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# Chapter One

## panKAT Pro Overview

The panKAT Pro is a powerful MIDI controller that is designed to capture your playing gestures and performance in a footprint similar to a standard steel pan. It transforms your performance into musical notes (MIDI data), capturing the details of dynamics, pressure, speed, dampening, etc., creating an incredible musical representation of your playing. It is this attention to nuance and detail that makes this instrument so enjoyable to play on. It is by far the most powerful percussion controller ever created.

The panKAT has many tuning configurations. The C Pan in 5ths is the standard layout. Of course the C Pan can start on any key or octave. It is now easy to play in any key with a touch of a pad.

Besides the standard tuning in 5$^{ths}$ layout, the panKAT offers new configurations never

explored such as pan in 4ths, diminished scales, blues scales, pentatonic scales, minor, chromatic and chord layouts. There are layouts for drums and percussion, and you can even make your own pitch configurations!

The panKAT is really several instruments in one. It is broken down into two basic keyboards, called Controller One and Controller Two. Each of these Controllers are independent from each other. They can have their own sounds, dynamic response, gate settings, octave range and more. These sounds can be activated by stepping on a footswitch or they can be layered so that both play at the same time.

The panKAT also has a third layer called a Reassignment Layer. Every note on this layer can be programmed by the User to play any note on any octave and on any of the 16 MIDI channels simultaneously. MIDI notes do not have to be contiguous. This means that you can set up special arrangements of non pitched sounds on any pad, or you can set up your own scales etc. This Reassignment Layer can be used in combination with the other Controllers or it can replace them. There are 14 programmable Reassignments stored in memory that can be assigned into any of the 128 User Kits.

The panKAT has a Virtual Pitch Wheel and Modulation Wheel. These are specially programmed keys that perform a control task such as pitch bend over a specified time and range. This makes it easy to continue playing while simply taping one pad.

There are special LATCH functions that can toggle notes on and off to loop at will. Pads can be assigned to send out program changes instead of notes. Combining these features in a User Setup is a powerful way to control things like MIDI Light Control or Loop Sequencers such as Ableton's LIVE or Spectrasonics STYLUS RMX.

The panKAT has 2 Foot Controller Inputs and three momentary inputs. All of these inputs are user programmable, offering tremendous power to the performer. In any particular performance, one can add subtle vibrato, pitch bend, sustain and gate time variances, blending of sounds, filter control, etc. just by using these input controls while playing on the pads. It is possible to suddenly shift octaves, change sounds, sustain chords, etc. while the "main" sound is active on the keyboard.

The 2 Foot Controllers can also be programmed to act as a Bass Drum and Hi-Hat input jack. Imagine playing the panKAT like a drum set!

You will notice that there are no buttons on the panKAT for editing. We have created an interface that allows for total programming without having to put down your mallets. Notice the words underneath the pads. When stepping on the edit footswitch, these pads turn into editing functions. This allows for instantaneous adjustments in playing such as octave range, gate time, velocity range, program change, volume change, etc. This makes for an incredibly easy interface. Once you get the hang of this approach, you will be able to quickly change parameters to your hearts content, even while you are playing live.

The panKAT has 128 Factory Setups, 128 User Setups and 16 Chain Setups. Each Setup is a complete assignment of the sounds and functions. You can name your own User Kits, store bank and program change information, create your own MIDI mixer with stored volume change commands. Every User Kit has its own velocity response settings, gate time settings, octave range etc. Chains allow for non contiguous arrangements of your Setups. This is an extremely useful feature for setting up quick sound changes in a performance situation. These changes can be accessed by stepping on a footswitch or by hitting the backward/forward function pads.

The Factory Setups are pre-programmed for General MIDI. That means that if you have a sound source that responds to General MIDI (it should have a GM MIDI logo displayed on it), the panKAT is ready to go without any programming involved. The instrument name that you see on the display is the sound that you will hear on your synthesizer . The Factory Setups are a great way to check out some of the cool features built into the panKAT. We've included many of the new pitch configurations in the Factory Kits. There is a listing in the back of this manual that lists the Factory Kit Setups.

If you have the panKAT WS, then your panKAT is ready to go, right out of the box! The sound set inside the panKAT is a General MIDI sound module. This also means that you can use the MIDI IN and have the panKAT WS play standard MIDI music files.

There are currently two versions of software available regarding pre-programming of the User Kits. One is for the Kurzweil Pc2R, and the other is for the Yamaha Motif ES. When the panKAT is reinitialized with this software, 128 User Kits are installed for one of these instruments. In other words, we pre-programmed the panKAT especially for one of these sounds sources. You can alter any of these settings of course, but this is a great way to get started when using these instruments. You may never have to do any programming because we have done it for you. Please note that both the Yamaha and Kurzweil Sound Modules are also tweaked at our factory before they leave. If you have purchased one of these sound sources from somewhere else, you will have to go online to our website and download the free SYSEX file for these instruments in order to get a turn key environment on your panKAT

We are sure by now that as you read this introduction, you realize the incredible power that lies within the panKAT. The real power however is not the bells and whistles that are inside it, but the expressiveness and musicality that is capable with this instrument.

One needs a fluid vocabulary to help articulate ideas and emotion. It is our passion to fill this instrument with a full set of features and functions to help the performer find the right articulation for self expression.

Here are just a few of these powerful features.

**Individual Pad Training**
Everyone plays differently. To help the performer get the full dynamic range of their

playing, the panKAT learns the player's style. It converts the users softest & hardest hits into 128 discreet velocity dynamics tailored to the performers needs.

**Dynamic Articulations**
Every Kit stores a set of minimum and maximum velocity ranges along with velocity curves to get the instrument dynamics tailored to personal taste. Dynamics can be used to change a sound at a particular velocity point. Besides setting any "gate" length of a sound, dynamics can also control how long a sound speaks. These "gate time settings" can also be controlled by a foot or breath controller.

**Acoustic Emulations**
The panKAT can recognize "dampen" strokes, a common vibraphone technique and "dead" strokes, a common marimba style of articulation. Like Individual Pad Training, dampening and dead stroke articulations can be tailored to respond to your personal style of playing.

**Special Mono Modes**
Special Mono Mode have been developed to allow the performer to play solo instruments such as flutes or lead lines without the "bleeding" of sounds heard when using a sustain pedal on a synthesizer. Instead the sustain pedal in this mode creates a legato single line passage. It is now possible to create staccato / legato articulations effortlessly.

**Auto Gate**
Auto Gate functions also help control the "bleeding" of sounds when playing fast passages. The length of a sound can vary depending on how fast you are playing. This can be extremely effective when playing an acoustic guitar sound for example.

# Chapter Two

**PLAY MODE SCREENS OVERVIEW**
We know that many of you do not want to read the entire manual. That's OK. If you purchased a Kurzweil PC2R or a Yamaha Motif ES from us, or if you have the panKAT With Sounds version, you probably won't need to do much programming anyway because we did that work for you. We hope that you already read the Start Up Guide and are up and running on your panKAT.

It is important that you understand what "condition" your panKAT is in at any particular moment, so please take the time to read THIS chapter. It will save you grief down the road!

If you want more detail on any of the topics that are being mentioned, refer to the INDEX. It will list all of the pages that refer to topics outlined in this chapter.

We recommend that you use the pdf version of the manual instead of the hard copy. Why, because built into the pdf is a search function. Just type in the word or phrase that you are looking for, and all of the “finds” show up on a panel to the right. Also, by downloading the manual online on our website, you can be sure that you are getting the latest version of the manual.

In this manual, we will be referring to Pad numbers, Rings and Pitches. There are Three Rings of pads on the panKAT. The Outer Ring is the largest. In this manual, we are referring to a C PAN Tuning (even though the panKAT has MANY possible tunings) The lowest note is C, pad number 1. This is at the 6 o'clock position. The numbers go up clockwise. The Outer Ring goes from pad number 1 through 12. The Middle Ring goes from pad numbers 13 through 24. The Inner Ring goes clockwise from pad numbers 25 through 29. The pad in the dead center of the panKAT is pad number 30.

When you first turn on the panKAT, the display tells you on the second line what version number of the software that’s inside your panKAT. Each new version of software adds new features that might change the way the display looks. This manual is written for version 1.x EXPECT UPDATES. It's a way of life at Alternate Mode. The malletKAT for example, has had updates for 20 years! This adds tremendous value to your investment. The panKAT matures with you.

There are four lines of text on the display. The display changes it’s look as different features are called up. Let’s begin with the first Line.

## WHAT is the DISPLAY SAYING?

### KIT NUMBERS

The very first character on Line one will either be:
**F** followed by a number. Example F 01 meaning Factory Kit 1 or
**U** followed by a number. Example U 89 meaning User Kit 89 or
**C** followed by a group of numbers. Example C02-12 Meaning Chain Two, Setup 12.

The F stands for FACTORY KITS. There are 128 Factory Kits that are in the panKAT. These KITs are stored in memory. This means that any changes that you make to the FACTORY Kits are gone as soon as you leave the KIT going to another KIT number. If you want to make permanent changes to a FACTORY Kit, then you will need to save them in a USER KIT.

The name of the KIT displayed on line 3 is a GENERAL MIDI Name. These names will only line up with the names that are on your sound source if your sound module or keyboard has the GM logo on it. If you do not have a GM synthesizer, the panKAT has no way of knowing what sound source it is connected to. You will need to go to the User Kits to make your own KIT names. The panKAT WS is General MIDI, so the names you see in the Factory Kits correspond to the sounds that you will hear.

If you see a U followed by a number on the first line, then you are in the USER KITS. There are also 128 USER KITS in the panKAT. Here you can name your own kits, change any parameter and have them stored into permanent memory. If you see a number looking like C01-01, then you are in CHAIN MODE. CHAIN MODE allows you to arrange your KITS in a non-contiguous fashion. You can store 16 Chains, each having the ability to arrange 16 KITS in each Chain.

**CHANGING KIT BANKS (FACTORY, USER and CHAIN)**
You can jump between these three modes by holding down the EDIT FOOTSTWITCH and hitting pad 10, (Eb on the Outer Ring). It says KIT BANK under the pad. Use the DECrement, INCrement pads (pads 28 &27,Db-E on the Inner Ring) to change modes.

**CHANGING KITS**
You can change KITS at any time by using the Backward /Forward Pads. (The little pads (outside the Rings) on the panKAT). Strike the pad twice to get your direction going.

There are several other ways to change kits. For more information regarding KITs and CHAINs, refer to the Index for specific pages on these subjects.

**LAYER MODE**
Immediately following the KIT NUMBER, you will see on the first line of the display one of the following LAYER MODES on the screen.

Hang = Hang Mode
Doub = Double Mode
Mel1 = Melody Chord Mode 1
Mel2 = Melody Chord Mode 2
Mel3= Melody Chord Mode 3
VEL S = Velocity Shift Mode
Alt = Alternate Mode

Layer Modes tell the panKAT how to control its sound layers. These layers are called CONTROLLER ONE AND CONTROLLER TWO. These Layers can be total independent, layered, velocity shifted, alternated or controller functioned as described below.

**HANG**
In this mode, when you are playing on the panKAT, you will hear the sounds being controlled by CONTROLLER ONE. When you step on the SUSTAIN TWO Footswitch, the panKAT switches to the sound being controlled by CONTROLLER TWO. In its default setting, CONTROLLER TWO sound plays INDEFINITELY (it HANGS) until you touch the SUSTAIN 2 Footswitch again. This allows you to play suspended sounds underneath while you are playing on the sounds from CONTROLLER ONE.

**HOW To Select HANG (LAYER MODE)**
Step on the Edit Footswitch and hold it down. Tap on pad 12 (F on the Outer Ring). The first LAYER MODE, HANG is displayed. If you hit pad 12 again and again, the various Layer Modes are displayed. The Layer Modes are Hang, Double, Melody Chord 1,2,3, Alternate and Velocity Shift. The display shows the Layer Modes in order and moves in the same direction. It does not loop around but stops when the last choice is displayed. Start from the beginning to see all of the possibilities.

When you find the Layer Mode that you want, just release the foot switch. Notice the display now in Play Mode. Your Layer choice is now showing. When you re-enter Layer Mode, the display will always begin with HANG. If you tap pad 12 again, the next LAYER mode is displayed. When you release the footswitch, the selected Layer becomes active.

**DOUBLE**
When you see DOUBLE on the first line on the display, it means that the panKAT is in Double or Layer mode. That means that both CONTROLLER ONE AND TWO are active across the entire panKAT. Both sounds are layered on the instrument. You can program the Sustain One Footswitch to control the sustaining of both sounds at the same time in the FOOT SUSTAIN Screens under PAD 14.

**HOW To Select DOUBLE (LAYER MODE)**
Step on the Edit Footswitch and hold it down. Tap on PAD 12, TWICE (F on the Outer Ring). You will first see HANG Mode. If you hit pad 12 again and again, the various Layer Modes are displayed. The Layer Modes are Hang, Double, Melody Chord 1,2,3, Alternate and Velocity Shift. The display shows the Layer Modes in order and moves in the same direction. It does not loop around but stops when the last choice is displayed. Start from the beginning to see all of the possibilities.

When you find the Layer Mode that you want, just release the foot switch. Notice the display now in Play Mode. Your Layer choice is now showing. When you re-enter Layer Mode in Edit, the display will first show HANG. If you tap pad 12 again, you will then be changing the Layer Mode's Selection.

**MEL1, MEL2, MEL 3**
When you see any of these on the first line, you are in Melody Chord Mode. These modes tell the panKAT what sound to play (from Controller One or Controller Two) depending on how many notes are being played simultaneously. It gives one the ability to play one sound as a melody line and another as an accompaniment sound simply by playing individual notes or chords.

There are three variations (described in the Editing Chapter 3) of the Melody Chord Mode. Each Mode varies slightly on where to send the notes when it sees a chord. It is always best to experiment and listen to the differences and see which Mode will work best for you.

**HOW To Select MELODY (LAYER MODE)**
Step on the Edit Footswitch and hold it down. Tap on PAD 12, THREE, FOUR or FIVE Times (F on the Outer Ring). You will first see the first Layer Mode option HANG. If you hit pad 12 again and again, the various Layer Modes are displayed. The Layer Modes are Hang, Double, Melody Chord 1,2,3, Alternate and Velocity Shift. The display shows the Layer Modes in order and moves in the same direction. It does not loop around but stops when the last choice is displayed. Start from the beginning to see all of the possibilities.

When you find the Layer Mode that you want, just release the foot switch. Notice the display now in Play Mode. Your Layer choice is now showing. When you re-enter Layer Mode, the display will first show Hang as your selection. If you tap pad 12 again, you will then changing the Layer Mode's Selection. .

**ALTERNATE Mode (Alt)**
The Alt stands for Alternate Mode. In this mode, every time you hit the keyboard, the sound switches between CONTROLLER ONE and CONTROLLER TWO.

**HOW To Select ALTERNATE Mode (LAYER MODE)**
Step on the Edit Footswitch and hold it down. Tap on pad 12 SIX TIMES (F on the Outer Ring). You will first see HANG Layer Mode. If you hit pad 12 again and again, the various Layer Modes are displayed. The Layer Modes are Hang, Double, Melody Chord 1,2,3, Alternate and Velocity Shift. The display shows the Layer Modes in order and moves in the same direction. It does not loop around but stops when the last choice is displayed. Start from the beginning to see all of the possibilities.

When you find the Layer Mode that you want, just release the foot switch. Notice the display now in Play Mode. Your Layer choice is now showing.

**VELOCITY SWITCH (VelS)**
When you see this on the screen, you are in Velocity Switch Mode. In this mode, the sound switches between CONTROLLER ONE and TWO by how hard you play. You can set up the exact velocity point that the switch happens.

**HOW To Select VELOCITY SHIFT (LAYER MODE)**
Step on the Edit Footswitch and hold it down. Tap on PAD 12 SEVEN TIMES (F on the Outer Ring). You will first see HANG Layer Mode If you hit pad 12 again and again, the various Layer Modes are displayed. The Layer Modes are Hang, Double, Melody Chord 1,2,3, Alternate and Velocity Shift. The display shows the Layer Modes in order and moves in the same direction. It does not loop around but stops when the last choice is displayed. Start from the beginning to see all of the possibilities.

When you see Velocity Shift Mode, just release the foot switch. Notice the display now

in Play Mode. Your Layer choice is now showing. When you re-enter Layer Mode, the display will first show Hang. If you tap pad 12 again, you will then changing the Layer Mode's Selection.

To change the Velocity Shift Point, while in Layer Mode, tap on the FORWARD Pad. The shift point is now blinking. Use the INC, DEC pads to change the setting from 1-127.

**PRESSURE MODES**

The panKAT can detect continuous pressure on a pad. This gesture of applying pad pressure can be interpreted by the panKAT to perform specific functions such as mallet dampening, dead stroking or pressure sustaining.

On the first line of the display on the far right of the screen, there are several choices of Pressure Modes. They are:

**Norml, Dampn, and DeadS**

**NORMAL Mode**

This represents the NORMAL Pressure Mode, where applying continued pressure causes notes to be sustained. (this is like pressing down on a keyboard). The note will shut off after the pressure from the mallet is released (and the gate time lapses)

You can access the NORMAL mode by stepping on the EDIT Footswitch, and while held down, tap PAD 2, (G on the Outer Ring). This pad is named PRESSURE. When you tap on the pad with the Edit Footswitch down ,you will see the word NORMAL. If you continue tapping the pad , the other PRESSURE modes are displayed. The Pressure Mode pad advances through all of the pressure Mode possibilities on the panKAT (Normal, Dampen, Dead Stroke)

If you let go of the footswitch and start the process again, hitting pad 2 will start the Mode changes from the beginning showing you the Normal, Dampen and DeadStroke.

**DAMPEN**

This represents the Dampen Pressure Mode, where natural dampening techniques cause individual notes to be quieted. This is like the dampen technique used on a vibraphone/vibraharp.

There are settings in the GLOBAL AUX (PAD 24) Screens that change the sensitivity and reactions to your dampening strokes.

You can access the DAMPEN mode by stepping on the EDIT Footswitch, and while held down, tap PAD 2, TWICE, (G on the Outer Ring).

**DEAD STROKE**
This represents the DEAD STROKE  Mode. This feature simulates the common dead stoke technique that is used with marimba and vibraphone players.

When a dead stroke gesture is detected, these notes can be sent out on a different MIDI channel so that dead stroke samples can be accessed.

If you have a SAMPLER that has samples of marimba dead strokes, this mode will become a valued feature.  The Dead Stroke gesture can also be creatively used to access different sounds on multiple channels that are transposed.  This means that you can control different sounds simply by how you use your mallets on the panKAT.

You can access the DeadS mode by stepping on the EDIT Footswitch, and while held down, tap PAD 2, THREE Times, G on the Outer Ring.

The Dead Stroke sends the note data to the actively kit assigned Reassignment Number (a Reassignment is a special keyboard layout arrangement where each note can be assigned to any note number along with it's own MIDI channel.

You can control the delay time before the Dead Stroke sounds in the Global Screens (Dead Stroke Count).

**CONTROLLER ONE and TWO CONTROLLER FUNCTIONS**
On the second line of the Display, you will see the word "Controller" followed by 1 or 2. *Whenever you edit the panKAT, you will need to know what layer you are working on.*

You can change what Controller you are using by stepping on the EDIT Footswitch , and while held down, tap the INC or DEC pads (pads 28-27(Db-E) on inner ring). The display will show the current Controller Number.

You will also notice that to the right of the word Controller is yet another group of functions that tell the Controller how it is to play.  These are the Keyboard Modes.

Every Setup has two Controller Layers, and each Layer can have its own assigned Function. Remember also that they can be layered in DOUBLE Mode or accessed independently in HANG Mode.

**KEYBOARD MODES**

On the second line of the display, after the Controller Number are the Keyboard Modes. They are

**POLY Mode**
**MONO Mode**
**RTC**
**RTC+ Velocity**

**POLY Mode**
This is the “standard default” Controller Mode. This is for normal polyphonic playing. In this mode, you can play chords, melody, etc.

You can access the Poly mode by stepping on the EDIT Footswitch and while held down, tap the C pad. This is PAD number 1 on the Outer Ring.

**MONO Mode**
This setting is for Monophonic Playing. This mode is great for lead lines, or for simulating solo line instruments like flute or trumpet. Only one note will sound at a time in this mode.

There is also an Mono Overlap Setting for setting legato control (this overlaps notes together, programmed in milliseconds).

You can access the Mono mode by stepping on the EDIT Footswitch and while held down, tap the C pad, twice. This is pad number 1 on the Outer Ring.

Details on these mode are in the “Editing the Screens” section.

**RTC and RTC +Velocity**
These are special Modes that turns the panKAT into a CONTROLLER DEVICE. Rather than sending out note data, it sends out controller data. This turns your panKAT into a massive knob turning machine for your synthesizers. This is a special mode that is discussed in detail in Chapter Three.

**INSTRUMENT NAMES / KIT NAMES / NONE**
On the third line of the display, you can choose one of three options for what will be displayed on that line. This option is decided in the GLOBAL AUX Screens. Pad number 24, E on the Middle Ring.

If you are using the panKAT WS, then you are using the General MIDI sounds. The display is set for INSTRUMENT NAMES.

If you are in USER KIT MODE, and you want to name your own KITS, then the DISPLAY will be set to KIT NAMES.

If you do not see any names on the display, but see info about both Controller 1 & 2, then you are in NONE Mode.

**INSTRUMENT NAMES**
These are the General MIDI Program Names. In the Factory Kits, you cannot change these names. The Instrument Names correspond to the Program Numbers that have been assigned to them.

If you have a General MIDI sound module, the INSTRUMENT NAMES on the panKAT display will automatically correspond to the screen names and sounds of your synthesizer.

If you are using a non standard sound source, or a different sound bank on a GM compatible synthesizer, the names will NOT correspond. You should then go to the USER KITS and use the KIT NAME option, or just ignore the name of the KIT in the FACTORY KIT setting.

KIT NAMES In the USER KITS on the panKAT, you can choose to name your own kits. This is helpful when creating a KIT that has combinations of sounds in them. This mode should be used if you are using a sound source that is not GM compatible.

This option is decided in the GLOBAL AUX Screens (Program String Names).

The KIT NAME is the same for BOTH CONTROLLERS. The length of the name can be a total of 12 characters. It is programmed by pressing the Edit Footswitch and Pad number 11 (Bb on the Outer Ring).

NONE It is also possible not to have any KIT name strings in a SETUP. This can be useful because screen lines 3 and 4 then display channel, volume and program number information for Both CONTROLLER ONE on line three and CONTROLLER TWO on line four.

If KIT NAMES or INSTRUMENT NAMES are chosen, line four displays information only for one CONTROLLER. You can decide which controller is being displayed by stepping on the EDIT and while held down hit the Decrement (pad 28 Db inner ring) or the Increment Pad (pad 27 E, inner ring). While in EDIT, you will see the words “Edit Controller One” or “Edit Controller Two” on the display. When you release the footswitch and are back in Play Mode, whatever CONTROLLER you chose will display its number on the second line. The data on the fourth line (explained below) will be information about that Controller.

**THE FOURTH LINE BANK, PROGRAM and VOLUME INFO**
There is much information packed on the fourth line of the display.

First, is the MSB, LSB Bank Change information. You will see a number like this: B 01-02. The B stands for BANK, the first number 01 is the MSB number. The dash separates the LSB number from the MSB.

You can change the Bank Number by hitting PAD 6 (B on the Outer Ring) while the Edit Footswitch is held down.

Following the Bank Number Display is the letter P followed by a number. This is the PROGRAM CHANGE number. There are 127 Program Change numbers available, each number representing a sound on your synthesizer.

Finally there is the letter V. This represents the Volume Number.

As you can see, each KIT in the panKAT stores a Bank, Program and Volume Number. It acts like a mixer, completely setting up your synthesizer with the right sound and the right volume. You'll almost never need to touch the sound module.

# Chapter Three

## EDITING THE PANKAT

The panKAT has no buttons or knobs for changing settings. All changes in the panKAT settings are done with the Playing Pads. That is why the Pads have names like Setup, Octave, and Channel, etc. below them. You can make all of your changes without having to put your mallets down!

The panKAT PRO has two main operating modes: PLAY MODE and EDIT MODE.

You are in PLAY MODE when you are not depressing the EDIT Footswitch. In PLAY MODE, your pads play sounds. The screen says Play Mode on the display along with other important information.

You are in EDIT MODE whenever you are depressing the EDIT Footswitch. In EDIT MODE, the Pads all perform the Editing functions that are written below the Pads.

Under every Pad is a function grouping. That means that all of the screens that refer to the specified function are under this one pad. Multiple Hits on the same pad call up different but related functions. Here are some Examples.

**HOW TO EDIT:**
The process of Editing goes like this:

• Depress the EDIT and keep it held down then...

• Select Controller 1 or 2 by hitting the INC/DEC Pads (pads 28-27, Db-E on the Inner Ring). This sets up what Layer you are Editing.

• Select the Function Type you want to edit by hitting the appropriate pad. The name of the Function Type is written next to the pad on the metal frame.

- Hit the pad again to see if there are related Functions.
  - Use the INC/DEC Pads to change the value for the displayed Function
  - Release the EDIT Footswitch . That's it!

Again, here is the procedure
Get into EDIT MODE with the EDIT Footswitch held down, select a Function Type that you want to change by striking the appropriate pad, change the value by using the INC/DEC pads, and release the EDIT Footswitch . Now, for some examples.

**EXAMPLE 1: Change the "MIDI Channel" setting for Controller 1**.
1. Depress the EDIT Footswitch. The Screen will look like:
Setup 01 (01-127) Edit Controller1 (or 2)

2. Use the INC/DEC pads (pads 28-27) on the Inner Ring to change Controller number if it is not set to 1.

3. Tap on PAD 3 "CHANNEL" (the "D" on the Outer Ring). Screen looks like this: Setup 01 Edit Controller 1 Channel XX. The Channel number is blinking.

4. Tap on the INC/DEC pads to change the MIDI CHANNEL for the Kit. MIDI Channels can be a number from 1 to 16.

5. Release the EDIT Footswitch. The Screen will return to the PLAY MODE screen. The KIT is now set to play on the MIDI channel that you have selected.

**EXAMPLE 2: Changing the Keyboard from Polyponic to Monophonic**

1. Depress the EDIT Footswitch. The Screen will look like:
Setup 01 (01-127) Edit Controller1 (or 2)

2. Use the INC/DEC pads (pads 28-27) on the Inner Ring to change Controller number if it is not set to 1.

3. Tap on pad ONE, KEYBOARD MODE. It will say Polyphonic. Tap the pad again. It will now say Monophonic. Release the Footswitch.

As you can see, sometimes you need to use the DEC, INC pads to change the blinking value and other times you need to tap the pad repeatedly to find the function. On some functions it will be necessary to use the FORWARD and BACKWARD pads to move the cursor around on the screen. A complete listing of the pads functions and options are listed below.

## EDITING the panKAT

Underneath the keys of the panKAT are the listings of FUNCTION TYPES. When you step on the Edit and hit one of these pads, the name of that FUNCTION appears. When it does, you simply use the INC/DEC pads to change the values within the Function. If there is more than one Function underneath a pad, it can be accessed by hitting that same pad again. These other Functions are closely related to the FUNCTION TYPE that you are Editing. If the cursor needs to be moved within the screen, use the FORWARD and BACKWARD Keys. The blinking parameter is where the cursor is on. The INC/DEC changes the value of the blinking parameter.

There are several locations where another Function also appears on the FORWARD and BACKWARD pads within the FUNCTION TYPE that you are Editing. These are present when a Function within the FUNCTION TYPE has a parameter that can also be changed. These are listed below.

## FUNCTION LISTING TYPES ON OUTER RING

**PAD 1 KEYBOARD MODE**
Functions *Polyphonic, Monophonic, RTC, RTC+Velocity*
*Forw/Back Transpose*

**PAD 2 PRESSURE MODE**
Functions *Normal, Dampen, Deadstroke*

**PAD 3 CHANNEL**

**PAD 4 NOTE ARRANGE**
Functions *Pitch Configuration, Octave, Transpose*

**PAD 5 VELOCITY**

Functions *Minimum Velocity, Maximum Velocity,Velocity Curve*

**PAD 6 PROGRAM CONTROL**
Functions *Bank MSB-LSB, Program Number*

**PAD 7 GATE CONTROL**
Functions *Gate Time, Velocity Gate, Roll Mode, AutoGate*

**PAD 8 VOLUME**

**PAD 9 ALL NOTES OFF**
Functions *All Notes Off, Individual All Notes Off*

**PAD 10 KIT BANK**
Functions *Factory, User, Chains*

**PAD 11 KIT NAME**

**PAD 12 LAYER MODE**
Functions *Hang,Double,Chord Mode 1-3, Alternate Mode, Velocity Shift*
*Forw/Back Velocity Shift Point*

## FUNCTION LISTINGS MIDDLE RING

**PAD 13 FOOT CONTROL**
Functions *Foot Controller 1 Assignment, Foot Controller Two Assignment, FSW MIDI NOTE*
Forw/Back *Controller 1& 2 Min Effect, Max Effect, Curve, Channel*

**PAD 14 FOOT SUSTAIN**
*FTSW 1 Sustains, FTSW 2 Sustains*

**PAD 15 WARP MODE**
*Forw/Back moves cursor*

**PAD 16 EFFECTS**
*Pitch Bend Sensitivity*

**PAD 17 REASSIGN MODE**
*Functions On/Off, Poly, Reass #, Reassign Program Sends, Interface Mode*
*Forw/Back moves cursor*

**PAD 18 CONTROL PRESET**
*Forw/Back moves cursor*

**PAD 19 CONTROLLER INTERFACE**
*Forw/Back Slew Data Strip Rate*

**PAD 20 GROOVE CONTROL**
*Forw/Back moves cursor, Groove Note, Groove Channel*

**PAD 22 PAD TRAINING**

**PAD 23 DATA DUMP**

**PAD 24 GLOBAL AUXILLARY**
*Function Last Entry*
*Forw/Back* Memory, Protect, Merge, DataDump Receive, Threshold Adj, Backwards Thresholds, Forwards Thresholds, Incoming PC Receive, Train Pad, Group Train, Individual Pad Train, Training Results, Foot Controller One Train, Foot Controller Two Train, Beeper, Screen Angle, Instrument ID, Debounce Count, Dampen Threshold, Dampen Count, Dead Stroke Dampen Count, Foot Controller 1 Performs, Foot Controller 2 Performs Incoming Channel Route, Incoming Sys Message, PC Sound Map, Program String Names, Chord Mode Window, Aftertouch Mask Count, Aftertouch Depth, Bank Select Enabled, Tune Instruments, Fine Tune Routing, Dampen Mode Scan Count, Normal Scan Count, Dampen Ratio, Virtual Control A, Virtual Control B, Virtual Control C, Reassign#, Key Pad Controller Adjustments,

## FUNCTION LISTINGS INNER RING

**PAD 25 CANCEL**
**PAD 26 DEFAULT**
**PAD 27 INCREMENT**
**PAD 28 DECREMENT**
**PAD 29 COPY**
**PAD 30 SETUP**

**WHEEL FUNCTIONS**
MOD WHEEL = *Modulation Wheel Settings*
PITCH WHEEL = *Pitch Wheel Settings*

**FORWARD PAD** *GROOVE CONTROL ON/OFF*
**BACKWARD PAD** *TAP TEMPO ON/OFF*

# CHAPTER FOUR FUNCTION DETAILS

# OUTER RING PAD FUNCTIONS

## PAD 1 KEYBOARD MODE

**POLYPHONIC MODE**
This is the “standard default” Controller Function. This is for normal polyphonic playing. In this mode, you can play chords, melody, etc.

You can access the Polyphonic Mode by stepping on the EDIT Footswitch, and while held down, tap PAD ONE on the Outer Ring. When you release the footswitch, you will see POLY on the screen display.

Please note that both Controller 1 and Controller 2 can have different Keyboard Mode Settings.

**MONOPHONIC MODE**
This setting is for Monophonic Playing. This mode is great for lead lines, or for simulating solo line instruments like flute or trumpet. Only one note will sound at a time in this mode.

You can access the Monophonic Mode by stepping on the EDIT Footswitch, and while held down, tap PAD ONE, TWICE on the Outer Ring. When you release the footswitch, you will see Mono on the screen display.

Please note that both Controller 1 and Controller 2 can have different Keyboard Mode Settings.

**MONO NOTE OVERLAP**
*Parameters = Disabled, .010 - .310 second Mono Note*

When using a monophonic sound, sometimes the monophonic effect doesn't sound as smooth as you like. To get more of a legato effect, this setting allows the old note to play for a short time after the new note has been struck. The old note will finally get shut off after the NOTE OVERLAP times elapses. This enhances the authenticity of playing single line instruments, such as the flute.

Some synthesizers do not respond well to this setting. If notes get stuck on, lower the overlap time. If notes still get stuck on, you will need to disable this feature for your particular sound module.

**To Access Mono Note OverLap**

Step on the Edit Footswitch and tap on PAD ONE, TWICE. You will see MONOPHONIC on the display.
Now tap on the FORWARD PAD. Use the INC/DEC pads to change the values from Disabled to .310 seconds.

**POLYPHONY COUNT**
*Parameters = 1 Note, 2 Note*

The panKAT Pro may be set to 1 note polyphony or 2 note polyphony. If one note polyphony is selected, a note currently sounding will be turned off by the panKAT PRO before the same note is played again. If two note polyphony is selected, two notes of the same pitch will be allowed to sound at the same time before a third note of the same pitch causes one of them to be turned off by the panKAT.

One note polyphony is different than monophonic in that only one sound of any pitch plays at one time. If notes get stuck on in two note polyphony Mode, then your sound module is not compatible with this feature. You will then need to set this parameter to one note polyphony.

**To Access Polyphonic Count**
Step on the EDIT Footswitch, and while held down, tap PAD ONE on the Outer Ring. TWICE. You will see MONOPHONIC on the display.

Tap on the FORWARD PAD, THREE TIMES. Use the INC/DEC pads to change the parameter to 1 or 2 Note Polyphony.

**RTC REAL TIME CONTROL MODE**
RTC. This stands for "Real Time Controller". This Mode turns the panKAT into a massive knob turning machine. The OUTER RING PADS (1-12) are each assigned one Continuous Controller Number in the GLOBAL SCREENS. The MIDDLE RING sends out discreet values in Play Mode. These pads increment values going clockwise on the pads starting from the 6 o'clock position (13, 24, 23, 22, 21,20,19,18,17,16, 15, 14). The discreet values change on each pad based on the overall range on the Minimum and Maximum Settings programmed in Global Screens. In other words, the overall range is divided amongst the 12 pads.

Each of the OUTER RING pads are assigned in GLOBAL AUX
1 Controller Number from 1 -127
1 MIDI CHANNEL
Minimum Value 1-127 (this sets the lowest value sent on pad 13)
Maximum Value 1-127 (this sets the highest value sent on pad 14)
Reset Value 1-127
Previous Control Value 1-127

Next Control Value 1-127

Go To RTC in the GLOBAL AUXILLIARY SCREENS for more info on setting up these parameters.

Whenever a KIT is programmed to RTC, this single set of 12 Continuous Controller numbers are set on the OUTER pads.

Step on the EDIT Footswitch, and while held down, tap on PAD ONE on the Outer Ring. THREE times. When you release the footswitch, you will see RTC on the screen display. Notice the bottom line on the display. Whenever you strike on an OUTER RING pad, its Controller Number is displayed. Whenever you strike on the MIDDLE Ring, the pads value is displayed. The panKAT then sends out the appropriate CC# and value.

Please note that both Controller 1 and Controller 2 can have different Keyboard Mode Settings.

**RTC + VELOCITY**

RTC + Velocity This stands for 'Real Time Controller plus Velocity. This is a special mode that allows for two controller numbers to be manipulated simultaneously. RTC is a horizontal control, meaning that values of a controller are affected by using the MIDDLE RING pads, left to right. Adding Velocity to this mode means that your dynamics, or vertical approach changes values to a controller. Playing soft or loud is interpreted as small or large controller values.

You can access RTC + V by stepping on the EDIT Footswitch, and while held down, tap PAD ONE, FOUR times..

Setting the RTC+ VELOCITY is done in the GLOBAL AUXILLIARY Screens. Here you assign the MIDH Channel, Controller Number and Reset Value.

**SLEW DATA STRIP RATE**

*Parameters = 00-127*

When using the RTC Mode, there is lots of control data being sent to the sound module. This screen allows the data to be stripped (thinned) out. Raising the value decreases the amount of data being sent.

**To set the Slew Date Strip Rate**

Step on the Edit Footswitch and while held down, tap on PAD ONE, THREE times. Now tap on the FORWARD PAD.

**PITCH WHEEL MODE**

PTW. This mode is the PITCH WHEEL MODE. This turns CONTROLLER 2 into a massive pitch wheel. Unlike the RTC, the value of the MIDDLE RING pads returns to zero when the note is released. This simulates using a pitch wheel on a synthesizer. This mode is intended to be used in conjunction with CONTROLLER ONE, the actual sound, while CONTROLLER TWO imposes the pitch wheel effect on CONTROLLER ONE.

**You can access PTW by stepping on the EDIT Footswitch.**
While held down, tap on PAD ONE Five Times. Remember that this setting only works on CONTROLLER TWO. PTW can not be accessed on Controller 1.
The PTW functionality is accessed by pressing FSW #2 (HANG pedal) and striking or pressing the keys while you are also sustain a sound using FSW 1.

The INNER PADS are reserved for Special Functions Pad in PTW Mode.
PAD 28 DEC ( **slew speed**) actives the INC/DEC pads for value change.
PAD 29 COPY ( **decrement key** )
PAD 26 DEFAULT ( **increment key** )
PAD 27 INC ( **portamento mode**)

When PAD 28 (**slew speed**) pad is struck (<u>with Hang Pedal Down</u>), the slew value is displayed, and remains there until PAD 28 is struck again. This acts like a toggle. The idea here is that after you strike PAD 28, you will then use PADS 29 (lowers) + 26 (raises) to program your slew rate time.. Once you have finished, PAD 28 again to begin playing.

The MIDDLE PADS are each assigned a Pitch Wheel controller value from 0-127 in the following manner.

Pad 19 (12 o'clock) is the Neutral Pitch Position
Pads to the LEFTof Pad 19 (20, 21,22, 23,24,13) bring to pitch down.
Pads to the RIGHT of Pad 19 (18,17, 16, 15, 14) bring the pitch up.

If Portamento is OFF, striking a key will immediately send the controller value assigned to that key. The neutral Pitch Wheel value is sent when both the pad and the HANG pedal are released.

If Portamento mode is ON, striking or holding a key will slew up or down to the value assigned to that key for as long as the key is pressed OR until the Gate Time Value has expired. If the key pressure is released or when the gate time ends, the controller values will slew back to the neutral value.

When an OUTER RING PAD is struck with the mallet, the panKAT holds that pad down

as determined by the GATE TIME. After the gate time has expired, the slew returns back to "0" at the determined slew rate when the HANG pedal is released. If the HANG pedal is still pressed when the max/min value is reached, the return slew sequence will not occur until it is released. Whenever the HANG pedal is released, the slew sequence returns to the neutral value (determined by gate time)

**PTW TIPS**
In order to hear the sustain sound, you must have sustain one pedal down. When you release the Hang pedal, the slew sequence returns to the neutral value at a duration of the programmed gate time of controller 2. Make the gate time settings small so that when you release the Hang Pedal, you will have normal pitches being played on controller one.

If you continue to press on an OUTER RING PAD after releasing the HANG PEDAL, the pitch bend continues until that key is released.

Holding the pad down has the same effect as holding the HANG pedal down.

**VIRTUAL CONTROL WHEEL**
Control Wheel A / Control Wheel B / Control Wheel C
There are three VIRTUAL CONTROL WHEELS on the panKAT. They are Control **Wheels A, B and C.** In the Global Screens, you assign what controller number (1-127) you want to assign onto the Virtual Wheel. This function is available only on CONTROLLER TWO.

The CTLA, CTLB and CTLB are the Virtual Control Wheels. This feature is also identical to the PTW Mode (see above) except that instead of sending out pitch bend data, you can assign any controller number and value by using the HANG footswitch combined with a tap on a pad on the MIDDLE RING.

See VIRTUAL CONTROL WHEEL In The GLOBAL AUXILLIARY Section for more info on setting up this Global Feature.

## PAD 2 PRESSURE MODE

**NORMAL PRESSURE MODE**
This is the normal default setting in the panKAT. When you apply pressure to the pad, it plays and sustains the sound normally until you release the pressure. The panKAT is either in Normal or Dampen Pressure Mode.

**DAMPEN STROKE, DEAD STROKE** When you play a note, then apply pressure to that pad in DAMPEN MODE, this will shut off the note. This mimics dampening on a mallet instrument. There are settings in the GLOBAL screens that vary how quickly and how sensitive the dampening occurs.

**To Access Dampen**
Press on the Edit Footswitch and tap on PAD 2 Twice. When you release the footswitch, you will see Dampn on the top line of the display.

This mode effects both Controller One and Controller Two simultaneously.

If you press on the Edit Footswitch and tap on PAD TWO THREE TIMES, the Dampen Mode switches to DEAD STROKE. **DEAD STROKE** is like Dampen, but instead of just shutting off the note on, it also plays another note. This mimics a Dead Stroke in that this motion initiates another sound.

When a Dead Stroke gesture is detected, these notes are sent out on a different MIDI channel so that the dead stroke samples can be accessed. The Dead Stroke gesture can also be creatively used to access different sounds on multiple channels that are transposed. The Dead Stroke sends the note data to the actively kit assigned Reassignment Number (a Reassignment is a special keyboard layout arrangement where each note can be assigned to any note number along with its own MIDI channel.

You can also control the delay time before the Dead Stroke sounds in the Global Screens ( Dead Stroke Count).

Check out these Global Functions in the Global Aux Chapter, DEAD STROKE.

**MULTIPLE HIT SMOOTHING (DAMPEN MODE)**
*Parameters = Is Not Active, Mode 1 Active, Mode 11 Active*

This parameter enhances the DAMPEN features of the panKAT. Manufacturers of synthesizer modules handle MIDI Note Off Commands differently. Because of this, some sound modules (i.e. from Korg Inc ) would get “stuck notes” if two notes were struck at the same time with the sustain pedal down and the DAMPEN mode turned on.

The normal Dampen Mode is TYPE ONE. This will create the most natural dampening effect. This is the same type that has been implemented on all previous versions of the panKAT.

If notes intermittently get stuck, change the Dampen Mode to TYPE TWO. This should solve the problem. Please note that the millisecond overlap screens do not have an effect on TYPE TWO. This is because TYPE TWO prevents momentary polyphony on

the dampened note. This is the hidden feature in TYPE ONE that makes it sound so natural

**To Access MULTIPLE HIT SMOOTHING**
Step on the Edit Footswitch, and while held down,
tap on PAD 2 Twice, then
tap on the FORWARD PAD. Use the INC/DEC to change variables.

## PAD 3 CHANNEL

**MIDI CHANNEL**
*Parameters = MIDI CHANNEL 1-16*

Use PAD 3 to assign a MIDI CHANNEL for both Controllers 1 and 2.

**To Access MIDI CHANNEL**
Step on the Edit Footswitch, and while held down,
tap on PAD 3
Use the INC/DEC to change the MIDI Channel.

## PAD 4 NOTE ARRANGE

**PITCH CONFIGURATIONS**
PITCH CONFIGURATIONS is the mechanism that “tunes” the panKAT's pads to various pitches. Since the panKAT is a steel drum emulator, the default Pitch Configuration is a panKAT tuned to 5ths. There are also special tunings for drums and percussion as well as other melodic situations. When using the Reassignment Mode, it is possible for you to create your own pitch configurations.

A complete list of the exact notes in each configuration is listed in the Appendix, but below is a listing of the panKAT's basic tuning configurations.

C Pan in Fifths
D Pan in Fifths
Chromatic
C Minor
C7
C Diminshed
C Major
C in Fourths
C Pentatonic

C minor pentatonic
GM Drums
C Minor in Thirds
C7 in Thirds
C Dim in Thirds
C Maj in Thirds
C Whole Tone
C Major Pentatonic
Blues
Percussion

Each of these pan configurations can be transposed up or down to any octave.

**To Access PITCH CONFIGURATIONS**
Step on the Edit Footswitch, and while held down,
tap on PAD 1
Use the INC/DEC to change the PITCH CONFIGURATION.

**OCTAVES**
*Range 00-14*
This function sets the pitch range of the Controller. Each time you raise or lower the number, the entire note range of the sound goes up or down one octave.

**To Access OCTAVES**
Step on the Edit Footswitch, and while held down,
tap on PAD 4 Twice, then
Use the INC/DEC to change the octave range.

Both Controller 1 and Controller 2 can have their own Octave Setting.

**TRANSPOSE MODE**
You can change the pitch range of either Controller -12 to +12 semitones. This changes the pitch in half steps.

**To Access TRANSPOSE MODE**
Step on the Edit Footswitch, and while held down,
tap on PAD 4, THREE Times.
Use the INC/DEC to transpose the sound by ½ steps.

# PAD 5 VELOCITY

**MINIMUM VELOCITY SETTING**
*Range 00-127*
This setting determines how loud your softest hits will sound. Lowering this number will make your soft hits sound softer. Raising this number will turn even soft hits into loud sounds (if the maximum velocity is set to max, 127)

**To Access MINIMUM VELOCITY**
Step on the Edit Footswitch, and while held down,
tap on PAD 5 , then
Use the INC/DEC to set the minimum from 0 -127

**MAXIMUM VELOCITY SETTING**
*Range 00-127*
This setting determines how loud your loudest hits will sound. Lowering this number will make your loud hits sound softer.

**To Access MAXIMUM VELOCITY**
Step on the Edit Footswitch, and while held down,
tap on PAD 5 TWICE , then
Use the INC/DEC to set the minimum from 0 -127

Setting the MIN and MAX Settings determines the overall velocity range of the sound that you are editing. To get the widest possible dynamic range, set the MINIMUM Velocity to 0 and the MAXIMUM Velocity to 127.

**VELOCITY CURVE**
*Range 01-11*
This setting determines how the loudness of a sound varies as your hits go from soft to hard. It determines how fast a sound goes from the minimum velocity setting to the maximum velocity setting as you play from soft to hard.

Some curves work in reverse. The harder you play, the softer the sound gets. Experiment with these curves to find the one that is right for you.

**To Access VELOCITY CURVE**
Step on the Edit Footswitch, and while held down,
tap on PAD 5 TWICE, then
Use the INC/DEC to set the maximum from 0 -127

# PAD 6 PROGRAM CONTROL

**PROGRAM CHANGE SETTING**
*Range 00-127*
This setting selects a sound or set of sounds on your sound source in conjunction with the BANK SELECT # command. There are usually 128 sounds in a BANK. This screen sends a program change within the Bank selected.

**To Access a Program Change**
Step on the Edit Footswitch, and while held down,
tap on PAD 6 TWICE , then
Use the INC/DEC to set the minimum from 0 -127

You will notice on the last line of the display the value changing. P stands for Program Change, and the value next to P is the actual program number being sent.

Notice that on the third line, there are names of instruments. These instrument names are only relevant if you are using a GM sound source like the one in the panKAT. If you are using a non GM sound source, you can disable the screen from displaying these names. This is done in the GLOBAL AUXIALLARY screens. Set the Program String Names to NONE.

**BANK MSB BANK LSB**
*Parameters = MSB 00-127, LSB 00-127*
The MSB, LSB settings tell the sound module what BANK of sounds to call up. Refer to your sound module's instrument listings to find the right MSB, LSB number combination for the Bank of sounds that you are looking for.
If only one bank number is needed, set the MSB to 00 then set the LSB to Bank number listed. If your sound module does not respond correctly, you many need to set the MSB to 01 instead.

Please note that the MIDI Spec calls for the Bank range from 1-128. Some manufacturers prefer to use the numbers 0-127. For this reason, it might be necessary to adjust your Bank (and Program Change) settings by one number.

**To Access BANK CHANGE COMMANDS**
Step on the Edit Footswitch, and while held down,
tap on PAD 6 , then
Use the INC/DEC to set the minimum from 0 -127.
Use the Forward/Backward keys to move the cursor between the LSB and MSB parameters.

# PAD 7 GATE CONTROL

**GATE TIME**
*10mS – 6.100 seconds, Velocity,FC1 Gate,FC2 Gate, LATCH, INFINITE*
Gate Time is the amount of time the panKAT holds down or sustain notes. Generally, Gate Time is a measure of how long the sound should sustain. After the panKAT Pro sends a “note on” command, the panKAT will wait this length of time before sending a “note off” command. For synthesizers, tone generators and samplers, this is an important setting. For many drum machines, this setting has no effect. When a Gate Time has no effect, it should be set to a fast value (0.015 milliseconds).

The display shows different gate time choices depending on the different lengths of time for the sustain of the notes. For very short Gates times, the value choices are in 5 mS increments. For medium times the resolution is 25 mS, while at long times (>2seconds), the resolution is in 100 mS increments. The varying resolution allows you to have accurate resolution where it counts most (short times) and also the ability to select very long times.

You can manually control individual sound sustain by continuing to hold down on a pad (except in Dampen/DeadStroke Mode). If you are going to do this, you should raise the minimum velocity of the pads up because dynamics on the pads are measured in the first 2 milliseconds of your contact with the pad. On a Staccto hit, this is fine. However, if you are trying to press down on a pad in a “sustaining way”, your “push” has not amounted to much in the first 2mS.

You also control varying the sustain of the notes you play by using the Sustain footswitch. It is the most natural mechanism to use as it operates like a vibe pedal. The Gate Time sets the minimum sustain which you can extend longer with the sustain pedal or by manually holding individual notes down.

**To Access the GATE TIME**
Step on the Edit Footswitch, and while held down,
tap on PAD 7 , then
Use the INC/DEC to set GATE TIME in Milliseconds. After 6.100 seconds, additional functions are Displayed. See Below

**AUTO VELOCITY TO GATE** VELOCITY
You can control the Gate Time of a sound by how hard you hit the pad.

Tap the Gate Pad (pad 7) and use the INC/DEC pads to find the VELOCITY Gate time setting (past 6.100 seconds)

After setting the Gate Time to VELOCITY, tap PAD 7 again to find the Min/Max Velocity Settings.

If the gate is set to VELOCITY, the length of each note is determined by the velocity of each hit. In other words, playing soft and loud determines the sounds length. The range of the gate is determined by the Minimum and Maximum Range of the Gate Times. Reverse settings are legitimate (the harder the hit, the smaller the gate time). The range of the Velocity Gate time is .10 to 6.100 seconds.

Use the Forward / Backward pads to move the Cursor between the Min and Max settings. Use the INC/DEC pads to change the values of these settings.

**INFINITE MODE**

Tap the Gate Pad (pad 7) and use the INC/DEC pads to find the INFINITE Gate time setting (past 6.100 seconds)

This setting is specifically for Controller 2 when using HANG mode. When the gate time is set to INFINITE, the Sustain 2 acts like a GATE TOGGLE. When the Sustain 2 is held down, the notes from CONTROLLER 2 are played. They will continue to play...to HANG, until the footswitch is held down again.

See also HANG MODE (pad 12 LAYER) for more information on the use of INFINITE Gate.

**FOOT CONTROLLED GATE**

Tap the Gate Pad (pad 7) and use the INC/DEC pads to find the **FC1** Gate or **FC2** Gate time setting (past 6.100 seconds)

After setting the Gate Time to FC1 or FC2, tap PAD 7 again to find the Min/Max Velocity Settings.

The Gate Time of a sound can now be controlled by the position of the controller pedal.

When the Gate Time is set to GATE FC1 or GATE FC2, the position of the pedal determines the length of the sound. The range of the gate time is set by the Min/Max Velocity settings on the next screen.

**ROLL MODE**

When ROLL MODE is turned on, individual notes can be polyphonic if the same note is played rapidly (thus eliminating the “machine gun effect” of certain sounds. Six Seconds after the rapid playing stops, a note off message is sent and will shut off all of the

individual note “on”s.  Please note that some sound sources will not “like” this function. If notes get stuck on in this mode, you must keep the Toggle set to OFF.

**To Access ROLL MODE**
Step on the Edit Footswitch, and while held down,
tap on PAD 7  THREE times , then
Use the INC/DEC to Toggle the setting ON or OFF.

**FOOT CONTROLLED GATE**
The Gate Time of a sound can now be controlled by the position of the controller pedal.

When the Gate Time is set to GATE FC1 or GATE FC2, the position of the pedal determines the length of the sound. The range of the gate time (minimum and maximum) is set by first calling up the gate time screen in edit mode, setting the time GATE FC, then while holding down the edit , tap the right function pad twice (past the roll mode screen). It is here that the minimum and maximum ranges are set.

**AUTO GATE MODE**
When AUTOGATE is enabled, the gate time is affected by how fast you play by the amount programmed on this screen. The Overlap setting on the display is the amount of time the shortened note will play before being turned off, measured from when the last note was hit.

**To Access AUTO GATE MODE**
Step on the Edit Footswitch, and while held down,
tap on PAD 7 FOUR Times , then
Use the INC/DEC to Toggle AutoGate ON/OFF.
Use the Forward/ Backward Pads to move the cursor to the Overlap setting.
Use the INC/DEC to adjust the time.

## Loop Latch/ Group Performance Mode

LATCH MODE on the panKAT is a special mode designed to control loops.  Whenever you strike a pad on the OUTER or MIDDLE RING, the note sounds and continues to sound until you hit that same pad again.  Each pad individually toggles the sound on and off.

The INNER RING of the panKAT performs special functions

The INC PAD 27 pad turns off all of the notes that are turned ON the OUTER RING.  It also remembers those notes and toggles them back On and Off with alternating hits on pad 27.

A reset happens if an outer ring pad is struck after notes have been shut off. It begins storing the note ons from that new pad strike.

The DEC PAD 28 pad turns off all of the notes that are turned ON the MIDDLE RING. It also remembers those notes and toggles them back On and Off with alternating hits on pad 28.

A reset happens if an middle ring pad is struck after notes have been shut off. It begins storing the note ons from that new pad strike.

Pads 29,25 and 26 are Independent Toggles

Pad 30 is a Master Toggle on all pads.

Set the gate time to Latch. The pads of both the Outer and Middle Ring now toggle on and off when struck. There are 24 pads that function this way. This means that the first time you strike one of these pads, a MIDI note ON is sent, but the note OFF is not sent out until the Pad is struck again.

**GROUP LATCH**
The Inner Ring performs special functions when the GATE is set to LATCH.

Pad 30 (Dead Center), shuts off ALL loops (note off) from the Outer and Middle Ring. When pad 30 is struck again, the loops toggle back on. If another pad is struck, pad 30 resets and remembers only the pads struck after hitting pad 30.

Pad 28 (Db) is similar to pad 30 except that it toggles and remembers only the pads struck on the Outer Ring.

Pad 27 (E) is similar to pad 30 except that it toggles and remembers only the pads struck on the Inner Ring.

Pads 25, 26 and 29 are independent toggles that are NOT affected or remembered by pads 28 or 27.

This is an incredible way to have a Controller on the panKAT become your “loop master controller” toggling up to 27 loops with selected memory for group latches.

## PAD 8 VOLUME

**VOLUME SETTING**
*Range 00-127*
This setting determines the overall volume of a patch on your sound source. When you enter a KIT SETUP, the volume command is sent to your synthesizer. This acts like a MIDI Mixer, so you can control the volume of sound from patch to patch.

The volume will be overridden by the Foot Controllers if you are using them to control volume, but volume commands sent by the Foot Controllers are only temporary changes. When you re enter the KIT, the programmed Volume is sent out.

**To Access VOLUME**
Step on the Edit Footswitch, and while held down,
tap on PAD 8 , then
Use the INC/DEC to change the Volume from 00 -127.

## PAD 9 ALL NOTES OFF

If a note ever gets stuck on, the ALL NOTES OFF Command will shut off the note on. It is a “panic button” pad.

There are two kinds of ALL Notes Off in the panKAT. The first is an abbreviated version of ALL NOTES OFF. It usually works and is instantaneous. The second version sends an individual “all notes off” command to every note and every channel. This takes several seconds to complete.

**To Access ALL NOTES OFF (Abbreviated)**
Step on the Edit Footswitch, and while held down,
tap on PAD 9 ONCE.

If a note is still stuck on, Hit pad 9 TWICE. A complete ALL NOTE OFF is sent.

**ALL NOTES OFF, INDIVIDUAL ALL NOTES OFF**
There are two kinds of ALL NOTES OFF in the panKAT. The first is an abbreviated version of all notes off. Press the Edit Footswitch and pad three ONCE, to initiate the all NOTES off. Hit the pad twice for an Individual ALL NOTES OFF sequence. This will take several seconds as every MIDI note on every MIDI channel is sent an ALL NOTES OFF command,

## PAD 10 KIT BANK

**KIT BANK**
The Bank Select Function allows you to alternate between the FACTORY KITS, the USER KITS and the CHAIN FUNCTION. When you first tap on PAD 10 with the Edit Footswitch held down, you will see the current KIT or Chain selection. To change the KIT type or to go to CHAIN, use the INC/DEC keys. When you see the KIT type that you want, release the footswitch.

On the Screen in Play Mode, you will see on the first line on the far left an 'F' followed by a number. i.e. F01, a 'U' followed by a number. i.e. U21 or a 'C' followed by a number. These letters represent that you are in F for Factory Kits, U for User Kits and C for Chains.

**FACTORY KITS**
There are 128 FACTORY KITS in the panKAT. These are factory presets that can not be permanently edited unless you copy them to a User KIT. These kits adhere to the GENERAL MIDI PROGRAM Mapping. This means that if your sound module has a GM LOGO on it, then the instrument names on the panKAT will match the names on your synthesizer.

Use the FORWARDS / BACKWARDS pads to find the KIT you want, or input the Kit Number you want by using the SETUP pad and number.

**USER KITS**
There are 128 USER KITS in the panKAT. You can name these kits to whatever description you like. You can also change any parameter and save them as your own.

At Alternate Mode, these Kits have been preset to work either with the panKAT WS, the Kurzweil PC2R or the Yamaha Motif ES. When you turn on the panKAT, look at the version number. If you see a K in there, its for Kurzweil. If you see a Y, it's been preset for the Yamaha. You can count that more updates on preset User Kits will certainly follow. Make sure that you register your panKAT with an email address so that you will be on our Newsletter E-Mail List.

You can load in SYSEX presets into the USER KITS. We have them on our website in the download section. You can also load in your own USER KITS.

Use the FORWARDs / BACKWARDS pads to find the KIT you want, or input the Kit Number you want by using the SETUP pad and number.

**CHAINS**
There are 16 Chains in the panKAT. Each Chain is a collection of USER KIT Setups that you can arrange in any order that you like. This is a great way to organize your sounds in groups. There are 16 Setups per CHAIN. You can move from CHAIN to CHAIN by Stepping on the Edit Footswitch, Press on the GLOBAL PAD 24, then use

the INC/DEC pad to find the chain that you want.

Use the FORWARDs / BACKWARDS pads to find the KIT you want within that CHAIN.

**MAKING YOUR OWN CHAINS** are done in the GLOBAL AUXILLARY Screens. You access your CHAINS here, but the organization of the CHAINS themselves must be preset. Read about CHAINS in the GLOBAL AUXILLARY CHAPTER under CHAINS.

*If you input the Kit Number by using the SETUP pad and number pads, you can temporarily play on a USER KIT OUTSIDE of the CHAIN. As soon as you use the INC/DEC pads, the next USER KIT within the CHAIN will cue. Read more about CHAINS in the GLOBAL AUX Chapter.*

## PAD 11 KIT NAME

***KIT NAMES***
*Parameters = 12 characters A-Z, numbers and symbols*

User defined KIT names can be assigned for the USER KITS (not Factory). There are a total of 12 character slots available for each kit. The KIT NAME is the same for both Controllers.

The characters that make up the KIT NAME string can be changed using the Increment or Decrement pads with the Edit Footswitch held down. The Forward and Backward pads select which character location to change.

There is a Global Setting that allows for three types of displays on the screen. Select **KIT NAMES** to display the names you program for each kit. Select INSTRUMENT NAMES if you want the General MIDI sound map. These are the names that are displayed on the FACTORY Kits as well.

If you don't have sounds in the panKAT, these names are still useful if you are using a GENERAL MIDI Sound source because the program changes adhere to the GM spec.

Select NONE for No string naming on the display. Selecting NONE allows for more KIT information to be displayed such as channel information, etc. If you are using an external sound source, and look at the sound source's display for the instrument name, selecting NONE allows information about both controllers to be displayed.

Selecting None has no effect on Factory Kits. These non Programmable factory kits automatically display the General MIDI program names.

## PAD 12 LAYER MODE

**HANG MODE**
Hang Mode is one of the LAYER MODES in the panKAT. Layer Modes tell the panKAT how to control its sound layers. These sound layers are called CONTROLLER ONE AND CONTROLLER TWO. Hang Mode is a default setting, because the main sound is generated by CONTROLLER ONE.

In this mode, when you are normally playing on the panKAT, you will hear the sound being controlled by CONTROLLER ONE. When you step on the SUSTAIN TWO Footswitch, the panKAT switches to the sound being controlled by CONTROLLER TWO. In its default setting, CONTROLLER TWO sound plays indefinitely, (it HANGS) until you step on the SUSTAIN 2 again. This allows you to play suspended sounds underneath while you are playing on the sounds from CONTROLLER TWO.

You can access the HANG mode by stepping on the EDIT Footswitch, and while held down, tap on pad 24.

**To Access HANG**
Step on the Edit Footswitch, and while held down,
tap on PAD 12. Release, you are in Hang Mode. You will see HANG on the first line of the display.

*Another useful way to use Hang is to match all of the parameters between Controllers One and Two with the exception of the OCTAVE. Lower the octave on Controller Two by one number. Now, when you step on SUST 2, the instrument just drops down by one octave.*

**DOUBLE MODE**
Double is one of the LAYER MODES in the panKAT. Layer Modes tell the panKAT how to control its sound layers. These sound layers are called CONTROLLER ONE AND CONTROLLER TWO.

Double Mode means that both CONTROLLER ONE AND TWO are active across the entire panKAT. Both sounds are layered on the instrument at the same time.

You can step on the Sustain One to control the sustaining of both sounds at the same time. Setting up the Footswitch Functions are performed under PAD 14

**You can access the DOUBLE MODE**
Step on the EDIT Footswitch, and while held down, tap on pad 12, TWICE. When you release the footswitch, you will see Doub on the first line of the display.

**MELODY CHORD MODE**

hit PAD 12, 3 Times while in Edit Mode.

**Mode One, Mode Two, Mode Three**. MELODY CHORD MODE is one of the LAYER MODES in the panKAT. Layer Modes tell the panKAT how to control its sound layers. These sound layers are called CONTROLLER ONE AND CONTROLLER TWO. There are three MELODY CHORD MODE variations.

When you see any of these on the first line (Mel1, Mel2, Mel 3), you are in Melody Chord Mode. These modes tell the panKAT what sound to play (from Controller One or Controller Two) depending on how many notes are being played simultaneously. It gives one the ability to play one sound as a melody line and another as an accompaniment sound simply by playing individual notes or chords.

There are three variations of the Melody Chord Mode. Each Mode varies slightly on where to send the notes when it sees a chord. It is always best to experiment and listen to the differences and see which Mode will work best for you.

**MODE ONE: MEL1**
If a chord is detected (two notes played within the time set in Global Auxiliary (CHORD MODE ), the first note of the chord is played on both layers

Example: You have a marimba on Layer one and a vibe sound on Layer Two. As you start to play a single line, you will hear the marimba sound. When you play a C chord, (the high C is the first note struck on the chord). The panKAT will play the High C on both the vibes and marimba sound, and the rest of the chord is played on the marimba sound only.

**MODE TWO: MEL2**
If a chord is detected, all notes are played on both layers. The panKAT temporarily jumps to DOUBLE or LAYERED MODE. As soon as a single note is played, only the first Layer will play. MODE THREE: MEL3 When a chord is detected, the first note of the chord will be played on Layer One. All subsequent notes of the chord will play on Layer Two.

**You can access the Mel1, Mel2 or Mel3 Melody Chord Modes** by stepping on the EDIT Footswitch , and while held down, tap on PAD 12 (hang) 3X, Four X for Five times respectively.

If you let go of the footswitch and start the process again, hitting pad 12 will start the Mode changes from the beginning showing you the HANG, DOUBLE, then **Mel1**, then **Mel 2** etc. This Mode is turned off when Double, or RTC Modes are selected.

A Sensitivity Control is provided in the Global Aux Screens. This parameter determines how close a pair of notes must be to be considered part of a chord. The lower the number, the lower the latency. This is because the panKAT has to wait until the

programmed time has elapsed to determine if you are playing a single note or chord.

**ALTERNATE MODE**
The Alt stands for Alternate Mode. In this mode, every time you hit the keyboard, the sound switches between CONTROLLER ONE and CONTROLLER TWO.

**You can access the ALT** mode by stepping on the EDIT Footswitch , and while held down, tap on PAD 12, SIX TIMES.

**VELOCITY SHIFT MODE**
This screen informs you that you are in Velocity Switch Mode. In this mode, the sound switches between CONTROLLER ONE and TWO by how hard you play. You can set up the exact velocity point that the switch happens.

**You can access the VEL S** mode by stepping on the EDIT Footswitch, and while held down, tap on pad 12, SEVEN  times.

To set the Velocity Shift Point, tap on the FORWARD pad when VEL S MODE is displayed on the screen.

# PAD FUNCTION LISTINGS MIDDLE RING

## PAD 13  FOOT CONTROL

**FOOT CONTROLLER ONE ASSIGNMENT**
*Pad 13 with the Edit Footswitch held down*
*Parameters = CONTROL CHANGE  CC# 00-128 (including some individual Continuous Controller Names*),  *MIDI NOTE MODE, or SETUP CHANGE*

Foot Controller One may be assigned to any CC#. Some commonly used functions have been named such as volume, modulation, pitch bend, chorus depth, pan, ion, etc. for convenience. Special panKAT Foot Controller functions are also assigned here such as Warp Volume, Blend, etc.

These functions are displayed if the "**Foot Controller Performs**" screen is set to **CONTROLLER** in the GLOBAL AUXIALLARY Screen.  Setting this function will affect how the Foot Controller responds in ALL kits.

A Foot Controller can also be set to play notes when stepping on a footswitch plugged into the Controller input jack. The “Foot Controller Performs” screen must be set to ONE MIDI NOTE, TWO MIDI NOTES or THREE MIDI NOTES.

Setting this function will affect how the Foot Controller responds in ALL Kits.

The screen displays MIDI NOTE MODE. This means that the panKAT will play one or more notes defined in the Global Screens when stepping on a footswitch that is plugged in the Controller Input.

The actual pitches are assigned PER KIT by tapping on PAD 13, THREE Times. Here four notes assignments are possible, including one MIDI channel and one Velocity number.

The polyphony (1,2,3,or 4 notes) sounded with the pressing of the footswitch is assigned in the Global Screen.

A Foot Controller can also be set to **ADVANCE Forward** or **Backward KITS**. The “Foot Controller Performs” screen must be set to **SETUP ADVANCE** or **SETUP BACKWARDS**. This means that the foot controller will change your kit setups on all User Kits.

**FOOT CONTROLLER ONE MINIMUM EFFECT**
*Parameters = 00-127*
The Minimum MIDI value that will be sent for the effect selected (CC#) for the Foot Controller. The value setting can be between 0 and 127. Adjust this so that the backward release of the Foot Controller's pedal will be at the number set here.

**To Access FOOT CONTROLLER MINIMUM EFFECT**
Step on the Edit Footswitch, and while held down,
tap on PAD 13 , then
Tap the Forward/ Backward Once
Use the INC/DEC to set Min Effect.

**FOOT CONTROLLER ONE CHANNEL**
*Parameters = Same as CNTRL1, Same as CNTRL2, Both Controllers, 01-16*

The MIDI channel for the effect of Foot Controller 1 can be assigned to the same channel as Controller one or two. It can also be assigned to the MIDI channels of **Both** Controllers or it can be assigned to any individual MIDI channel.

**To Access FOOT CONTROLLER CHANNEL**

Step on the Edit Footswitch, and while held down,
tap on PAD 13 , then
Tap the Forward/ Backward Pads 4 Times
Use the INC/DEC to set Channel.

**FOOT CONTROLLER ONE MAXIMUM EFFECT**
*Parameters = 00-127*
The Maximum MIDI value that will be sent for the effect selected (CC#) for the Foot Controller. The value setting can be between 0 and 127. Adjust this so that the full depression of the Foot Controller's pedal will be at the number set here.

**To Access FOOT CONTROLLER ONE MAXIMUIM EFFECT**
Step on the Edit Footswitch, and while held down,
tap on PAD 13 , then
Tap the Forward/ Backward Pads 2 TIMES
Use the INC/DEC to set Maximum Effect.

**FOOT CONTROLLER ONE CURVE**
*Parameters = 00-11*
The response curve for Foot Controller One may be selected from any of the Curves available in the panKAT Pro. Curve 8 was made specially to be used as the curve for Foot Control.

**To Access FOOT CONTROLLER ONE CURVE**
Step on the Edit Footswitch, and while held down,
tap on PAD 13 , then
Tap the Forward/ Backward Pads 3 TIMES
Use the INC/DEC to set Curve
**FOOT CONTROLLER TWO ASSIGNMENT**
*Parameters = CONTROL CHANGE CC# 00-128 (including some individual Continuous Controller Names*), *MIDI NOTE MODE, or SETUP CHANGE*

Foot Controller Two may be assigned to any CC#. Some commonly used functions have been named such as volume, modulation, pitch bend, chorus depth, pan, ion, etc. for convenience. Special panKAT Foot Controller functions are also assigned here such as Warp Volume, Blend, etc.

Foot Controller Two may be assigned to any CC#. Some commonly used functions have been named such as volume, modulation, pitch bend, chorus depth, pan, ion, etc. for convenience. Special panKAT Foot Controller functions are also assigned here such as Warp Volume, Blend, etc.

These functions are displayed if the “**Foot Controller Performs**” screen is set to

CONTROLLER in the GLOBAL AUXIALLARY Screen. Setting this function will affect how the Foot Controller responds in ALL kits.

A Foot Controller can also be set to play notes when stepping on a footswitch plugged into the Controller input jack. The “Foot Controller Performs” screen must be set to ONE MIDI NOTE, TWO MIDI NOTES or THREE MIDI NOTES.

Setting this function will affect how the Foot Controller responds in ALL Kits.

The screen displays MIDI NOTE MODE. This means that the panKAT will play one or more notes defined in the Global Screens when stepping on a footswitch that is plugged in the Controller Input.

The actual pitches are assigned PER KIT by tapping on PAD 13, THREE Times. Here four notes assignments are possible, including one MIDI channel and one Velocity number.

The polyphony (1,2,3,or 4 notes) sounded with the pressing of the footswitch is assigned in the Global Screen.

A Foot Controller can also be set to ADVANCE Forward or Backward KITS. The “Foot Controller Performs” screen must be set to SETUP ADVANCE or SETUP BACKWARDS. This means that the foot controller will change your kit setups on all User Kits.

**To Access FOOT CONTROLLER TWO ASSIGNMENT**
Step on the Edit Footswitch, and while held down,
tap on PAD 13 Twice.

**FOOT CONTROLLER TWO MINIMUM EFFECT**
*Parameters = 00-127*
The Minimum MIDI value that will be sent for the effect selected (CC#) for the Foot Controller. The value setting can be between 0 and 127. Adjust this so that the backward release of the Foot Controller's pedal will be at the number set here.

**To Access FOOT CONTROLLER MINIMUM EFFECT**
Step on the Edit Footswitch, and while held down,
tap on PAD 13 TWICE, then
Tap the Forward/ Backward Once
Use the INC/DEC to set Min Effect.

**FOOT CONTROLLER TWO CHANNEL**
*Parameters = Same as CNTRL1, Same as CNTRL2, Both Controllers, 01-16*

The MIDI channel for the effect of Foot Controller 1 can be assigned to the same channel as Controller one or two. It can also be assigned to Both the MIDI channels of Both Controllers or it can be assigned to any individual MIDI channel.

**To Access FOOT CONTROLLER CHANNEL**
Step on the Edit Footswitch, and while held down,
tap on PAD 13 TWICE, then
Tap the Forward/ Backward Pads 4 Times
Use the INC/DEC to set Channel.

**FOOT CONTROLLER TWO MAXIMUM EFFECT**
*Parameters = 00-127*
The Maximum MIDI value that will be sent for the effect selected (CC#) for the Foot Controller. The value setting can be between 0 and 127. Adjust this so that the full depression of the Foot Controller's pedal will be at the number set here.

**To Access FOOT CONTROLLER TWO MAXIMUM EFFECT**
Step on the Edit Footswitch, and while held down,
tap on PAD 13 TWICE, then
Tap the Forward/ Backward Pads 2 TIMES
Use the INC/DEC to set Maximum Effect.

**FOOT CONTROLLER TWO CURVE**
*Parameters = 00-11*
The response curve for Foot Controller One may be selected from any of the Curves available in the panKAT Pro. Curve 8 was made specially to be used as the curve for Foot Control.

**To Access FOOT CONTROLLER TWO CURVE**
Step on the Edit Footswitch, and while held down,
tap on PAD 13 TWICE, then
Tap the Forward/ Backward Pads 3 TIMES
Use the INC/DEC to set Curve

## PAD 14 FOOT SUSTAIN

Edit Footswitch, PAD 14 ONCE, Footswitch One
Edit Footswtich, PAD 14 TWICE, Footswitch Two.

These footswitches act as a sustain pedal for Controller One, Controller Two and the Reassignment Layer.

Each of these pedals can be assigned to Sustain
the following.
1 = Controller 1
2= Controller 2
R= Reassignment  Layer

Sustains 1
Sustains 2
Sustains 1 & 2
Sustains R
Sustains 1 and R
Sustains 2 and R
Sustains 1 and 2 and R

## PAD 15  WARP MODE

**WARP MODE**
*Parameters = P1 & P2 -12 to +12 semitones, Repetitions 1-3, Patterns 1-8, Volume 10-100%*

Warp Mode gives the panKAT the ability to repeat any pattern in real time.  The amount of repeats is controllable, along with the tempo. Besides the echo being repeated, it is also possible to change the pitch of each of the echo's by plus or minus 12 semitones.

This means that each note struck can create a short musical sequence. To make this even more interesting, instead of just playing back the notes evenly, we have added 8 rhythm patterns that superimpose themselves over the real notes played.

In the **Warp Screen**, you can turn ON and OFF the WARP function. On this line of the display you also set the **REPeats (1-3)**. On the second line, the **P** stands for the echo's note pitch. A value of 0 plays the note without any pitch change. Inserting a value (-12 +12) changes the note played in semitones. P1,P2 and P3 allow for three programmed pitch changes.

The fourth line is for applying a **PATtern** to the notes.
The pattern are as follows:
1: Straight eight notes in groupings of two
2: Quarter note followed by 2 eight notes.
3: Two eight notes followed by a quarter note.
4: Eight note, quarter note, eight note.

5: Eight note triplets
6-8: Various other patterns.
A repeat count of 1 plays two notes. A repeat count of 2 plays 4 notes, etc.

If in Double Mode, only Controller One Warp will operate. Reassignments also do not respond to Warp Mode.

**You can change the tempo of the Echo by**
1. Stepping on the Edit Footswitch , (held down)
2. Tap the Backward Pad twice (for Tempo)
3. The GROOVE ENABLED must be turned on for this to function.

It is also possible to control the repeats of the echo with a Foot Controller. Assign Foot Controller One) or Foot Controller Two to WARP VOLUME.

**To Access the WARP Mode**,
Tap on Pad 15
Use the Forward and Backward Keys to move the Cursor
Use the INC/DEC pads to change parameter settings.

## PAD 16 EFFECTS

PAD 16 is designed to send out Reverb MIDI Effect Program commands to the external MIDI OUT jacks. These call up presets, similar to program changes.

*Please note that these commands may not have any effect on your sound module as some manufacturers do not implement these specific commands.*

## PAD 17 REASSIGNMENT MODE

**REASSIGNMENT MODE**
*Parameters = OFF, COMBINE, REPLACE*

Actual Note Reassignments are programmed in the GLOBAL Screens. There are 14 Reassignment Groups available. Each Reassignment Group allows the panKAT to play any MIDI note number on any MIDI channel. Each Group shares a minimum and maximum velocity setting, a velocity curve setting, and a gate time. These 14 Group Reassigments are stored in the Global Screens but are accessed in the Kit Auxiliary Screens.

The Reassignment Mode can be turned OFF (panKAT plays the normal Controller One and Controller Two data). It can be set to **COMBINE**, which then plays the notes

assigned to the Reassignment Group number along with the data from Controllers One and Two.

When the Reassignment Mode is set to **REPLACE**, the KIT plays the Reassignment Groups MIDI note numbers instead of Controller Two.

**REASSIGNMENT POLYPHONY SETTING**
*Parameters = Monophonic, Polyphonic*
This determines whether the Reassignment Group plays in Monophonic or Polyphonic mode.

**REASSIGNMENT NUMBER**
*Parameters = 01-14*
Here is where you select one of the 14 Reassignment Groups stored in the Global Settings to be Used in the current Kit number.

**REASSIGNMENT OCTAVE OFFSET**
*Parameters = 00-14*
You can transpose the octave of the entire Reassignment Group Number assigned to this Kit. This Octave Offset applies only to this User Kit.

**REASSIGNMENT FORCED GATE**
*Parameters = OFF, Latch, 0.10 – 6.000 sec.*
You can override the gate settings of the Reassignment Group to the Parameter Choices assigned to this User Kit.

**REASSIGNMENT TRANSPOSE AMT**
*Parameters = -12 - +12*
You can transpose the notes of the Reassignment Group up or down one octave in semitones.

**REASSIGNMENT EXTRA PROGRAM /VOLUME SENDS**
*Parameters = PC no, 00-127*
Reassignment Channel 01-16 Bank MSB, LSB 00-127, 00-127 Vol no 00-127
On this screen you assign the Bank, Program Change, MIDI Channel and Volume Settings.

**REASSIGNMENT POLYPHONY and INTERFACE**
*Parameters = Polyphony 1,2*
*Interface INTernal, EXTernal, Neither, BOTH*

This screen sets the polyphony of the reassignment and the routing. Internal assignment is for panKAT's with sounds built in.

**TO ACCESS REASSIGNMENT MODE**
With the Edit Footswitch held down
Tap on PAD 17 (REASSIGNMENT MODE use INC/DEC to toggle ON/OFF

Use Forward Pad to move cursor to POLYPHONY Setting. Use INC/DEC to change from Polyphonic to Monophonic.

**Tap on PAD 17 TWICE to Access REASSIGNMENT NUMBER**
Use Forward Pad to move cursor to OCTAVE OFFSET, TRANSPOSE AMOUNT and FORCED GATE. Use the INC/DEC to change parameter settings.

## PAD 18 CONTROL PRESET

On PAD 18, you can set up the panKAT to send a Controller Number and Value when entering the kit. This is useful when you want to preset an effect or have some other controller parameter preprogrammed when you first go to a User Setup.

All 128 Controller Numbers are accessible along with a MIDI Channel Assignment and a Value assignment.

In EDIT, use the Forward Pad to move the cursor through these settings. Use the INC/DEC pad to change the parameters.

**KIT CONTROLLER PRESET CC#**
*Parameters = 00-127*
Every User Kit on the panKAT Pro can send a preset value on any Controller Number. This is useful when a desired effect needs to be present upon entering a kit such as a specific reverb setting or a modulation value. This is where you set up the Controller number.

**KIT CONTROLLER CHANNEL**
*Parameters = 01-16*
Every User Kit on the panKAT Pro can send a preset value on any Controller Number. This is useful when a desired effect needs to be present upon entering a kit such as a spefic reverb setting or a modulation value. This is where you set up the Controller numbers MIDI channel.

**KIT CONTROLLER PRESET CC# VALUE**
*Parameters = 00-127*

Every User Kit on the panKAT Pro can send a preset value on any Controller Number. This is useful when a desired effect needs to be present upon entering a kit such as a specific reverb setting or a modulation value. This is where you set up the exact value for the Controller number assigned.

## PAD 19 CONTROLLER INTERFACE

**EDIT CONTROLLER INTERFACE MODE**
*Parameters = Both, Internal and External, Neither, External MIDI only, Internal Only.*

This function turns on and off Controller 1 or 2. For panKAT's with built in sounds, data can be sent to the internal sound only or external device or be sent to both.

Step on the EDIT Footswitch and tap on PAD 9 to program the Interface Setting.

## PAD 20 GROOVE CONTROL

**GROOVE WITH TAP TEMPO CONTROL** Several percussion patterns are available when the metronome is activated. The FORWARD PAD acts as a Start/Stop for the metronome and 2 hits on the BACKWARD PAD establishes the tempo. On the panKAT Pro WS (with sounds) model, the sounds for the built in grooves can either come from the internal or an external sound source.

If you tap on PAD 20 with the Edit Footswitch held down, you can select whether or not you want the Grooves ENABLED or DISABLED.

You can select the GROOVE that you want to play by using the FORWARD PAD to move the cursor to the second line on the display, then use the INC/DEC Pads to scroll through the list of Rhythms.

Use the Forward Pad to move the cursor to the TEMPO and VOLUME settings of the GROOVE. You can then route the GROOVE to the INTERNAL sound card or an EXTERNAL synthesizer or routed to BOTH.

After you assigning the Rhythm that you want hear, you will then need to assign ONE MIDI NOTE NUMBER and CHANNEL.

**The GROOVES are really rhythmic patterns played on ONE MIDI Note number.**

**TO ACCESS the NOTE NUMBER AND CHANNEL**
With the EDIT Footswitch held down, tap on PAD 20, then
tap on the FORWARD PAD, FIVE TIMES until you see the GROOVE MIDI NOTE NUMBER AND GROOVE MIDI CHANNEL. Use the INC/DEC pads to change these parameters.

**GROOVE PATTERN**
*Parameters = Various Groove Patterns.*
Use the Inc/Dec pads to scroll through the list of patterns available.

**GROOVE ENABLE**
*Parameters = Disable / Enable*
This screen determines whether the Groove Metronome is active or not.

**GROOVE ROUTING**
*Parameters = Both Int & Ext, Neither, External MIDI only, Internal Only*

**GROOVE TEMPO**
*Parameters = 40-240*
You can manually set the tempo of the Groove here or you can Use the Tap Tempo Function by holding down the EDIT Footswitch and hitting the BACKWARDS PAD TWICE at the TEMPO that you want the Groove to play. The Groove Enabled must be active.

**GROOVE VOLUME**
*Parameters = 00-10*
You can set the volume of the GROOVE from softest 00 to loudest 10.

## PAD 21 CHAINS

**CHAIN MODE**
*Parameters = Chain Number 01-16, Chain Step 0-16, Chain Step, Chain Enable Enable/Disable*

A CHAIN allows you to arrange User Setups (Kits) in any order. You can either step through the Chain's Steps by using a Footswitch, or you change it by hitting the Forward or Backward function pads. This function is very useful in live situations because you can organize in advance what sounds you might need in a song or performance.

There are 16 Chains in total. Each Chain can have up to 16 User Setups. You can also link Chains together or set up a Chain as a Loop.

In  Edit, you determine What Chain you are editing , which one of the 16 Steps you are editing , and what User Kit  you want in the slot. After you choose one of the 128 User Kits, you can also tell the panKAT to advance to the NEXT CHAIN or to LOOP the Chain that you are editing.

In Play Mode, if you have the CHAIN ENABLED in the Globals , striking the Backwards or Forward pad will automatically take you to the next programmed User Kit assigned to that Chain.  You can also set one of the FOOT CONTROLLER inputs to Setup Advance or Setup Backwards your Steps (User Kits) within that Chain.

When you Enable the Chain Mode, the first character on the display in Play Mode tells you what Chain you are in and what Step you are in.  For example, C02-03 means that you are in Chain number 2, and that you are in the Third Step. If you want to know what User Kit you are in, step on the Edit  Footswitch and hit the Setup Pad (low C on the highest octave). The screen will display the current Setup Number.

In Play Mode, if the Chain Mode is Enabled, it is possible to quickly change Chain Numbers. If you want to go to a different Chain, hold down the Edit , hit the Global Pad (PAD 24) then hit the INCREMENT (PAD 27) to advance through the Chains or hit the DECREMENT pad to go back through the Chains. Release the Footswitch to play.

## PAD 22  PAD TRAINING

One of the most important design features of the panKAT is its ability to have the pads be trained by the user for personal dynamic response. Every player has their own idea of what a soft hit is and how hard they ultimately want to play. By teaching the panKAT your playing style, the instrument learns the way you play and provides the widest dynamic response possible for you.

There are three ways that the panKAT can be trained.

**GLOBAL TRAIN**,
In this Mode, you simply hit one pad soft, then hard to give the overall dynamic response for the entire instrument.  This is the default way to train the panKAT.

**GROUP TRAINING**
The two sensors on the panKAT are trained separately.

**INDIVIDUAL PAD TRAINING**
Individual pads can be trained separately from the rest of instrument.

Sensors can vary *slightly* from each other.  Also over time, the sensors response can vary as well. The pad training provided on the panKAT eliminates the problem. The reason for this is because the panKAT can “see” 255 levels of dynamics. MIDI only has

127 levels. When you hit the pad soft and hard in the training process, you set the minimum and maximum levels. These values are then imposed over the MIDI dynamic response curves. The slight variations possible from sensors are masked because the panKAT is twice as dynamic as MIDI.

**GLOBAL PAD TRAINING (TO TRAIN PADS)**
*Parameters = 00-255*
You can train the entire instrument for your personal dynamic response. This training affects the entire instrument, and all pads receive the same response values. Once you enter PAD 22 in EDIT, the panKAT will prompt you to hit any pad to continue with the training process. When you do, the panKAT will ask you to hit any pad soft, then after a moment will ask you to hit any pad hard. This completes the dynamic training.

**GROUP OCTAVE PAD TRAINING (SEE INFO IN GLOBAL SCREENS)**
This method of training is NOT recommended unless you are having trouble with a specific pad.

## PAD 23 DATA DUMP

**SELECT DATA DUMP TYPE**
*Parameters = Global, All Memory, All Kits, Chains & Reassignments, User KITS K01-128*
Use the Inc/Dec pads to decide which Type of Memory Dump you want to send. Strike the Global Pad again PAD 24.. The panKAT will immediately send out the data dump. The panKAT will automatically accept a data dump without any setup from the user as long as the Data Dump Receive Enable (Global Screen) is set to Enable. This is the default setting.

## PAD 24 GLOBAL AUXILLARY

see Chapter 5 GLOBAL AUX FUNCTIONS

## PAD 25 CANCEL

**CANCEL**
To recover from unwanted changes, simply hit the CANCEL pad . Changes that you have made to a Setup may be undone as long as you have not gone away from this Setup to another one.

All changes you make to your Setups are saved immediately when you change them.

You do not need to do any specific action to “save” your changes - it happens automatically.

• To recover from unwanted changes, simply hit “Cancel” (PAD 25) with the Edit footswitch held down. Changes that you have made to a Setup may be undone as long as you have not gone away from this Setup to another one.

# PAD 26 DEFAULT

**DEFAULT**
The panKAT PRO can automatically place in a default value for every function when you are editing. This means that when you call up a function, rather than having to guess what number to input, striking pad 26 while the function value is blinking will load in a basic “default” or normal value.

Using the Defaults will make using the panKAT PRO even easier for you. Whenever you want to make a new Setup, you can dump in the Defaults so that you can start out with the Setup already close to your liking. This is especially true since you can even change the Defaults to whatever your preferences are.

The Default values (for Setup settings) themselves may be changed at any time. To do this, the “Default” pad must be the first pad hit after the Edit is depressed. From this point on, as long as the Edit is held down, the values that are being edited are the Default values instead of the Function settings themselves.

For Example: Let’s change the Default value for Channel to 4.

1) Depress the Edit and keep it depressed during the following.
2) Hit the “Default” Pad, (pad 26, D on Inner Ring).
3) Hit the “Channel” Pad, (pad 3 on the Outer Ring).
4) Hit the Inc/Dec pads to find the number 4, (pads 27&28, E&Db on the Inner Ring).
5) Release the Edit .

Note, you have not changed the value of Channel in any of your Setups. You have only changed the Default for Channel. From now on, when you hit Default while looking at a Channel setting, the value “4” will be put in for the Channel in that Setup. Let’s continue the example by showing that:

6) Depress the Edit and keep it depressed during the following.
7) Hit the “Channel” Pad, (pad 3 on the Outer Ring).
8) Hit the “Default” Pad, (pad 26, D on Inner Ring). Note that the Channel has been changed to “4”.
9) Release the Edit .

Now you have changed the current Setup Channel setting (for one of your Controllers).

To put your Channel back to the Channel you want (and put Default setting to the Channel you want) do steps 1 to 9 above again, except at step 4 put in the Channel number you want to use. Now you should put in the Defaults for all the values you use. This will make all of your future Setup editing easier because you can set up most of the values quickly by using the Defaults.

Once you organize all of your personal preference Setup Values, you can load an entire KIT with your favorite Defaults.

**To load in a Default Setup**,
1) Depress the Edit and keep it depressed during the following.
2) Hit the “Setup” Pad, (pad 30, C Dead Center).
3) Hit the “Default” Pad, (pad 26, D on Inner Ring).
4) Release the Edit . Now this Setup has all of your defaults loaded into it.

The Default for Program Change is always the # of the Setup you are in. Therefore, you are unable to change the Default for Program Change.

The Default for Gate Time for Controller 2 in Hang Mode is always “Infinite.” The Default Gate Time for Controller 1 and for Controller 2 in Double (Layer) is user definable.

If you change one of your Defaults for a particular setting and want to get it back to the original Factory setting, the method is as follows: <Edit foot down> <Default> <setting> <Default> <Edit foot up>

For example, if you want to return the Default for Minimum Velocity to the original Factory setting:
1) Depress the Edit and keep it depressed during the following.
2) Hit the “Default” Pad, (pad 26, on Inner Ring).
3) Hit the “Minimum Velocity” Pad (pad 5, Outer Ring).
4) Hit the “Default” Pad again, (pad 26, on Inner Ring).
5) Release the Edit .

Now the Default for Minimum Velocity has been returned to the original Factory setting

## PAD 27 INCREMENT
## PAD 28 DECREMENT
**Use these pads to change the values of blinking parameters in Edit Mode**

# PAD 29 COPY

**SETUP COPY**
This function allows you to copy the current FACTORY or USER Setup to any other USER SETUP number.

To do this, perform the following steps:
1. Hit the SETUP COPY pad (*pad 29, Inner Ring*) while the Edit is pressed.
2. Use the INC/DEC pads to find the USER KIT NUMBER you want to save to
3. Hit the SETUPCOPY pad again to see the confirmation screen.
4. Hit the SETUP COPY pad a third time to perform the copy. After the copy is performed, the SETUP that you copied to is the CURRENT Setup.

# PAD 30 SETUP

**SETUP NUMBER** *pad 30, C Dead Center*
A SETUP is an entire collection of settings that defines one “kit” of the panKAT Pro. There are 128 USER SETUPS and 128 FACTORY SETUPS in the panKAT. A Setup consists of MIDI Channels, Gate Time Setting, Velocity Settings, Program Number, Etc.

In Edit, if you tap on the SETUP PAD 30, you can use the INC/DEC pads to quickly jump to the KIT SETUP that you want.

# FORWARD BACKWARD PADS

These are the little pads on the left and right side of the panKAT (9:00 o'clock and 3:00 o'clock positions).

In PLAY MODE, hitting the pads allow you to ADVANCE or go BACKWARDS to the next Setup. You need to hit them twice to start the Setup changing, but once you do, one hit moves the Setup one kit back or forwards.

When the TAP TEMPO / GROOVE is ENABLED, hitting the BACWARDS pad twice with the EDIT Footswitch down will determine the new Tempo. The screen will display the new tempo after the pad is struck twice.

When the TAP TEMPO/ GROOVE is Enabled, hitting the FORWARD pad toggles the GROOVE ON or OFF.

SEE the GROOVE Section in the Global Screen Chapter for more info.

In EDIT MODE these pads allow you to advance backwards or forwards to the next cursor position on the screen and also to advance backwards or forwards to the next screen (examples; Global Aux Screens, Kit Aux Screens, Gate Time Screens, etc)

**PITCH WHEEL (VIRTUAL WHEEL ONE AND TWO)**
These are the two pads at the 11:00 o'clock and 5:00 o'clock positions on the panKAT.

These pads act much like a pitch and modulation wheel on a keyboard with the exception that you have a choice to either hold it down to hear the wheels effect or you can allow one strike of the pad to perform an action over a specified time and amount.

**The Virtual Wheels are programmed in the Global Auxiliary Screens**.
In the Global Aux Screens you can set the
*MIDI CHANNEL* 1-16
*CONTROLLER NUMBER* 1-127
*RANGE*
*xxx-xxx (reverse numbers allow for reverse response)*

*PRESSURE MODE*
Pressing on the V PAD will product an immediate dynamic response and release to pressure.

*SCRIPT MODE*
Striking the pad performs the controller function over a specified time

*MOTION*
*Upwards, Downwards, Shake* throughout range over

*TIME*
005-1000ms to return to zero

# CHAPTER FIVE GLOBAL AUXILLIARY FUNCTIONS

## GLOBAL AUXILIARY FUNCTIONS PAD 24

There are many Global Function Parameters that are in the panKAT. These functions effect the entire instrument, regardless of what SETUP you are using.

Here is how to get into the “tunnel” of screens

1. Press the Edit Footswitch , press pad 24 - then use the Backwards, Forwards pads to navigate to the function that you are looking for.

*TIP: Tap on pad 24 TWICE. In most cases it will automatically go to the last Global Screen that you were editing.*

## LISITING OF GLOBAL FUNCTIONS

**ADJUST THRESHOLD BACKWARDS / FORWARDS**
*Parameters = 01-48*
The pads on the panKAT have programmable sensitivity settings. The BACKWARD and FORWARD pads have their own sensitivity setting usually set higher because these are function keys not note keys. These screens allow one to manually change the sensitivity setting. The default is set at 45.

**BANK SELECT**
*Parameters = Enable, Disable*
You can choose to disable BANK Change Commands in your panKAT Pro. This will prevent any Bank Messages from being sent to your sound source.

**BEEPER**
*Parameters = On/Off*
You can turn on or off the internal beeper that is heard whenever you are editing or changing Kits. Use the INCrement or DECrement pads to change this setting.

**CHORD MODE WINDOW**
*Parameters = 01-20 milliseconds*
This is a Sensitivity control function when using the MELODY CHORD MODE. The parameters in this screen control how close together a pair of notes must be to be considered a chord. The lower the number, the lower the latency because the panKAT has to wait until the programmed time has elapsed to determine if you are playing a single note or chord.

**DAMPEN CONTROL SCREENS**
Dampening Control Screens include Dampen Count, Dampen Scan Count, Dampen Ratio and Dampen Threshold. These parameters help the panKAT to interpret acoustic dampening gestures. Because mallet players use different sticks and apply pressure to the mallet pad differently, adjustments must be made in the software to help mimic and

interpret these strokes.

**DAMPEN COUNT**
*Parameters = 0-255*
This setting is used to adjust the time between striking a pad and when the pad may be dampened when in DAMPEN MODE. Making this setting greater makes dampening more difficult, lowering it makes dampening easier. If the value is too low, slight bounces of your mallet on the pads may dampen notes when you don't want them to.

**DAMPEN MODE SCAN COUNT**
*Parameters = 0-16*
This setting is the amount of time the processor takes to scan the signal to decide if the gesture on the pad is a dampen stroke. The higher the number, the more accurate the dampening stroke will be. The higher the number also adds delay. Experiment with the right setting for you.

**DAMPEN RATIO**
*Parameters = 0-255*
This screen sets a ratio between the dampen signal and the normal signal. When you apply pressure to the pad, a rise is detected in the signal. Changing this parameter helps the panKAT to evaluate the difference between a stroke and a pressured dampen stroke.

**DAMPEN THRESHOLD**
*Parameters = 00-255*
This setting is used to adjust the dampening characteristics of the panKAT when played in DAMPEN Mode. The Dampen Threshold is a measure of how much pressure is required to get damping to occur. Raising this value decreases the likelihood of dampening, lowering it makes dampening easier.

**DATA DUMP RECEIVE**
*Parameters = Enabled, Disabled*
You make choose to Enable or Disable the receiving of Data Dumps back into your panKAT Pro. The normal setting is Enable.

**DEBOUNCE COUNT**
*Parameters = 01-120*
Debounce time is the time immediately after a hit has been recognized, where the panKAT PRO ignores the signal from the pad as that signal settles down. Too short of a

debounce time may result in notes double triggering on one hit. Too long of a debounce time may result in fast double strokes being missed.

**DEAD STROKE COUNT**
Increasing the value adds a delay time before the Dead Stroke Sounds.

***FINE TUNING ROUTING*** *Tune Instruments to 440*
*Parameters = Both Int & Ext, Neither, External MIDI only, Internal Only.*
This function routes a FINE TUNING command to the external sound source, or for the sound source built into the panKAT PRO. Note that not all sound modules respond to this command.

**FOOT CONTROL ONE PERFORMS**
*Parameters = Controller, Setup Advance, Setup Backup, MIDI Note*
If you don't intend to use the Foot Control Inputs for Volume or other Controller Settings, you may choose to Globally reassign your Foot Control input to ADVANCE or BACKUP through your Setups.

## The FTC Performs choices are:

*CONTROLLER*: (User settings definable in each Each Setup- see Setup Auxiliary Settings

*SETUP ADVANCE / SETUP BACKUP*
If Setup Advance or Backup has been selected, either a foot pedal or a footswitch will work in moving you through your Setups.

*FOOTSWITCH MIDI NOTES*
Up to Four Notes can be assigned to the Footswitch. A Velocity value is also available. When the Footswitch is, depressed, a note on is sent. When the switch is released, a note off is sent.

**FOOT CONTROL TWO PERFORMS**
Parameters = Controller, Setup Advance, Setup Backup, MIDI Note.
If you don't intend to use the Foot Control Inputs for Volume or other Controller Settings, you may choose to Globally reassign your Foot Control input to ADVANCE or BACKUP through your Setups.

### The FC Perform choices are:

*CONTROLLER*: (User settings definable in each Each Setup- see Setup Auxiliary Settings)

*SETUP ADVANCE / SETUP BACKUP* If Setup Advance or Backup has been selected, either a foot pedal or a footswitch will work in moving you through your Setups.

*FOOTSWITCH MIDI NOTES*: Up to Four Notes can be assigned to the Footswitch. A velocity value is also assignable. When the Footswitch is depressed, a note on is sent. When the switch is released, a note off is sent.

**GROUP OCTAVE PAD TRAINING**
Parameters = 00-255
There are TWO sensors on the panKAT that can be trained separately. In the GLOBAL EDIT screens you will find the “TO TRAIN PAD GROUPS” displayed. The panKAT will direct you to GROUP TOP or GROUP BOTTOM for training

Groups are assigned as follows:
**GROUP TOP (the top sensor)** =
PADS 9,8,7,6,5,4
21,20,19,18,17,16,
28,27 and the V Wheel One

**GROUP BOTTOM (the bottom sensor)=**
PADS 10,11,12,1,2,3
22,23,24,13,14,15
29,25,26,30,

In this Global Screen, the panKAT asks you to hit any pad to TRAIN SENSOR groups. After striking any pad, a Group Letter appears. USE PAD **7 or 19** for GROUP TOP and use PAD **13 or 1** for GROUP BOTTOM to TRAIN the Sensor.

If you want to train a different Group, tap on the FORWARD PAD. The other Group will show.

The panKAT will ask you to play a soft hit and then a hard hit on the specified note(s) in the selected GROUP. After the panKAT finishes calculating the results, it automatically moves to the next Group and asks you to hit the next C for training. This process will continue repeatedly until you hit the Footswitch to stop the training process.

Trust your ears and your playing dynamics. The values may look different from octave to octave, but the response can be the same. This is because there is a different sensor on each octave (and a different section of circuitry controlling it). By training each octave separately, the 128 MIDI velocity response levels should be about the same. This function dramatically increases the evenness across the entire panKAT.

**INDIVIDUAL PAD TRAINING**
It is also possible to train up to sixteen individual pads. These pad training values are stored in “INDIV Pad Train A, B, C.....H”. Go to Global Screen keep the Footswitch down and use the right function pad to scroll through these 16 INV PAD TRAIN Letters.

Pick a letter for storage, then tap the pad that you want to train. The panKAT will ask you to hit the pad soft, then hard. These values will be stored in that INV PAD Letter for the mallet pad that you just played. Go to Global Screen and use the function pad to find the training values in the PAD Letter. The name of the pad (the key) that has been individually trained is now displayed in that Pad slot.

If the same pad is trained in more than one slot, only the training data from the last slot is used.

An individually trained pad will revert to the Group training results if the user releases footswitch #2 before striking the pad to elect it for individual training AND the pad that is struck is the pad assigned to the slot currently displayed on the training screen. If the pad that is struck is NOT the pad assigned to the slot currently displayed on the training screen AND Footswitch #2 is not pressed, training will be aborted. To select a pad for individual training, the Footswitch MUST be held while striking the pad. The user should release the Footswitch once the pad has been selected for training so it is not pressed when the actual training is performed.

If the individual slot has not been assigned a pad, the training results will display “----“.

**TO TRAIN INDIV PAD A.....N**
This is the shortcut to get to the IND Pad Training Screen described above.

**TRAINING RESULTS**
Low Level
High Level
Individual Pad
This is the shortcut to see the results of a Training Session. You can manually change the results by using the INC/DEC keys.

**INCOMING CHANNEL ( 1 to 16 ) ROUTE TO**
*Parameters = Both Int and Ext, Neither, External MIDI only, Internal Only*
When the panKAT “sees” MIDI Channel information on the MIDI IN Port, that data can be routed to the Internal Sounds of the panKAT WS or to the MIDI OUT Port or can be filtered so that MIDI data from that channel is blocked.

**INCOMING PROGRAM CHANGE RECEIVE**

*Parameters = All Channels, OFF, 1-16*
The panKAT PRO maybe set to accept or ignore Program Changes at this screen using the INCREMENT / DECREMENT pads. You may set the panKAT PRO to accept all Program Changes, ignore all Program Changes, or accept only Program Changes transmitted on a particular channel.

**INCOMING SYSTEM MESSAGE ROUTE TO**
Parameters = Both Int and Ext, Neither, External MIDI only, Internal Only
This screen lets you select how incoming MIDI SYSTEM MESSAGES appearing at your MIDI IN are routed. The panKAT PRO maybe set to accept or ignore SYSTEM MESSAGES at this screen using the INCREMENT / DECREMENT pads. You may set the panKAT PRO to route these messages to the Internal Sound Card, the External Sound Source, Both, or they can be filtered out using NEITHER. Common SYSTEM MESSAGES are MIDI Clock, Sequence Start/ Stop / Continue, Active Sensing, MIDI Time Code, Song Position Pointer/ Song Select).

**UNIVERSAL ID**
*Parameters = Universal ID, 01-127*
The “Individual Instrument ID” for the panKAT PRO can be assigned at this screen. This setting is used to allow external devices to selectively send data dump information to the panKAT Pro. This number is really useful if you have more than one panKAT PRO. If not, leave it set to UNIVERSAL ID. Data dump information that is meant for a panKAT PRO with a different ID than assigned at this screen will not be accepted by the panKAT PRO. (except if set at Universal ID, which accepts all).

**MIDI IN PROGRAM CHANGE SOUND MAP**
*Parameters = SETUPS MAP, GENERAL MIDI MAP*
When the panKAT receives a Program Change Command, this data can be routed to change the Program within the Active Setup (GENERAL MIDI MAP) or it can change the SETUP ITSELF (SETUP MAP).

If you are using a panKAT WS in a Multi Mode Configuration (more than one sound at once) or if you are using the internal sound source for another controller, using the setting GENERAL MIDI MAP sends program changes to any of the 16 MIDI channels when receiving Program Change Data from an External Source from the MIDI IN.

**MIDI IN to MIDI OUT MERGE**
*Parameters = ON / OFF*
MIDI data coming into the MIDI IN of the panKAT may be passed through to the MIDI OUT if MIDI Merge is set to ON.

**NORMAL MODE SCAN COUNT**
*Parameters = 3..16*
This setting tells the panKAT how long to scan or examine the pads before sending out a note. The higher the setting, the more accurate the dynamics, but the more latency it adds. The default value of 5 is the normal setting.

**PERMANENT MEMORY IS**
*Parameters = ON/OFF*
You can protect changes made to your USER KITS when you turn ON the PERMANENT MEMORY setting. If the PERMANENT MEMORY is set to OFF (the default setting) changes made to your USER Kits are automatically saved. There is no SAVE Procedure on the panKAT.

TIPS:
The Factory KITS can not be Permanently Saved unless copied to the USER KITs.
Global Settings can still be altered when MEMORY PROTECT is turned ON.
The panKAT PRO will also accept a SYSEX Dump regardless of this setting.

**PROGRAM STRING NAMES**
*Parameters = KIT NAMES, NONE, INSTRUMENT NAME*
You can customize the way the panKAT screen displays data. A setting of KIT NAMES, allows one to customize the names of their USER KITS. Every User Kit can have its own unique name. Once this setting is active, the panKAT will display in PLAY mode on the third line, the KIT Name that you programmed in the KIT AUX Screens. If no name was programmed, the screen will display **********.

A setting of INSTRUMENT NAME automatically calls up the General MIDI Instrument name nomenclature. This means that the Instrument Name is connected to the program change number, not the User Kit name. You can NOT modify these names.

The Factory Kits automatically operate in the INSTRUMENT NAME Setting. Only the USER KITS reflect this choice.

A setting of NONE eliminates all instrument names on the display. Instead, the third line shows key parameter information of Controller One, and the fourth line displays parameter information of Controller Two.

**REASSIGNMENT MODE**
Reassignment Mode in the panKAT allows User definable notes to be played on the keyboard. You can play any MIDI Note on ANY pad on the panKAT. Each pad can have its own MIDI Channel. An entire User Layout of these prearranged MIDI notes are

called an Reassignment Layer.

There are 14 Layers that can be assigned. Each USER KIT can have one Reassignment Layer assigned. In the Kit Auxiliary Screens you decide if you want to COMBINE this Layer with the Controller's Sound or if you want to REPLACE the Controller's sound with this new MIDI note assignment. Each pad shares a Minimum and Maximum Velocity setting, a Velocity Curve and a Gate Time.

**REASSIGNMENT NUMBER**
Parameters = 01...14
On the first line of the display, select which one of the 14 Reassignments you wish to Edit.

**REASSIGN K NUMBER**
Parameters = 01-61
The next selection on the first line is “k” followed by a number up to three digits. The “k” stands for which KAT pad on the panKAT you want to reassign to a different sound. The highest note on the panKAT is k30, which is pad 30. The reassign K numbers go higher, because they are “pre-enabled” for future expanders.

You can use the INC/DEC pads to get to the pad number that you want to Edit OR you can quickly jump to the pad you want by stepping on the Sustain One (when the Reassign Screen is visible) then while both Footswitches are held down, hit the pad on the panKAT that you want to edit. You will see the “k” number change as you tap on the different pads on the panKAT.

**REASSIGN M NUMBER**
Parameters = C-2 – G8
On the second line of the display, you can select the MIDI NOTE that you want to assign to the pad selected on the first line. Notice that both the MIDI NOTE NUMBER and the Actual Note name are displayed at the same time.

You can use the INC/DEC pads to change the note that you want to reassign here or you can use the shortcut. When in this editing screen, step on the Sustain Two (the Edit Footswitch should already be depressed). While these pedals are down, when you strike a pad, it reflects the note that will sound on the “k” pad. You can change the octave in KIT EDIT to get at lower or higher note numbers.

**REASSIGN CHANNEL**
Parameters = 01-16
On the second line of the display, you can change the MIDI Channel for the “k” pad number that is visible. Every pad on the panKAT can be assigned to any of the 16 MIDI channels separately.

**REASSIGN MINIMUM VELOCITY**
Parameters = 00-127
On this screen you establish the MINIMUM Velocity Setting. This setting is for the entire Reassignment Layer, not for the one MIDI note number. Each Reassignment Layer Receives one MINIMUM, one MAXIMUM and one GATE TIME setting.

**REASSIGN MAXIMUM VELOCITY**
Parameters = 00-127
On this screen you establish the MAXIMUM Velocity Setting. This setting is for the entire Reassignment Layer, not for the one MIDI note number. Each Reassignment Layer Receives one MINIMUM, one MAXIMUM and one GATE TIME Setting.

**REASSIGNMENT DEFAULTS**
The following is a listing of default values of the REASIGNMENT numbers set for a Five Octave panKAT.
Reassignment # 1 C-2 to C 2
Reassignment # 2 C-1 to C 3
Reassignment # 3 C-0 to C 4
Reassignment # 4 C 1 to C 5
Reassignment # 5 C 2 to C 6
Reassignment # 6 C 3 to C 7
Reassignment # 7....14 all keys set of OFF

You can assign the notes in the Reassignment Layer Mode to function as a LATCH, where the first strike sends a note on, and a second strike on the same pad shuts it off. If the Reassignment is set to MONOPHONIC MODE in the Kit Edit Screen, only one loop will play at a time. If the Reassignment is set to POLYPHONIC MODE in the Kit Edit Screen, it is possible to independently control multiple loops. The Hi C on the panKAT is reserved to shut off ALL active Loops in the Reassignment.

Set the Forced GATE to LATCH in the Kit Auxiliary Reassignment screen and the notes played by the assignment layer will toggle (i.e. 1st time a pad is hit, a NOTE ON will be send and the 2nd time a pad is hit, a NOTE OFF will be sent). The reassignment layer will operate in polyphonic and monophonic modes. If a note is assigned to reassignment PAD 30, striking this pad will send a NOTE OFF for all pads for which no NOTE OFF

has been sent. It will not send a NOTE ON for this pad. If note number 128 (OFF) has been reassigned to reassignment PAD 30, to this pad will not play a reassignment note (normal) BUT will also NOT turn off notes for the other reassignment pads. This gives the user the ability to decide if one pad is capable of controlling all reassignment note offs and also allows the hi C pad to be a playable note in COMBINE mode, without turning off all active reassignment pads.

**REASSIGNMENT QUICK COPY**
A fast copy function has been added to the reassignment mode so that the user can either auto increment or copy the value of one reassignment pad to the next right adjacent pad.

Copying the data from one reassignment pad to the next adjacent pad...
While in the Global Reassignment Edit Screen, Hold down the edit AND the Sustain ONE together, use the RIGHT (forward) function pad to copy the existing assignment to the next. The panKAT will copy the existing data to the adjacent pad.

Auto incrementing the data from one reassignment pad to the next adjacent pad...
While in the Global Reassignment Edit Screen, Hold down the edit and AND the Sustain ONE together. Use the BACKWARDS function pads to AUTO INCREMENT the existing assignment to the next. The panKAT will copy the existing data to the adjacent pad AND add that value by one.

**MODIFIED REASSIGNMENT NOTE ASSIGNMENTS**
Midi Note 128 is now an OFF pad. When this is assigned to a pad, no sound will be produced. This allows the ability to assign only the notes you want to sound. This is especially useful in COMBINE mode when both the Reassignment and Controllers One, Two or Both are also active. The default note is NO NOTE.

Using Midi Note 128 on the Hi C in the reassignment layer prevents that pad to perform an ALL LOOP OFF function for that layer. No sound will play on that pad. Please refer to the Reassignment Section in the KIT AUXILLARY SCREENS for more information regarding the Reassignment Mode.

## Real Time Controller Mode and RTC+Velocity Mode

**Real Time Controller Mode**
Real Time Controller Mode turns the panKAT into a massive knob turning machine. Each pad on the OUTER Ring of the panKAT is assigned a channel, controller number, minimum value, maximum value, and reset value in the Global Screens

Once a pad is struck on the Outer Ring, the MIDDLE RING PADS act as individual

values (like the position of a fader or knob on your synthesizer ). The values move clockwise, Pad 24 is the is the minimum value, and the PAD 13 is the maximum value. As you play on the “value” pads of the panKAT, the panKAT instantly translates your last hit to the controller “knob” of your synthesizer . The knob turning can be instantaneous, or can slide “slew” to the next value. This can create some incredible interesting effects that are not possible with real time knob tweaking. Complex rhythms can be imposed on any controller number.

Entering and leaving a “Control Key” (pad on the OUTER RING in RTC mode) can also create an effect. When you leave a Control Key (by striking another control key), one has the option of resetting the last value and/or presetting the new value of the control key just struck.

The MIDDLE RING of the panKAT’s pads are reserved for special functions.

**PAD 28** turns on the Editing of the RTC Slew Speed Values. You do not need to step on the footswitch as these are REAL TIME functions. You must strike PAD 28 again to toggle out of RTC Editing.

**PADS 26 and 29** Increments and Decrements the Slew Speed Value.

While in Play Mode, you can turn **Portamento On and Off** by toggling **PAD 27.**

While in Play Mode, you can **Slew Up** by tapping on **PAD 25**
While in Play Mode, you can **Slew DOWN** by tapping on **PAD 30**

The Real Time Control Mode also has a variation mode called RTC+Velocity

The RTC mode is selected by striking PAD 1, FOUR TIMES while the Edit Footswitch is pressed.

## Assigning Controller Numbers

There is only ONE RTC assignment in the panKAT that is activated whenever RTC is assigned to a Controller in the User Kits.

There are four screens for data entry in the Global Edit Screens.

**RTC KEY NUMBER (KEY # PAD)**
This represents which OUTER RING pad on the panKAT you are working on. The display lists Pads 1-12, the Outer Ring.

**RTC CHANNEL**
Parameters = 01—16
This is where you assign a MIDI Channel to Each of the 12 Pads on the Outer Ring.

**RTC CONTROLLER#**

Parameters = 00-128
This is where you assign the controller number for each pad on the Outer Ring.. Choices are NO, 0-128. Number 128 is a Pitch wheel assignment. The last line on the display will show the name of the controller number assigned.

**RTC MIN VALUE**
Parameters = 00-127

**RTC MAX VALUE**
Parameters = 00-127

**RTC RESET VALUE**
Parameters = 00-128

These values are found by using the FORWARD pad.

Setting the Min and Max values gives the range of the “Outer Ring Controller” pads on the panKAT. Since there are 127 controller values available, and only 12 “Middle Ring VALUE pads” on the instrument, the panKAT averages the total value of the assigned range over these pads. The min and max settings affect the total range of controller values that are averaged across the white pads. The RESET value is the controller value sent when the RESET PAD is struck or when Exiting and Entering a new controller pad (see below).

Notice that the top line of the display is not editable. It is for your reference to remind you of what black key you are working on.

**RTC PREV CNTRL VALUE**
Parameters = Reset, None

**RTC NEXT CNTRL VALUE**
Parameters = Reset, None, Last

When you enter (strike a Outer Ring Pad) or leave (strike another Outer Ring Pad), the controller’s value can be reset to the value set in the RESET parameter on the previous page. This parameter can also be set to NONE, which means that the controller number will not be changed when entering or leaving a “Outer” key setting. It is also possible to set this parameter to LAST, meaning that the value from this black key will be remembered when you enter it again.

“Prev Ctrl Value” means the Control Number value of the last black key or the control function that you are leaving from. “Next Ctrl Value” means the Control Number value of the black key that you are going to.

Here are some examples of settings and the results.

Example One:
Prev Ctrl Value: RESET
Next Ctrl Value: NONE

This means that when a OUTER RING PAD is hit, the reset value for the last controller command will be sent. If you are striking an Outer Pad for the first time, no controller value will be sent until you hit a Middle Ring Pad. If you have been “working” this controller, then decide to move to another Outer key, the original Outer keys controller value will be reset as you leave this controller. When you enter the new controller number, no initial value will be sent until you hit a Middle Key

Example Two:
Prev Ctrl Value: NONE
Next Ctrl Value: RESET

This means that when an Outer key is hit, the reset value for this newly selected controller command will be sent. When you first enter this controller number by striking an Outer key, the RESET value is sent out. When you leave this controller number by hitting another Outer key, the original Outer keys value is NOT RESET, but if you strike another Outer key, the new controllers value will automatically send out the RESET value.
Example Three:
Prev Ctrl Value: NONE
Next Ctrl Value: LAST

This means that when an Outer Key is hit, the value that is sent is the value that was sent the last time a value was sent for this Outer key. If the last value was due to a reset operation, the reset value is not sent. Only the last value sent as a result of striking a Middle key. This means that the panKAT remembers what was the last value this particular Outer key sent out, and returns to this value when this Outer key is struck again.

**The A#3 pad is the RESET PAD. When this pad is struck in PLAY mode, it will RESET the value of the active controller to whatever value was set in the GLOBAL screen.**

Extras
The Pitch Wheel has been added as a 128th “controller” and the A# pad will reset it to the neutral value. There is also a special mode, Pitch Wheel Mode, PTW MODE, described later.

**RTC+ VELOCITY MODE** This is a special mode that allows for two controller numbers to be manipulated simultaneously. RTC is a horizontal control, meaning that values of a controller are affected by using the white keys, left to right.

Adding VELOCITY to this mode means that your dynamics, or vertical approach changes values to a controller. Playing soft or loud is interpreted as small or large controller values.

This mode is analogous to turning TWO knobs of a synthesizer module at the same time. By thinking left to right and soft to loud at the same time, incredible effects can happen in real time, with just two sticks in your hands.

In order to properly activate this mode, the basic controller settings must first be set in the GLOBAL AUX Screens.

**RTC CONTROLLER #**
*Parameters = 00-127*
This is where you set the MIDI Channel and Controller Number that will be affected by the velocity or the playing dynamic.

**RTC RESET VALUE**
*Parameters = 00-127*
Use this to set the reset value. There are not min/max settings for this mode because the extremes are determined by the min/max velocity settings.

**SLEW DATA STRIP RATE**
When using the RTC Mode, there is lots of control data being sent to the sound module. Under Pad One, Keyboard Mode, a FORWARD screen has been provided that strips or thins out some of the data. Raising the value (between 1 and 127) decreases the amount of data being sent.

**SCREEN ANGLE**
Parameters = Straight View, Edge View
You can change the viewing angle of the screen from Straight View to Edge View.

## PAD THRESHOLDS / PAD TRAINING

**PAD THRESHOLD ADJUSTMENT**
The Threshold of each individual pad may be adjusted at this screen by hitting the pad you wish to alter. When the pad has been selected, you may increase or decrease the threshold using the BACKWARD / FORWARD pads. The lower the threshold, the more sensitive the pad ( & more likely to false trigger).

**ADJUST THRESHOLD MARGIN BACKWARD FUNCTION PAD**
The Function Pads (Backwards/Forwards) are set to a higher threshold level than the rest of the instrument. The default setting is 45. You can adjust the threshold here by using the INC/DEC pads.

**ADJUST THRESHOLD MARGIN FORWARD FUNCTION PAD**
The Function Pads (Backwards/Forwards) are set to a higher threshold level than the rest of the instrument. The default setting is 45. You can adjust the threshold here by using the INC/DEC pads.

**GLOBAL THRESHOLD ADJUST**
If you are playing your panKAT in a high altitude area, you may need to raise the thresholds levels of the entire instrument because the sensors are sensitive to pressure above sea levels. If your panKAT begins to false trigger (playing itself, rapid fire pitches), you simply need to raise the thresholds.

This feature is also used to increase or decrease the general sensitivity of the entire instrument.

When the panKAT is reinitialized, a sensitivity Margin of “10” is automatically placed under every pad. You can raise or lower this setting by performing the procedure below. You can see the results of adjustments by going back to Global Screen #5 and hitting any pad. Be careful not to go too low, or the instrument may start playing itself. If you raise it up too high, it will take a harder hit in order to get the instrument to respond.

**To Change the THRESHOLDS**
Step on the Edit and Sustain 2 at the same time. The display changes and says Threshold Adjust Use the BACKWARDS pad to lower the threshold to make the instrument MORE sensitive. Use the FORWARD pad to raise the threshold to make the instrument LESS sensitive.

**AUTOMATIC PAD THRESHOLD**
By simply pressing and releasing the Edit , the panKAT Pro performs a Pad Threshold Recalibration. This temporarily adjusts the pad thresholds (as if you just turned on the panKAT). This setting is not permanent. If you want to save a new permanent threshold level, perform the Global Threshold Adjust procedure described above.
Don't lean on the pads when you step on the edit footswitch as this will raise the thresholds of the pads, making them very in-sensitive. If this should happen, press and release the Edit again (without touching any pads) and this will make the pads playable again.

**REINITIALIZING YOUR PAD SENSITIVITY THRESHOLDS**
To REINITIALIZE your panKAT Pro pad sensitivity Thresholds back to safe settings, simply hold the EDIT and the Sustain 2 BOTH down, and while they are depressed hold

down both the “Backward” and Forward” small Function pads. Your panKAT PRO will read the present idle levels of your Pads and put your Thresholds at safe settings for you.

**TO TRAIN FOOT CONTROLLER ONE / FOOT CONTROLLER TWO**
The response of FootController (1,2) may be set at this screen by training the FootController. If you would like to Train the FootController, strike any pad one more time and release the Edit Footswitch. The panKAT PRO will sound a continuous beep. You should respond by pressing the FootController pedal to the floor and then hit a pad. The panKAT PRO will again sound a continuous beep. You should now release the FootControl pedal and hit a pad again. The FootController is now trained and the panKAT PRO will return to PLAY Mode.

**TUNE INSTRUMENT**
Parameters = -50+50 cents, MIDI CHANNEL 1-16
If your external sound source responds to the TUNING Command or if you have an older panKAT with sounds, you can fine tune Globally your sound module in "cents".

**VIRTUAL CONTROL WHEEL A,B,C CONTROLLER NUMBER**
*Parameters = CC#00-127*
The Virtual Control Wheel Function on the panKAT turns Controller Layer Two into a Programmable Control Wheel. Unlike RTC, the value of the white keys return to zero when the note is released. This simulates using a Pitch Wheel on a synthesizer. This Mode is intended to be used in conjunction with Layer One, the actual sound, while Layer 2 imposes the Controller effect on Layer One.

Layer Two can be set to CTLC mode by hitting PAD ONE, SIX TIMES. with the EDIT Footswitch depressed. The CTLC functionality is accessed by pressing FSW #2 (Hang pedal) and striking or pressing the keys.

The INNER PADS are reserved for Special Functions.
PAD 28 Slew Speed Enable
PAD 29 Decrement Key when Slew Speed pad is enabled
PAD 26 Increment Key when Slew Speed pad is enabled
PAD 27 Portamento Mode On off
PAD 30 Reset

When PAD 28 (Slew Speed) pad is struck (with Hang Pedal Down), the Slew value is displayed, and remains there until that pad is struck again. This acts like a toggle. The idea here is that after you strike pad 28, you will then use Pad 29 and Pad 26 to program your Slew Rate. Once you have finished, hit the Pad 28 again to begin playing.

The Middle Ring Pad acts as a knob moving clockwise. Pad 13 is the lowest value, Pad 14 is the highest.

Keys positioned between those described above are assigned intermediate values. If Portamento is OFF, striking a key will immediately send the controller value assigned to that key. The neutral Pitch Wheel is sent when both the pad and the Hang pedal are released.

If Portamento Mode is ON, striking or holding a key will slew up or down to the value assigned to that key for as long as the key is pressed OR until the Gate Time Value has expired. If the key pressure is released or when the gate time ends, the controller values will slew back to the neutral value.

When a Middle Ring pad is struck with the mallet, the panKAT holds that pad down as determined by the GATE Time. After the GATE Time has expired, the Slew returns back to Zero at the determined Slew Rate when the Hang pedal is released. If the Hang pedal is still pressed when the Min/Max value is reached, the return Slew Sequence will not occur until it is released. Whenever the HANG pedal is released, the Slew sequence returns to the neutral value (determined by Gate Time).

**ASSIGNING THE VIRTUAL CONTROL WHEEL**

Virtual Control Wheel

There are three Virtual Control Wheels (besides the Pitch Bend) that can be assigned GLOBALLY. These are Control Wheels A,B and C. In these Global Screens, you assign what controller number (1-127) you want to assign onto the VIRTUAL WHEEL.

Every Kit in the panKAT can use ONE of these three assigned Wheels in Controller Two.

After striking the PAD 1 SIX Times in the Edit Mode on Layer Two (Controller 2), the Layer turns into the CTLC Mode. When the Sustain Two is depressed, the Virtual Wheel is activated. The Virtual Wheel assumes the MIDI Channel of Layer Two.

**VIRTUAL CONTROL WHEEL A,B,C CONTROLLER NUMBER**

*Parameters = CC#00-127*

The Virtual Control Wheel Function on the panKAT turns Controller Layer 2 into a Programmable Control Wheel. Unlike RTC, the value of the white keys return to zero when the note is released. This simulates using a Pitch Wheel on a synthesizer This Mode is intended to be used in conjunction with Layer One, the actual sound, while Layer 2 imposes the Controller effect on Layer One.

Layer #2 can be set to CTLC mode by hitting the MONO key Five times with the EDIT Footswitch depressed. The CTLC functionality is accessed by pressing Footswitch #2 (Hang pedal) and striking or pressing the keys.

The INNER PADS are reserved for Special Functions.

PAD 28 Slew Speed Enable

PAD 29  Decrement Key when Slew Speed pad is enabled
PAD 26  Increment Key when Slew Speed pad is enabled
PAD 27 Portamento Mode  On off
PAD 30  Reset

When PAD 28 (Slew Speed) pad is struck (with Hang Pedal Down), the Slew value is displayed, and remains there until that pad is struck again. This acts like a toggle. The idea here is that after you strike pad 28, you will then use Pad 29 and Pad 26 to program your Slew Rate. Once you have finished, hit the Pad 28 again to begin playing.

The Middle Ring Pad acts as a knob moving clockwise.  Pad 13 is the lowest value, Pad 14 is the highest.

Keys positioned between those described above are assigned intermediate values.  If Portamento is OFF, striking a key will immediately send the controller value assigned to that key. The neutral Pitch Wheel is sent when both the pad and the Hang pedal are released.

If Portamento is OFF, striking a key will immediately send the controller value assigned to that key. The neutral Pitch Wheel value is sent when both the pad and the HANG pedal are released.

If Portamento mode is ON, striking or holding a key will slew up or down to the value assigned to that key for as long as the key is pressed OR until the Gate Time Value has expired. If the key pressure is released or when the gate time ends, the controller values will slew back to the neutral value.

After the gate time has expired, the slew returns back to "0" at the determined slew rate when the HANG pedal is released. If the HANG pedal is still pressed when the max/min value is reached, the return slew sequence will not occur until it is released.  Whenever the HANG pedal is released, the slew sequence returns to the neutral value (determined by gate time)

These wheels can only be assigned to CONTROLLER TWO. Only one wheel can be activated per KIT. It is activated when the Sustain Two Footswitch is depressed. Like the PTW mode, the white keys on the panKAT send out discreet wheel values.

You can access CTL by stepping on the EDIT , and while held down, PAD ONE SIX  , SEVEN or EIGHT times respectively.

# Chapter Six
# GOOD THINGS TO KNOW

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**REINITIALZING THE PANKAT**

Step on the Edit Footswitch and press (hold down) both FUNCTION PADS all at the same time. Notice the display screen will prompt you to also hold down PAD 4 next to the to the FORWARD Function Pad. Continue holding all three pads until you hear the reinitialize beep tones. The panKAT defaults back to the Factory Kits.