E-drum

Digital Percussion Module

Owners Manual

Version 1.0

WARNING – This equipment generates, uses and can radiate radio frequency energy. If not installed and used in accordance with the instruction manual, this may cause interference to radio communications. It has been tested and found to comply with the limits for class A computing devices pursuant to Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his/her own expense will be required to take whatever measures may be required to correct the interference.

1. OVERVIEW

The E-drum digital percussion module is an electronic drum using sounds that are digitally recorded and stored in easily interchangeable ROM cartridges. The module allows you to control the loudness of the sound and (if desired) it's pitch by how hard you hit the pad. The pads sensitivity can be adjusted for playing styles ranging from light finger taps to heavy sticking.

The module provides controls for tuning the original sound over the range of one octave, setting the pads sensitivity for pitch change, adjusting the decay of the sound and adjusting the bass and treble content of the sound. The rear panel provides connectors for audio output, an optional AC power adapter and a multi purpose control input that allows the module to be triggered from synthesizer gates and triggers or audio signals (with level detection). This input also makes possible independent voltage control of pitch via an active voltage pedal or other DC voltage source.

The E-drum is powered by two 9-volt batteries or an optional AC adapter.

2. SETUP

POWER

The first step in setting up your E-drum module is to supply it with power. It may be powered either by two 9-volt batteries (alkaline batteries are highly recommended) or by an optional AC adapter.

BATTERIES

To install batteries, remove the battery compartment cover by loosening the retaining screw on the bottom of the module. Attach a battery connector to the terminals of each battery. Carefully stuff the batteries into the battery compartment, being careful not to crimp or pinch any wires. Replace the battery cover and secure with the retaining screw.

AC ADAPTER

IMPORTANT: Do not use any AC adapter other than the one supplied by E-mu Systems specifically for use with E-drum modules.

To connect an AC adapter, insert the adapters mini phone plug into the AC IN jack on the rear of the E-drum module. Plug the adapter into a standard 110 VAC outlet. The power on LED should light to indicate the module receiving power.

POWERING MULTIPLE MODULES

Up to five E-drum modules can be powered from one AC adapter. For each additional module you will need a patch cord with a 3.5mm phone plug on each end. Plug one end of the cord into the AC out jack of a powered module. Plug the other end into the AC in jack of the nearest un-powered module. This module can now be connected to another and that to another etc.

Do NOT connect more than five modules to a single AC adapter.

AUDIO OUTPUT

Using a patch cord with a standard ¼" phone plug, connect the E-drum modules audio output to your amplifier or other sound system. Start with your amplifiers volume at a low setting until you become familiar with the E-drums output level.

SOUND CARTRIDGE

Select an E-drum sound cartridge and insert it into the slot at the rear of the E-drum. The cartridge should be inserted such that the label is readable from the top. (The cartridge is keyed so that it will only go in the right way.) Be sure the cartridge is fully and securely inserted into the module. If it doesn't seem to want to go in, try pushing it to the left (as seen from the rear of the module) and then in.

POWER ON

(Pay close attention to this section or you may find yourself buying a lot of batteries!)

If you look carefully at the labeling on the E-drum module, you will see that what you were thinking was the "power on" button was actually called the "Batt. On" button. This button controls the battery power for the module. When it's in the "in" position, the batteries are powering the module. When it's in the "out" position, the batteries are disconnected from the circuit. If you are using only the batteries, you can simply consider this the on/off button.

However, if you are also using an AC adapter, things get a bit tricky. Unlike some other products that you may be familiar with, plugging in the AC adapter does not automatically disconnect the batteries. Only having the BATT. ON button in the off position will disconnect them. It is therefore possible to have the AC adapter plugged in and still be draining the batteries. When using the AC adapter always check to see the battery switch is in the "off" position. (When using the AC adapter, there is no on/off switch. The module is on as long as the adapter is plugged in. Be sure to unplug the adapter from the AC outlet when you are through playing.)

SELECT SOUND

Some E-drum sound cartridges contain two sounds. Pressing the sound select button on the E-drum modules front panel will let you choose between these sounds. This button will have no effect on a single sound cartridge. (Some E-drum modules have two sound select buttons. Simply ignore the right button.)

3. CONTROLS

PAD SENSITIVITY

The sensitivity of the E-drum modules pad can be adjusted using the 15-turn trimmer accessible through the small hole to the right of the pitch knob. To adjust the trimmer you will need a small screwdriver or a trimmer adjustment tool (available at most electronic stores like radio shack). Turning the trimmer counterclockwise will decrease the sensitivity (i.e. you will need to hit the pad harder). Turning the trimmer clockwise will increase sensitivity. Remember, you have to turn the trimmer 15 times to go from one end of the range to the other, so you will probably have to turn it a couple of turns to notice any effect at all.

The objective in making this adjustment is to match the pads sensitivity to your playing style so you will have predictable control over the modules maximum dynamic range. If you play the module with only your fingers, you should set the sensitivity high so you don't need to hit the pad very hard to get maximum volume. However, if you are practicing to be Keith Moon, you should set the sensitivity at the opposite extreme. Other playing styles will fall somewhere in the middle. The best method of adjustment is trial and error. Make an adjustment and try playing. You'll know when it's right.

INITIAL PITCH

The pitch control adjusts the initial pitch of an E-drum sound over a range of one octave. Turning the knob counterclockwise lowers the pitch. Turning it clockwise raises the pitch.

PITCH SENSITIVITY

This control determines the extent to which hitting the pad will affect the pitch of the sound. With this control turned fully counterclockwise, the pad velocity will have no affect on the pitch. The pitch knob and/or the external pitch control voltage will always set the pitch of the sound. Turning the control clockwise will cause the pads velocity to affect the sounds pitch. The harder you hit the pad, the higher the pitch. The farther you turn the control clockwise, the greater available pitch change. Again, trial and error will show you the best setting for each sound. (We've found a little pitch response, even on snares and toms will give a noticeably more "natural" feel to the sounds.)

Keep in mind the maximum total tuning range of the E-drum is one octave. (This is the total of the initial pitch setting, the external control voltage and any pad control.) The highest pitch available is the pitch you get with the initial pitch control at its highest setting. Increasing pitch sensitivity or hitting the pad harder will not raise the pitch beyond this point. If you want the pad to exercise a wide range of control over pitch, be sure to set the initial pitch setting at a lower end of its range.

DECAY

The decay control allows you to adjust the duration of an E-drum sound. With the knob turned fully clockwise you will hear the entire recorded length of the sound. Rotating the knob counterclockwise will progressively shorten the sound until, with the knob fully counter clockwise; you will hear only the first 50 milliseconds of the sounds attack.

EQUALIZATION

The (very) active bass and treble controls make it possible for you to tailor the E-drums sounds to your own particular taste. With both knobs in the center of their range the response is essentially flat. Moving either control clockwise from that position will boost the appropriate frequency range while moving it counterclockwise will attenuate it. Experimentation with these controls can produce a wide variety of useful sounds from each cartridge.

4. EXTERNAL TRIGGERING

The E-drum modules TRIG IN jack is a ¼" stereo phone jack, allowing both triggering and external voltage control of pitch.

TRIGGERING

The E-drum modules trigger input accepts gates and triggers from 0.2 to 5 volts. Duration of the trigger must be at least 100 milliseconds. The higher the voltage and/or the longer the pulse length, the louder the triggered sound will be.

The module can also be triggered by most audio signals. The level of the audio signal will determine the loudness of the triggered sound. Thus, the E-drum module is able to duplicate the dynamics of the audio source triggering it. This makes it ideal for triggering from miked acoustic drums or from pre recorded percussion (or other audio) tracks. In each case you can replace the triggering sound with any E-drum sound, while still retaining all the dynamics of the original performance.

Use a standard ¼" mono phone plug with the triggering signal wired to the tip if you are using the input for triggering only (i.e. no external pitch control). If you plan to use simultaneous pitch control, you will need a stereo phone plug or an adapter as described below.

When an external trigger source is connected to the E-drum module, the modules pad remains active but at reduced sensitivity.

EXTERNAL PITCH CONTROL

The E-drum modules TRIG IN jack also accepts a voltage of from 0 to 5 volts for the purpose of controlling pitch. Possible controllers include active voltage pedals, synthesizers, sequencers, or most any other source of variable DC voltage. Again, keep in mind the modules maximum tuning range is about one octave. If you want to be able to control this entire range with your external controller, be sure to set the front panel pitch control at its lowest setting.

If you are using the TRIG IN jack for pitch control only (no external triggering), use a stereo phone plug with the control voltage wired to the ring contact. Custom wire a ¼" stereo plug (trigger to tip contact and control voltage to the ring contact) if you will be using both triggering and voltage control. You may also use a patch cord with two mono jacks connected to a stereo plug. Use a meter to find out which jack is the tip and which is the ring. When you've figured this out, label the jacks for future reference. (When using this patch cord, both the trigger and control voltage should use a mono phone plug with the signal at the tip.)