

# Emulator II polyphonic digital sampling keyboard

The new standard in affordable professional sampling systems



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At E-mu Systems we designed the Emulator II to be an extremely versatile tool for the creation and manipulation of sound. But we also designed it to be easy to understand and use. Its functions are divided into logically organized modules, each controlling a different facet of the Emulator II's operation. Using the Emulator II is simply a matter of activating the appropriate module and then choosing a function from the "menu" printed on the Emulator II's front panel.

## Master Control

The Emulator II's Master Control module includes those controls that affect the entire instrument (Tune, Transpose, Mix Volume, etc.) as well as a keypad, four sliders, and a backlit LCD display.

The numeric keypad is used to select the current preset, select module functions and to enter data. Once a module function is selected, variable parameters are set using sliders A, B, C, and D. By including four sliders, parameters that are closely related (such as an envelope's ADSR settings) or that interact (such as filter cutoff frequency and envelope modulation amount) can be adjusted simultaneously, greatly reducing the time and frustration usually associated with one parameter at a time programming methods.



The 32 character LCD display is the key to the Emulator II's remarkable ease of use. It guides you through each function, clearly displaying parameter values and requesting any required

user actions. We've designed its messages to be so complete that once you familiarize yourself with the Emulator II's functions, you may never have to refer to the owner's manual again.



## Sample

The Sampling module is used to digitally record your own sounds into the Emulator II's memory. The 17.6 seconds of available sampling time may be used for one long sound or divided up among any number of shorter sounds.

When sampling, the LCD display becomes a precise peak reading VU meter to help you set the proper recording level. After each sample, the Emulator II checks your recorded data and warns you if an overload occurred during the sampling process.



## Filter

The filter module lets you independently control the harmonic content of each sample in a preset. Eight programmable lowpass filters with variable resonance and their own ADSR envelope generators allow you to subtly modify timbres or to transform your original samples into entirely new sounds.

For maximum expressivity, most filter parameters can also be controlled by the realtime controllers or by keyboard velocity.

## VCA/LFO

With the Emulator II's VCAs (and their associated ADSRs) you can modify and reshape your original sounds. By simply setting appropriate attack and decay times you can create bowed pianos, plucked bassoons, staccato chickens or virtually anything else a reasonably demented mind can imagine. And since both VCA level and attack time can be controlled by keyboard velocity, truly realistic phrasing and articulation are available at your fingertips.

This module also controls the Emulator II's eight independent LFOs. In addition to true polyphonic vibrato, the Emulator II offers programmable vibrato delay and a unique new random variation function that assigns a slightly different LFO rate to each note that you play. In ensemble passages this helps create the illusion of individual players, each with their own vibrato. In solo passages it eliminates the unnaturally perfect vibrato typical of most electronic instruments.



## Voice Definition

Once you've sampled a sound, the Voice Definition module allows you to digitally edit and manipulate it. You can adjust its length by truncating data from its beginning and end, or digitally splice some portion of it to another sound. The usually tedious job of setting a sustain loop has been simplified by our new AutoLoop™ function that examines the sound data to find the best possible loop in the vicinity of your manually set loop points.



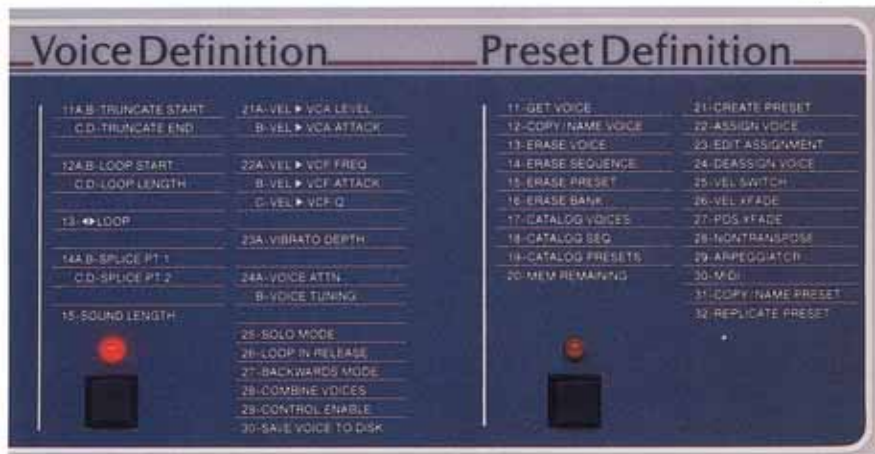
Additional functions let you play a voice's sound data in reverse order for backward tape effects, digitally combine the voice with other voices, and adjust the voice's level and tuning in relation to other voices in a preset.

This module also routes keyboard velocity control to a voice's VCA and VCF parameters.

## Preset Definition

This module allows you to combine your individually created voices into complete keyboard presets, each with its own realtime control, MIDI, and arpeggiator parameters.

This module also offers a number of unique keyboard control functions. With velocity switch you can assign two voices to the same keyboard range and use key velocity to choose between them (e.g., play a key softly to get a conventional bass guitar sound; play hard and get slap bass). Velocity crossfade lets you use key velocity to control a crossfade between two sounds, while with positional crossfade the balance between stacked sounds is defined by where in their mutual range a key is played, thus allowing sounds to be gradually transformed into other sounds as you play up and down the keyboard.



## Realtime Control

The Emulator II's realtime controls consist of two wheels (one spring loaded), a footpedal, two footswitches, and provision for three external MIDI controllers. With this module you can assign each of these control sources to one of a number of control destinations. Each preset can have its own unique set of control assignments which is enabled whenever that preset is selected.



## Special

The Special module offers a variety of diagnostic, calibration and other largely service oriented functions. It will also be used to access new functions included in future software updates.

## Disk

The Disk module allows you to store and recall your sounds and sequences on high density floppy disks. It also provides for disk copying, cataloging, formatting, and erasing.

## Sequencer

The Emulator II sequencer is a digital keyboard recorder that lets you create compositions in a manner analogous to a multitrack tape recorder. Like a tape recorder, you can overdub separate parts on each of its eight polyphonic tracks. Each track can be assigned to a different preset for true multi-timbral sequencing. The sequencer records both keyboard dynamics and realtime controls as well as offering a selectable autocorrect function to compensate for any rhythmic inaccuracies in your playing.

The sequencer includes extensive track-oriented editing capabilities. Individual notes and phrases can be edited using the punch in/punch out function. A track can be bounced together with other tracks, assigned to a preset other than the one it was originally recorded with, or erased. And, unlike a tape recorder, you can change the tempo of an entire composition without affecting its pitch.

The sequencer also takes full advantage of the Emulator II's MIDI and SMPTE interfaces. Since each track can be assigned to its own MIDI channel, up to eight fully polyphonic MIDI instruments or drum machines can be

controlled simultaneously. With the Emulator acting only as a MIDI sequencer (no samples in memory) its storage capacity exceeds 90,000 notes.

The inclusion of a built-in SMPTE code reader/generator opens up new possibilities in professional recording, motion picture, and broadcast applications. Using SMPTE code, music and effects tracks can be precisely synchronized to film or video productions. And with a SMPTE track on your multitrack master, it's possible to start the tape anywhere in the middle of a sequence and have the Emulator chase to the correct point and lock in sync in a matter of seconds.



In 1981 E-mu Systems created the original Emulator sampling keyboard and introduced the power of digital sampling to a world of musicians, composers, producers and sound effects designers. Now, drawing on four years of experience as the pioneers in affordable professional sampling technology, E-mu Systems presents the Emulator II™—an instrument that sets new standards of sonic realism, creative power and expressive control.

### Superior sound quality

Like its predecessor, the Emulator II is a completely self-contained professional sampling system. With it you can digitally record literally any sound and play it back polyphonically from its keyboard. But that's just the beginning. The Emulator II uses a new data encoding technique that results in truly stunning sound quality. From the sound of the rosin on the bow of a violin to the screaming overtones of a heavy metal guitar, every nuance of a sound is reproduced with startling realism.

The Emulator II comes with a full 17 seconds of sampling time (at maximum sampling rate) and a built-in floppy disk drive to let you store and reload your sounds. You can select disks from our extensive library of digitally recorded sounds or use the Emulator II's user sampling facility to create a personal sound library of virtually limitless size.

### Creative control

Once you've sampled a sound, the Emulator II's real creative power comes into play. Its velocity sensing keyboard gives you precise expressive control over loudness, timbre and articulation (you can even program its dynamic response to match your personal playing style). You can assign multiple samples anywhere on the keyboard with up to 60 programmable splits. Or assign two sounds to the same range and use keyboard velocity to control a crossfade between them.

A variety of analog and digital sound processors let you tailor each sample to your specific needs. Samples can be tuned, transposed, truncated and looped (our new AutoLoop™ function uses the Emulator II's powerful computer to help you find the best possible loop points). The inclusion of programmable filters, VCAs, and envelope generators for each channel allows extensive sound modification and reshaping. A backwards mode facilitates the creation of satanic messages. Or you can use the digital splicing function to create completely new sounds from parts of other samples (imagine an instrument with the attack of a piano, the sustain of a violin, and the decay of a guitar).

Each channel also includes its own LFO with programmable delay and a unique random variation mode that helps you create realistic ensemble passages by assigning a slightly different vibrato rate to each note you play.

### Powerful MIDI sequencer

To help take full advantage of the Emulator II's compositional capabilities, we've included an extremely powerful polyphonic sequencer. Its features include auto correct (that works!), full programming of keyboard dynamics, and complete track oriented editing with punch-in, punch-out, and track bouncing. What's more, it can also function as a stand-alone multichannel MIDI sequencer capable of controlling up to eight other MIDI instruments and drum machines with a storage capacity of over 90,000 notes!

### Multiple interface flexibility

Add to all this an RS-422 computer interface, a 24 pulse per quarter note clock, a full MIDI implementation, and a built-in SMPTE code reader/generator and you have a complete music and sound effects production facility in a single portable package.

## Emulator II. The new standard from E-mu Systems, Inc.

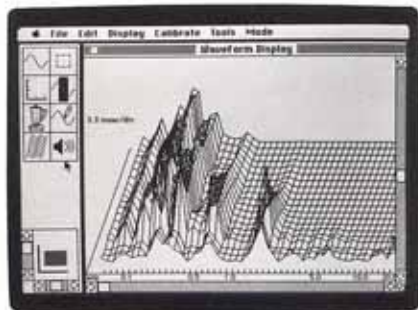
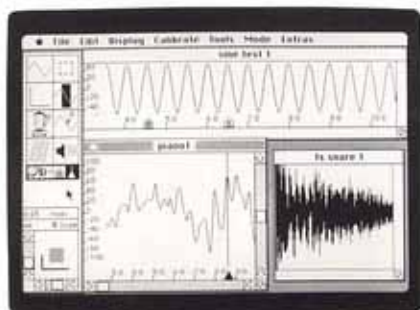


The Digidesign Sound Designer™ turns your Emulator II into a complete computer music system.

## System Expansion

The Emulator II has been designed from the start to allow easy system expansion. Options available now or in the near future include a second floppy disk drive for more convenient disk operations, a Winchester hard disk for vastly expanded sound storage (with a two second load time!), and probably most exciting, the Digidesign Sound Designer™ which turns your Emulator II and an Apple Macintosh™ into an advanced computer music system complete with 3-D graphic waveform analysis, waveform modification, multi-algorithm digital synthesis, music printing and editing and more. All at a fraction of the cost of other comparable systems.

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## Emulator II Specifications

### Computer

Sample length - 17.6 seconds  
Channels - eight  
Playback frequency range - 20 Hz-20kHz  
Dynamic range - 96dB  
Power requirements - 115v/230v;  
60Hz/50Hz; 150W max

### Keyboard

Range - 5 octave/61 key, C to C  
Velocity sensing - programmable sensitivity  
Splits - up to 60, programmable

### Analog Processing

VCF - 4 pole lowpass filter, one per channel  
VCA - one per channel  
Envelope generator ADSR, two per channel  
LFO - one per channel

### Data Storage

Medium - 5 1/4" floppy diskettes, soft sectored, double sided, double density  
Storage capacity - approx. 500k bytes per diskette  
Drives - double sided, half height. One standard, second drive optional

### Inputs

Sample; SMPTE clock; MIDI; Voltage A/D (footpedal); Footswitch 1; Footswitch 2

### Outputs

Mono mix; Individual channels (8); SMPTE clock; MIDI; Metronome

### Computer Interface

RS-422

### Standard Accessories

Footpedal  
Footswitches (2)  
10 diskettes

### Optional Accessories

Second floppy disk drive  
Winchester hard disk storage system  
Digidesign Sound Designer™ Macintosh™ program

*Specifications subject to change without notice.*



**E-mu Systems, Inc.**  
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