

## The Kurzweil K2000 & Galaxy

### Intro:

The Kurzweil K2000 is arguably the most powerful synthesizer in the OU MIDI Lab. It is definitely the most flexible and programmable. But to realize this power and flexibility you need to master the steps involved in sampling and creating K2000 programs with useful keymaps. In its simplest form — doing everything with the K2000's operating system (and using the tiny LCD screen as your only visual reference), the process still involves several steps which are well-documented in the sampling addendum to the K2000 manual (Chapter Two). If you knew nothing else about processing digital audio and the only piece of equipment you had available was the K2000, you can still get the job done and unleash the power of the K2000.

The process we will be covering in this series of instructions, however, builds on your previous knowledge of digital audio and MIDI editor/librarian programs from earlier classes. It couples the tremendous processing speed, flexibility, and familiar “friendly” graphic interface of a powerful computer with the native strengths of the K2000. While the benefits to this system are significant, it does involve a few more steps. It's not that any of the steps are difficult — this isn't rocket science! It's just that there are so many little steps and they need to be accomplished properly and in the right order.

### Phase One: Getting Ready

You will need a DOS-formatted disk which can be read by both the K2000 and the Macintosh computer. A floppy disk will work, but it will seriously limit the number and/or length of samples. A DOS-formatted “zip” disk is recommended. If you already have a spare Mac-formatted zip disk, you can reformat it as a DOS disk if you have access to a PC with a zip attached. You can also reformat it on one of the MIDI Lab Macs, but it requires using Iomega's *Zip Tools* software.

Steps for Converting a Mac-formatted zip disk into a DOS-formatted one in the MIDI Lab.

1. Place your zip disk in the zip drive attached to the Macintosh computer on Workstation #1.
2. Launch *Iomega Tools* (located under the Apple Menu) and verify that the disk you want to erase appears in window
3. Click on “Macintosh” ... then select DOS format from the pop-up menu.
4. Select one of the two erase options by clicking on its button — today we'll choose “Short Erase.”
5. Next, select “Erase” from the pop-up warning window.

When *Iomega Tools* is finished reformatting, you will have a disk that both the Mac and the K2000 can read. You can use it to transfer files between the two devices.

### Phase Two: Creating “transferable” sample files.

Create a few short AIFF files on the Macintosh computer. There are many ways to do it; we've covered several in some earlier classes. Recommended methods include:

1. Importing a few seconds of audio from a DAT using *Deck II*, *Pro Tools*, or *Sound Designer II*.
2. Importing a few seconds of audio from a CD using *Deck II*, *MoviePlayer*, or *SoundHack*.
3. Record audio directly into the computer through the mixer using a microphone with *Deck II*, *Pro Tools*, or *Sound Designer II*. (Check with your lab assistant to borrow mic and cable, if necessary.)

NOTE: *Deck II*, *Pro Tools*, and *Sound Designer*, by default, will write Sound Designer II files, but they can all “mix” or “bounce” to AIFF. Other Applications that can convert files several different file formats to AIFF include: *SoundEffects*, *SoundHack*, and (on station #1) *Alchemy*. Also be aware that DOS limits filenames to 8 letters.


To create our demo samples, we recorded a short phrase and used *Alchemy* to cut the phrase into smaller bits of audio.

**Phase Three:** Steps for Transferring Files from the Macintosh to the K2000.

1. Drag your AIFF samples to your DOS-formatted zip disk.
2. Drag your zip disk icon to the trash to eject it from the Mac.
3. Insert your zip disk into the drive attached to the K2000.
4. Press the “Disk” button on the K2000.
5. Turn the large data wheel until the LCD screen indicates you’ve reached SCSI address #5  
You will see that the K2000 has “recognized” the attached zip drive at that address.
6. Press the programmable button under “Load” (Note: you may need to press either of the “more” buttons to scroll through the options until you see “Load.”)
7. Turn the large data wheel, if necessary, to highlight in the LCD screen the name (or at least the first 8 letters of the name) of one of the samples you created.
8. To load one file, push the “OK” button. To load several files, push the “Select” button, then scroll to another sample name and push “Select” again. Repeat this step until all the files you want to load have an “x” beside them. THEN push the “OK” button.
9. The next dialog screen gives you several choices of banks — you can dial up any bank from 200 and 800 to store your stuff. The default “200-299” should work fine for your project. The other decision you need to make to actually initiate the loading process is to inform the K2000 “how” you want to load the material. You should (eventually) read up on these choices in the manual. For now, since you are just starting out, there will likely be only two choices and it shouldn’t make much difference whether you select “Append” or “Fill”— UNLESS.... there happen to be several more choices, indicating that someone else has saved something in the bank you are planning to use. If this happens, you should select “Overwrt” to erase all the other stuff in the bank except your own stuff. This will eliminate a LOT of potential for confusion. However, do NOT use the “Overwrt” option if you are ADDING something to an existing bank of yours which is already in the K2000. Use one of the other options...such as “Append.”
10. You can confirm that your samples are now stored in the K2000 by pressing the “Master” button on the K2000, followed by the programmable button under the word “Sample” in the LCD screen. You can scroll through all your samples using the large data wheel. (You may first need to push the arrow keys to highlight “samples.”)


**Phase Four:** Using *Galaxy* to set-up the K2000 to use your samples effectively.

**Steps for creating your own K2000 Galaxy Bundle** (a “bundle” is simply a collection of related files)


1. Launch *Galaxy* software (under the Apple Menu)
2. Under the “File” menu select “New Bundle...” and select K2000 from the list of options.
3. Save your new bundle to your own disk — (use -s).

**Steps for updating your K2000 Galaxy Bundle**


(This lets *Galaxy* know what new samples you’ve loaded into the K2000.)

1. Double-click on the words “Sample Headers” to view what’s in that part of your bundle, then scroll out to the bank number you used when you loaded your samples (let’s assume we’re using the 200 – 299 bank).
2. Click anywhere in that bank, then under the “Load/Send” menu select “Get 200’s Bank.”  
NOTE: A series of flashing lights on your MIDI interface will indicate that MIDI data is transferring between the K2000 and *Galaxy* and soon you will see the names of all the samples you loaded appear in the Keymaps window. Once the names appear in your *Galaxy* bank, you can close that window so you are again looking at your bundle window. NOTE: You are not sending the samples themselves to *Galaxy*, only the sample names.
3. It’s a good idea to “Save” your bundle again, so that you won’t have to redo this procedure if you crash or have to “bail out” of a failed process down the line— (use -s).
4. You should also push the eject button on the K2000 zip drive to spit out our zip disk.


## Steps for Creating and Naming Your Own K2000 Programs

1. Double-click on the word “Programs” to view what’s in that part of your bundle, then scroll out to the bank number you used when you loaded your samples (let’s assume we’re using the 200 – 299 bank).
2. Click on any blank program (we’ll use 200), then press the “Edit” button in the right hand corner of the window.
3. Under the Edit Menu, select “Edit Program Name” to name your new program.
4. Again...it’s a good idea to save your file again at this time — (use - s).

## Steps for Creating Your First Keymap

1. Click in the layer 1 keymap box. (There will probably be a default piano keymap already in place)
2. Type < 200 > into the keymap box followed by the <ENTER> key.
3. Then under the the Edit Menu, select “Edit Keymap” and a new window will pop up.
4. It’s a good idea to immediately name your keymap to prevent confusion (and possible crashes), SO... under the Edit Menu again, select “Name Keymap”
5. Again...it’s a good idea to save your file at this time — (use - s).

## Steps for Editing Your First Keymap — i.e. Adding a Sample

1. Click in the “Sample” box (bottom center of keymap screen)
2. Type < 200 > into the Sample box — the name of your first sample should appear.
3. Click in the Hi Key box and <option-click> your mouse on a note on the screen keyboard to limit the effective range of the sample (so you can add more samples to your keymap).
4. Often you will want to transpose the sample so that the original sample will sound somewhere within the range established by the Lo Key and Hi Key boxes. Start by shifting the original by 1, 2, or 3 octaves: Type “12” ...or... “24” ...or... “36” into the Course Tune box. We’ll use “36”
5. Again...it’s a good idea to save your file at this time — (use - s).


## Steps for Adding More Samples to Your Keymap

1. Click on the keyboard above your Hi Key note. The sample name will change (to “not found”) and the Selected Range box will indicate a new note range, too.

You can also click on the Selected Range box to get a pop-up window that allows you to select a new range to which you can attach a sample.

2. Type < 201 > into the Sample box — the name of your second sample should appear.

**Steps 3-5 are basically the same as above...**

3. Click in the Hi Key box and <option-click> your mouse on a note on the screen keyboard to limit the effective range of the sample (so you can add even more samples to your keymap).
4. Again you may want to transpose this sample, too, so that the original will sound somewhere within the range established by the Lo Key and Hi Key boxes.  
SO... Type “12” ...or... “24” ...or... “36” into the Course Tune box. We’ll use “24” this time.
5. Again...it’s a good idea to save your file at this time — (use - s).

You can repeat the previous steps until all the samples you want to use are mapped to the keyboard. When you are through editing your keymap, simply close the keymap window (and of course, save your changes).

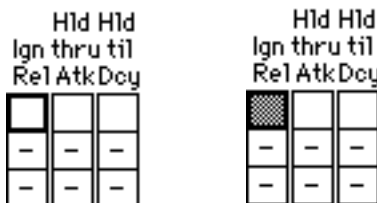
**Phase Five:** Editing and Modifying your K2000 Program.

Since in addition to being a powerful sampler, the K2000 is also a powerful synthesizer, the opportunities for further modification of your program are “vast” — *too* vast to cover at this time. You are encouraged to check out the K2000 manual and/or explore various features of the instrument using Galaxy or the K2000 operating system. For now we’ll just hit a few of the highlights.

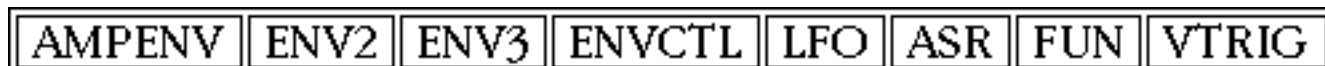
Among the first things you are likely to want to explore are the effects settings. There are over 40 factory presets to choose from (all editable) and room to store 100’s more of your own. You can also easily alter the “Wet/Dry Mix” by typing in a new % or bypass the effects entirely

EFFECT		Bypass	1 Sweet Hall	
If you don't hear changes: Edit Master/MIDI, and change FXMode				
Control	→	Input	Initial	Depth
OFF	▶	Wet/Dry Mix	45%	0
OFF	▶	None	▶ 0	0
OFF	▶	None	▶ 0	0

Another simple but useful modification involves the altering the “release” characteristics. By clicking in the appropriate box, your program will “ignore” note-off messages from the K2000 keyboard — meaning that the *entire* sample attached to the note will be played no matter how short the note. This is especially useful for (among other things) ringing percussion sounds like cymbals, bells, gongs, etc., or for triggering many kinds of sound effects or dialog.

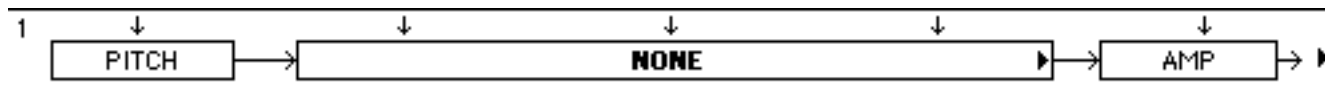


The real high-powered synthesis engine on the K2000 has so far been hidden from view. To see what other possibilities exist, go to the Layer Menu and select “Edit Layer #1” (or type **1**). At the bottom of the screen there are 8 buttons:

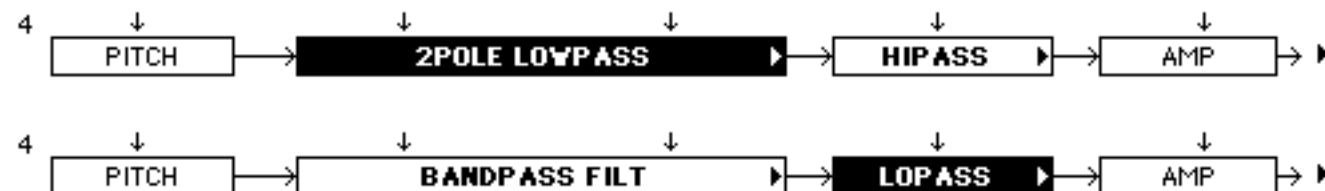


These buttons each cause another editable window to pop up on the screen, allowing you to control such things as the Amplitude Envelope, various other envelopes, Low Frequency Oscillator, etc.

Just below the middle of the layer window is a signal routing window which offers you an astounding number of options for modifying and controlling your program.



There are 31 separate routing algorithms. In each algorithm you have a number of modules that can be interchanged with one another. For example...



Above this routing diagram are the actual settings and controls for the modules in the routing diagram.

PITCH			F1 FREQ			F2 RES			F3 FREQ			F4 AMP		
Semi	Cent	Hz	Coarse	Cents	Pad	Coarse			Coarse	Cents	Pad	Adjust	Pad	
0st	0	0.00	C4	0	0dB	0.0dB			C4	0	0dB	6dB	0dB	
Ct/Key	VelTrk		Ct/Key	VelTrk		dB/Key	VelTrk		Ct/Key	VelTrk		dB/Key	VelTrk	
0	Oct		0	Oct		0.00	0.0dB		0	Oct		0.00	20dB	
Src 1	OFF	▶	Src 1	OFF	▶	Src 1	OFF	▶	Src 1	OFF	▶	Src 1	OFF	▶
Depth	Oct		Depth	Oct		Depth	0.0dB		Depth	Oct		Depth	0dB	
Src 2	OFF	▶	Src 2	OFF	▶	Src 2	OFF	▶	Src 2	OFF	▶	Src 2	OFF	▶
Depth	MWheel	▶	Depth	MWheel	▶	Depth	MWheel	▶	Depth	MWheel	▶	Depth	MWheel	▶
Min	Oct		Min	Oct		Min	0.0dB		Min	Oct		Min	0dB	
Max	Oct		Max	Oct		Max	0.0dB		Max	Oct		Max	0dB	

These boxes allow you to modify and control each of the modules in a myriad of ways.

You may have noticed, looking at the main program window that underneath your newly created keymap there were two more blank boxes.

## LAYERS

	Mute	Keymap	(
1		200 MyFirstKeymap ▶	
2		-	
3		-	

The K2000 allows you to pile on up to three separate layers...in other words each key could trigger as many and three different samples. Or you could set it up so that different methods of performance, or with the flick of a controller, you could easily switch between up to three different individual samples.

To add a new layer, simply go to the Layer Menu and select “New Layer...” — at which point you would repeat the steps above for creating and editing a new keymap.

### Phase Six: Saving your Kurzweil bank using the K2000 Zip!

Saving your entire bank using the K2000 zip drive will make it easier to add to your work later, or to use your K2000 work in a MIDI sequence. You can keep all your program, keymaps, etc. AND samples together in one easy-to-load file. (Remember Galaxy will ONLY save the names of your samples in the sample header bank — NOT the samples themselves.)

1. Reinsert your zip disk into the K2000 zip drive. (You did remember to eject it before didn't you?)
2. Push the Disk button on the K2000.
3. Push the programmable button under the word “Save.” (Note: You may need to turn the large data wheel until the LCD screen indicates you've reached SCSI address #5 and/or press either of the “more” buttons to scroll through the options until you see “Load.”)
4. If necessary turn the large data wheel until the LCD screen indicates you've selected the bank which has your newly created samples, programs, keymaps, etc. Then push the programmable button under the word “OK”
5. Next use the large data wheel and the arrow keys to enter an 8-character name for your file. Then push the programmable button under the word “OK.”

**NOTE:** This file will not be readable by the Macintosh, so you won't be able to use the computer to reedit the actual samples in the K2000 bank. For that you would have to go back to the original AIFF version (so don't delete them just yet!). However, this Kurzweil file does have the advantage of allowing you to quickly and easily set up the K2000 by simply loading one single file. If you need help loading your K2000 file next time, just refer to the instructions on loading your samples, but look for your K2000 file instead of the individual samples.