or it will reassign itself!

- Use the bank soft-keys (F5 & F6), the left/right cursor keys, the previous/next keys or the data entry control to select presets. The previous and next banks in the folder are shown in the upper right of the Sprint display window.

If you get lost...

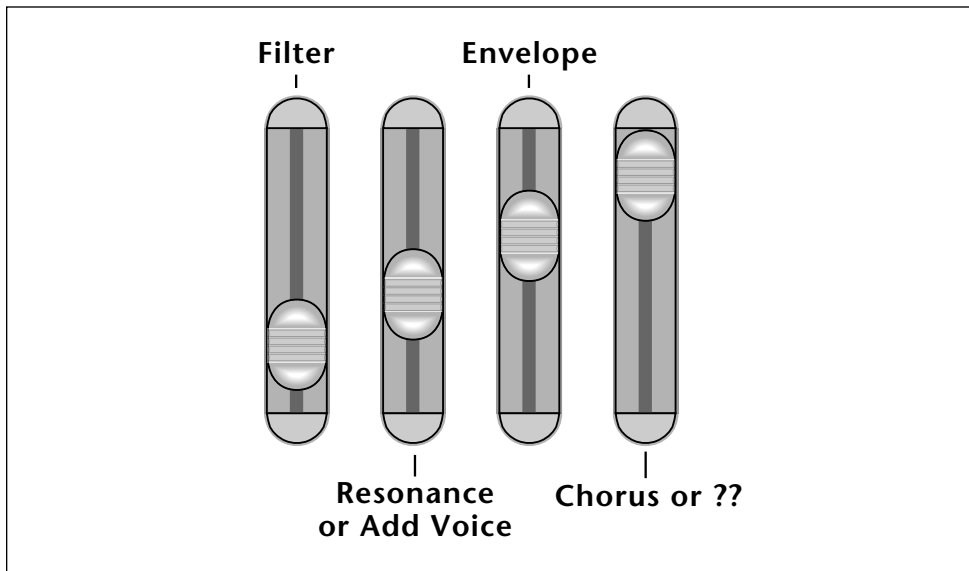
If in your mad button pressing, you find yourself somewhere other than the Sprint screen, use this shortcut. The E4K is shipped with Assignable Key 3 programmed to access SoundSprint mode. Simply press **Assignable Key #3**.

To program an assignable key...

If Assignable Key #3 is not programmed for the Sprint page, you can easily reprogram it. First go to the Sprint page (Main Screen, Arrow, Sprint), then **press and hold the Assignable Key 3 for two seconds**. Now it's programmed!

CHECK OUT THE REAL-TIME CONTROLLERS

Each of the Sprint presets is a carefully crafted Instrument with real-time controllers programmed to control the most important aspects of the sound. The back of this booklet contains a Sprint preset listing with a description of what the real-time controllers do in each preset. For many of the Sprint presets, the sliders are programmed according to the diagram below. These are only generalized labels; many of the presets use the sliders for wildly different uses.



Don't forget to check out the other real-time controllers such as the "Thumbby Button", modulation wheels and keyboard aftertouch (pressure).

To get back the original sound...

After fiddling with the sliders you may just want to get back to the original settings. Simply press **Assignable Key #3** which has been programmed to jump to the Sprint page. The original slider settings will instantly reload.

Tip: *Aftertouch is applied by pressing down harder on the key after the note has been made.*

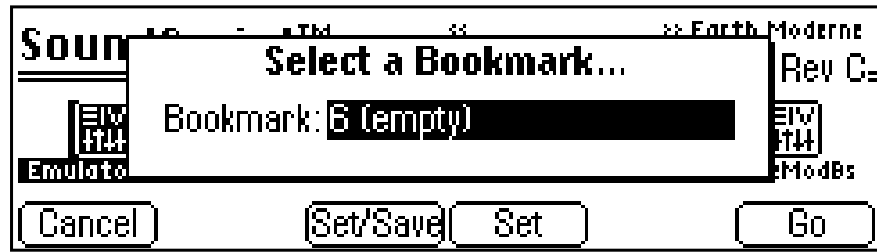
Tip: *If you find a set of slider settings that you like better than the factory settings go to Preset Edit, Global and adjust controllers A-D. Then save the bank back to itself.*

BOOKMARKS

If you find a preset you really like, you might want to attach a **Bookmark** to it. Bookmarks allow you to instantly select and load a SoundSprint. Up to 100 bookmarks can be saved and store in nonvolatile EEPROM.

► To Set a Bookmark:

1. From the SoundSprint Browser, select the preset you wish to bookmark using the left/right cursor keys.
2. Press the **Mark...** function key (F3). The following screen will appear.



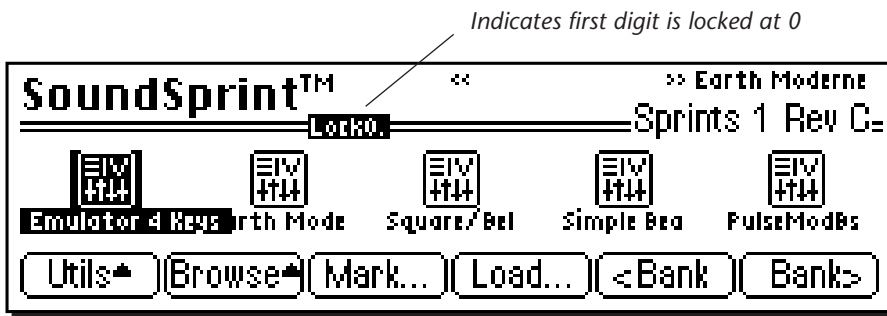
3. Select a bookmark location using the data entry control or inc/dec keys.
4. After selecting a location, press the **Set** function key (F4) to set the bookmark. Press the **Set/Save** function key (F3) if you want to save the bookmarks to nonvolatile memory.
 - The numeric keypad selects a bookmark from the rank of 10 you last selected with the Lock engaged.
5. Press the **Go** function key (F6) to go to the currently selected preset.
6. Press **Cancel** (F1) to cancel the operation.

► Alternate Method to Set a Bookmark:

1. From the SoundSprint Browser, select the preset you wish to bookmark using the left/right cursor keys.
2. Press and hold the **Set** key located to the right side of the numeric keys. While holding the Set key, press one of the numeric keys. A pop up dialog box will inform you that the bookmark is set.
 - If you don't **Save** your bookmarks using the Set/Save button, they will be lost when power is turned off.

► **To Select a Bookmark:**

1. From the SoundSprint Browser, simply press the numeric key(s) corresponding to the bookmark you wish to select. For example, if you want to select the preset at bookmark number 9, press 9 on the numeric keys. The preset will be selected and loaded.
2. The **Lock** key locks the first digit of the two digit bookmark number. Press and hold the **Lock** key (located to the left of the numeric keys) while pressing one of the numeric keys to lock the most significant digit. Press the Lock key by itself to turn Lock mode On or Off. The lock indicator on the display is shown below.
3. With Lock Off, two digits must be entered to select a bookmark. For example, to select bookmark 9, you would press 0, then 9.
4. With the most significant digit locked, only one key press is required to select a bookmark.



5. To select another rank of 10 bookmarks, press and hold the Lock key and press one of the numeric keys. The display will inform you which rank of 10 bookmarks is now selected.

SoundSprint preset locations...

When you load a preset via SoundSprint, it is placed in a special area which happens to be the upper ten preset locations, 990-999. Press the Disk button, extinguishing the LED. The main preset screen will appear.



Tip: When you Save a bank, the E4K asks you if you want to save the SoundSprint presets (in locations 990-999) as well as the other presets.

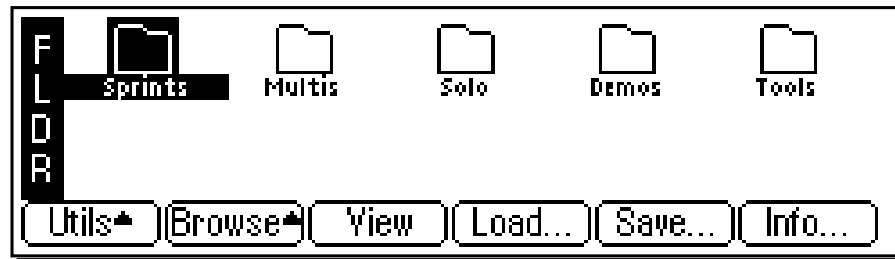
Scroll through the presets using the data entry control or inc/dec keys. Note that the last presets you “Sprinted” are still loaded up in the highest number preset locations (990-999).

LISTENING TO THE DEMO SEQUENCES

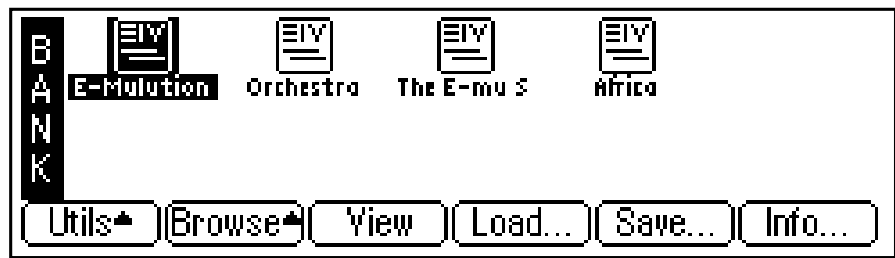
SoundSprints are great for auditioning sounds and for solo playing, but for live performance or multi-timbral sequencing it's usually better to load up an entire **Bank** of presets. This gives you instant access to every preset in the bank. This is also where RAM (memory) comes into play. The more RAM you have in your E4K, the more sounds can be loaded at one time. The E4K comes standard with 4 megabytes of RAM, but can be expanded all the way up to 128 megabytes (*See the Appendix chapter of the operation manual for details*).

► To Load a Bank:

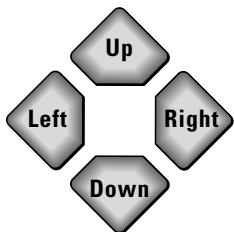
1. From the SoundSprint Browser, press the **Browse** key. A second row of function keys will appear. (From the main screen, press the **Disk** module key, then the **Browse** key.)
2. Select **Folders** by pressing F2. The following screen will appear.



3. Use the cursor keys to select folders. For now, select the **Demos** folder, then press **Browse** again.
4. Select **Banks** to view the banks in the Demos folder. The following screen will appear.



5. Select one of the demo banks using the cursor keys, your choice. Press **Load** to load the selected bank.
6. A dialog box will appear informing you that you are about to overwrite the data in memory. Don't worry, this only erases the data in RAM. All your sounds are safely stored on the internal hard disk. Press **Yes** (F6) to load the bank.
7. A progress bar will appear, then you're back to the main screen.



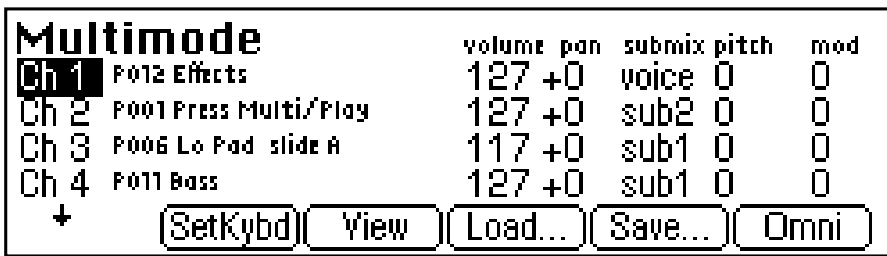
CURSOR KEYS



8. The preset is trying to tell you how to play the demo sequence, but you have to press the Arrow key first.



9. This screen should look familiar. The demo sequences are multi-timbral, meaning that they have multiple presets (sounds) playing at the same time. Press the **Multi** button (F6) to put the E4K into multi mode. The screen will change to look like this.

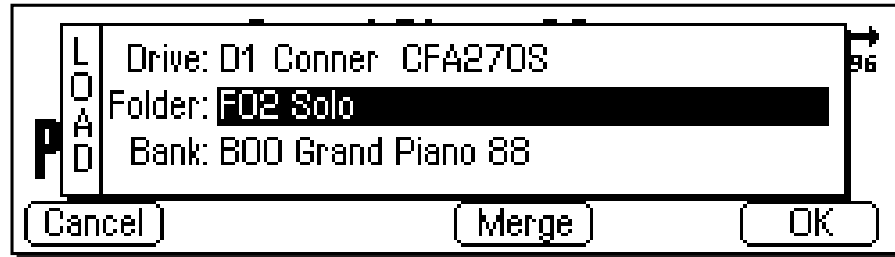


10. The multimode screen shows you which preset is assigned to each MIDI channel as well as a lot of other information. You can read all about this in the main operation manual. For now, press the sequencer **Play** button on the front panel and listen to a demo sequence. Press **Stop** to stop.

11. Using a feature called “Magic Load Preset”, the next demo bank will be automatically loaded when the current sequence ends. When the bank is finished loading, press **Play** on the sequencer controls to play the demo sequence associated with the bank.

- You might want to turn Magic Load Preset Off when you are finished since selecting preset #127 is programmed to load a hard disk bank, This may cause confusion when you are sequencing.

12. If you want to check out the individual presets, press the **Omni** key. This puts you back into “single preset mode”. Select presets using the data entry control, inc/dec keys or the left/right cursor keys.
13. To select a bank from a different folder, press the **Arrow** key, then **Load**.



Tip: Banks in the Sprint folder contain only one preset each.

14. From the screen shown above, use the up cursor key to select the folder field. Use the data entry control or inc/dec keys to select another folder. After selecting new folder, move the cursor back down to the bank field to select a bank. Press **OK** to load the bank.
15. Once the bank has loaded, use the data entry control, inc/dec keys or the left/right cursor keys to select presets within that bank.

Easy as cake...

You're probably starting to learn your way around. Feel free to explore. That's what the E4K is all about. You don't have to worry about losing any sounds unless you **Save** a bank over another one. So go forth and conquer. The E4K is an incredibly powerful instrument and you won't learn it all overnight. Be patient and don't be afraid to get in there and experiment.

Going back into SoundSprint mode...

When you try to load SoundSprints after loading a bank, you will inevitably come across a small roadblock in the form of a “Sample Memory Full” message. Not to worry. You have to erase the bank first. Here's how...

1. Switch back to Omni mode. **SoundSprint does not work in Multi mode.** (Main Screen, Arrow, Omni)
2. Press the **Master** module button on the front panel.
3. Press **Bank**. Three additional soft-key buttons will appear.
4. Press **Erase**. A pop up dialog box inquires if you really want to erase all presets, samples and sequences from the bank.
5. Yes you do, so press **OK** (F6) to erase the bank.
6. Now press **Assignable Key 3**. This key jumps you immediately into Sprint mode. (See page 5 if this key does not work as promised.)

THE PROGRAMMER'S TOOLBOX

The E4K is a powerful sampling synthesizer and one of the neatest things about owning one is the opportunity for doing some creative sound design. You might think that developing voices with a sampler begins with a microphone, but this need not be the case. With the sound elements that are provided on the internal Hard Drive in the **ToolBox** folder, along with the powerful synthesis and re-sampling features of the E4K, you will find that you can develop patches which are extremely unique and musical. You can conjure up wild and exotic sound effects without a microphone. Here's how the Toolbox works.

Before you begin...

Turn SoundSprint mode Off. From the SoundSprint page, press **Utils** (F1). Press **SprntOff** (F5). Press the **Disk** button, extinguishing the LED, to go back to the main screen.

E4K Synthesis

1. Load the **SD's Tool Box** bank in the **Tools** folder. This will clean up your RAM workspace and load up the samples and preset templates you need.
2. Familiarize yourself with the toolbox by scanning through the samples first. Enter the Sample Manage module and select subsequent samples for listening, with the cursor keys.

The first set of samples is a set of looped sine waves tuned to the first 32 partials of the harmonic series, based on A-440 Hz. Following these is a set of short complex waves (labelled Cpx) tuned to A3-440 Hz and looped as single cycles. These are interesting because their structure changes over very few samples and by moving the loop point, a dramatic change in timbre can be achieved. After this there are two "air samples" (two different types of looped noise), and a set of "knocks" with either a woody or metallic character.

3. Press the **Sample Manage** button, extinguishing the LED. You should now be back in the main screen in Omni mode.

Now check out the presets, for this is where the real value becomes clear. Some of these presets won't play very well because they have literally too many sample layers and this eats up all the instrument's polyphony, but the main purpose is to use these sounds for re-sampling; creating new samples.

Presets 000~002 are each a set of 32 harmonics layered up. The difference between them is in the effect of the real-time faders. For each preset, faders A~C remove different sets of partials. Fader D consistently controls a low pass filter. By trying different real-time fader values on these presets, a very wide variety of simple waveforms can be generated. For example, with preset 000 move faders A and D up to about halfway to get a "clarinet tone".

► **To Resample the Wave**

1. Enter the **Sample Manage** module
2. Select **New**.
3. Select **resample 16 bit** as the source.
4. Turn Off the right side to make this a monaural sample.
5. Press **Arm** (F5), then play A3 (the 4th A from the bottom of the keyboard). The following screen will appear.



6. Set the Automatic Parameters as shown above: Truncate: **both**, Normalize: **relative**, Loop: **1/8**.
7. Press **Keep** (F4), to keep the sample. The E4K will perform automatic truncation, gain boosting and looping on the sample you just recorded. The sample will be named, "Wavemake#00". You now have a single cycle wave ready to use in building up a preset.
8. Press **Sample Manage** twice to go out of the module, then back in. Your new sample will be selected and you can play the keyboard to hear it.

Wave Sequencing

Presets 003~006 also use a layered set of 32 partials, but in this case the partials are dissonant or the faders have a more complex effect. Experiment to find the sound that you need, then resample it.

1. Turn the right channel on since these presets are stereo.
2. Set the sample length to 2.4 seconds or longer.
3. Set the automatic loop parameter to: $1/2 + xfd$. This should produce an acceptable loop. (See the E4K operation manual for more information on the automatic parameters.)

Additive Synthesis

Preset 007 is a special case and here, the 32 harmonics are laid out along the keyboard white notes, starting with harmonic number one on key A1. Play the harmonics to get the desired wave timbre before resampling it.

Preset 008 uses a layer of four complex waves to generate new waves for resampling. The faders move the sample loop points around to give different timbres and fader D adds a chorus effect. Again, when you have the desired basic sound, use the resampling technique to capture the new wave.

Fat Waves

Preset 009 “Multi Whatever” is a very useful tool for synthesizing complex waveforms. Try this...

1. Load any sample into the preset - do this by entering preset edit and going to the main voice page shown below.



2. Move the cursor to the sample field in Voice 1 (shown above) and choose a wave - a complex wave would be a good choice. Put the sustain pedal down and play handfuls of notes to the right and left of C3. You hear a layer of the identical note.

Fader D: begins to detune the notes the further they get away from the center.

Fader C: adds a little random vibrato

Faders A & B: set and sweep a filter.

The result is a “Chorused” or multi source effect, just waiting to be resampled as a new stereo wave then used as a building block for more presets. Practically any sample can be given new life by “multiplying” it with the “Multi-Whatever” preset template! Try recording your voice (sing an “aah” tone) then use the multi-whatever technique to generate a choir.

Preset 010 is a simple example of using source waves as oscillators for a synthesizer. Find some good source waves then load them into the preset and use the real-time faders as basic sample loop, filter, filter amount and chorus controls.

Fader A: Adjusts the Sample Loop Start Point

Fader B: Adjusts the Filter Envelope Amount and increases Resonance

Fader C: Adjusts the Filter and Amplifier Envelope Rates

Fader D: Adds a Chorus effect to Voice 1

After a few hours you will be using the tool box to generate new waves which you can then compile into presets. The presets can be brought to life by adding some of the knocks and taps also provided. Mixing an “air” sample into a preset is an effective way of adding ambience. And don’t forget, when you are re-sampling, any FX you add with the Effects processors will also be resampled - you resample exactly what you hear.

A word about housekeeping...

After a session with the toolbox, you could find that your RAM bank contains quite a few “weeds” - bits and pieces that are by-products of preset building. A good and safe method of keeping your disk neat and tidy is to simply “export” presets rather than try to clean up the bank and save it. This is the method:

1. Enter the **Disk** module, press **Browse** and go to the **Folders** level.
2. Press **Utils** (F1). Press **New** (F2) to create a new folder and label it “My Presets”.
3. Go back to the Tool Box bank that you have been working on. Select the new preset that you have constructed.
4. Enter the **Preset Manage** module. Select **Export** (F5).
5. In the dialog box, choose the folder “My Sounds”, and then the first empty Bank. Press **OK** (F6).
6. Your preset will be saved as its own bank (Sprint style) in its own folder. Discard the bank in RAM with all its weeds - the original toolbox is safely intact on the hard drive.

USING THE SEQUENCER

The E4K's sequencer was originally designed as a "scratchpad" to quickly and easily capture your musical ideas. With key features such as Standard MIDI File Import/Export, 16 track operation and the ability to resample a sequence, the sequencer becomes a powerful composition and synthesis tool.

Before you begin...

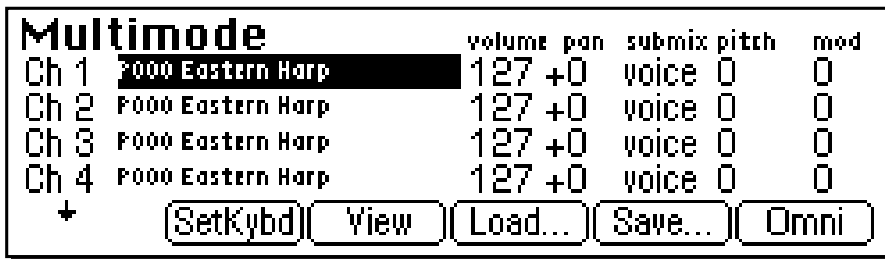
Load a bank from the **Multis** folder. Loading a bank gives you a variety of sounds to work with when sequencing.

► To Record a Sequence:

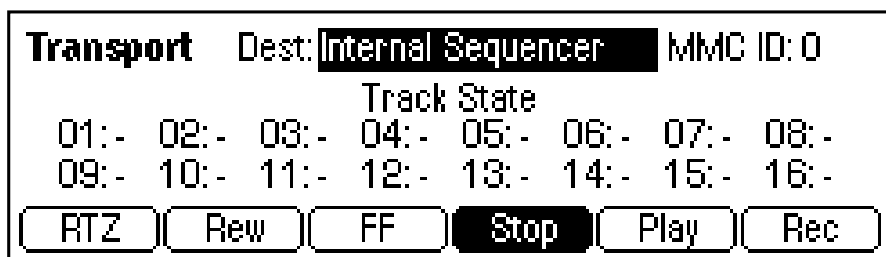
1. Press **Record** , then press **Play**. Start playing the keyboard.
2. Press **Stop** when you are finished recording. Press **Play** to play back the sequence. That's it!
3. To record another track, repeat step one.

► To Record a Multitimbral Sequence:

1. From the main screen, press the **Arrow** function key (F6) in the lower left corner of the display. Four additional soft key choices will appear.
2. Press the **Multi** function key (F6). The following screen will appear.



3. Use the up/down cursor keys to select the MIDI channel you want to record. (Ch 1 might be a good place to start.) Press **SetKybd** (F2) to select the MIDI channel. The selected channel will be recorded on track one.
4. Move the cursor to the preset field and select a preset.
5. Now press the **Sequencer** key, then the **Trnsprt** key (F3). The following screen will appear.



TIP: Program Assignable Key #1 to the Sequencer Transport screen to save time jumping back and forth. Press and Hold Assignable Key 1 for 2 seconds.

Tip: The sequencer can be programmed to start recording immediately or when you play the first note. This function is located under Sequencer Utilities, Setup.

6. To begin recording, press **Record**, then press **Play** on the sequencer transport controls. Start playing the keyboard. You can use either the front panel transport controls or the function keys to control the sequencer.
7. Press **Stop**, then **RTZ** when you have finished playing.
8. Press **Play**. The sequence should play back exactly as you played it.
9. If you aren't happy with your performance and want to play it again, move the cursor down to the Track 1 field and change the status back to **R** (record). Then re-record the track (step #3).
10. Ready to record another track? Press the **Master Module** button to go to the Multimode screen, select another MIDI channel (perhaps to channel 2). Also change the preset associated with the new channel.
11. On the sequencer transport controls, press **Record**, then press **Play**. Begin playing the keyboard to record on track two.
12. Press **Stop**, then **RTZ** to return the sequence to the beginning of the song.
13. Press **Play**. The sequence should play back with the two tracks using two different presets.
14. If you make a mistake on a track, go back to the Transport screen (using Assignable Key #1) and reset the track status to **R** (record). Then re-record the track. Try out the Solo and Mute modes on one of the tracks. You can adjust the volume and pan position of each channels in the Multimode screen.
15. After recording, you can change the presets associated with each channel in the Multimode screen.

Sequencer trick...


- Record a sequence moving just the real-time control sliders. Play the keyboard while the sequence controls the sliders and creates complex sound envelopes. Resample the result to capture a wild new sound.

Standard MIDI Files...

The most powerful aspect of the sequencer is its ability to read and write Standard MIDI Files from your computer sequencer. Simply export your computer sequencer file as a "Standard MIDI File" in DOS format and transfer via floppy disk to the E4K.

► To Import a Standard MIDI File:

1. From the Disk Browser, select the **Floppy Drive**.
2. Press **Browse** again and select **Banks**. The Standard MIDI Files will appear as Banks.
3. Press the **Load** function key (F4). A popup dialog box will appear warning you that loading will destroy the bank.
4. Press the **Merge** function key (F4). The selected sequence will be merged into the current bank and placed in the first empty sequence location.

 **Tip:** Standard MIDI Files should be named according to the format: **12345678.MID** (up to 8 characters followed by ".MID").

SOUNDSPRINT CONTROLLER FUNCTIONS

The following charts list the real-time controller functions in each SoundSprint preset. In each preset the real-time controllers adjust important aspects of the sound and a very wide range of timbres can be synthesized without any programming knowledge. The realtime controllers are PERFORMANCE controls, designed to be actuated while playing. These controls are just a part of what makes the E4K such a great instrument.

Sometimes a controller will adjust several parameters at once to achieve a desired effect. On some presets the controls are somewhat standardized. A quick glance at the chart shows that the Slider A is often used to control the Filter Cutoff. Likewise Slider C often controls the envelope times.

- If you find a set of slider settings that you like better than the factory settings, go to Preset Edit, Global and adjust controllers A-D. Then save the bank back to itself.

NAME	SLIDER A	SLIDER B	SLIDER C	SLIDER D	THUMBY	MOD WHL	PRESSURE
Emulateous	Filter	Add Voice	Attack	Chorus	FF Pitch 1-oct	LFO -> Filter	LFO -> Pitch
Affinity Combo	Filter	Add Voice	Rates	Filter	FF Glide	Filter	None
Belltazaar	Filter	Samp Retrig	Attack	Add Voice	FF Glide	LFO -> Pan	None
Smok'in B3	Add Voice	Add Voice	Pitch Vc-2	None	LFO Rate	LFO -> Pitch	None
P5 Brass	Filter	Resonance	LFO -> Filt	Chor Amt	LFO -> Pitch	LFO -> Pitch	None
Piano Padiano	Filter	Release	Sub Voice	Add Voice	2nd Vc Glide	LFO -> Pan	None
Full on SG	Voice XSw	Filt Mute	Pitch	Chorus	Pitch 1-stp	LFO -> Pitch	LFO -> Pitch
Oasis	Filter	Resonance	Add Voice	Add Voice	FF -> Glide	Filter	None
And You & I	Filter	Resonance	Attack	Chorus	Glide	LFO -> Pitch	None
Power Clav	Filter	Resonance	Release	Chorus	Mom. Pitch	LFO -> Pitch	None
GalaxyClas Syn	Filter	Resonance	Release	LFO -> Pan	FF Filter Freq	LFO -> Pitch	None
AdderSong	Filter	Resonance	Release	Add Voice	Pitch (Oct)	LFO -> Pitch	None
String Ensemble	Filter	Resonance	Attack	Attack	Pitch (Oct)	Chorus	None
Magic Organ	Add Voice	Add Voice	Add Voice	Attack	A,B,C Vc Add	Filter	None
Xowlwn	Filt/SStart	Filter	Attack	Attack	LFO -> Pitch	LFO -> Pan	None
Classic ElPiano	Filter	Decay	Attack	Chorus	LFO -> Pan	LFO -> Rate	None
Groove Monkey	Filter	Samp Retrig	Filter Env	Chorus	Amp Off	LFO -> Pan	None
Angels Choir	Filter	Chor/Pan	Attack	Chorus	FF -> Pitch	None	None
FM Piano Pad	Xswitch	Filt Atk	Add Voice	Attack	LFO-Pitch	LFO -> Pitch	LFO -> Pitch
Bender	Filter	Samp Start	Pitch	Chorus	Pitch (4th)	LFO -> Pitch	LFO -> Pitch
Gothic Tower	Filter	Add Voice	Attack	Add Voice	Pitch (m3rd)	LFO -> Pitch	LFO -> Pitch

SOUNDSPRINT REAL-TIME CONTROLLERS

NAME	SLIDER A	SLIDER B	SLIDER C	SLIDER D	THUMBY	MOD WHL	PRESSURE
Mexating	Filter	Add Voice	Samp Start	LFO -> Pan	Mom Glide	None	None
Tron Strgs/Vox	Filter	Add Voice	Add Voice	Chorus	FF Release	LFO -> Pitch	None
Fretless	Filter	Vol Env	Add Voice	Chorus	Lag Pitch	None	LFO -> Pitch
Omega Synth	Filter	Sub Voice	Attack	Release	FF Glide (Oct)	LFO -> Pitch	LFO -> Pitch
Ny Guitar/Strg	2nd Voice	2nd Vc Filt	Attack	Chorus	Filt Freq/Res	LFO -> Pitch	None
PmpChp Groove	Filter	Samp Start	Env	Samp Retrigr	Amp Off	LFO -> Pan	None
Simple Beauty	Filter	Add Voice	Attack	Pitch	FF Filter Res	LFO -> Pitch	None
Clarinet	Filter	Add Voice	Attack	Filt -A	Pitch	LFO -> Pitch	LFO -> Pitch
Tight ElecPiano	Filter	Loop Start	Resonance	Chorus	Pitch/Chorus	None	None
Earth Moderne	Filter	Add Voice	Add Voice	Resonance	FF Glide	LFO -> Pitch	None
Glass Vox	Filter	Samp Start	Release	Chorus	Filter Mute	LFO -> Pitch	None
SawBigBass	Filter	Resonance	Attack	Chorus	FF Glide (Oct)	LFO -> Pitch	None
Ice Mirage	Filter	Sub. Voice	Attack	Pitch	FF Pitch (5th)	LFO -> Pitch	None
Dance Split	Filt/Chor	Resonance	Release	Pitch	FF Chorus	LFO -> Pitch	None
EuroBass	Filter	Resonance	Samp Start	Chorus	Lag Pitch	LFO -> Pitch	None
Kaleida	Filter	Sub Voice	Attack	LFO -> Pan	FF Glide	LFO -> Pan	None
Breathy Bonettes	Filter Vc-1	Add Voice	Filter Vc-2	Chorus	Vc-2 Pitch	Filter	LFO -> Pitch
Mister Mini	Filter	Vc-2 Pitch	Glide	Chorus	Pitch (m3rd)	LFO -> Pitch	None
Dream Pad	Filter	Attack	Release	Glide	Filt Res	LFO -> Pitch	LFO -> Pitch
Breathy Trumpet	Add Voice	Filt Mute	Glide	Chorus	Pitch	LFO->Pitc/Fil	LFO-> Pit/Filt
Base Case	Filter	Layer	Perc.	Layer	Pitch Bend	Resonance	Non
Electric Funk	Filt Mute	Samp Start	Attack	Chorus	Mom. Filter	LFO -> Pitch	LFO -> Pitch
Pad Sweep	Filter	Resonance	LFO-Filt	LFO -> Pan	Mom. Glide	LFO -> Pitch	None
Violin Performer	Add Voice	Samp Start	Xswitch	Chorus	Pitch	LFO -> Pitch	None
Pop Rock'in Kit	Add Vc/Fil	Xfade	Filter	Chorus	None	Samp Start	None
Bassoon	Filter	Add Voice	Attack	Filter V1	Fiter	LFO -> Pitch	LFO -> Pitch
Yum Lead	Filter	Resonance	Release	Decay	FF Pitch (Oct)	None	LFO -> Pitch
Serious Organ	Filter	Samp Start	Add Voice	Chorus	None	None	None

SOUNDSPRINT REAL-TIME CONTROLLERS

NAME	SLIDER A	SLIDER B	SLIDER C	SLIDER D	THUMBY	MOD WHL	PRESSURE
Memory Brass	Filter	Resonance	LFO -> Pan	Chrs Amt	Pitch	Thumb Pitch	LFO -Pitch
Sax	Filter	Resonance	Release	Chorus	Mom. SStart	LFO -> Pitch	None
Tron Flutes	Filter	Add Voice	Attack	Resonance	Pitch	LFO -> Pitch	None
Crystal Spectr.	Filter	Resonance	Samp Start	Chorus	FF->LFO->Pan	LFO -> Pitch	None
Combi Brass Sect	Filter	Resonance	Samp Start	Chorus	FF Glide	LFO -> Pitch	None
Acoustic Bass	Filter	Attack	Release	Chorus	Lag Pitch	LFO -> Pitch	None
Orynoko Choir	Filter	Attack	Release	LFO -> Pan	FF Glide	LFO -> Pitch	None
Slicer	Filter	Samp Start	Glide	Pitch	Pitch	Thumb Pitch	LFO -> Pitch
Section Strings	Filter	Resonance	Attack	Attack	Pitch (Oct)	Chorus	None
Acid	Filter	Resonance	LFO->Pitch	Glide	Filter	LFO -> Pitch	None
Plucker	Filter	Resonance	Release	LFO -> Pan	Pitch (1 Step)	LFO -> Pitch	None
English Horn	Filter	Add Voice	Attack	Vc-1 Filter	Fiter	LFO -> Pitch	LFO -> Pitch
Just Noises!	Filter	Resonance	Samp Start	Glide	Pitch (1 Step)	LFO Pan	None
Sinthy Trumpets	Filter	Resonance	Add Voice	Attack	AddPitch (Oct)	Add Vc Filter	LFO -> Pitch
FM Tine Piano	Filter	Attack	Filter Env	Chorus	Chorus	LFO -> Pitch	None
Endland Journey	Filter	Resonance	Vc-2 Pitch	Chorus	Vc-2 Pitch	Filter Freq	None
Pulse Mod Bass	Filter	Resonance	Filter Env	Chorus	Mom. Glide	LFO -> Pitch	None
French Horn	Filter	Add Voice	Attack	Chorus	Pitch (4th)	LFO -> Pitch	None
Piano	Filter	Decay	Attack	Chorus	FF Filter	LFO -> Amp	None
AutoChorister	Filter	LFO- Res	Atk/Rel	LFO Rate	FF Glide	Chorus	None
Cool Vibes	Filter	Add Voice	Attack	Chorus	Mom. Release	LFO -> Amp	None
Sax Quartet	Filter	Add Voice	Add Voice	Chorus	FF Attack	LFO -> Pitch	LFO -> Pitch
Cathedral Synth	Filter	LFO Rate	SStrt/Add V	Filter Vc-3	FF Filt Env	Add Voice	None
RT Mini II	Xfade	Filter	Resonance	Attack/Rel	Pitch (1 Step)	LFO -> Pitch	None
Hearts Of Space	Filter	Resonance	Filt Attack	Vol Attack	Mom. Glide	LFO -> Pitch	Filter
808 Machine Kit	Filter	Resonance	Samp Start	Glide	Samp Retrigr	LFO -> Pan	None
Cellonikal Whizz	Filter	Resonance	Amp Env	Chorus	Pitch	LFO -> Pitch	None
Rockin' Organ	Filter	Samp Start	Chorus	LFO -> Pan	X Fade	None	None
Live Bass	Add Voice	Add Voice	Filt Res	Chorus	Mom Vc Add	LFO -> Pitch	Pitch Bend

SOUNDSPRINT REAL-TIME CONTROLLERS

NAME	SLIDER A	SLIDER B	SLIDER C	SLIDER D	THUMBY	MOD WHL	PRESSURE
Jupiter Synth	Filter	Resonance	Filt Env Atk	Vol Env Rel	Glide	LFO -> Pitch	LFO -> Pitch
Muted Combo	Filter	Samp Start	Vel->SStart	Chorus	Lag Pitch	LFO -> Pitch	None
Harpichord	Filter	Resonance	S-Start	Chorus	Reverse	LFO -> Pitch	None
Green Haze	Filter	Samp Start	Glide	Pitch	Pitch 1/2Step	Thumb Pitch	LFO -> Pitch
Tales of Tuva	Filter	Filter Env	Attack	LFO Amt	Pitch 1 Step	LFO -> Pitch	None
FX/Ana Drums	Filter	Resonance	Release	Trigger	Pitch 1 Step	LFO -> Pan	None
Sizzpad	Filter	Amp Env	Filter Env	Vc-2 Filt Env	Pitch 1 Step	None	LFO -> Pitch
Pop Horn Punch	Add Voice	Pitch Down	Pitch Up	Attack	Pitch 1/2Step	LFO -> Pitch	None
Voice O Le'	Add Voice	Filter Mute	Release	Pitch	Mom. Glide	LFO -> Pitch	None
Q Bass	Filter	Decay	LFO->Pitch	Chorus	Lag Pitch	LFO -> Pitch	None
Pan Flutes	Filter	Samp Start	Attack	Chorus	Pitch 1/2Step	LFO -> Pitch	Pitch
Shamisen	Filter	Glide	Release	Chorus	Pitch 1/2Step	LFO -> Pitch	LFO -> Pitch
Coming Along	Add Voice	Resonance	Filter	Chorus	LFO -> Pan	LFO -> Pitch	None
Basic Kit	Filter	Resonance	S-Start	Chorus	Pitch 1Step	LFO -> Pan	None
E-Saw Stack	Filter	Resonance	Attack	Release	Mom Pitch	LFO -> Pitch	LFO -> Pitch
Crazy Tenors	Filter	Add Voice	Release	Chorus	Mom Filter	Filter	LFO -> Pitch
Bell Organ	Filter	Resonance	S-Start	Filter Env	FF Pitchoct	LFO -> Pitch	None
H 2 O	Filter	Resonance	Attack	Add Voice	FF Glide	LFO -> Pitch	None
Hot & Nasty	Filter	Samp Start	Pitch	LFO->Retrig	Add Voice	Add Voice	LFO -> Pitch
Vocalis Blender	Filter	Resonance	Atk/Rel	Chorus	FF Glide	LFO -> Pitch	None
Taiko Drum	Add Voice	Filter	Release	Chorus	Pitch	LFO -> Pitch	None
Halo of Stars	Filter	S-Start	Attack	Pitch->LFO	Glide	Qntz LFO	None

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