

# 360 Systems MIDI BASS

## Operation Guide

Welcome to the world of sampled bass sounds. You have just purchased an instrument of unusual and exciting capability-- for this one can reproduce ANY SOUND that is stored on its digital memory chips.

### Digital Audio from 360 Systems

Midi Bass produces sound of a quality that has been unattainable by most other sampling instruments, including some of the more expensive ones. Although it is used primarily for "bass" instruments, Midi Bass is actually capable of an audio bandwidth of 16 Hz to 16,000 Hz. Noise and distortion are low enough to make it an excellent choice for studio work too. 360 Systems uses a unique circuit design with two VLSI (Very Large Scale Integration) chips to provide many new features, while reducing the cost compared to earlier design methods.

Midi Bass plays sounds that come from audio information stored in digital memory chips called EPROMs. Each EPROM contains the sound of one particular instrument, and up to four different EPROMs can be plugged into Midi Bass at once. There are essentially no limits to the types of sounds that can be stored digitally; 360 Systems has most of the world's best-liked bass sounds available for Midi Bass, and many new and unusual sound are being developed, from synths to percussion to special effects (see the enclosed Library List).

### Playing Music with MIDI

MIDI stands for "Musical Instrument Digital Interface", and is a method of sending performance information from one instrument to another. MIDI is an industry standard, which means that it is adhered to (more or less) by all manufacturers so that instruments made by different companies can "talk" to one another.

Midi Bass adheres to the MIDI standard, and works well with every MIDI device we know of. It's the perfect MIDI "slave", and can be driven by MIDI keyboards, sequencers, bass pedals, guitar controllers, and even MIDI drum machines! It is capable of responding to the following MIDI messages:

Note On/Off---This describes when a particular key was pressed, when it was released, and what key it is.

Velocity---This message describes how forcefully a key is played.

Pitch Bend---Lets a note change pitch in response to movement of the pitch wheel.

Program Change---This message allows another MIDI device to cause Midi Bass to instantaneously switch from one EPROM sound to another.

### Getting Started

Plug the AC cord from Midi Bass into a suitable grounded (3 wire) outlet.

**CAUTION: DO NOT REMOVE OR DEFEAT THE GROUNDING PRONG ON THE AC POWER CORD. SERIOUS SHOCK HAZARDS CAN RESULT FROM FAILING TO CONNECT THE AC POWER CORD TO A GROUNDED OUTLET.**

Connect the MIDI OUT of a keyboard or sequencer to the MIDI IN jack of Midi Bass. Connect the AUDIO OUT to your mixer or amplifier. Make sure your amp is turned down, then flip Midi Bass's power switch on; the LED over switch #1 will light to show that the unit is working. Set the MIDI CHANNEL switch to ALL (Omni) or #1. Turn up the volume knob on Midi Bass to about 3 o'clock, then turn up your sound system to a suitable volume. Take a moment now to play thru the various sounds; enjoy!

### Memory Select Buttons

Buttons #1 through #4 select the different EPROM sounds. Midi Bass always "wakes up" on position #1; pressing buttons #2 through #4 will allow you to hear the other sounds currently installed in Midi Bass. If you press a button that is already lit, Midi Bass will play a test note (A=110Hz) on that particular sound. If the sound has been previously played from a keyboard, the button will replay the last note played.

Note that no sound will be heard from positions that do not contain a memory chip, and those LEDs will not light. Remember that Midi Bass is produced in both 2- and 4-sound models; if LEDs #3 and #4 do not light, check inside to see if those sound chips are present in your unit.

### Midi Channel Switch

This slide switch allows you to choose the MIDI channel number that Midi Bass receives. The ALL position (Omni) causes Midi Bass to respond to all MIDI information it receives, no matter what the transmitted channel number may be. Setting the switch to a particular

channel number causes Midi Bass to play notes it receives on that channel only, ignoring all others. Note that some synths, notably the Yamaha DX-7, can only transmit on MIDI channel #1. In this case Midi Bass must be set to either ALL or #1 to respond.

The higher MIDI channel numbers are usually used with multi-track sequencers and Master Keyboard Controllers when different musical parts or ranges are assigned to different channels. MIDI channels 1 through 7 are available when Midi Bass is first turned on; channels 8 through 14 can be selected as described in the section titled "Special Functions: Buttons #1 Thru #3".

### **Key Priority Switch**

Midi Bass is monophonic, which means that it plays one note at a time. By setting the key priority switch properly, it is possible to have the bass note follow a particular part of your performance.

#### **1. Last Key**

For most performance work and especially when using a sequencer, place the switch in the LAST note (middle) position. This ensures that every new note played will speak, even if old keys are still held down. This mode allows you to play fast (and even somewhat inaccurately) and still look good.

#### **2. Low Key**

It is often useful to extract the lowest note played within a chord, and ignore all others. To do this, place Midi Bass in the LOW key priority. The LOW mode is particularly useful in two-handed performances when the left hand is playing open-voiced pads, and Midi Bass is set to play only in the lowest range of the keyboard. See the "Setting Keyboard Limits" section.

#### **3. High Key**

In this mode Midi Bass plays the highest note within a chord. By voicing chords suitably it can play a predictable harmony line or melody line within the chord. The HIGH mode also works well in two-handed performances, when Midi Bass is set to play the upper portion of the keyboard. See the "Setting Keyboard Limits" section.

### **Setting Keyboard Limits**

Limit points, as used here, are similar to "split points" in synthesizers, except that they describe which portion of Midi Bass's range will actually respond. Midi Bass's range can be limited on both the upper and lower ends, so that it will respond to only a very small number of keys if desired. Further, upper and lower limits are remembered separately, and you can switch between them while playing.

### **Upper Limit Point**

If you would like Midi Bass to play only in the left hand and not in the right hand, then you may want to set an upper limit. Simply set the 3-position LIMIT POINT switch to UPPER. Press and hold the SET button and then press a single key on the keyboard that will define the upper limit. Release the key first, then the button. Midi Bass will now play up to and including this key. Upper limit points are particularly useful in conjunction with LOW note priority.

### **Lower Limit Point**

At times it will be useful for Midi Bass to play in its upper ranges, and not go below a certain point. To set a LOWER limit, simply place the LIMIT POINT switch in the LOWER position. Press and hold the SET button and then press a single key on the keyboard that will define the lower limit. Release the key first, then the button. Midi Bass will now play down to and including this key. Lower limit points are particularly useful in conjunction with HIGH note priority.

### **Special Functions: Buttons #1 Thru #3**

Buttons #1 through #3 have special secondary functions besides selecting a particular EPROM sound.

#### **Button #1 (MIDI Channel)**

This button enables MIDI channels 8 through 14. While holding the SET button, press button #1 momentarily. The MIDI CHANNEL switch now selects channels 8 through 14. Pressing button #1 again returns you to channels 1 through 7 again.

#### **Button #2 (MIDI Program Change)**

When Midi Bass is first turned on it does NOT respond to MIDI program change commands, since this can be undesirable in systems where many synths are receiving on the same MIDI channel. However, it's easy to set Midi Bass to receive program changes: Press and hold the SET button, then momentarily press button #2. Midi Bass will now receive and respond to program change commands (MIDI programs #1 through #4 only, obviously). Repeat the procedure to cancel program change.

### **Adding Alternate Sound Chips**

#### **About ZIF Sockets**

Repeated installation and removal of EPROM memory chips from regular IC sockets can damage the pins on the IC, and broken pins cannot be repaired. If you plan to change chips more than once you should install Zero Insertion Force (ZIF) sockets (see figure 1). ZIF sockets plug into the original sockets and have a special locking lever that secures all 28 pins of the chip; no force whatever is

required to install or remove chips from a ZIF socket. Use **ONLY** blue sockets manufactured by Aries; these may be obtained from 360 Systems.

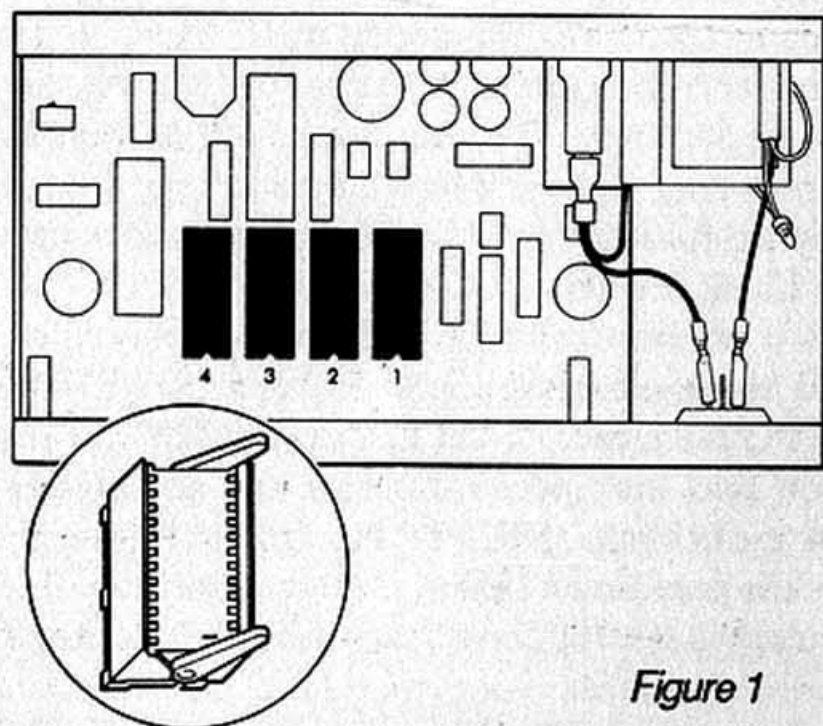


Figure 1

### **Removal of a Chip From the Standard Socket**

1. Turn the power off and unplug Midi Bass.
2. Remove the four rubber feet from the bottom.
3. Use a small flat-blade screwdriver to gently pry up each end of a memory chip. It may be useful to bend a hook into the end of a small screwdriver to get under the notched end of the chips.

### **Installing a Chip in the Standard Socket**

1. Turn the power off and unplug Midi Bass.
2. Notice that a notch is present in one end of the EPROM. This must be oriented toward the **FRONT** of Midi Bass. Refer to the drawing.
3. Carefully align all feet on one side of the EPROM in the socket recess. Now convince the other side to line up with the socket too. It may be necessary to place the side of the EPROM on a table top and gently fold the pins until they point straight down.
4. When all 28 pins are aligned in the socket, press firmly to seat the EPROM.
5. Visually inspect that no pins are folded under or bent.
6. Install the bottom cover, and verify that the sound plays.

***WARNING! CHIPS INSTALLED BACKWARD WILL BE INSTANTLY DESTROYED WHEN YOU TURN ON THE POWER! BE SURE TO DOUBLE CHECK!***

### **Installing ZIF Sockets**

1. If there is an EPROM in a standard socket, remove it as described above.
2. Notice that the ZIF socket has a small #1 printed on its top surface. This designation should be toward the FRONT of the unit.
3. Carefully align all 28 pins of the socket with the standard Midi Bass socket. Press firmly to install.
4. Install an Alternate Sound EPROM in the ZIF socket with its notch toward the front of the unit.

If a chip does not play when installed in a ZIF socket, one of the socket pins may be folded. Remove the ZIF socket and inspect it.

### **Storage and Handling of EPROM Chips**

All EPROMs are somewhat fragile, and can easily be damaged by static electricity. They are shipped with their pins stuck in conductive (black) foam, and should be stored in the same manner when not in use. Never store EPROMs in plastic bags. Avoid dropping them, and remember that their pins are easily damaged.

Only EPROMs manufactured by 360 Systems specifically for Midi Bass can be used in Midi Bass. Those made for other products will not function.

### **Limited Warranty**

360 Systems warrants each Midi Bass to be free of defects in material and workmanship for a period of one full year from the date of purchase.

In case of defect, repairs will be made without charge when the instrument is shipped, prepaid and properly packed, to 360 Systems. These warranties do not cover defects resulting from improper use, unauthorized repairs, tampering, or failure of the user to follow normal operating procedures. Parts replaced under these warranties are warranted only through the remaining portion of the original warranty.

The foregoing warranties are in lieu of all other warranties, express, implied, or statutory, including but not limited to any implied warranty of merchantability of fitness, and all other obligations or liabilities of 360 Systems. In no event shall 360 Systems be liable for special or consequential damages, or for any delay in the performance of this warranty due to causes beyond its control.

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