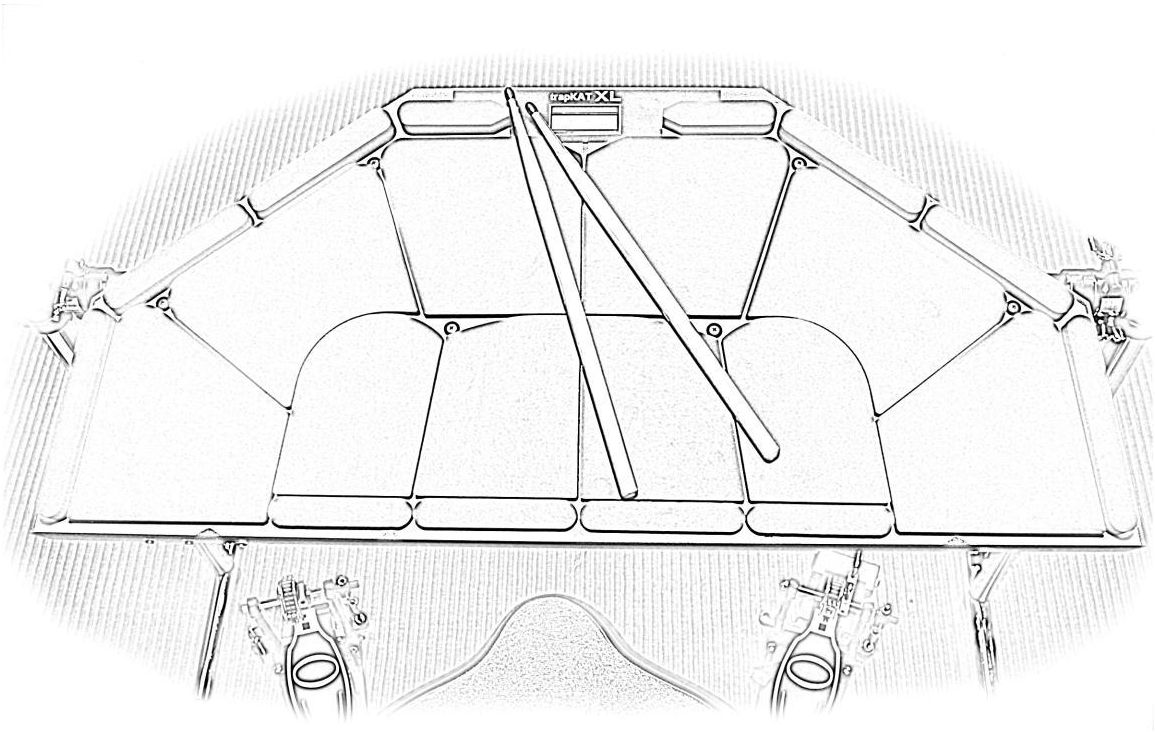


# TRAPKAT XL 6.0

## MANUAL



Rev. 1019

[www.alternatemode.com](http://www.alternatemode.com)

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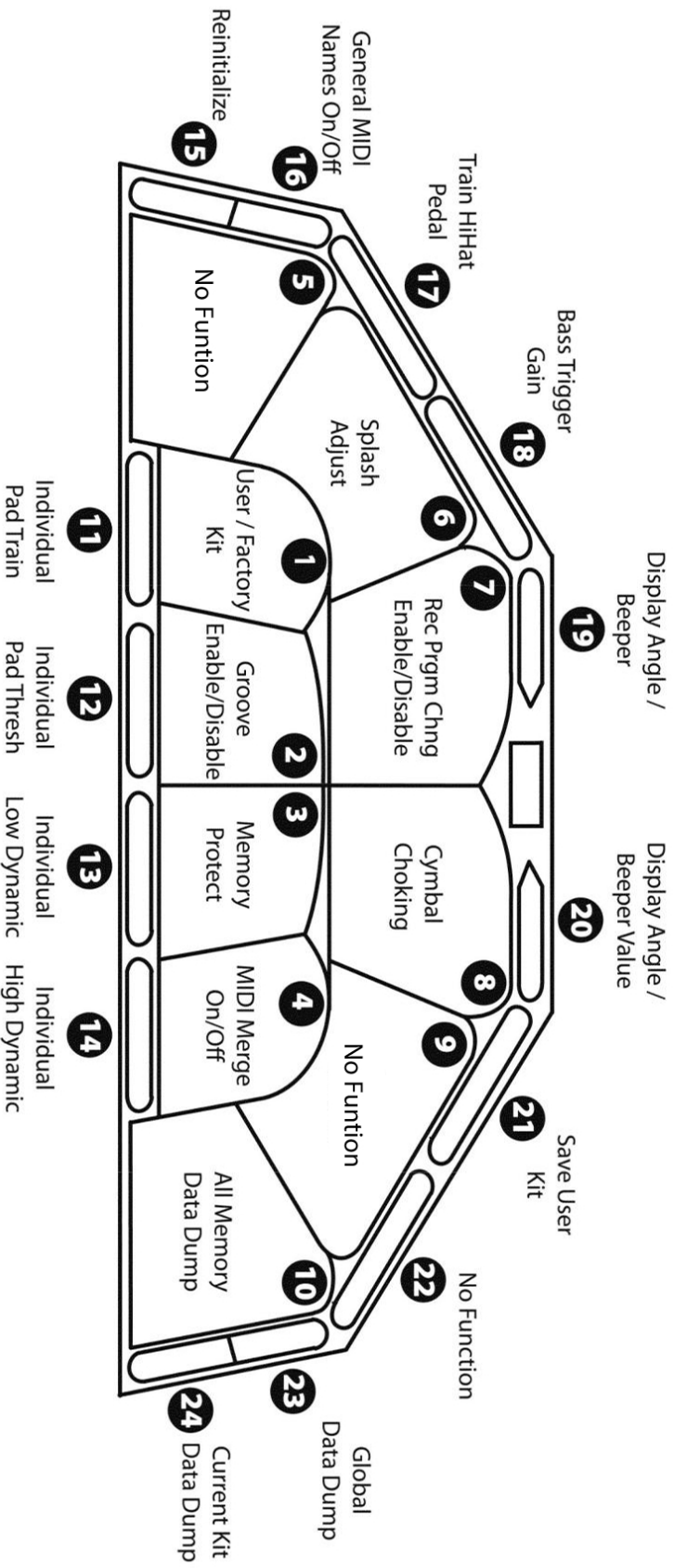
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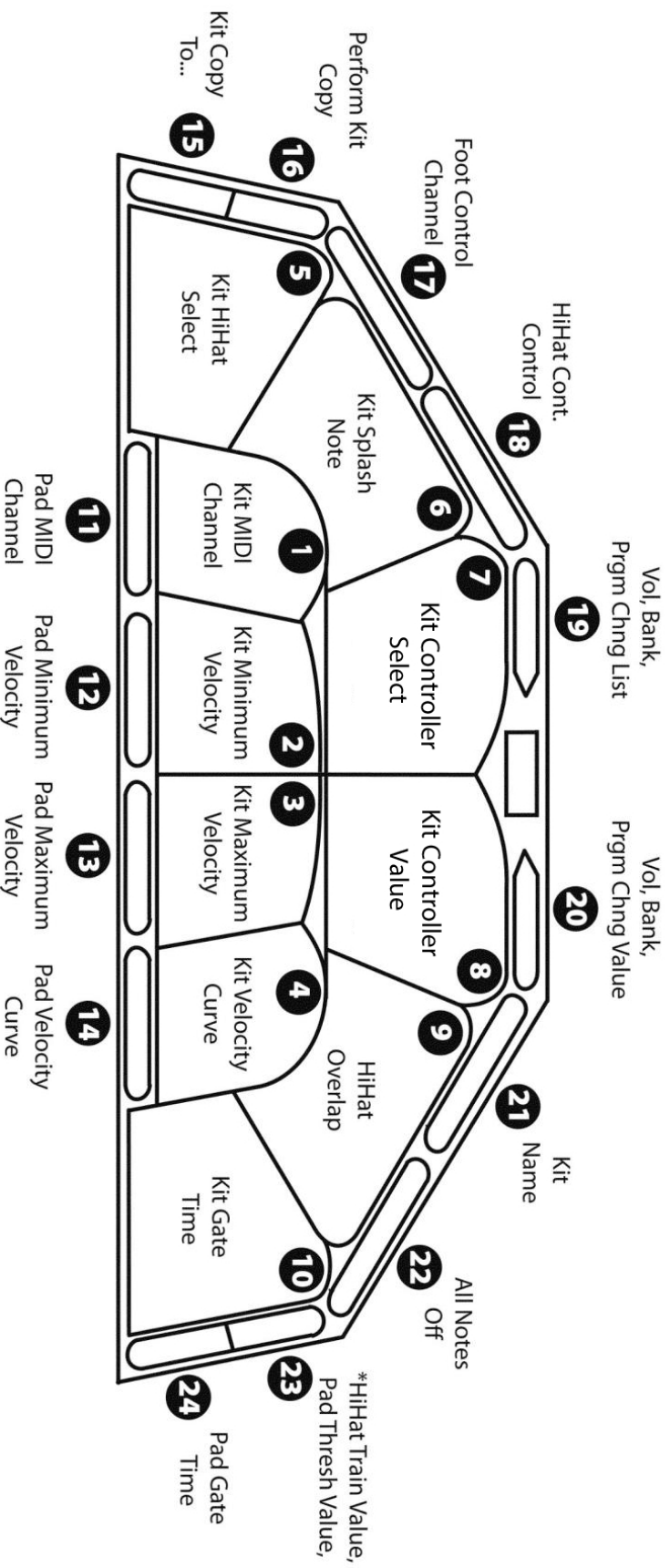
# GLOBAL EDIT PAD LAYOUT

Hold down the GLOBAL EDIT footswitch and hit a pad to access these functions.



# KIT EDIT PAD LAYOUT

Hold down the KIT EDIT footswitch and hit a pad to access these functions.



\* HiHat Train Value & Pad Thresh Value will show after 2nd consecutive strike on pad.

## INTRODUCTION

Welcome to Alternate Mode's trapKAT XL!

Since the original trapKAT, much has changed. We now use a lightweight aluminum frame which is about 2/3rds lighter than the original trapKAT. We have replaced the original heavy gum rubber pads with our new nuBOUNCE playing surface. This new playing surface just feels great to play on. There are 24 pads on the trapKAT, 10 large pads and 14 rim shot style pads that can be played with the shaft of your drumstick. There are also bass drum and hi hat inputs, making a total of 26 things to play on.

Our proprietary FSR (force sense resistor) sensors have improved as well. They are now more dynamic and durable than ever before. The trapKAT now comes in a beautiful white powdered coated surface.

Many of the drumKAT's performance features are now part of the operating system of the trapKAT. There are Alternate Modes, Velocity Switch Modes, Layering, Pad Linking as well as some Gate Control Modes such as Roll Mode and Latching for Loops. We have even added Controller Functions so that CC Data can be sent along with note data.

Because the trapKAT XL is conceived as a total electronic drum set, we developed our own Hi Hat and Bass Drum triggers, the eHAT2 and eKIC pedals. These pedals are different because unlike other companies models, you can determine the pedal height and spring tension on both of them. It is the fact that you are using a real bass drum pedal that makes it feel incredibly natural and comfortable to play on. We also sell our own stand, so that a complete bundle is available for your convenience.



## QUICK START

Getting setup is easy. There are two brackets that connect to the back of the trapKAT. These brackets in turn get mounted onto the brackets on your rack stand. Once you set the mounting brackets on your stand and lock them in, setting up the trapKAT will only take seconds to set up.

The trapKAT uses a screw in style power adapter (different from other KAT models). This adapter is universal so it can be used all throughout the world. Simply plug it in and turn it on.

Plug the eKIC (or another Bass Drum Trigger) into the “BASS DRUM INPUT” on your trapKAT. It requires a standard 1/4” mono cable.

Plug the eHAT2 (or another Hi Hat Controller) into the “HAT INPUT” on your trapKAT. It also requires a standard 1/4” mono cable

Plug the supplied footswitch into the “KIT SELECT”

Connect your sound source to the trapKAT by connecting a standard MIDI cable (hardware based) or USB to MIDI cable (software based) to the trapKAT's MIDI OUT connector. If you have purchased a sound module and trapKAT together from Alternate Mode, The trapKAT will be preprogrammed for that sound module.

The trapKAT is now ready to play.

Notice that there are twenty four pads on the trapKAT. The trapKAT also has 24 Kits to play on. Each pad represents a number from 1 to 24. Every time you step on the footswitch, you jump to the next kit, from 1 to 24. You can instantly jump to any kit simply by holding down the Kit Select footswitch, and while held down, tap on any one of the pads. When you do this, the trapKAT calls up the KIT number that matches the pad number.

You are now ready to stop reading and start enjoying yourself. Please get behind the trapKAT and start playing!!!!!!

## CONNECTIONS

### POWER SWITCH

This is your standard on/off switch. Please note that if you turn off the trapKAT, wait several seconds before turning it back on. The instrument needs to reset itself. If you happened to restart it too fast, the sounds might not fire up. No worries, just shut it off and wait a few seconds then all will be fine. Also notice that there is a warm up cycle. This is for the benefit of the sound card. It needs to reinitialize itself, and takes about 8 seconds before the trapKAT turns itself completely on.

### AC ADAPTER INPUT

The trapKAT comes supplied with a removable, locking AC adapter that connects to the trapKAT and your 110v outlet. If you are in Europe, we will supply you with a different plug. The adapter is the same however, and will automatically switch to your 220/240v operation.

### BASS DRUM INPUT

This is where you plug your bass drum trigger into. The input uses a 1/4" mono cable. The trapKAT XL is optimized to play with the eKIC. If you have others, the trapKAT will need to be TRAINED in order to optimize your bass drum trigger. There are also GAIN controls that make the trapKAT compatible with most bass drum triggers on the market.

### FOOTSWITCH INPUTS

There are 4 Footswitch Inputs built into the trapKAT XL. The trapKAT prefers MOMENTARY OPEN style footswitches. The footswitches supplied with the trapKAT are of this variety.

If you own MOMENTARY CLOSED style footswitches, they will still work, BUT you must plug them in BEFORE you turn on the trapKAT. The trapKAT reads the pedals polarity on power up and makes them work properly. If you do use a momentary closed footswitch, you should not remove them from the input while the trapKAT is on. It will think you are stepping on the footswitch!

### KIT SELECT FOOTSWITCH

Using this footswitch allows you to access the trapKAT's Kits. You can access these kits in two ways. Simply step (tap) on the footswitch to increment to the next kit. The faster way to call up any kit is to hold down the footswitch and while held down, tap any pad. The pads number (1-24) will also match the Kits number (1-24). There are USER KITS and FACTORY KITS in the trapKAT. These KIT types are called up in the GLOBAL Screens.

### NOTE EDIT FOOTSWITCH

Changing sounds on the trapKAT is easy. All you have to do is hold down this footswitch, and while it is held down, hit the pad that you want to change. The first time that you strike the pad, you will hear the sound that is assigned to the pad. The next time you tap on the pad (with the footswitch still held down,) the sound will increment by one. You will hear the sound change each time the pad is struck.

If you pass by the sound, you can easily go backwards in the list of sounds. Simply release the footswitch and quickly hold it down again. The sounds will now play in the reverse order.

What you are actually doing is advancing through MIDI note numbers. There are 127 notes possible. That means that you could be scrolling through up to 127 sounds on any pad. Notice on the display that the screen tells you what note number you are playing. The Beep Sound also changes. This is really necessary so that you know which direction you are going and how far you need to go.

You might also be seeing a name of a sound on the display. These names show up if in the GLOBAL section, GM Names are turned on. If you are not using a GM drum module, you will need to ignore

these names. The trapKAT doesn't know what is plugged into its' MIDI OUT port. So it is best to get into the habit of looking at the note number and not the sound name.

### **KIT EDIT FOOTSWITCH**

This footswitch turns the pads into a function for editing the KIT that you are playing. When you stepped on the NOTE EDIT footswitch and tapped on a pad, you saw and heard a note number. When you step on the KIT EDIT FOOTSWITCH and hit a pad, a function will be displayed. Just about every pad has a function, some have multiple functions. These will be described in the KIT EDITING section of the manual.

### **GLOBAL EDIT FOOTSWITCH**

This footswitch is for doing things that are Global. That means that these settings affect the entire instrument, and not just one kit.

The overall training of the pads, saving your kits, doing data dumps, memory protection are all examples of Global things to do on the trapKAT. These Global functions are described in the GLOBAL EDITING section of the manual.

### **MIDI OUT JACKS**

There are two MIDI OUT jacks on the trapKAT. They are identical and are there for convenience in case you are using more than one sound source for your sounds. Data goes OUT to the external world through these jacks at the same time.

### **MIDI IN JACK**

Plug a MIDI cable into this port if you want to send a SYSEX Data Dump to the trapKAT. It is also possible to program the MIDI note number of a pad if you are in NOTE EDIT and you send a note number externally to the trapKAT from an outside source. This is called AutoTrain.

### **Hi HAT INPUT**

This is where you connect your eHAT2 to the trapKAT. You must use a 1/4" mono cable. At the factory, we TRAIN the trapKAT to work perfectly with the eHAT2. If you are using another manufacturer's hi hat pedal, you will probably will need to TRAIN the pedal in order to get the best results. TRAINING the pedal will be discussed in the GLOBAL Section of the manual.

## THE MANUAL

Controlling the trapKAT effectively really requires that you understand the functions that lie underneath the KIT EDIT and GLOBAL EDIT Screens. Understanding the basics of MIDI really is also necessary so that the concepts discussed do make sense. You will then be able to program your own kits that reflect your needs and requirements in playing the trapKAT.

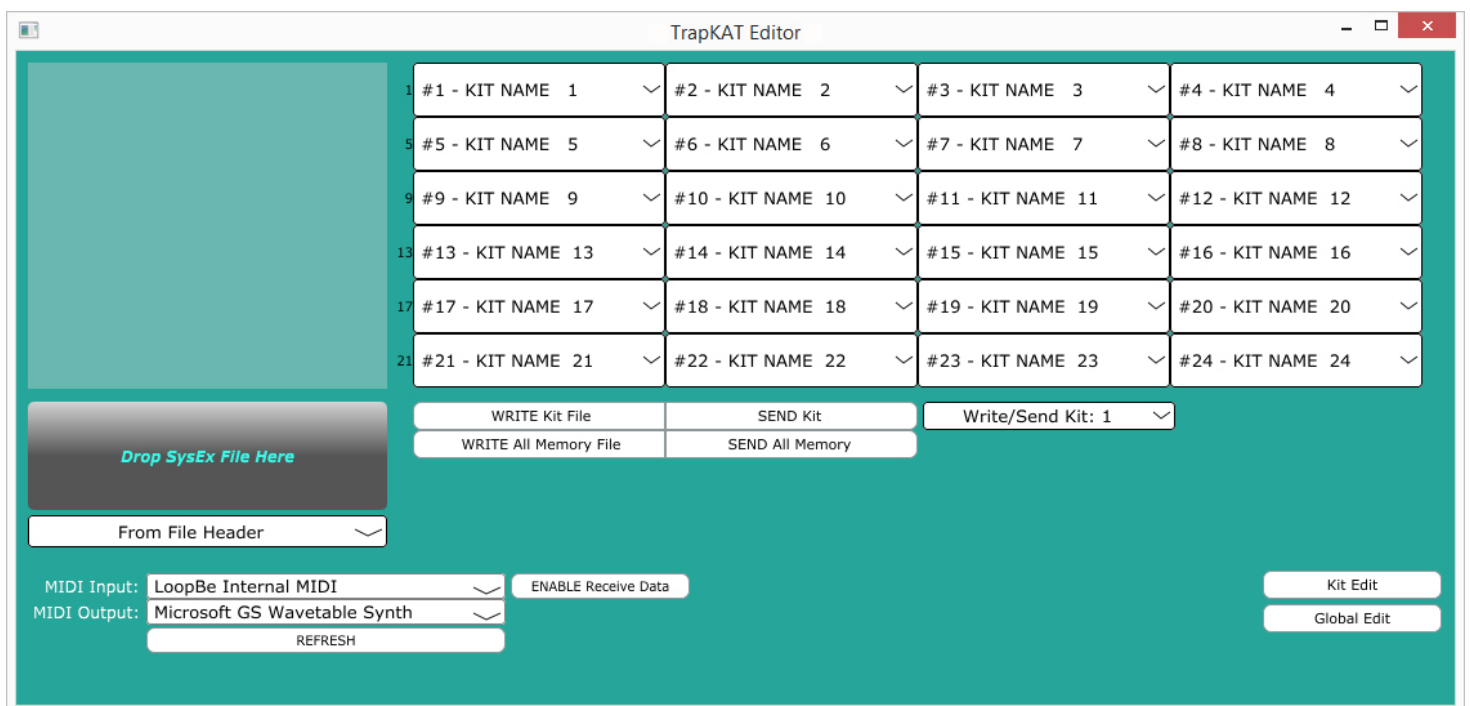
There is however another way out... a sort of purgatory for the land of MIDI. We compiled a list of questions that musicians ask us over and over again on how to get around the trapKAT. Each of the questions asked will go over all of the steps necessary to solve the specific problem. The answer will be abbreviated but it will answer the question. It's a shortcut yes, but it will help you get around the instrument in a “need to know” basis.

After reading this section in the manual, there will be several other sections that will cover all of the screens and functions in the trapKAT. This will be the NOTE EDIT, KIT EDIT FUNCTIONS and GLOBAL EDIT FUNCTION sections. This will be followed by an Appendix that will have listings of Sounds, Definition of Terms, Warranty and other important information.

Please also note that there are other ways of learning about the trapKAT. There is a VIDEO HELP DESK on the alternatemode.com website that will have video demonstrations on “how to's”. There is a KNOWLEDGE Database on the website that has answers to questions asked. There is a Forum where questions can be answered and finally (last resort), or you can call us. Contact information can be found on our website.

## The trapKAT Editor

The trapKAT Editor makes programming your trapKAT quick and easy. You can edit KIT and GLOBAL settings, as well as copy, swap and save Kits. The trapKAT Editor is available for free! Go to our website for video instructions and to download the Editor. It's available for PC or MAC.



## **20+ QUESTIONS MOST OFTEN ASKED**

***HOW DO I.....OR..... WHY CAN'T I  
OR.....WHY DO I.....OR .....WHAT IS???***

### **WHAT ARE THE PAD NUMBERS**

There are 10 big pads and 14 rim pads. The first 4 big pads left to right are 1 to 4. The next circle of pads from the left are pads 5-10. The little rim pads in front of the instrument are numbers 11-14. The outer rim pads starting from the left are pad numbers 18-24.

### **GET MY HI HAT TO WORK**

In order to have a good working Hi Hat pedal, you will need to do three things. First you must TRAIN your pedal. Then you must decide what pads you want to have the Hi Hat function to work on (1 to 4) and finally you will need to determine which mode of Hi Hat you want (GM Hi Hat, Controller Hi Hat or HATNOTE Modes).

To TRAIN the Hi Hat pedal, Step on the GLOBAL EDIT Footswitch. While held down, tap on rim pad #17. The display will then guide you to depress the Hi Hat pedal all the way down and then hit any pad, followed by releasing the pedal and hitting any pad. Your pedal is now Trained!

Now you need to define what pad or pads are going to be Hi Hat pads that will respond to the position of your Hi Hat pedal. To do this, step on the KIT EDIT Footswitch. While held down, tap on pad # 5. The display will show what pads have been previously selected.. Now strike pad #5 again. The screen will ask you to select what pads you want to be Hi Hat pads. Tap on the pad or pads that you want to be Hi Hat pads and release the pedal.

Finally you need to decide if you are using General MIDI Hi Hats (if you are connecting to a GM drum machine), or if you are using Continuous Controller Data for Drum Modules or Soft Synths that looks at the pedal position or if you are using HATNOTE mode.

Step on the KIT EDIT Footswitch. While held down, tap on pad # 18. Each time you tap on the pad, you will see choices to select. HATNOTE, 01, 04, 04F and None. HATNOTE is the setting to use if you are using the SKS, (Kurzweil sound card) "NONE" is the setting if you are using a General MIDI drum module, and 01, 04 and 04F are Continuous Controller Number Settings used in the popular VST drum modules or drum modules like the KAT KT-M1 or Roland TD30.

There are other settings that can further tweak the Hi Hat Settings in the Global Screen settings.

The eHAT2 can also be plugged directly into the KAT KT-M1 Drum Module. To set up the eHAT2 with the KT-M1, select the Hi Hat channel in the UNIT menu. Navigate to the HCAL screen. Choose Hi Hat type ALEHH. A mono cable must be used with the ALEHH Hi Hat type. Use the Calibrate function to train the Hi Hat. Change the PFACT setting to adjust the chick (typically must be increased by 10 after training).

### **GET MY BASS DRUM PEDAL TO WORK**

Like the Hi Hat pedal, the bass drum trigger needs to be TRAINED to get the best results. The proper MIDI note number needs to be assigned and finally the right velocity setting in the Kit needs to be tailored to your taste.

There are three GAIN settings in the Global Setting called MIN, MID and MAX. To set the Gain Setting, step on the GLOBAL EDIT Footswitch. While held down, tap on pad # 18. Each time you tap on that pad, you will see the choices toggle between Min/ Mid/ and Max.

Next you should TRAIN the pedal. Step on the GLOBAL EDIT Footswitch, and while down, tap on pad #11. When you tap on the pad, the screen will ask you to choose you pad (or trigger) you want to TRAIN. Tap on your bass drum pedal. The screen will ask you to play softly. Do it once and wait until it asks again to play hard. After you do that, you will need to tap on the GLOBAL EDIT Footswitch again to get out of this mode. You can look at the values that the trapKAT set for your training in the Global Screens (pads 13 and 14). You can also lower the Threshold if you need softer triggering (Global pad # 12). These are described in more detail in the GLOBAL EDITing Section of the manual.

You now have to make sure that the bass drum is assigned to a bass drum sound. Usually this is MIDI note number 36. To change the MIDI Note Number, Step on the NOTE EDIT Footswitch and while held down, tap on the bass drum trigger. The MIDI note number is displayed. You can change it simply by tapping on the bass drum trigger with the Edit Footswitch held down.

The last thing to consider is the minimum velocity of the bass drum. Try using a value a 32 to begin with. To change the Minimum Velocity, Step on the KIT EDIT Footswitch and tap on pad # 12. The minimum velocity is displayed. You can change it by tapping on the pad.

If you are using the KT-M1 module with the trapKAT, there is no need to worry about most of these settings. The eKIC should perform very well right out of the box.

### **GET THE trapKAT TO RESPOND TO MY PLAYING STYLE**

One of the main features of the trapKAT (and the other KAT Controllers) is that you can teach the instrument your playing style. By performing a TRAIN on the pads, the trapKAT understands what you mean to be soft and loud. The MIDI velocity dynamics are superimposed within the dynamic range that you set. This is a very powerful feature as it makes your instrument personal!

Training the pads is easy. Step on the GLOBAL EDIT Footswitch and Tap on Pad # 11 twice. You can then let go of the footswitch. Now, pad by pad, do as the screen asks.... play each pad soft, then hard. After you have done this to all of the pads and bass drum trigger, step on the GLOBAL EDIT Footswitch again to get out of this mode.

You can see the results on your Training by using the GLOBAL EDIT Footswitch and tapping on pads 13 and 14. These pads will show you the values the trapKAT “read” when you played soft and hard.

### **RESET THE trapKAT**

Getting the trapKAT back to the original Factory Settings is easy. Step on the GLOBAL EDIT Footswitch and while held down, tap on pad #15. It will ask you to tap on pad #15 again. It will ask you to hold down pad #1 then hit #15 a third time. When you do this, you will see the display acknowledge that the trapKAT has been reinitialized. The instrument defaults to the FACTORY Kits.

After you reinitialize the trapKAT, the instrument automatically turns on MEMORY Protection. If you attempt to change any parameter on the trapKAT, you will hear a “bad” beep. To shut off MEMORY Protection, step on the GLOBAL EDIT Footswitch, and while held down, tap on pad #3. This pad toggles the Memory Protection on and off.

## **GO BETWEEN FACTORY AND USER KITS**

The FACTORY Kits on the trapKAT XL 6.0 are meant to be used with the KAT KT-M1 Drum Module. Please note that you can make changes to Factory and User Kits, but you can only save USER Kit information. When you alter a Factory Kit, the changes go away as soon as you leave the kit. This is also true for the User Kits unless you choose to do a SAVE function to that Kit.

The good news is that the FACTORY Kits utilize all the possible Trigger Channels in the KT-M1. This allows you to program the maximum amount of sounds in each Kit. Because of the open architecture of the KT-M1, there is really no need to change any of the MIDI note numbers in the trapKAT FACTORY Kits. Simply assign the sound you want for each pad to the matching Trigger Channel of the KT-M1. Refer to the Pad Assignment Section in this manual. This shows what pad is assigned to which KT-M1 Channel.

To go between FACTORY and USER Kits, step on the GLOBAL EDIT Footswitch and tap on pad #1. Each time you tap on that pad, the trapKAT switches between Factory and User Kits. When you shut off the trapKAT and turn it back on, it will remember what Bank of Kits you are using.

### **"QUICK CLICK"**

While you are incrementing values, quickly release and repress the footswitch (within a second). The values will now change direction. This works for the NOTE EDIT, KIT EDIT and GLOBAL EDIT Footswitches.

### **SAVE A KIT**

To save any changes that you make in USER KITS, hold down the GLOBAL EDIT footswitch and hit pad #21 twice. To save changes made in FACTORY KITS, you must copy the kit to a USER KIT.

### **CHANGE THE SOUNDS**

TrapKAT 6.0 is preprogrammed at the factory to work with the KT-M1 Drum Module. The KT-M1 module operates in a different way than other drum modules. Instead of having MIDI note numbers assigned to sounds, they are assigned to Channels. Any sound can be assigned to a Channel. Each Channel has a default note number, but it can be changed to any MIDI note number (0-127). Match a Channel's note number to a trapKAT pad's note number to play the sound assigned to that Channel.

Some sounds have a group of consecutive note numbers associated with it. Cymbal sounds have 3 (Bell, Bow, Edge) and snare and toms have 2 (snare and rim, tom and rim). The Hi Hat also has a group of consecutive notes. The module always indicates the first note in the group. For example, the default note number for Cymbal 1 is 64. This is actually a group of notes (64, 65, 66) which is bell, bow, edge. In order to play the bow sound on the trapKAT, leave the note number 64 on the module and set the trapKAT pad's note number to 65.

Changing the note number in the module will shift the group of notes. These notes cannot be separated from each other. For example, changing the note number on Cymbal Channel 1 from 64 to 65 will result in the note group 65, 66, 67 (Bell, Bow, Edge). Any note numbers can be used on any channel, as long as the trapKAT matches the number. Both trapKAT banks are programmed using the KT-M1 default note number configuration.

If you are using the trapKAT with other traditional sound sources, changing a sound on a pad simply requires that you step on the NOTE EDIT footswitch, tap on the pad that you want the sound to change,

then continue tapping to hear all of the sounds that are available in that kit.

There are 127 note numbers that are possible in any Kit. When talking about melodic sounds, note number 00 is the lowest sound, and 127 is the highest note possible. If the sound is a marimba for example, each note number just plays a different note on the marimba. When talking about drum sounds, each note number usually plays a different sound. Usually there aren't 127 sounds available in a kit, but this is how the theory works. For both pad sounds, and kit sounds, there is a MIDI channel that they play on. There are 16 MIDI channels available. This means that you can have different Kits sounds as well.

There are 127 program changes possible. But because some sound sources have more than 127 sounds, Bank commands were created. A Bank is a collect of 127 different sounds (programs). On the trapKAT, you can store up to 4 different Bank and Program Numbers per kit. Recall that each of these sounds must be associated with a MIDI Channel number. This is the way that we can differentiate the different sounds on different pads when the sound is a kit sound, not a pad sound.. Also, we can control the relative Volume for each of these Sounds.

To do this you will need to assign a MIDI Channel, Bank Number (MSB-LSB), Program Change Number and Volume Number to the Kit. If you need more than one sound, you can store up to 4 of these on different MIDI Channels.

It KIT EDIT, pads # 19 and 20 are assigned to this task. When you step on the KIT EDIT footswitch and continue tapping on pad 19, you will see Volume (1), Program (1), Channel (1) MSB (1) and LSB (1), then Volume (2), Program (2) etc etc all the way up to LSB (4).

When you see the value displayed, tap on pad #20 to increment the value. You can also "quick click" the footswitch to go the other direction.

The good news is that most of the time you will only be calling up one Bank and Program Number per User Kit. The KT-M1 does not use Bank commands. It only requires the Program Change number.

### **MANAGE KIT NAMES**

If you want to name your own Kit, step on the KIT EDIT footswitch and tap on pad #21 twice. While continuing to hold down the footswitch, the pad numbers below change the characters on the display. Let go of the footswitch when you are done.

- Pad 1 assigns upper case letters
- Pad 11 assigns lower case letters
- Pad 3 assigns a space between characters
- Pad 12 assigns a character
- Pad 3 advances the cursor
- Pad 13 reverses the cursor
- Pad 4 advances the characters
- Pad 14 reverses the characters.

### **CHANGING NOTE NUMBERS DOESN'T DO ANYTHING**

The trapKAT can play up to 16 sounds on one pad. Most of the time when you are changing note numbers, you will be working on slot number 1 (of 16). You can tell which slot you are working on by



looking at the screen when the NOTE EDIT Footswitch is held down. For example, you might see something like #38-01. The number 38 is the MIDI note number. The 01 represents slot 1 of 16.

Hearing these other sound slots depends on if you have a special function turned on such as Alternate Mode or Velocity Shift. These are activated in the Velocity Curve Screens. These functions will be described in the KIT EDIT FUNCTIONS chapter.

If you find that you are not in slot number 1, then step on both the NOTE EDIT and KIT EDIT footswitches at the same time, and continue tapping on the pad until slot 1 rotates back on the screen.

### **THE TRAPKAT IS PLAYING ITSELF**

Every pad on the trapKAT has its own "THRESHOLD" setting. This is the low end (softest) sensitivity setting where the trapKAT decides when to start sending out notes. If you ever hear any false triggering, fixing the problem is easy. First identify the hyper sensitive pad. If you don't know which pad it is, step on the NOTE EDIT Footswitch. It will just jump to that pad when the pad triggers itself. Step on the GLOBAL EDIT Footswitch, and while held down, tap on pad #12. The screen will ask you to hit the pad that you want to adjust. Hit that pad, then hit the pad again. Each time you strike the pad, it will raise the THRESHOLD by a value of one. If you want to go backwards, perform a ""quick click""

### **THE DIFFERENCE BETWEEN TRAINING AND VELOCITY SETTINGS**

There is a difference between TRAINING your pads Globally and setting up your velocity settings in a particular KIT. When you go into the GLOBAL screens and elect to TRAIN a pad, you are setting up the playing range for those pads for the entire instrument. A TRAIN tells the trapKAT what you define as a soft and hard hit. Setting up a velocity range on the other hand tells the trapKAT how loud to play a pad when you play soft and hard. The velocity range is from 00 to 127. In every kit, you define what is the minimum velocity number you want when you play soft, and the maximum velocity when you play hard.

### **I DON'T HEAR ANY SOUNDS FROM MY SOUND SOURCE**

When you don't hear any sounds coming from your sound source, it usually is because you haven't set the correct MIDI channel. There are 16 MIDI Channels possible. The trapKAT transmits on a MIDI Channel, and the sound source receives on one. Check to see what MIDI channel you are transmitting on in the trapKAT. Then check your sound source to make sure that it is receiving on the same channel.

To see what MIDI channel you are transmitting on your trapKAT, step on the KIT EDIT Footswitch, and while held down, tap on pad 1. The MIDI channel will be displayed. You can change the channel by hitting pad one repeatedly. If you want to have different MIDI channels on different pads, tap on pad 11. The screen will ask what pad you want to see the MIDI Channel. The KT-M1 and trapKAT default to Channel #2

### **THERE IS A BIG DELAY WHEN I USE MY COMPUTER**

When any MIDI controller is plugged into a computer for the purpose of sound generation, latency becomes an issue. What should be noted is that the delay heard is not coming from the trapKAT. The trapKAT sends out data in about 1mS. (that's 1000<sup>th</sup> of second). Sound generation from a computer can be 10 times that, and that can be very noticeable.

If you decide to use a computer for sound generation, consider getting the fastest computer you can afford with plenty of RAM. Today computers are sold with SSDs (solid state drives). These are much faster than traditional drives and they are truly road worthy.

The real culprit for latency is the sound card in the computer. It simply isn't fast enough for use as a musical instrument. Of course it's fine for playing back music, but not for real time generation of sound. To that end, manufacturer's have created external Audio/MIDI devices that use special drivers (ASIO for example) that are designed for using your computer as a sound source. Using an audio/midi interface is even more critical for drummers because we hear latency much better than other musicians. Even when you get this device (there are many to choose from.. just type in AUDIO MIDI INTERFACE in GOOGLE) , there are settings that are crucial for dealing with latency issues. In the preference screens on these devices you can control the Sample Rate and Buffer Rate. Raising the Sample Rate and Lowering the Buffer Rate assures the lowest latency, but it puts the most demand on your computer. Usually the preference screen also displays the latency in milliseconds. You will need to find the balance between CPU usage and latency.

### **GET RID OF THE BEEPER SOUND**

Turning the Beeper On or Off is done by stepping on the GLOBAL EDIT Footswitch, and while held down, tap on pad #19. The screen will display its current setting. To change it, tap on pad #20

### **BACK UP MY USER KITS**

The trapKAT is a like a computer, and can be subject to data loss. Backing up your kits should be a routine process. There are free programs for both MAC and PC that you can use to back up your data using a MIDI Interface. There are links on our website to get them. It is also possible to use your sequencer to store data. This type of storage is called SYS EX DATA Dumping.

On the trapKAT there are three kinds of SYS EX Dumping. All Memory Data Dump, 1 Kit Data Dump and Global Dump. We recommend using the “All Memory” dump. It's the easiest and the best way to save all of your work. To perform a Data Dump, make sure that you plug a MIDI cable to the trapKAT's MIDI out jack, then connect that to your MIDI Interface. Open up one of the programs suggested on our website (trapKAT Editor,SYSEX Librarian, MIDIOX, etc) and enable it to “RECIEVE” data.

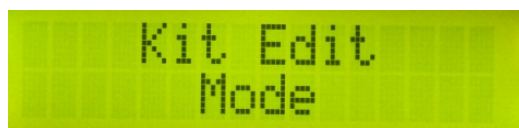
On the trapKAT, step on and hold down the GLOBAL EDIT Footswitch and hit pad # 10. All of the trapKAT's memory will be sent out the MIDI out jack. The trapKAT will automatically receive data dumps back. Just plug a MIDI cable to the MIDI IN jack, and send the file over using the same program.

It is also highly recommended that you back up your KT-M1 Bank files (.dkit) and sound files (.dsnd) to your computer. The KT-M1 acts as a normal computer drive. Therefore you can copy and replace files easily. By making copies of the original Bank and Sound files, you will have the ability to revert back to the original factory settings.

### **WHAT SOUND SOURCES DOES THE TRAPKAT WORK WITH**

The trapKAT will work with any MIDI sound source... including hardware drum machines, keyboards and all virtual and soft synth plugin.

# KIT EDIT FUNCTIONS



The following section will go over all of the KIT EDIT Functions that are in the trapKAT. It is in these screens that all of the programming of the kits happen. Accessing these functions are always the same. Step on the KIT EDIT Footswitch, and while held down, tap on one of the pads. The pads function will display. Here is the list of functions.

Pad 1	Kit MIDI Channel
Pad 2	Kit Minimum Velocity
Pad 3	Kit Maximum Velocity
Pad 4	Kit Velocity Curve
Pad 5	Kit Hi Hat Pad Select
Pad 6	Kit Splash Note
Pad 7	Kit Controller Select
Pad 8	Kit Controller Value
Pad 9	Hi Hat Overlap
Pad 10	Kit Gate Time
Pad 11	Pad MIDI Channel
Pad 12	Pad Minimum Velocity
Pad 13	Pad Maximum Velocity
Pad 14	Pad Velocity Curve
Pad 15	Kit Copy "to" Kit
Pad 16	Perform Kit Copy
Pad 17	Foot Control Channel
Pad 18	Hi Hat Continuous Control
Pad 19	Volume, Bank, Program Change Listings
Pad 20	Volume, Bank Program Change Value Change
Pad 21	Kit Name
Pad 22	All Notes Off
Pad 23	No Function/Hi Hat Train Values/Pad Threshold Values
Pad 24	Pad Gate Time

In an attempt to make these functions more understandable, we have combined the pad functions into categories. This should make it easier to program the trapKAT as related functions described below have been organized in one topic.

## MIDI CHANNEL PAD #1, 11

```
Kit Number 001  
Channel = 001
```

```
Hit Pad Again  
for Pad Channel
```

To change the MIDI Channel on the entire User Kit, tap on pad #1. The Kit's current MIDI channel is displayed. To change the MIDI channel, tap on the pad again or “quick click” to reverse direction when tapping on the pad. If you want to change the MIDI Channel on just one pad, use pad #11, Pad MIDI Channel. When you tap on pad #11, it will ask you to select the pad that you want to change the MIDI Channel.

There are 16 MIDI channels available in MIDI. Any pad can be assigned to its own MIDI channel. If you have a multi-timbral sound module, very creative kits can be created! A different program sound can be assigned to any MIDI channel, allowing the trapKAT to control many sounds at once.

## KIT VELOCITY (Minimum, Maximum, Velocity Curves) PAD #2,12, 3,13, 4 and 14

```
Kit Number 001  
Min Vel = 001
```

```
Kit Number 001  
Max Vel = 127
```

```
Kit001 VelCrv 01  
Curve 1
```

There are three settings that affect the response of each pad. They are called Minimum and Maximum Velocity, and Velocity Curve. The Min and Max Velocity affect the range of how loud or soft an individual sound can be. The Velocity Curve affects the feel or how fast the sound gets louder as you smoothly play harder and harder.

The range for velocity is 00-127. If you set the Minimum to 00 and the Maximum to 127, you are programming the pad to play the widest dynamic range possible. Counter to what you may first think, this is not always the best choice. For example, most people find that the bass drum needs a narrower range, say 32-127. If the softest hits are not heard, then you will need to raise the Minimum Velocity Setting. If you want the same crack of a snare drum, you might want to raise the Minimum Velocity even higher.

If you hear a sound that is not balanced, i.e. too loud, you might want to lower the Maximum Velocity.

After the range is set, the next factor to consider is the Velocity Curve. The curve tells the trapKAT how fast to change from soft to loud. Usually folks like a linear or smooth response, and use the default Curve #1. There are exponential and logarithmic curves that stay soft longer as you play harder or the other way around.

It is possible to set one Minimum, Maximum and Curve Setting for the entire kit. Use pad #2 for the

Kit Minimum Velocity, pad #3 for the Kit Maximum Velocity. The range possible is 00-127. Use pad #4 to Select a Kit Curve. There are 8 “normal” curves to choose from and then there are “special curves” discussed below.

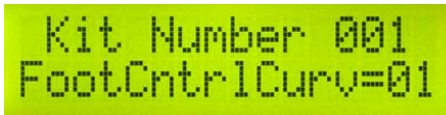
The normal curves are...

<b>Velocity Curve 1</b>	Linear-smooth from soft to loud
<b>Velocity Curve 2</b>	Stays soft longer than curve 1
<b>Velocity Curve 3</b>	Stays soft even longer than curve 2
<b>Velocity Curve 4</b>	Slow linear curve with an accent on the top end
<b>Velocity Curve 5</b>	High minimum, stays even then accent on top
<b>Velocity Curve 6</b>	moves from soft to loud much quicker than curve 1
<b>Velocity Curve 7</b>	another variation on the Linear Curve
<b>Velocity Curve 8</b>	and another variation of the Liner Curve

As you can see, these curves are very subjective. They will sound different depending on the sound, the velocity ranges set and the curve factor built into the sound module. It is for this reason we recommend that you stay with Curve 1 unless you want “more” or something different. Experiment. If you decide that you want to have different velocity ranges and curves for different pads, the trapKAT allows you to do this.

Pad #12 controls individual pad minimum velocity. Pad #13 controls individual maximum pad velocity. Pad #14 controls individual pad velocity curve. When any of these pads are tapped, the trapKAT will ask what pad you want to change. Hit the desired pad and change the velocity or curve by continued strikes on that pad. If you change any pad, and go back to the Kit Velocity pads, you will see “various” on the screen, informing you that different pads have different velocity values. If you proceed to change the value here, all velocities within the kit will be reverted to this value.

## FOOT CONTROL CURVES



```
Kit Number 001  
FootCtrlCurv=01
```

There are 7 different foot control curves to choose from to personalize the feel of your Hi Hat controller pedal. Choose the one that best suits your type of controller pedal. Hold the KIT EDIT footswitch down and also press down once on your controller pedal. Each subsequent press on the pedal toggles through the foot controller curves.

## SPECIAL CURVES (MULTI MODE and ALTERNATE MODE)

### Pad 4 and 14



```
Hit Pad Again  
for Pad Curve
```

In the search to add drumKAT like features to the trapKAT, we developed a way of adding multi mode and alternate mode features to the trapKAT without the necessary programming needed on the drumKAT to do this. This was accomplished by adding special “canned” curves that performed these functions simply by calling up that function. These curves are located in Velocity Curve pads #4 (kit) and pads #14 (individual pad) settings. They appear after the “ 8 normal” curves.

To select a multi-pad or alternate mode curve, step on the KIT EDIT footswitch and hit either pad #4 for the entire kit or pad #14 (recommended) to find the special curve function. These Special Curve Functions are:

- 2<sup>nd</sup> Note @ Hardest**            sound 2 plays only for the hardest hits
- 2<sup>nd</sup> Note @ Hard**                sound 2 plays only for hard hits
- 2<sup>nd</sup> Note @ Medium**            sound 2 plays when medium hits are executed
- 2<sup>nd</sup> Note @ Soft**                sound 2 plays when soft hits are executed
- 2 Note Layer**                    two sounds are played simultaneously.
- Xfade @ Middle**                cross fades of sounds 1 and 2 where they mix in the middle
- Xswitch @ Middle**            cross fades on sounds 1 and 2 where there is an exclusive switching from one to the other in the middle
- 1 @ Medium; 3 @ Hardest**    sound 3 comes in only for the hardest hits. Sound 2 comes in for the medium hits
- 2 @ Medium; 3 @ Hard**        sound 3 comes in only for the hard hits. Sound 2 comes in for the medium hits
- 2 Double 1; 3 @ MED**        sound 3 comes in only for medium hits. Sound 2 doubles sound one all of the time
- 3 Note Layer**                    simultaneously plays sounds 1,2 and 3
- 4 Note Shift**                    sound 4 comes in for the hardest hits. Sound 3 for medium, sound 2 on the soft hits
- 4 Note Layer**                    simultaneously plays sounds 1, 2,3 and 4
- Alternating**                    from 2 to 16 notes in an alternating pattern (more info below)
- Control + 3 Notes**            continuous data send from pad along with note data (more info below)

In order for these curves to work properly, note numbers have to be assigned to the NOTE NUMBER SLOTS. There are up to 16 slots per pad. These are assigned using the NOTE EDIT Footswitch combined with the KIT EDIT Footswitch.

Step on the NOTE EDIT Footswitch and tap on a pad. You will see the pad number, a three digit note number already assigned to the pad followed by a dash ... then you will see the SLOT number from 1- 16.

While the NOTE EDIT Footswitch is held down, press on the KIT EDIT Footswitch. Each press on the KIT EDIT Footswitch increments the slot by one. When you release this footswitch, you can then edit the note number in that slot.

The trapKAT remembers what slot you last used, so be careful. You might be thinking you are programming the first slot, but check the slot number first before changing note numbers.

## **ALTERNATE MODE**

The trapKAT can play up to 16 alternating notes on any pad. It is also possible to use “silence” as a note value so that rhythms can sound simply playing even 16<sup>th</sup> notes on that pad.

To turn to this function, select the Curve called, ALTERNATING for that particular pad. Next program the MIDI note numbers you want in the Slot positions.

There are several “special” note numbers that have a direct affect on the Alternating Curve. These are called “Alternate Reset”, “Alternate Freeze” and NO. These “note numbers” can be found when you scroll past 127 using the NOTE EDIT Footswitch. If “Alternate Reset” is assigned to a slot (other than slot #1), then the alternating pattern will then start again from the beginning. This feature allows the pad to be set to any alternating pattern from 2 notes to 16 notes.

If “Alternate Reset” is assigned to a slot #1, then the Alternate Resets affect ALL Alternating pad in the entire User Kit.

The “Alternate Freeze” function stops the alternating pattern from advancing to the next note slot. If the Alternate Freeze is placed in the first position (slot #1) in the Alternating, then ALL alternate notes in the entire kit will be frozen.

If the Alternate Freeze function is placed in any of the other remaining 15 MIDI note number slots, then that pad will stop advancing until the pad is reset. (Alternate Reset)

If “NO” is assigned to a slot, then a silent note will take the place of a MIDI note number

## **CONTINUOUS DATA**

### **Control + 3 Notes mode**

Any pad can be assigned to send out continuous control data on a pad. The MIDI note number assignment becomes the CC# number and the velocity of the hit becomes the CC value. Minimum and Maximum CC ranges are assigned by the velocity minimum and maximum settings of that pad.

The same pad assigned to “Ctrl + 3” can also simultaneously send out up to 3 MIDI notes per pad. These are assigned in slots 2, 3 and 4. Any MIDI note assignments in the other slots (5-16) will have no effect.

When the pad is played, the velocity information (how hard you hit) is converted to the Controller value. The softest hit will send out a CC value of 0, while the hardest hit will send out a CC value of 127. The outer boundaries are controlled by the minimum and maximum velocity settings that you set for the pad.

The Gate Time for the pad serves as a SLEW. This means how long it takes to go from value to value. It is like a portamento for controller values.

To use this function, set the Curve on the desired pad to “Ctrl + 3 Notes”. The MIDI note assignment for slot #1 then becomes the Continuous Controller Number. How hard you hit the pad then becomes the Control Data number (00-127) in real time. How fast the value goes from number to number is determined by the Gate Time.

Finally Slots 2, 3 and 4 can be assigned to MIDI notes. These notes will be played simultaneously , that is layered along with the control data information.

## HI HAT CONTROL PAD #5, 6, 9, 17, 18



```
Hihat Continuous  
Controller = 04F
```

Getting responsive Hi Hat control is a very important of your kit setup. Depending on your sound source and Hi Hat pedal, different settings and parameters are possible.

Here are some different ways that the Hi Hat is tackled in Electric Drums:

**General MIDI Hi Hat-** Notes are assigned to open, closed, chic and splash. There are no variations of open and closed. Pads on the trapKAT are assigned to perform this function (Hi Hat Pads)

**Continuous Control-** For these sound modules, only one note number on the pad is required to get at all of the positions on the Hi Hat. On the trapKAT, Hi Hat pedal position is recorded and sent out via continuous controller messages. The Hi Hat pad assignments do not need to be activated.

**HATNOTE- (KS Model Only)** 8 Specific note numbers are assigned for the Hi Hat. HATNOTE was designed for the trapKAT 5KS. Different Hi Hat note numbers are sent out depending on the position of the Hi Hat pedal.

*Before determining which method is right for you, please make sure that you TRAIN your Hi Hat pedal. (Global Kit Footswitch pad#17).*

## FOOT CONTROLLER CHANNEL PAD #17



```
k01FootCntrlChan  
Same as Chick
```

When using only one sound source, make sure that the Foot Controller is set to the same MIDI channel as the rest of the KIT. This is found in KIT EDIT, pad #17. This pad normally defaults to “SAME AS CHICK” in which case you do not have to do anything.



## SELECTING PADS to be HI HAT PADS

### PAD #5



```
Kit:01 HiHatPads
01 04
```

When a Hi Hat pad is played, the note that is sent out depends on whether the Hi Hat pedal is depressed or not. If the Hi Hat pedal is depressed, a “closed” note will be played. If the Hi Hat pedal is not depressed, an “open” note will be played. The trapKAT needs to know which pads should be controlled by your Hi Hat pedal position.

To select a pad or pads to be a Hi Hat pad, press on the KIT EDIT Footswitch, and while held down, hit pad #5. You will see the pad numbers that are currently selected for Hi Hat.

If you strike the pad a second time, the pad numbers go blank, and the screen asks you to Select what pads you want to be the Hi Hat pad. You can now tap one, two three or four different pads that all will be assigned to the Hi Hat Mode. Release the footswitch.

## DEFINING SETTINGS FOR OPEN CLOSED and CHICK



```
Splash Note #046
OpenHiHat
```

The KT-M1 automatically assigns the open, closed, and chick sound together. It is only necessary to assign the one Hi Hat Channel note number to the trapKAT pad. The Hi Hat Channel's note number is actually a group of consecutive notes. The module always indicates the first note in the group. These notes cannot be separated from each other. For example, the default note number for the Hi Hat Channel is 45. This is actually a group of notes (45, 46, 47) for open, half and chick. The other Cymbal Channels operate the same way (for bell, bow, edge and choke).

Changing the note number in the KT-M1 module will shift the group of notes. For example, changing the note number of the Hi Hat Channel from 45 to 46 will result in the note group 46, 47, 48. For the most part, it is not necessary to change any of the Trigger Channel's default note numbers. KT-M1 sounds are independent from the MIDI note numbers. The MIDI note numbers represent the Trigger Channel, not the sound assigned to the Channel.

For other sound sources, to define the MIDI note number for the Open Sound, step on the NOTE EDIT Footswitch and tap on one of the Hi Hat pads. Do not press on the pedal. Every tap on the Hi Hat pad increments the midi note by one. You can do a “quick click” to reverse direction. The GM note for Open Sound is MIDI note #46.

To define the MIDI note number for the Closed sound, step on BOTH the NOTE EDIT Footswitch and depress the Hi Hat pedal. While both are held down, tap on one of the Hi Hat pads. Every tap on the Hi Hat pad increments the midi note by one. You can do a “quick click” to reverse direction. The GM note for Closed Sound is MIDI note #42.

To define the MIDI note number for the Chick sound, step on and keep down the NOTE EDIT Footswitch and then tap on the Hi Hat pedal. Every tap on the Hi Hat pedal increments the midi note by

one. You can do a “quick click” to reverse direction. The GM note for Closed Sound is MIDI note #42.

To define the MIDI note number for the Splash sound, step on the KIT EDIT Footswitch and while held down, tap on pad #6. Each subsequent tap on the pad will increment the note number. Usually the open sound MIDI note number #46 is used for the Splash.

Please note that the min/max velocity settings, curve and gate time settings are all programmed in the normal way and that these settings affect all of the notes in the Hi Hat.

## CONTINUOUS HI HAT CONTROL



Most of the new drum machines on the market today use continuous controller information to create various amounts of open and closed Hi Hat sounds. This permits your Hi Hat pads to not just be open or closed, but to play sounds that vary continuously from open to closed. As you move your eHAT or other CC controlled Hi Hat pedal, the trapKAT sends a stream of information to the sound source about the changing position on the Hi Hat pedal. This in conjunction with hits on the Hi Hat pads, give you varying Hi Hat sounds.

The KT-M1 has the option of using continuous controller 1 or 4. The default for the Hi Hat Channel is Continuous Controller 1.

Step on the KIT EDIT footswitch, and tap on pad #18. This is your Hi Hat Continuous Control Screen.

Manufacturers of drum modules use different Controller Numbers for controlling Hi Hats. The most popular is CC 4. On the trapKAT, we offer CC#01, CC#04 and CC#04F. In the early models of drum modules, some manufacturers did not use the full range of CC control.

There were two versions of CC4. One went from 0-64 and the other went from 0-127. On the trapKAT, CC4 setting represented the limited range, and CC4F (full) represented the full range. Today everyone that uses CC control uses the CC#04F version.

It is also possible not to send out CC data on the trapKAT. Just scroll to the value of “NONE” on pad #18.

## HATNOTE (KS MODEL ONLY)

HATNOTE offers an 8 note Hi Hat feature to users with a Hi Hat controller like the eHAT2, and a sound module that uses multiple sounds for the Hi Hat. This is what the trapKAT 5KS uses for the Kurzweil sounds built in. Varying degrees of Hi Hat open sounds appear when you strike a Hi Hat pad and have set the Continuous Controller function to HATNOTE.

There is no need to program the note numbers for this mode. These values are “fixed” and preprogrammed to work automatically.

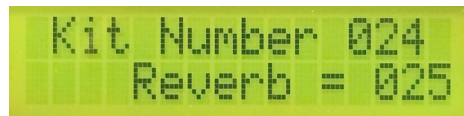
## HATNOTE OVERLAP (KS MODEL ONLY)

Hit pad #9 while holding down the KIT EDIT Footswitch and you will see the HATNOTE Overlap screen. This screen allows you to set a specified time in which your Hi Hat notes will overlap instead of abruptly cutting each other off.

This will create a more realistic sound. The Overlap times are the same as the Gate Time Settings (.005-6.3, Roll Mode, Infinite)

## PAD CONTROLLERS

### PADS #7, 8



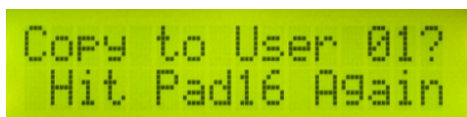
TrapKAT 6.0 now has the ability to send out 9 different MIDI Controllers per Kit. Pad #7 chooses the Controller and Pad #8 changes the value of the Controllers (0-127) or NO (Off).

The following MIDI Controllers are available:

<b>Controller #91</b>	<b>Reverb</b>	Controls reverb send amount.
<b>Controller #92</b>	<b>Tremolo</b>	Controls tremolo amount.
<b>Controller #93</b>	<b>Chorus</b>	Controls chorus amount.
<b>Controller #94</b>	<b>Detune</b>	Controls detune amount.
<b>Controller #70</b>	<b>Sound Vary</b>	Usually controls the way a sound is produced.
<b>Controller #71</b>	<b>Resonance</b>	Allows shaping the Voltage Controlled Filter (VCF).
<b>Controller #72</b>	<b>Release</b>	Controls release time of the Voltage controlled Amplifier (VCA).
<b>Controller #73</b>	<b>Attack</b>	Controls the time it takes for the sound to reach maximum amplitude.
<b>Controller #74</b>	<b>Brightness</b>	Controls the Voltage Controlled Filter's cutoff frequency.

## COPY KITS

### PAD #15, 16



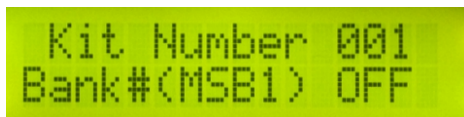
It is possible to copy a preset Factory Kit or a User Kit to any of the 24 User Kit locations. "Kit Copy" will always copy the Kit you are currently in to some other selected User Kit. Kit Copy is performed using pads #15 and #16, when the KIT EDIT footswitch is depressed.

Pad #15 changes the Kit Number and pad 16 performs the copy function.

When pad #15 is struck, the screen will display "Copy Current Kit to User Kit XX". While the footswitch is still held down, hit pad #15 repeatedly. You will see the User Kit value increment with each hit of the pad. When you reach the User Kit location where you want to store this current kit, Hit pad #16. The screen will ask you to verify that you want to do this. Hit pad #16 again to Store the Kit.

## SOUND CONTROL (Volume, Bank, Program Change)

### PAD #19, 20



```
Kit Number 001  
Bank#(MSB1) OFF
```



```
Kit Number 001  
Volume(1)= 127
```

The trapKAT XL can send out 4 different Bank Changes, Program Changes and Volume Changes on 4 different MIDI channels. With the KIT EDIT footswitch held down, tap on pad #19 (left of the display). This is a “tunnel” screen, meaning that each time you tap on pad #19, a new screen pops up. Here are the screens in the Tunnel:

Volume 1 = xxx  
Program Change 1 =xxx  
Program Change Channel 1 = xxx  
Bank (MSB1) = xxx  
BANK (LSB1) = xxx

Volume 2 = xxx  
Program Change 2 =xxx  
Program Change Channel 2 = xxx  
Bank (MSB2) = xxx  
BANK (LSB2) = xxx

Volume 3 = xxx  
Program Change 3 =xxx  
Program Change Channel 3 = xxx  
Bank (MSB3) = xxx  
BANK (LSB3) = xxx

Volume 4 = xxx  
Program Change 4 =xxx  
Program Change Channel 4 = xxx  
Bank (MSB4) = xxx  
BANK (LSB4) = xxx

TrapKAT 6.0 for both the FACTORY and USER Kits are programmed for KT-M1 Kits 1-24. USER/FACTORY Kit #1 = KT-M1 KIT #1 (Program Change #1) and so on. There is a KIT Bank for the USER Kits and a KIT Bank for the FACTORY Kits .

Usually, you only need to send out the first group, that is a Volume, Program, and Bank Change commands on one MIDI channel.

A Bank is a collection of up to 127 Sounds (program changes). In order to call up a sound on a Kit, the Bank, Program and Volume numbers on a MIDI channel must be sent in order for the sound to change.

In the KIT EDIT menu, pad #20 changes the values on all of these parameters. Each tap on pad #20 increments the value of the number displayed. A "quick click" will decrease the value. Most sound modules have a listing in the back of their manual with all of the sounds available. These sounds will require its own MSB,LSB Bank Change and Program Change and Volume Change Commands.

Please note that some sound modules require these parameters to be sent out as one packet. That means that as you change one parameter at a time, you will not hear the sound change until after you leave the kit, then return to it.

## **KIT NAMING**

### **PAD #21**

It is possible to assign a name to your User Kits, using up to 12 letters. Hit pad #21 twice while holding down the KIT EDIT footswitch.

To change the character of the letter that's flashing, use the following pads:

Pad 1	assigns upper case letters
Pad 11	assigns lower case letters
Pad 2	assigns a Space between characters
Pad 12	assigns a character
Pad 3	advances the cursor
Pad 13	reverses the cursor
Pad 4	advances the characters
Pad 14	reverses the characters

## **ALL NOTES OFF**

### **PAD #22**



```
Hit Again For  
All Notes Off
```

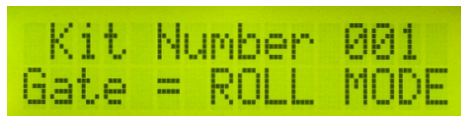
If a note ever gets stuck on (does not shut off), the trapKAT can send a ALL NOTES OFF command that will shut off all notes. Simply Step on the KIT EDIT Footswitch and hit pad #22 twice.

## **PAD GATE TIME**

### **PAD #24, 10**



```
Hit Pad Again  
for Pad Gate
```



```
Kit Number 001  
Gate = ROLL MODE
```

Gate Time is the length of the sound. It is the time between a MIDI Note On and the corresponding MIDI Note Off. On many drum machines, Gate Time has no effect. Many drum machines ignore MIDI Gate Time and simply play the sound to its completion.

Pad #24 and pad #10 are the Gate Time Pads in KIT EDIT. As in previous KIT settings (channel, velocity, etc) it is possible to have a KIT Gate Time (same gate for entire Kit) pad #24 or an individual pad time setting for each pad (pad #10). Simply hold down the KIT EDIT footswitch, tap on one of these pads, and continue to hit the pad until you arrive at the value you want. You can also “quick click” to reverse direction on the values when tapping.

Gate Times are expressed in milliseconds from .005 to 6.3 seconds.

There are three special Gate Time Settings also possible:

### **ROLL MODE**

Roll Mode was designed to be used with sound modules and samplers that respond to note off commands. This feature helps to eliminate the “machine gun” drum roll effect by delaying a note off command until after 6 seconds has elapsed from the time the pad was last hit. ROLL MODE is a selection after the millisecond options (past 6.3 seconds)

### **INFINITE MODE**

When a pad's gate time is set to INFINITE, it means that no note offs are sent on the pad. Just note on events.

### **LATCH MODE**

LATCH MODE is a Gate Mode setting that toggles between note on and note off with repeated hits. This is an extremely effective mode when you want to control loops.

## **HIDDEN FUNCTIONS**

### **HI HAT TRAIN RESULTS**

#### **IDLE LEVELS**

#### **PAD #23**



```
Open 020 045 082
101 120 Closed
```

The first time that you strike pad #23 with the KIT EDIT footswitch held down, you will see the display say NO FUNCTION. But if you strike it again, you will see a peculiar screen looking something like this:

OPEN 038 091 174 218 247 CLOSED

This is the **HI HAT TRAIN RESULTS** Page

The values shown above are numbers that the trapKAT loads into this screen when you TRAIN your Hi Hat pedal. The trapKAT breaks down movement of your pedal into 5 malleable zones. This advanced screen is useful to make sure that your pedal is working properly. You can also manually change these values. Pad #1 changes the first value, Pad #2 changes the second value, Pad #3 changes the third value, Pad #4 changes the fourth value, Pad #10 changes the fifth value.

### **IDLE LEVEL SCREEN**



```
Pad 01
Idle Level = 000
```



```
R0100000000 0000
P0000000000
```

If you Step on the KIT EDIT Footswitch and tap on pad #23 three times you will be entering the Idle Level Screen. Release the footswitch after you hit the pad three times and you will see the “idle level” of

all 24 of your pads.

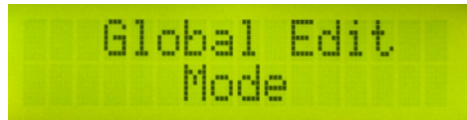
This idle level is a measure of what the internal computer sees from your pads when you are not playing – when they are “idle”. The sensors in the trapKAT are called FSR (force sensing resistor). These sensors are sensitive to very light playing or pressure. Therefore, even the pressure of the nuBounce playing surface can show up. That is OK. The software is designed to take care of small constant pressures. This is what we call the “idle levels” of your pads.

Looking at these numbers, the top row displays the values of all 14 rim pads. The first 10 numbers are pads #15 to #24. The next four values of the top line are the 4 rim pads in front of you, pad #11-14.

The bottom line has pads 1 through 10. To identify which pad is which, pick a pad and press on it and watch which number on the screen rises when you press on it. It is normal for there to be some jitter or fluctuation in the numbers around some specific value. This is the scanning process.

If the numbers go beyond 4 or 5, then it means that there is pressure due to pad shift. Pad shift can occur if the pad gets real hot from the sun playing outdoors, and the glue material (PSA) underneath softens and the pad shifts (you move it vertically). This information informs us that maintenance is required on the pads. If you see consistent high numbers, you should contact us at the factory.

# GLOBAL EDIT FUNCTIONS

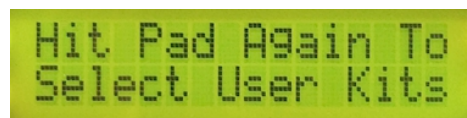


The following section will go over all of the GLOBAL EDIT Functions that are in the trapKAT. It is in these screens that you program the parameters that affect the entire instrument. Accessing these functions are always the same. Step on the GLOBAL EDIT Footswitch, and while held down, tap on one of the pads. The pads function will display. Here is the list of functions.

Pad 1	User/Factory Kits
Pad 2	Groove Enable/Disable
Pad 3	Memory Protect
Pad 4	MIDI Merge On/Off
Pad 5	Grooves Auto On/Off
Pad 6	Splash Adjust
Pad 7	Receive Program Change Enable/Disable
Pad 8	Cymbal Choking
Pad 9	Groove Volume
Pad 10	All Memory Data Dump
Pad 11	Individual PAD TRAINING
Pad 12	Individual Pad Threshold
Pad 13	Individual Low Dynamic
Pad 14	Individual High Dynamic
Pad 15	Reinitialize
Pad 16	General MIDI Names On/Off
Pad 17	TRAIN Hi Hat Pedal
Pad 18	Bass Trigger Gain
Pad 19	Display Angle / Beeper Listing
Pad 20	Display Angle / Beeper Value Change
Pad 21	Save User Kit (KS only)
Pad 22	No Function
Pad 23	Global Data Dump
Pad 24	Current Kit Data Dump

## USER/ FACTORY KITS

### PAD #1



The trapKAT has two banks of KITS. These are called Factory Kits and User Kits. There are 24 Kits in a BANK. Version 6.0 is optimized to work with the KT-M1 Drum Module. The Factory Kits and User Kits have different sets of note numbers assigned to the pads. Factory Kits utilize all of the KT-M1 Trigger Channels while the User Kits are programmed for ease of use and to be compatible with 2 BOX KIT Banks. You can change the settings in the Factory Kits, but your changes are not saved.

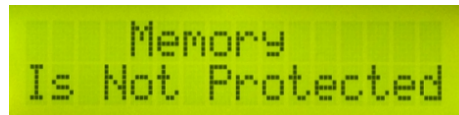


When you leave the kit, the original Factory Kit is restored. If you edit a Factory Kit and want to Save it, you must use the KIT EDIT footswitch and pad #15-16 to save your Kit to a User Kit.

A User Kit is a collection of pad note numbers, MIDI channels, velocity and curve settings, gate times and Kit Name. The User Kits in the trapKAT can be altered and saved by you. If you need to restore the Kits back to the Factory Setting, you will need to reinitialize the instrument.

Calling up a Factory Bank or User Bank is easy. Step on and hold down the GLOBAL EDIT Footswitch, and hit pad #1. Striking the pad again toggles between the two Banks.

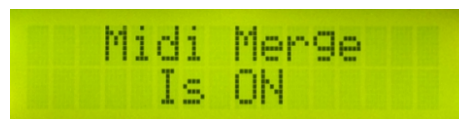
## **MEMORY PROTECT PAD #3**



If Memory Protect is Turned ON, you can not make any changes to the instrument. You will know that the Memory Protection is On because you hear a “bad” beep every time to try to change anything. If you perform a REINITIALIZE, the trapKAT defaults to MEMORY PROTECTION ON.

Turning Memory Protect on or off is performed on pad #3 with the GLOBAL EDIT Footswitch held down.

## **MIDI MERGE PAD #4**



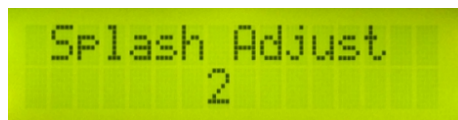
MIDI information coming into the MIDI In of your trapKAT may be passed (or merged) through to the MIDI Outs if the MERGE is ON. If you have another controller besides your trapKAT, you may want to have both the external controller and the trapKAT use the same sound source. The Merge setting allows you to do that.

If you are editing note numbers on the trapKAT, you can Auto Load the MIDI note number and MIDI channel directly from the MIDI IN.

Turning ON or OFF the Merge is performed simply by depressing the GLOBAL EDIT footswitch and hitting pad 4 twice.

If you are in NOTE EDIT Mode and you press a key on an external keyboard plugged into the MIDI IN port with MERGE On, that note and channel will automatically be loaded into the pad's note number.

## **SPLASH ADJUST PAD #6**

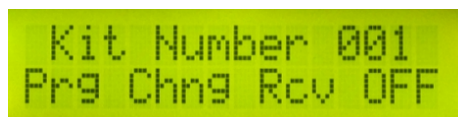


Splash Adjust  
2

Splash is a Hi Hat event that drummers use when they kick up the Hi Hat pedal fast to get a splash sound.

This function controls the “EASE” of when splash occurs. There are 10 variations of “ease”, plus off. Adjusting the “ease of splash” is performed by hitting pad #6 with the GLOBAL EDIT footswitch depressed.

## **PROGRAM CHANGE RECEIVE ENABLE/DISABLE PAD # 7**

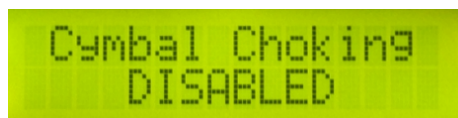


Kit Number 001  
Pr9 Chng Rcv OFF

You can have the trapKAT change Kits under the control of some external device like another controller or sequencer. To do this you must select a MIDI Channel to Receive Program Changes on. This Channel must match the MIDI Channel that the external device is sending Program Changes to the trapKAT on. This setting can be on any MIDI channel 01-16 or set to OFF.

To select the Channel to Receive Program changes on, simply depress the GLOBAL EDIT footswitch and hit pad #7.

## **CYMBAL CHOKING PAD #8**



Cymbal Choking  
DISABLED

This function is not necessary when using the KT-M1. The KT-M1 Cymbal Choke function is part of the group of note numbers assigned to each Cymbal Channel. In Trapkat version 6.0, pad #15 and #24 for both the User and Factory Kits have this cymbal choke function programmed for all 3 cymbals. This is accomplished by assigning all 3 Cymbal Channel's "Choke" note numbers to these pads in slots 1, 2, and 3 then adding a "3 note layer" curve. Hitting pad #15 or #24 will choke any cymbal you trigger.

Other drum modules use “aftertouch” to control choking a cymbal performed by grabbing the pad in the same manner you would grab an acoustic cymbal to choke it. Enable Cymbal Choking under pad #8 in GLOBAL EDIT and see if your drum module responds to this.

There is another cymbal choking method that was implemented by Alesis™ called Exclusive 96

Mode. Note number 96 is essentially a silence pad and is another method you should try on your drum module if you are looking to choke your cymbal.

## **MEMORY DATADUMPS**

### **PAD #10, 23, 24**



Data Dumps are used to send out your trapKAT RAM settings to be saved on an external storage device like a data disk or computer so that you may receive them later. Along with the release of version 6.0 is the release of the trapKAT Editor for PC and MAC. With this program, you can send, receive, and save data dumps as well as edit most of the settings in the trapKAT. The trapKAT Editor is available for free on our website: [alternatemode.com](http://alternatemode.com)

We also have a links for programs for your MAC (SysEx Librarian) or PC (MIDI/OX) that store data dumps on your PC.

Data dumps are used as a backup against the accidental loss of your User Kits and Global settings. Having a Data Dump of your Kits is like having a spare tire in your car trunk. It is not necessary until you need it, but when you need it, you'll regret not having been prepared.

The trapKAT sends out 3 different kinds of Data Dumps.

Pad #10 Sends out an ALL MEMORY DUMP. All Kit and Global Data is sent out.  
Pad # 23 sends out only the GLOBAL Data. This is your training settings  
Pad # 24 sends out the current KIT.

Step on the GLOBAL EDIT footswitch and tap one of these pads twice. The appropriate data will be sent out. Make sure that you have a MIDI cable plugged into the MIDI OUT port on the trapKAT, and that you have the MIDI cable plugged into your receiving device, enabled and waiting to receive the data. Don't forget to Name the dump once its completed.

The trapKAT will automatically receive the Dump and notify you when it is complete.

## **PAD TRAINING**

### **PADS #11, 12, 13, 14**



Everyone's playing style is different from everyone else's. Some players play with a much lighter touch than others. Because of this, the trapKAT allows you to “train” your own personal dynamics. Dynamics are your range between hard and soft hits. As well as training your dynamics, you can also adjust the sensitivity of your playing pads to suit your style.

TRAINING your pads consists of telling the trapKAT what a soft hit and a hard hit are in your playing style. If you are a finesse player, your hard hit may only be a medium hit for a basher. One set of settings aren't appropriate for both playing styles because when you play through your personal

dynamic range from soft to hard, you need to get a full range of volume out of the sounds you are playing-not just soft to medium loudness.

To train the trapKAT for your playing dynamics, do the following:

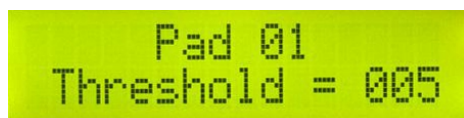
Depress the GLOBAL EDIT footswitch and hit pad #11. The screen will ask you to hit pad #11 again. Now choose a pad that you want to Train and hit the pad softly. Wait until the trapKAT asks you to hit the pad hard. That pad is now Trained.

You can now TRAIN every pad and the bass drum pedal. Just keep on going from pad to pad, wait for the screen to tell you to hit the pad soft and then hard. When you are finally finished Training, step on the Edit footswitch again. The trapKAT will stay in TRAIN mode until you step on the Edit Footswitch.

The pads and rim pads all need to be trained individually because of their varied locations, uses, and heights. Retrain any pad that doesn't respond the way you like. Feel free to experiment with your training, using different levels of soft and hard hits. This training, together with the velocity and curve settings (that are in the User Kits), you can tailor the response of the trapKAT to feel natural and dynamic to your playing style.

## **PAD THRESHOLD**

### **PAD #12**



The TRAINING does not affect the low end sensitivity, that is the level of softness that the trapKAT will “see”. This softest level is called a pad's threshold. The Threshold is the setting that affects how sensitive your pads are. The lower the value, the more sensitive that particular pad will be. However, if you make the Threshold too low, the pad may trigger itself, and you will hear “note chatter”.

Please note again, that the Minimum, Maximum and Curve Velocity Settings in the User Kits on every pad will influence the response of a pad. So if the pad sound is too soft for example, you might want to raise the pads minimum velocity. Please refer to the Velocity Setting Section in the KIT EDIT Screens for details on programming velocities on the trapKAT.

Depress the GLOBAL EDIT footswitch and hit pad# 12. It will ask you to hit the pad again.


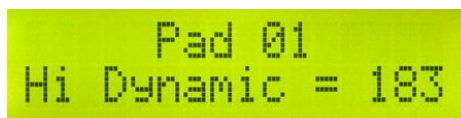
Now choose the pad that you want to change the Threshold.

If you strike that pad again, you will increment the threshold, making it LESS sensitive. To decrement while editing, do a “quick click”, that is release the footswitch and quickly re-depress it. The beeping when you hit a pad will change to indicate that you are now decrementing, decreasing the values. A second “quick click” will return to normal incrementing.

If you strike any other pad (remember to keep the footswitch held down) you will see the value of its Threshold and be able to change the pads value as well. It is normal for your pads to have different values, so only change those you want to make more or less sensitive.

## PAD LOW AND HIGH DYNAMICS

### PADS #13, 14

A yellow rectangular box containing the text "Pad 01" on the first line and "LowDynamic = 052" on the second line, displayed in a monospaced font.A yellow rectangular box containing the text "Pad 01" on the first line and "Hi Dynamic = 183" on the second line, displayed in a monospaced font.

The training of your pads determines two values: your “low dynamic” and your “high dynamic”. These settings tell you where your soft and hard hits lie in the trapKAT's range. As well as training with the soft and hard hits, you can also manually changes these values yourself.

To see the values that the trapKAT stored after a TRAIN or to modify these values, step on the GLOBAL EDIT footswitch and hit pad #13 for LOW DYNAMICS, or pad #14 for HIGH DYNAMICS. Hit the pad again to see the values. If you strike that pad again, you will increment the Dynamic. If you “quick click”, striking the pad again reverses the values.

Hits that are softer than your Low Dynamic setting will play at your minimum velocity setting. Hits that are harder than your high dynamic will still play at your Maximum Velocity Setting. This is an important concept. It means that the TRAIN determines the RANGE that the trapKAT will see. If you play softer than what you trained at, the trapKAT still sends out the value that you set up in the Minimum Velocity setting. If you play harder than the TRAIN, any volume playing beyond that will still only play the maximum velocity.

In other words, you want to put your Min/Max Velocity Range within your Training settings. What this means in practicality is that when you TRAIN, be realistic. When it asks you to play soft in the

TRAINING process, play the way you play.....hit the softest hit that you really will play. When it asks you to play hard don't just bash it. Think about what level of hard playing you want the trapKAT to go to reach its maximum velocity setting. This is one place where you might need to experiment to get the trapKAT to respond the way you want it to!

## REINITIALIZE

### PAD #15

A yellow rectangular box containing the text "Depress Pad1 and" on the first line and "Hit Pad15 Again" on the second line, displayed in a monospaced font.

To Reinitialize your trapKAT back to all the original FACTORY and USER Kit settings, simply hold down the GLOBAL EDIT footswitch, and hit pad #15. The trapKAT will ask ask you to hit pad #15 again, while your pressing pad #1.

If you then hit pad #15 again, while holding down pad #1, and while still depressing the GLOBAL EDIT footswitch, the trapKAT will return to the original settings for everything. User Kits, Pad Thresholds and Preferences.

## GENERAL MIDI NAMES

### PAD #16

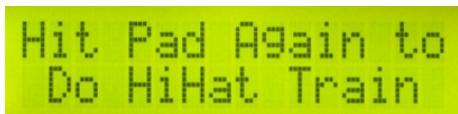


When setting up your MIDI note numbers on your pads, you can also choose to display the General MIDI Name of that note number. This feature only works if you are using a GM drum module.

Step on the GLOBAL EDIT footswitch, and while held down, tap on pad #16. The GM Mode toggles between on and off with multiple hits.

## TRAIN HI HAT Pedal

### PAD #17



It really is important to TRAIN your Hi Hat pedal in order to get the best results out of the pedal. Make sure that you are using a 1/4" mono jack plugged into the trapKAT. Step on the GLOBAL EDIT Footswitch and tap on pad #17 twice. The screen will ask you to depress the Hi Hat pedal all the way down and then hit any pad.

Next, the screen will ask you to release the Hi Hat pedal then hit any pad.

## BASS DRUM TRIGGER GAIN

### PAD #18



The BASS Drum input can be TRAINED, and the THRESHOLD and DYNAMICS can be changed in the same way as for the pads. Simply play the bass drum pedal instead of hitting a pad when TRAINING.

There is one important difference with the Bass Drum Trigger than with the pads. It has a GLOBAL GAIN Setting to help accommodate the variety of bass drum triggers available. Simply hit rim pad #18 with the GLOBAL EDIT footswitch depressed and you can cycle through the three Gain Settings with repeated kits.

MIN (best for eKIC), MID (triggers that need more Gain) MAX (triggers needing high GAIN). If after the training the bass input, the response of your bass trigger is not optimum, then try a new Gain, then Train again. You can look at the Training Values (pad #13,14) to see the results of the GAIN change.

**DISPLAY ANGLE/ BEEPER  
PAD #19, 20**



On the trapKAT can change the viewing angle of the display and you can turn the Beeper on or off. When you tap on pad #19 in GLOBAL EDIT, the screen toggles between the Display Setting and the Beeper Setting with each hit. To change the angle or the beeper setting, tap on pad #20.

**SAVE USER KIT  
PAD #21**

This feature is only for the trapKAT KS (Kurzweil Sounds) version. The trapKAT XL automatically saves changes made in USER KITS.

**NO FUNCTION**



No function is assigned to the pad. Pad #23 is an exception. (see HIDDEN FUNCTIONS section).

**PAD LINKING**



It is possible to LINK and pad to any pad. This means that when a pad is LINKED, striking one pad will play the notes from two pads. The pad that you are playing on, PLUS the pad that is linked to that pad.

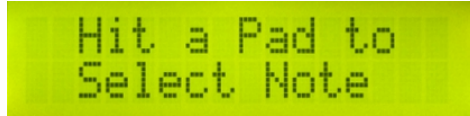
To turn on the Link Pad Function, step on the NOTE EDIT FOOTSWITCH and tap on the pad that you want to set up the LINK. Now with the NOTE EDIT FOOTSWITCH still held down, tap on the GLOBAL EDIT FOOTSWITCH. Each time you tap on the GLOBAL Footswitch, the LINK Advances to the next pad. The choices go from pad 1 to 24 and NO.

When you assign a pad to LINK, both the pad that you are playing on AND the sounds assigned to the LINK pad will sound.

If you want to cancel this function, set the LINK to OFF. This is done by continuing tapping the footswitch past pad 24. The LINK Screen will say NO. A quick-click. (release and step again) will change direction of the pad LINK Numbers.

# NOTE EDIT FUNCTIONS

## NOTE EDIT FOOTSWITCH



Changing note numbers on the pads is a real easy task. All you have to do is hold down the NOTE EDIT FOOTSWITCH, and while it is held down, tap on any pad.

Every other hit on that pad with the footswitch down will increment the number by one. If you want to go the other direction, use “quick click”. (release and repress the footswitch). The numbers now go in reverse order.

## HEAR SOUND

When you are changing the note numbers using the NOTE EDIT FOOTSWITCH, the trapKAT automatically auditions the sound. This means that the note number that you are calling up is also being triggered, and is being sent out to the MIDI OUT jack.

It is possible to turn ON or OFF this HEAR SOUND function by stepping on the GLOBAL EDIT FOOTSWITCH, and while held down, step on the Hi Hat controller pedal. The screen will either read, “Hear Sound is On” or “Hear Sound is Off”. When you go back to the NOTE EDIT, the result of this toggle will determine if you can hear the sounds while you are editing or not.

## SPECIAL NOTE NUMBERS

Normally, MIDI note numbers go from 00-127. Each number has the ability to play a sound. The trapKAT has SPECIAL note numbers. When scrolling past 127 using the NOTE EDIT FOOTSWITCH, you will see the special notes that aren't really notes but FUNCTIONS. These special notes do all kinds of cool things on the trapKAT. Take a look....

### **No**

This special note number function plays a silence when the pad is struck. If you are using one of the Alternate Mode Curves, this function allows you to have the desired number of alternating notes, but can have the option of having a silent location within the pattern. This can help create rhythmic patterns on a pad.

### **Sequence Start, Sequence Stop, Sequence Continue**

When a pad is set to any of these functions (by its note number name), a sequence command is sent to the external and internal sound module. If the module is capable of playing sequences, then any trapKAT pad can be set to control the starting, stopping and continuing of sequences.

### **Alternate Reset**

The Alternate Reset function resets the alternating pattern to start from the beginning. If the Alternate Reset is placed in the first position (slot #1) in Alternating Mode, then All alternating notes in the kit will be reset. If the Alternate Reset Function is placed in any of the other remaining 15 MIDI note numbers slots, then that pad will reset back to the beginning.



### **Alternate Freeze**

The Alternate Freeze function stops the alternating pattern from advancing to the next note slot. If the Alternate Freeze is placed in the first position in Alternate Mode, then All Alternate Notes in the kit will be frozen. If the Alternate Freeze Function is placed in any of the remaining 15 MIDI note number slots, then that pad will stop advancing until reset.

### **Kit Advance, Kit Backwards**

If a note number is assigned to Kit Advance or Kit Backwards, striking this pad will advance or step backwards the User Kit by one. Note that every kit must be assigned its own Kit Advance/Backwards Function.

### **Pitch Wheel**

If a pad note number is assigned to PITCH Wheel, then pressing on this pad will send out pitch data.

### **Program Advance, Program Backup**

As you may recall from the KIT EDIT Section, changing programs (sounds) require a Bank (MSB/LSB) Change, and a Program Change Command on a specific MIDI channel. The KT-M1 only requires the Program Change Command.

We have make a shortcut on the trapKAT 6.0. The KT-M1 has 100 possible KITS. The trapKAT uses the first 24 of these KITS for the 24 USER KITS, and 24 FACTORY KITS each having its own KIT Bank (.dkit) The Program Advance/Backup function was added to USER Kit #24. This allows you to access KT-M1 KITS 25-100. Pad #24 will advance to the next KIT in the KT-M1, and pad #15 will revert to the previous KIT. The screen also changes, displaying the Program Change that has just been loaded in. This makes it easy for you to find the KIT number that you want.

To make any of these KITS (25-100) a USER Kit, use the Drumit Editor or the Module to copy the KIT to one of the first 24 USER Kits in the KIT bank. You will then have to rename the KIT on the trapKAT to match the KT-M1 KIT name.

Another option is to simply change a USER Kit's Program Change number to the desired KIT number. With the KIT EDIT footswitch held down, hit pad #19 to scroll to the Program Change number screen. Hit pad # 20 to change the value.

### **NOTE SLOTS**

The trapKAT can play up to 16 sounds on one pad. Most of the time when you are changing note numbers, you will be working on slot number 1 (of 16). If you accidentally stepped on the NOTE EDIT Footswitch and the KIT EDIT FOOTSWITCH at the same time and then struck a pad, you then switched editing to slot number 2 of 16. You can tell which slot you are working on by looking at the screen when the NOTE EDIT Footswitch is held down. For example, you might see something like #38-01. The number 38 is the MIDI note number. The 01 represents slot 1 of 16.

Hearing these other sound slots depends on if you have a special function turned on such as Alternate Mode or Velocity Shift. These are activated in the Velocity Curve Screens. These functions are described in the KIT EDIT FUNCTIONS chapter.

If you find that you are not in slot number 1, then step on both the NOTE EDIT and KIT EDIT footswitches at the same time, and continue tapping on the pad until slot 1 rotates back on the screen.

## **KIT SELECT FOOTSWITCH**

The trapKAT has three ways of accessing your 24 Kits. This applies to both the Factory and User Kits.

Every time you step on the KIT SELECT FOOTSWITCH, the trapKAT advances the Kit by one. If you step on the footswitch and hold it down, and then hit a pad, the trapKAT jumps to that kit. You may recall that the trapKAT's pads numbered from 1-24 coincide with the 24 Kits that are available. This allows for instant access jumping from any kit to any kit. Just step on the Kit Select Footswitch and type a pad.

Finally, you can set a pad to “Advance” to the next Kit or go “Backwards” to the last adjacent Kit. To do this, set the MIDI note number to “Advance” or “Backwards”. These are the special note numbers that can be found past MIDI note #127. When using this function, these special MIDI notes must be programmed in every Kit. These are Kit parameters.

## APPENDIX

### GLOSSARY OF TERMS

Below is a list of terms that are used throughout the manual. Here are non technical explanations.

#### **BANK**

Changing sounds on the trapKAT require both a Program Change and a Bank Change. A Bank Change is a collection of Program Changes. Each Bank has 127 Programs in them. A Bank Command consists of two numbers MSB xx and LSB xx.

#### **CHANNEL**

In MIDI there are 16 MIDI channels. A MIDI channel is like a phone number. For two instruments to communicate, they must talk over the same channel. This is very much like communicating with a friend on the phone. You must dial the correct phone number first.

#### **CONTROLLER**

A MIDI Controller is a device whose purpose is to control other MIDI devices (as opposed to a sound source whose job is to be controlled). Generally, a Controller is the Interface device which you play on, such as a Guitar Controller, Keyboard Controller, Drum Controller, etc.

#### **DATA DUMP**

The internal data information that a musical instrument sends out so that you can save its setting on a back up system.

#### **DEFAULT**

The standard, customary or “safe” value for a given setting.

#### **DYNAMICS**

A measure of how hard or softly you are playing with your sticks.

#### **EDITING**

The act of changing the settings in a device.

#### **FACTORY KITS**

Kits that are always present in your instrument. These are Kits that are designed to work with the KT-M1 Drum Module

#### **GATE TIME**

The length of time that a note plays as sent by the trapKAT. It is the length of time that the trapKAT waits after it sends a Note On Command, before it sends a Note Off. Many drum machines ignore the Gate Time sent by the trapKAT and sound the note until its fully “played out”. Melodic sounds like horns, strings, & organs often do respond to Gate Time.

#### **GENERAL MIDI (GM) SOUND MODULE**

A sound module that conforms to the General MIDI specification specifying Program layout by sound type for simple connection between MIDI devices.

#### **KIT**

A collection of MIDI Note and Channel settings for all of your pads, Hi Hat and bass drum. Basically, a KIT defines what sounds you pads make. There are Factory and User Kits in the trapKAT.

## **MIDI**

MIDI stands for Musical Instrument Digital Interface. It is a agreed upon standard for communications between electronic musical instruments. It is simply the means by which your trapKAT communicates with the sound sources you connect it to.

## **MIDI DELAY**

A term which is mistakenly used by many to refer to all kinds of delay ranging from Sound Source delay, to Sound Travel Delay, to actual delay due to MIDI. The delay caused by the transmission of MIDI information is only 1 millisecond! That's .001 of a second.

## **MIDI IN**

A 5 pin DIN jack by which an instrument receives MIDI information from another musical instrument. Though its MIDI IN, the trapKAT can receive DATA Dumps, Kit changes and Note # Auto Train information.

## **MIDI OUT**

A 5 pin DIN jack by which an instrument sends out MIDI information to another instrument. The trapKAT sends out Channel, Note and Velocity information and Continuous Controller messages.

## **NOTE NUMBER**

A MIDI Note is the number sent in a MIDI Note ON or MIDI Note OFF command to tell the receiving instrument which sound (pitch) to make.

## **PROGRAM CHANGE**

A MIDI command which instructs the receiving instrument to change a new group of settings. For Sound Sources, this generally means selecting a new group of sounds.

## **RESPONSE**

What Velocity the trapKAT sends out related to your playing dynamics. A natural response is that the velocity (hence the loudness) gets bigger as your dynamics increase.

## **SCREEN**

A display "window" on the trapKAT, usually with information about the current setting.

## **SOUND SOURCE**

A device that accepts MIDI input and then plays a sound based on the information it received. Drum machines, samplers and synthesizers are all examples of Sound Sources.

## **SOUND SOURCE DELAY**

The time it takes for a Sound Source to play a sound after it has received all the MIDI information it needs. Usually this is about 2 to 15mS.

## **SOUND TRAVEL DELAY**

The time it takes for a sound to travel through the air from the source (speakers, drum head, etc) to our ears. Sound travels around 1.125 feet per second.

## **TOGGLE**

To switch back and forth from one selection to another. For example, in GLOBAL EDIT, pad one toggles (switches) between Factory and User Kits.

**TRIGGER**

Any of various external impact sensors that can be plugged into the trapKAT bass input. Normally these are foot triggers like the eKIC.

**USER KIT**

Kits that are changeable in your trapKAT. These are Kits that you can alter to meet your needs.

**VELOCITY**

A measure of how loud or soft a MIDI note will play on your sound source when playing on the trapKAT.

## APPENDIX

### MIDI FOR PERCUSSION

The world of Percussion has some special needs that affect how MIDI is generally used for Percussion and Drum Sounds. These special differences include how Note Offs (Gate Time) are handled, how Notes and Program Changes are used, and sensitivity to time delay and polyphony.

Keyboardists, guitarists, string, and horn players are all used to dynamically controlling the length of the Sounds they produce. This is not generally true for drummers and percussionists. Generally, once a drum is struck, it plays its sound out on its own. (Of course there are exceptions like cymbal choking and damping mallet or drum sounds - but often the sounds do play out on their own.)

Because of this, it is not unusual for a drum machine to not pay any attention to Note Off Commands. This means that generally, even if a drum machine is told to turn off a Sound after only a few milliseconds, most will play the Sound out until it is done on its own anyway. Because of this, you can choose on the trapKAT not to send any Note Off Commands - because often, for drum Sounds, they are not needed and simply fill up space in sequencers and waste the time of the Receiving Sound Source.

Another difference for Percussion is that different Note Numbers are more likely to stand for totally different Sounds - (not just different pitches of the same Sound). There are exceptions to this, but a keyboard player is more likely to think of MIDI Notes correlating to Pitch and a drummer is more likely to think of MIDI Notes as referring to totally different Sounds.

For a keyboard player, a **Program Change** Command is typically thought of as selecting some specific Sound which the MIDI Notes access different Pitches of. For a drummer, a Program Change is generally thought of as selecting a specific collection of individual sounds which specifies which different Sounds can be accessed through MIDI Note On Commands.

Because drummers and percussionists have a highly developed sense of time, they are more sensitive to time delays. A drummer is very sensitive to where a Sound is played with respect to the beat. This brings us to MIDI Delay. The MIDI time delay for a Note On Command is 1 millisecond (one thousandth of a second). It is imperceptible! (5 milliseconds (mS) is where you start to notice, 10 mS is noticeable and 20 mS is obnoxious.) (1 mS = .001 Second)

So why do we hear all this talk about MIDI Delay? Because they are really talking about **Sound Source Delay** when they talk about MIDI Delay. So what is Sound Source Delay? It is the time that it takes a Sound Source to respond to a MIDI Note On Command it has received and start to make a Sound. Sound Source delay typically ranges from 1/2 mS to 15 mS. The Sound Sources with 1/2 mS to 3 mS delay are the ones worth owning.

So if you want to avoid "MIDI Delay", avoid Sound Source Delay! Call us and we'll tell you how the current Sound Sources rate.

Interestingly enough, there is also Sound Travel Delay! It actually takes sound a noticeable time to travel through the air. Hence echoes. Hence you see lighting, then hear thunder seconds later. Specifically, sound travels 1 foot in just a bit less than 1 mS. This means that a monitor placed 10 feet from your ears will cause around 10 mS of delay - Sound Travel Delay! (There is about a 2mS delay from when you strike your acoustic snare drum to when the sound gets to your ear!)

Earphones have a Sound Travel Delay of only a teeny bit, since the little speakers inside are so close

to your ears.

Looking at the actual times involved in MIDI Delay (1mS), Sound Source Delay (.5mS-15mS), and Sound Travel Delay (2-10mS), you can see that actual MIDI Delay is the least of your worries.

(By the way, a MIDI Merge (In-merged-to-Out) generally has 1 to 2 mS Processing Delay.)

Because a drum sustains *after* you hit it for some time, quick hits or rolls have essentially two or more separate acoustic sounds playing at once. Drums need polyphony per drum to sound real. The trapKAT has 4 Note polyphony per pad so that you can capitalize on any sound sources that support polyphony per note.

## APPENDIX

### Inserting New Software Chips For Software Updates

#### PHYSICALLY CHANGE YOUR SOFTWARE CHIP:

Tools Needed: 1 medium flat screwdriver.

- 1) First, remove the AC adapter plug from the back of the trapKAT!
- 2) Find a smooth, clean, flat surface and place your trapKAT upside down on it, the jacks facing away from you.
- 3) Remove back cover of the trapKAT (16 screws).
- 4) When the trapKAT is opened, you will see one large circuit board towards the back. On the front right of the printed circuit board is a large chip with a white paper label that says something like “trapKAT 4.5”. The chip with the white label is your Software Chip, the code that runs your trapKAT - its Operating System. Before you take the old software chip out, note how it is oriented in the socket. Specifically notice that the “notch” on the end of the chip is away from you.
- 5) The chip is at the top end of the circuit board. To remove an old chip, you will use your flat screwdriver. You will pry the chip out of its socket. Look at the Upgrade chip you received and you will be able to tell what is the chip and what is the socket. You want to insert the screwdriver *between* the chip and the socket so as to pry up the chip but not the socket. As you start to pry up the chip insert the screwdriver further under the chip and pry up more, then insert the screwdriver even further and then pry up more until the chip comes out of the socket. Don't be scared - just pry a little bit and then push the screwdriver in further, until the chip is out. Take your time, don't be in a hurry. Make sure you insert the screwdriver *between* the chip and the socket before you start to pry each time. (Instead of between the socket and the circuit board.)
- 6) After you have the chip out, place the new chip in its socket, being careful to orient it in the same way that the old chip was (remember the “notch”?). Take a little care to align the legs of the chip into the holes in the pins of the socket. Then push down evenly on the chip. It should push down snugly into the socket. Visually check to see that none of the legs got squished and are smashed under the chip.
- 7) Replace the back cover of your trapKAT and reinsert the 16 screws.
- 8) Turn your trapKAT back over, and reinsert the AC adapter plug into the trapKAT. Now turn your trapKAT back on. If the display is working, you are OK. If the display is not working then:
  - a. Remove the AC adapter plug again.
  - b. Turn the trapKAT over again and remove the 16 screws.
  - c. Take the back cover off again.
  - d. Try reinserting the chip (don't get legs bent under the chip).
  - e. Put the back cover on, turn the trapKAT back over, reinsert the AC adapter plug, and turn the power back on.

If this still fails, put your OLD software back in and give us a call. After you have had the new software in and used it for several days, please send the old chip back to us. They are reusable.



## **APPENDIX**

### **WARRANTY POLICIES**

The trapKAT has a limited warranty. The trapKAT is warranted against defects due to materials or workmanship for 1 YEAR ON PARTS AND LABOR, except for the FSR SENSORS which are warranted for 6 months.

Save your sales receipt, it is required for proof of warranty.

#### **WARRANTY RESTRICTIONS**

Damage or defects sustained through unauthorized repair or tampering, or abusive treatment are not covered by this warranty. The warranty does not cover damages to the trapKAT as a result of incorrect polarity AC Adapter. The shipping expenses and arrangements for repair are the responsibility of the purchaser.

Alternate Mode is not responsible for loss of Kit Memory when your controller is sent in for repair or upgrade. Please, save your Kits on a Data Disk, Sequencer, or Computer before sending in for repair.

#### **CARE AND MAINTENANCE**

The trapKAT is an electronic musical instrument that was designed to take a pounding - from a pair of drum sticks - not from rolling down the stairs. Simply use good judgment and your trapKAT will provide you with years of enjoyment.

Don't pour or spill liquids on your trapKAT. Don't leave in a very hot car for extended periods of time.

Don't leave in overly damp areas for extended periods of time.

Do not clean bare pads or metal surfaces with alcohol or solvents.

For pads with power dots on them, you can clean them by dampening a cloth with a small amount of alcohol and wipe the pads down.

## APPENDIX

### CUSTOMER SERVICE

There are many ways of getting the customer service you need.

Contact information can be found on our website: [alternatemode.com](http://alternatemode.com). Product documentation and downloads such as manuals, guides, firmware, and SYSEX files are available on our website. We also have a Discussion Forum and a Video Help Desk to help answer any questions you may have.

#### **IF YOU NEED TO SEND THE trapKAT XL BACK TO THE FACTORY:**

If you need your trapKAT repaired or worked on for any reason, call our Customer Service staff and ask for an “**RA**” number. This is a “**Return Authorization**” number. When you call in your RA, our staff will ask you for information like your name, address, phone number, serial number, purchase date, software version (power-up display) and a description of the problem. Write this “**RA**” number on the **outside of the box** when you send it back to Alternate Mode.

**SHIPPING:** If you need to ship the trapKAT back in for a repair or an update, use care and good judgment. It is best to save the original packing material to make shipping easy and safe. If you do not have the original packing material, box the trapKAT in tight with bubble wrap, paper, etc. so that it is not flopping around in the box during shipping. Leave enough space inside the box to pad the corners of the trapKAT. **Shipping expenses and proper packing of instruments shipped to Alternate Mode are the responsibility of the consumer.**



# ALTERNATE MODE

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