GUIDED TOURS

GUIDED TOURS

GUIDED TOUR #1:
MEET THE EMAX II

Welcome to the Guided Tours! If you have just met Emax II for the first time, follow these tours until you complete the Guided Tours section. This will get you "up and running" on the Emax II in the fastest possible time. Also, you'll learn some tricks in this section that will come in handy as you play some more with the Emax II.

This tour covers how to...

- Get ready for the tours
- Load a bank from the hard disk
- Select different presets within the bank
- Load a floppy disk
- Tune the Emax II to other instruments
- Transpose the keyboard

...and also discusses Emax II's "modular" design philosophy.

HOW TO USE THE GUIDED TOURS

Please follow all steps exactly as given. For example, if we ask you to load the Arco Strings disk, even if you would really rather hear something else load in the strings—several sections of the tour will refer to specific sounds on that disk.

Occasionally during a tour you will be told to refer to something like **PRESET DEFINITION 4**, **SAMPLE 2**, or some other name. This means that you will find more information in the specified section of the manual's reference section. For example, **PRESET DEFINITION 4** indicates that the information is in the preset definition chapter under section 4; **SAMPLE 2** indicates that the information is in the sample chapter under section 2.

GETTING READY FOR THE GUIDED TOURS

Have you sent in your warranty card yet? Listen, we're not kidding! Send it in!!
Okay. Now you can proceed.

Set up the Emax II as described in the Introduction under **Instant Gratification**. After completing step 5, return to this section.

LOADING FLOPPY DISKS

So far, so good...now it's time to move on.

1. Press the button labeled **DRIVE SELECT** and use the data slider to select, SCSI 0: Floppy.

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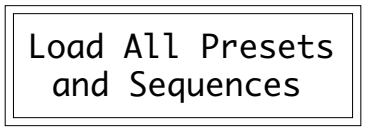
2. Select the Arco Strings disk (4 M Emax IIs- Piano & Strings) , and insert it in the drive.

3. Press the button labeled **LOAD BANK**. The display will say:



4. Press **ENTER** to load the floppy disk. Remember that loading in a new bank will erase the currently loaded bank, so always think twice before pressing Enter to load the bank.

5. Play the sounds from the newly-loaded disk, then move on to the next section.

LOADING A BANK FROM THE HARD DISK

If you are using an external hard disk, make sure that it is correctly connected (Connection Instructions) and formatted (**MASTER 5**) for the Emax II.

1. Press the button labeled **DRIVE SELECT** and use the data slider to locate the hard disk. Hard disk drives may use SCSI ID numbers 1-7.

2. Press the **LOAD BANK** button; the display says: Load Bank, and shows the name and number of the current bank. Use the data slider to scroll through the available hard disk banks. Stop when you find the bank labeled Arco Strings (4 M Emax IIs- Piano & Strings), then press **ENTER**.

■ An alternate method of loading a hard disk bank is to press **LOAD BANK**, then simply type in the number of the bank using the numeric keypad.

The display will show the current preset number and name (the cursor will flash underneath the first digit). Start playing the keyboard and adjust the Volume slider for a comfortable listening level.

SELECTING DIFFERENT PRESETS

1. The bank you just loaded contains several presets. To call up a new current preset, use the keypad underneath the display. Note that "leading zeroes" must be entered for preset numbers (i.e. type 0 and 0, not just 0, to call up preset 00). Now type 0 then 0 on the keypad; these will replace the numbers indicated by the flashing cursor.

2. The display says P00. Play the keyboard... hey, check out those sounds!

3. Now call up more presets (refer to **GENERAL INSTRUCTIONS 1**, "Selecting the Current Preset,"). If you enter a number for which there is no preset, the display will list the entered preset number and say "Empty Preset"; try again.

4. To scroll through the presets available in the bank, move the data slider. The various preset names will scroll on the lower display line. When this line shows the desired preset, press **ENTER** to make that the current preset. This is an alternative preset selection method.

5. Increment or decrement the current preset (as displayed in the top line) with the **CURSOR** buttons. This method is useful for live performance—arrange your presets in the desired order, and step through them as needed.

When you're ready to check out some more sounds, proceed.

THE EMAX II "MODULAR" SYSTEM

The left side of the Emax II front panel includes the volume, data slider, **ON/YES** and **OFF/NO** (Increment and Decrement) buttons, the Liquid Crystal Display, two cursor control buttons, and a numeric keypad. Once you select a module and function, this area is where you will specify parameters.

The *modules* start towards the right of the keypad. Each module will be discussed in detail later on; the following is intended mostly as background information. Each module affects a certain area of Emax II's operation.

■ **Function Buttons** These are the buttons that get you going. Load Bank and Enter load disk data into the Emax II, Drive Select selects which disk drive will be used, and Transpose, as you probably suspect, transposes the keyboard.

■ **Sequencer** This module is a 16-track solid state control data recorder. While optimized for downloading MIDI data from other sequencers, it has some very useful features such as Mono operation when driven via MIDI, ability to re-assign presets, track bounce, and so on. It consists of the Sequencer Setup module (which sets up a sequence for recording) and the Sequencer Manage module (which lets you load, erase, copy, and do other sequence "housekeeping"). All sequencer functions are controlled by the left-hand column of buttons.

■ **Master** This module contains functions that affect the overall keyboard or bank (memory remaining, keyboard velocity curve, master tune, erase all and format disk). This also contains the Special commands, which are explained in the Reference section.

■ **Sample** This "recording studio" module records sounds from the outside world into the bank. Features include adjustable preamp gain, variable threshold setting, and adjustable sample rate and length.

■ **Digital Processing** With this powerful module, you may edit a voice's length, loop (i.e. infinitely sustain) any portion of the voice (with several different looping options), have Emax II automatically find the best loop points ("Autoloop"), splice two different voices together, mix two voices, amplify or attentuate the voice, and more.

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■ **Preset Management** This module handles the preset "housekeeping"—load presets from disk, save presets to disk, create, copy, rename, or erase presets, and check on how much memory space a preset uses up.

■ **Preset Definition** This module lets you change parameters within a given preset. Set up the arpeggiator or MIDI options, assign the pitch bend and modulation wheels to control various parameters in real time, copy or erase voices, edit the voice assignment, choose Stereo Voice mode (more on this later), and set some keyboard parameters (dynamics and crossfade between overlapping voices).

■ **Dynamic Processing** This module sets parameters that should be familiar to those who have worked with analog synthesizers. Set the dynamics by adjusting the VCA envelope, control timbre using the VCF (filter) and its associated AHDSR envelope generator, modulate the signal with the LFO, tie the keyboard velocity to various parameters, set the tuning, attenuation, and delay for each voice, and more.

Remember—if you want to save modified voices or presets, save the altered bank to disk. Otherwise, any changes will be lost as soon as power to the Emax II is interrupted.

ACTIVATING A MODULE, SELECTING FUNCTIONS, DE-ACTIVATING A MODULE

Here's important background information on how to access the various module functions. As the tours progress, we'll relate this information to practical examples.

■ **Activating** Each module has an associated switch. Most of these are found in the right-most series of blue buttons, however, the Sequencer Setup and Sequencer Manage module buttons are found in the green column of Sequencer-related buttons. Pushing the associated switch "activates" the module, as indicated by an LED next to the switch lighting up. Upon activation, the display's top line will show the Module Identifier (such as "Master," "Preset Management," etc.). In some cases, upon activation the display will ask you to specify the current voice (as described in the next Guided Tour). Once the module is active, it's time to start...

■ *Any time you make a mistake, get confused, or get lost in the module, simply de-activate the module. Then, re-activate and try again.*

■ **Selecting functions** Each module includes a printed list of functions on the front panel; these functions are available when the module is active. Selecting a module function requires keying in its associated number with the keypad. We will shortly give an example of how this all works.

■ **De-activating** When you're finished with the module, either press its button again to de-activate, or simply activate a new module.

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TUNING THE EMAX II TO OTHER INSTRUMENTS

Refer to **MASTER 1**. This function demonstrates how Emax II uses the data slider to adjust a parameter (in this case, overall tuning).

TRANSPOSING THE KEYBOARD

Refer to **FUNCTION**, **TRANSPOSE** and follow the instructions.

GUIDED TOUR #2:

SPECIFYING THE "CURRENT VOICE"

BACKGROUND

Emax II has two modules dedicated exclusively to processing voices within a preset: **DIGITAL PROCESSING** and **DYNAMIC PROCESSING**. *Each voice* stored in a bank can be processed independently (or groups of voices may be processed simultaneously if desired). Therefore, we need a way to specify the *Current Voice*, which is the individual voice (or collection of individual voices) to be processed.

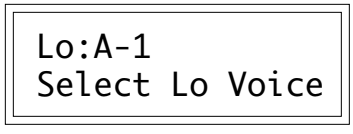
The concept of the *Current Voice* is important. To process one voice out of a preset, assign the current voice to be that one voice, and process it. To process more than one voice at a time, specify a group of voices to be the current voice and process all voices simultaneously.

This section covers how to identify which keyboard keys belong to which voice, and how to specify which voices or voices make up the current voice. For a short form version of this tour, see **DYNAMIC PROCESSING 00** and **DIGITAL PROCESSING 0**.

Begin this tour by loading Arco Strings (Piano & Strings) into the bank. Also, read the section **FUNCTION, ENTER DATA** as the **ENTER** button will be used frequently during this and most subsequent tours.

IDENTIFYING WHICH KEYBOARD KEYS BELONG TO WHICH VOICE

1. Once the Arco Strings (Piano & Strings) bank is loaded, the display should show 00 as the current preset. Select preset #10 - Demo Strings, then activate the Dynamic Processing module. Its LED will light after a second. If a current voice has not been previously selected (it shouldn't have if you just loaded in the disk), the display will say:



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If this is the case, move on to step 2. If a current voice has been previously assigned, the display's top line will give the module identifier. If this is the case, before proceeding to step 2 initiate the **CHANGE CURRENT VOICE** function by keying in **00.**

Note: that if the preset contains primary and secondary voices, the display will ask whether you want to process the primary, secondary, or both voices (**GENERAL INSTRUCTIONS 2**). With this preset, however, there are only primary voices. Emax II is a smart little critter, so it won't ask you to select between primary and secondary voices unless both types of voices are present.

2. Play the keyboard, starting at the lowest note. The upper display line will show the note you're playing, while the lower display line will show the voice number and its original pitch (in this case, 01 and F#0). The original pitch is the pitch of the sample itself. See **GENERAL INSTRUCTIONS 3** for details on the keyboard numbering protocol.

■ *The data slider may also be used to quickly find all the voices assigned to the keyboard.*

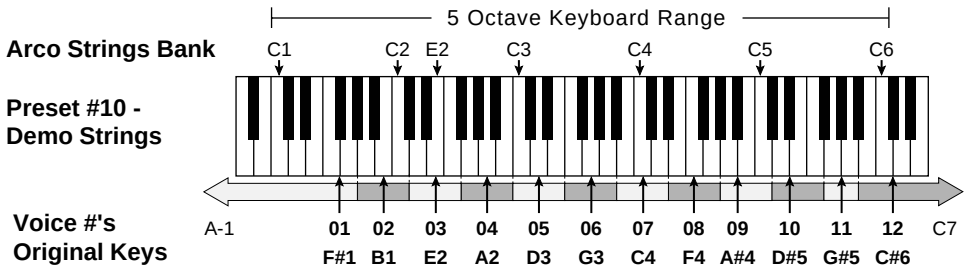
```
Lo:A-1
Pri:01 Orig:F#0
```

This lower display line remains as is until you play the first A. From this, we can conclude that voice 01's original pitch is F#0, and that it was transposed to cover the range from A-1 to G#0.

If there were both primary and secondary voices present, the display might look something like this:

```
Lo:A-1
P:01 F#0 S:05 F0
```

Play ascending keys, one at a time, over the full range of the keyboard. The display will give the voice number and the original pitch. Take a minute or two and note where the various voices begin and end, and which voices are at which locations on the keyboard. They should be as follows, with the original keys indicated by the numbered arrows:



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SPECIFYING THE DYNAMIC PROCESSING MODULE CURRENT VOICE

Now that we know how many voices there are in the preset, and the range covered by each voice, let's specify a range of voices to be altered by the Dynamic Processing module, starting with the lowest voice. This will become the lowest part of the current voice.

1. Press a key in the lowest voice of the range you want to process. For this exercise, press E2. When the upper display line confirms your choice, press **ENTER**. Since E2 is located within voice 03, that voice becomes the lowest voice of the current voice. Note that you could have pressed any key within voice 03 to specify that voice.

2. The display now shows the highest note of the voice in which E2 resides. Don't press **ENTER** yet—but if you did, this highest note would set the upper limit of the current voice. Instead, let's make the current voice cover a somewhat wider range. Press C4 (the display will show this as the new high note) and press **ENTER**. As with selecting the lowest voice, selecting any key within the highest voice makes that voice the upper range of the current voice. Thus, the current voice now extends from V03 to V07, and covers the range from D2 to D4.

3. You will now see the module identifier, which means you're ready to start modifying the sounds in the bank with the Dynamic Processing module, the subject of the next tour.

4. The assigned current voice will remain as is until you either change the current voice assignment, change presets, or load another bank. If you switch between modules, the current voice remains as assigned (unless you select the Digital Processing module, which will be a subject of a later tour).

5. Before proceeding, look over **DYNAMIC PROCESSING 00** to help reinforce what you've learned. Now that you know what a current voice is and how to specify it, we've reached the end of this tour (although you may need to come back from time to time to refresh your memory). In the next tour, we'll see how to modify voices with the Dynamic Processing section.

GUIDED TOUR #3:
DYNAMIC PROCESSING OF A VOICE

BACKGROUND

The Dynamic Processing module consists of several sound processing functions. Let's start with the Filter and VCA sections, as they are among the most important.

Make sure you have loaded in the Arco Strings (Piano & Strings) bank and selected the current voice as specified in Guided Tour #2 before proceeding. The display should show the Dynamic Processing module identifier. If not, repeat Guided Tour #2.

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WORKING WITH THE FILTER

You could activate the Filter Setup function directly by keying in 13. However, let's investigate another way to select the Filter function. Move the data slider to catalog the various Dynamic Processing functions. When the display shows function 13, **Filter Setup**, press **ENTER**.

CHANGING FILTER CUTOFF FREQUENCY

1. Refer to **DYNAMIC PROCESSING 13**. The display should look like the one in Step 1 of **DYNAMIC PROCESSING 13**.

2. Play with the cursor buttons (the left and right arrow buttons directly below the display). Note how you can move the cursor under the various parameters to be adjusted. For now, move the cursor under Fc.

3. Vary the data slider. Note how the numbers under Fc change. Lower numbers mean a lower filter cutoff frequency (less high frequencies). Higher numbers mean a higher filter cutoff frequency (more high frequencies). Observe how only the notes within the current voice are affected by the slider setting.

Note: You must re-trigger a note to hear any changes. Holding down a note and playing the slider will not change the sound; you must play a note after changing the slider to hear the results of changing the slider. This is true when making any changes to the sound, not just while you're in the Filter function or the Dynamic Processing module.

By the way, now might be a good time to mention that although we are changing the sounds in the bank, the sounds on the disk remain unchanged. This is because we haven't saved the bank to disk. Thus, you can fool around with the bank sounds as much as you want without having to worry about altering the original sounds on the disk.

CHANGING FILTER Q

1. Move the cursor under Q on the display. Vary the slider to change the sharpness of the sound; higher numbers give a sharper sound. Again, this affects only the range of notes covered by the current voice. Leave the Q at about 90 and proceed.

2. Move the cursor back to Fc and vary the data slider. Note how this produces a sort of wa-wa effect (remember, you have to re-trigger the key to hear the results of changing the Q).

3. Now set Fc and Q to about 50. The range of notes covered by the current voice should sound muted.

CHANGING THE FILTER CUTOFF ENVELOPE

1. Let's investigate the effects of envelope control over the filtered sound. Move the cursor under Env and use the slider to set a value of +40. This allows the envelope to control the filter cutoff frequency. (See **DYNAMIC PROCESSING 14**.)

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2. Now we need to change over to **DYNAMIC PROCESSING 14**. Press **ENTER** to exit from the current function (see **GENERAL INSTRUCTIONS 3**), and the display will show the module identifier.

3. Key in 14 to select the filter envelope parameters.

4. Move the cursor under A and vary the slider. With larger values, it will take more attack time for the filter frequency to go from lowest to highest cutoff frequency. Refer to **DYNAMIC PROCESSING 14**, vary the various envelope parameters, and observe the effect these changes have on the sound.

5. Now let's check out inverted envelopes. Set the envelope parameters as follows:

```
F: A  H  D  S  R
   01 01 07 01 01
```

... and play and hold a chord. This is a non-inverting envelope in the sense that the envelope increases the filter cutoff frequency above the initial cutoff. To select an inverting envelope, where the cutoff decreases below the initial cutoff, exit Function 14 by pressing **ENTER** (this puts you back at the module identifier), then key in 13.

6. We're back at the familiar Filter Setup screen. Move the cursor under Env and select -40 to invert the envelope. Note that the envelope effect is not all that noticeable when you play a chord. This is because the envelope forces the cutoff frequency in a negative direction, and since the cutoff frequency is already fairly low, it can't go that much lower.

7. Now move the cursor under Fc and increase the cutoff frequency to around 90 or 100. The effect will be far more noticeable since there will be more range available for the negative-going envelope excursion.

8. If you feel like experimenting, play with the Trk control to affect the way the filter frequency tracks the keyboard pitch (see **DYNAMIC PROCESSING 13**).

9. Before proceeding with the Tour, set Fc=100, Q=00, Env=+00, and Trk=1.00. Set the envelope to A=01, H=01, D=01, S=32, and R=05 (**DYNAMIC PROCESSING 14**). After entering these values, press **ENTER** to return to the module identifier.

FUN WITH VCAS

1. In preparation for the following experiments, let's change the current voice to include the entire keyboard. Enter 00, then press Enter twice. You have now selected the entire keyboard.

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2. Now key in 12 to select the VCA function. Referring to **DYNAMIC PROCESSING 12**, move the cursor under the various envelope parameters and see how different settings affect the sound.

3. Before moving on, make sure you have a sound that is fairly sustained with little or no envelope attack time.

■ *Pressing the **Enter** button twice in succession will also select all voices.*

OTHER DYNAMIC PROCESSING OPTIONS

1. Key in 11, refer to **DYNAMIC PROCESSING 11**, and note how the controls affect the sound.

2. Let's add some LFO effects. Key in 16 and position the cursor under each display option. Vary the data slider and observe how this affects the sound. Note that adding LFO to Fc might not sound all that noticeable; if you want a more obvious effect, bounce back to function 13 and set Fc to about 50 and Q to about 50. This should make the LFO's effect more noticeable.

3. If the LFO settings aren't to your liking, then key in 15 to change the LFO rate, delay and variation (as explained in **DYNAMIC PROCESSING 15**).

UNDERSTANDING VELOCITY

1. By now you might have a pretty messy sound due to all those exercises. Let's start with a clean slate. Press function button **LOAD BANK** and then **ENTER** to re-load the disk. Select preset 10 as the current preset. Press the **DYNAMIC PROCESSING** button.

2. Let's make the entire keyboard the current voice. Press the **DYNAMIC PROCESSING** button again, which selects the entire keyboard.

3. Key in 17, and read over **DYNAMIC PROCESSING 17**. The velocity to level setting should be 06; move the slider to select different values, and note the effects. Emax II plays softer as you play softer. In other words, Emax II equates harder play with the nominal volume setting and goes down from there as you play softer.

4. Move the cursor under the other available parameters and vary the slider. Notice that the filter cutoff frequency lowers as you play softer . The amount of downward change is dependent on the value in the display.

Filter Q is affected differently than level or filter cutoff. It raises from the initial setting as you play harder Also, note that velocity can be set to affect Q inversely—in other words, if the filter is set to a high Q setting, playing harder on the keyboard will lower the Q.

5. After you've had enough of function 17, key in 18. Here the velocity affects the VCA and filter envelope attacks, as well as panning. Refer to **DYNAMIC PROCESSING 18** as

you experiment with different settings. Remember that the velocity-to-envelope attack setting interacts with the initial envelope attack settings; if you don't take our word for it, then by all means call up the envelope attack parameters for the filter and VCA and see how different values interact with different velocity values.

MORE DYNAMIC PROCESSING...

Read over **DYNAMIC PROCESSING** sections 19, 20, and 21. If any of these interest you, use the knowledge you've gained in this tour to try out these functions on various presets.

GUIDED TOUR #4:
REALTIME CONTROL PROGRAMMING

BACKGROUND

Ever wanted to add vibrato to a grand piano? Or bend its pitch? The Realtime Control module can do this, and lots more. Begin this Tour by re-loading Arco Strings (Piano & Strings), then select Preset 10 (Demo Strings).

PITCH-BENDING

First, let's check out pitch-bending. Play middle C and rotate the pitch bend wheel. Hmm...no pitch bend. Now play A5, and there will be pitch bend. Check further, and you'll see that pitch- bending affects only the range from A#3 to C7. This is because pitch bend can be enabled for any voice or voices within a preset. In this case, pitch bend was only enabled for the voices that span from A#3 to C7 (voices 07-12).

Let's have pitch bend affect the entire keyboard. Key in **DYNAMIC PROCESSING 22** and select the entire keyboard as the current voice (surely you know how to do this by now, so we'll spare you the details). Move the cursor, and you'll see a list of modulation destinations. Pitch will be set to **ON**. Press **YES**, and like magic, you can now pitch bend the entire current voice.

The important point of all this is that if modulation does not seem to affect a voice, *make sure that modulation is enabled*. Now read **DYNAMIC PROCESSING 22** for more information. Want to change the pitch bend range? De-activate the Dynamic Processing module, activate Preset Definition, and refer to **PRESET DEFINITION 8**.

CHANGING MODULATION WHEEL DESTINATIONS

Note: Emax II offers two vibrato options: Pre-programmed (which adds a constant, selectable amount of vibrato), and realtime (where the player adds in vibrato by using one of the wheels).

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Each Emax II wheel can be assigned to a particular destination. For example, if the left wheel is assigned to pitch, then rotating the wheel bends pitch. If assigned to the filter, rotating the wheel varies the cutoff frequency.

Let's set up for the next part of the tour. Choose Preset 01 as the current preset if it is not already. Activate **DYNAMIC PROCESSING**, assign the entire keyboard as the current voice if necessary, then key in 22**.** Press the cursor buttons and press **YES** for all the enable options. This will make it easier to hear the results of the next series of experiments.

Now activate **PRESET DEFINITION** and key in 9**.** To make "live" playing as simple as possible, the display works somewhat differently for this module. The display shows eight pairs of numbers:

```
1:1 2:4 3:0 4:0
5:0 6:0 7:3 8:6
```

The first number of each pair stands for one of the eight possible control sources (the left-hand column of functions printed on the top panel under **Preset Definition 9**), namely:

1: Left wheel (center detent, spring return type)
2: Right wheel (continuously variable type)
3: Pressure (from external MIDI controller)
4: Control voltage pedal (plugs into rear panel PEDAL jack; also accepts any 0 to +10V control voltage source)
5: MIDI control A (can be assigned to any MIDI controller #)
6: MIDI control B (can be assigned to any MIDI controller #)
7: Footswitch 1 (plugs into rear panel FOOT SWITCH 1 jack)
8: Footswitch 2 (plugs into rear panel FOOT SWITCH 2 jack)

The second number of the pair represents a control destination (the right-hand column of functions printed in the module) which you assign to a control source.

Each of the destinations printed in the upper right-hand column (0-9) can be controlled by control source 1, 2, 3, or 4, or via data sent over MIDI. For more information on MIDI, see **PRESET DEFINITION 7** ("MIDI Setup") and the Advanced Applications section of this manual.

Each of the destinations printed in the lower right-hand column (0-6) can be controlled by sources 7 and 8.

You'll be happy to know that real time control settings are memorized for each individual preset. Thus, if desired each preset can react to the real time controls and MIDI controllers in different ways.

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SELECTING A CONTROL SOURCE and CONTROL DESTINATION

1. With Arco Strings, preset 10 as the current preset, and **PRESET DEFINITION 9** activated, select the left wheel as a control source by keying in **1**. The cursor will flash underneath the number to the right of the chosen control source number, thus indicating that Emax II is ready for you to key in the control source's destination.

2. The left wheel should be assigned to **1** (pitch). Vary the wheel and check that the keyboard pitch is indeed affected. If sections of the keyboard are not affected, check that pitch control is enabled (**DYNAMIC PROCESSING 22**). Now press **2**; this assigns the left wheel to Filter cutoff. Rotating the wheel towards you should produce a more muted sound. Key in **13**, and the left wheel will affect overall volume. If you feel adventurous, check out the other control destinations. Note that if you select a destination that is already specified for one of the other control sources, the old assignment will be de-selected and that control source will be turned off (**0**).

3. Think about it for a bit...the left wheel can control a destination, the right wheel can control a different one (as can the pedal), and there are MIDI control possibilities too. These assignments can be different for each preset, and particular controller destinations can be disabled for different presets and voices. We're talking versatility here, so if you feel like taking out the next couple of hours and checking out all the possibilities, be our guest! Note: When assigning the footpedal, make sure it's plugged in to prevent unpredictable results.

4. Oh yes, and there are footswitches too. But before experimenting with the footswitches (sources 7 and 8), we need to understand the difference between looped and unlooped sounds. Looping is described more fully in **DIGITAL PROCESSING 2** and **DIGITAL PROCESSING 3**, but basically, a "sustain looped" sound is one where a portion of the sound is put into an "infinite repeat" loop for as long as you hold down the key. This is similar to the infinite repeat function on digital delay lines. Looping allows for sustaining a normally non-sustaining sound for as long as you like. An unlooped sound is not artificially sustained, and therefore lasts its normal length.

Keeping this in mind, refer to **PRESET DEFINITION 9**, Destinations 0-6. Assign various functions to the footswitches; note that some sounds lend themselves to the sustain function better than other sounds, so feel free to experiment.

GUIDED TOUR #5:
BASIC SAMPLING

BACKGROUND

Sampling does not just involve sticking a microphone in front of something—sampling is an art. So, we've included information on the art of sampling in the Advanced Applications section of this manual. Meanwhile, this Guided Tour gives you the basics, and also lays the groundwork for the guided tour of the Digital Processing module.

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SETUP

1. Plug a microphone into the rear panel Sample Input jack (an instrument can also be used, but a mic is easier to work with for now).

2. Erase the bank memory (**MASTER 4**). This gives us maximum sampling time.

3. Set the level (**SAMPLE 1**). The default keyboard placement will work for now, but if you want to change it, see **SAMPLE 2**. Also set the sampling rate (**SAMPLE 3**). This should be at 39 kHz; might as well leave it there for now. Check the available sampling time (**SAMPLE 4**), which should be at least 13.4 seconds.

4. Set the threshold (**SAMPLE 5**), arm the sampling process (**SAMPLE 6**), and you're ready to sample! Speak into the mic; as soon as the level exceeds the threshold, the display will say "sampling." Feel free to talk away for 13.4 seconds, but if you lose patience, press **8** to stop sampling.

5. Play the keyboard in the assigned range (lower keyboard, C1-B1) to hear the results of your sampling.

6. Now experiment with more sampling: Try setting a particular sample length (**SAMPLE 4**), using forced sampling instead of threshold-sensitive sampling (**SAMPLE 7**), assigning the sampled sound to other portions of the keyboard (**SAMPLE 2**), and also, practice terminating the sampling process (**SAMPLE 8**). As long as you do not de-activate the module, new samples will replace previous samples on the keyboard.

7. To save the sample as part of a preset, de-activate the sample module. Since memory was cleared prior to sampling, Emax II created a preset (00) called "Untitled," and this is the preset that holds your new sample. Had you sampled into a bank with existing presets, the sample would have been stored with the current preset. If you wanted to sample into a new preset, you would have first had to create a preset (**PRESET MANAGEMENT 3**) in which the sample could reside.

8. Let's try another sample. Activate **SAMPLE 2** to change the current voice. Notice that Emax II, a very polite instrument, doesn't overwrite the existing sample without your express permission; thus, the new sample is automatically assigned to the next higher octave. This assignment can always be modified with **SAMPLE 2**. Also note that if you're ever in a position where you're going to overwrite an existing sample, Emax II will notify you via the display.

9. Remember, this Guided Tour is intended simply as an overview to give you a "feel" for the sampling process. Good sampling requires skill and patience; practice!!

GUIDED TOURS

GUIDED TOUR #6:
DIGITALLY PROCESSING SAMPLES

BACKGROUND and SETUP
Digital processing allows for radically altering voices stored in the bank. In this Guided Tour, we'll learn — among other topics — how to truncate, loop, reverse, splice, and combine samples. First, though, we need to take a couple of samples with which we can practice.

1. Clear the bank of memory (**MASTER 4**).

2. Follow the directions in Guided Tour #5 and make a sample of yourself speaking. However, select a 4 second sample length (**SAMPLE 4**). After setting the threshold and such, arm sampling and start jabbering.

3. De-activate the sample module, then re-activate and take another 4 second sample. You will not have to do any setup — just hit **SAMPLE 6** and talk away. You now have two samples suitable for experimentation.

CHOOSING THE CURRENT VOICE
Activate **DIGITAL PROCESSING**. You will be asked to select a voice, so press a key within the range of the voice that you want to work on and press **ENTER**.

TRUNCATING A VOICE
1. Choose **DIGITAL PROCESSING 1** to truncate the ends from voices.

2. Vary the data slider as you play a key in the range assigned to the current voice. Notice the start of the voice will disappear. Use this technique to get rid of silence at the start of a voice or for effects.

3. Move the cursor using the arrow keys to the End display. Use the data slider to truncate any undesired part off the end of the sample.

4. When you get tired of truncating, press **ENTER**. When Emax II asks if you want to "Make Truncation Permanent?", enter **NO** so that the full sample is available for subsequent experiments in this tour.

5. If desired, change the current voice (**DIGITAL PROCESSING 0**) and experiment with truncating the other sample you took. Again, when asked if you want to "Make Truncation Permanent?", press **NO**.

LOOPING A VOICE
1. If you haven't yet done so, activate the **DIGITAL PROCESSING** module and assign the current voice. Select function 4 and turn the loop mode **ON**.

GUIDED TOURS

2. Refer to **DIGITAL PROCESSING 2** to graphically see how looping affects a sample. If you play and hold a key in the current voice, it will play indefinitely since the loop function is on.

3. Now try modifying the loop. Activate **DIGITAL PROCESSING 2** and adjust the Start and Length values. Note that if the length equals the full length of the sample, you will not be able to set a new start point. Reduce the length, and you should be able to adjust the start point. For practice, try looping individual words or sentence fragments.

Please remember that looping is a very complex process which requires a great deal of practice for proficiency. The only way to fully understand looping is to experiment with a variety of signals. The purpose of this Guided Tour is to acquaint you with the concept of looping, but there is much more to the subject than simply fooling around with looping words from a spoken sample. For more information, refer to the Advanced Applications section of this manual.

SPLICING VOICES

Splicing marks an end point in one sample and a start point in a second sample; the first sample end and second sample start are then joined together. See **DIGITAL PROCESSING 6** to graphically see how this process works, then follow the instructions given to splice two samples together. (Make sure any loops are turned off in the samples for best results.)

COMBINING VOICES

Combining mixes two samples together digitally into a single sample whose length equals that of the longer sample. Assuming you still have two samples on the keyboard, follow the instructions in **DIGITAL PROCESSING 7** and combine them. If not, first clear the bank memory and record two samples as instructed at the beginning of this section.

FURTHER INVESTIGATIONS

The Digital Processing module is very powerful, but this is one case where spending some time experimenting with the various options works much better than just reading about them. Fool around with Taper (**DIGITAL PROCESSING 5**), Crossfade Looping (**DIGITAL PROCESSING 8**), and Digital Effects (**DIGITAL PROCESSING 9**). The more you work with these functions, the more sense they will make, and the more easily you can get Emax II to do your bidding.

A PRACTICE SAMPLING SESSION

1. Plug a microphone into the rear panel sample input jack.

2. Erase all memory (Use **MASTER 4**). This erases the bank, not the disk.

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3. Set the level (**SAMPLE 1**). Sing "ahhhh" into the microphone (This is an easy sound to loop). The VU level should not quite reach the top of its range. Adjust the gain (use the data slider) until a good level is attained.

4. Set the threshold (**SAMPLE 5**). This should be set about 5 or 6 bars from the left. When the input sound exceeds this level, recording will start.

5. OK, now get ready to sing "ahhhhh" and press (**SAMPLE 6**) to arm the sampling process.

6. Now sing "ahhhhh". When you are out of breath, press (**SAMPLE 8**) to stop sampling.

7. Play the keyboard in the assigned range (lower keyboard, C1-B1) to hear the results.

8. Now we can truncate the silence from the beginning and end of the sound. Press (**DIGITAL PROCESSING**), the display will say: Select a Voice. Play a key in your sample range (C1-B1) and press **ENTER**. Now press **1** to select truncation.

9. Adjust the start and end points by moving the slider to remove any silence or unwanted portion of the sound (You must play the keyboard after you move the data slider in order to hear the results of the slider change). Press **ENTER** then **NO** to exit truncation.

10. Now we are ready to loop the sound. Press **2** to select looping. To loop, first move the data slider to make the loop length about 10,000 to 14,000 samples long. Next move the start point into the sustained portion of the ahhh sound so that the ticking sound becomes softer. When you get a fairly good loop press **ENTER**. The display says: Autoloop Y/N. Press **YES**. You now should have a fairly good loop. If not, adjust the start point and again press autoloop. It takes practice, but you'll get it. That's it! Feel free to play around with other processors such as chorus and LFO.

11. In summary; these are the steps you will go through every time you have a sampling session (of course you will develop your own order and style of doing it).

- Take the sample
- Truncate the sample
- Loop the sample (if desired)
- Assign the voice to a keyboard position
- Continue to refine and make presets

TIME TO SAVE?

Maybe you haven't created any masterpieces during these experiments...but maybe you have. If you want to save a preset to disk, take your blank formatted disk prepared in the last Guided Tour and Save All 16 bit (**PRESET MANAGEMENT 8**). Moral of the story: Always have a blank formatted disk around (or an empty hard disk bank) just in case you come up with something you want to save.

GUIDED TOURS

GUIDED TOUR #7:
MANAGING THE BANK

BACKGROUND AND SETUP
The following functions don't necessarily do glamorous things, but they are very useful. This Guided Tour acquaints you with these utilities.

Begin by loading the Arco Strings (Piano/Strings) bank.

ERASING A PRESET
Refer to **PRESET MANAGEMENT 4** and erase Preset 01. Don't worry, this is just gone from the bank, not the disk. And we can get it back anyway by...

LOADING A PRESET
See **PRESET MANAGEMENT 1** and load Preset 01. Now it's back in the bank again.

OTHER BANK MANAGEMENT FUNCTIONS
The other functions—copy, rename, create, and preset size— are pretty much self-explanatory. Refer to **PRESET MANAGEMENT 5, 6, 3**, and **7** respectively. Try these various functions to get a feel for how they work. **PRESET MANAGEMENT 8** lets you save the bank to disk.

GUIDED TOUR #8:
THE SEQUENCER

The Emax II sequencer is a "scratchpad" for musical ideas, and is not intended to be a sophisticated do-all whiz-bang. However, you can create sequences on a fancy computer and, using Supermode, download these sequences via MIDI into the sequencer (**SEQUENCER SETUP 6**).

For now, we'll check out how the sequencer works as a scratchpad, so load the Arco Strings bank, activate **SEQUENCER MANAGE**, and let's go.

1. Key in 1 to set the tempo. While you're at it, activate **SEQUENCER MANAGE 2** and make sure that the Emax II clock is on Internal. The other Sequencer Manage options—Load, Erase, Copy, and Rename—are described under **SEQUENCER MANAGE 3** through **6**.

2. Now press **SELECT**. Enter sequence numbers 01, 02, 03 etc. from the keypad, until you find one that says, "Empty Seq". This is the sequence into which we will record.

3. Press **RECORD**, then **PLAY.** Start playing the keyboard immediately when you press play. When you've played enough, press **STOP**.

4. To play back the sequence, press **PLAY**. Varying the data slider will change the tempo. The display will show this is an untitled sequence; practice renaming it with **SEQUENCER MANAGE 6**.

5. To stop the sequence at its end, press **STOP** once. To stop it immediately, press **STOP** twice.

6. Now dig into the sequencer portion of the manual and check out all the various functions if you so desire. Bouncing tracks is fun, as is overdubbing.. and Supermode... in fact, sequencers in general are a lot of fun.

GUIDED TOUR #9:
MAKE YOUR OWN

These Guided Tours cover only the basics; to cover every possibility of how to use the instrument would drown you in words. It's better that you just start playing! The best way to learn Emax II is to dive right in. Remember, you can experiment as much as you want on stuff in the bank; you have to actually save the bank to disk in order to alter the contents of the disk, and in case you're nervous, you can even write-protect the disk.

Try to spend some time not playing with, but rather practicing with, the instrument. After you're a little more familiar with Emax II, read through the Reference Section and delve deeply into a particular function or module. Emax II is like an audio construction set, where sounds can be captured, held, processed, mutated, spliced, sped up, slowed down...and lots more, so take advantage of what it is has to offer.

The more you practice with the Emax II, the more you'll be able to put your personal stamp on the music you play. And when you do play, you'll know the instrument well enough so that you are free to concentrate on the music.