

MicroZone

Wilson Generalized keyboard

OWNER'S MANUAL

U-648 and U-990



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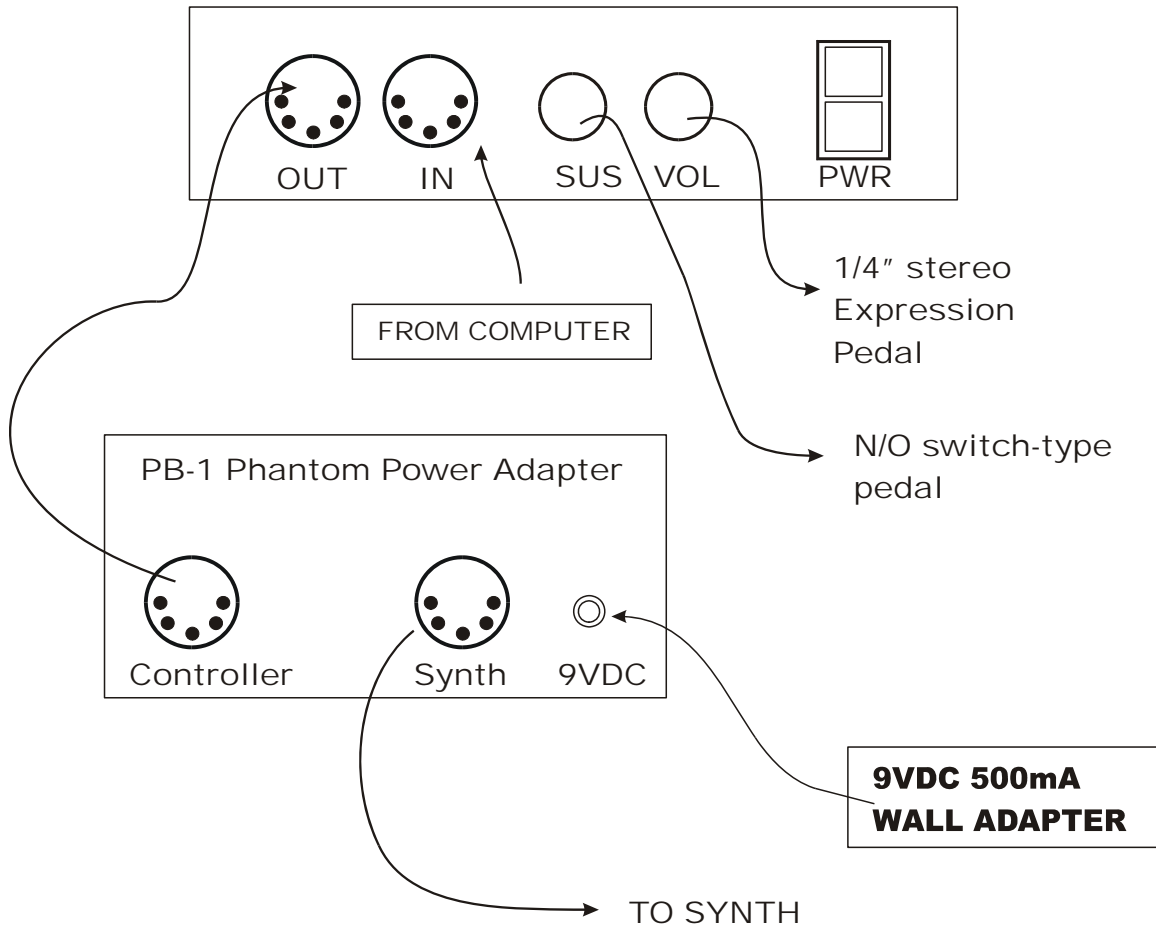
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TABLE of CONTENTS

OVERVIEW	p.2
Function Keys.....	p.4
Menu System.....	p.5
Live Mode	p.5
Top Level Edit Menu.....	p.6
UTILITIES	p.7
CURVES	p.8
ZONES	p.11
Keymaps	p.13
Keymaps and Zone Processing	p.17
MIDI setups	p.16
SENSORS	p.20
BULK-DUMP	p.24
SYSEX format	p.26

U-648 Rear Panel



Power is connected to the U648 via the MIDI OUT Jack. Connect a 5-wire MIDI cable (important) from the Keyboard's MIDI OUT to the PB1's CONTROLLER input. Connect a second MIDI cable (3-wire cable is ok) from the Pb1 to the Synth.

OVERVIEW

Congratulations on receiving your microZone U648 or U990 Generalized Keyboard controller. With its combination of hardware and software features it should afford you a lifetime of creative exploration.

You can skip this section if you want to jump right into programming the instrument. In general, it's a good idea to look over this manual, just to see what's in your new instrument.

UZone Keyboard layout:

The Black and white color coding shows a 48-key linear keyboard on the bottom two rows of keys. Vertically you can see 6 ranks of 48-key keyboards (9 ranks of 90 keys for the U990) . Each rank is programmed in its own assigned Zone which includes settings for MIDI and selection of a keymap. The combination of these tools allow you to define tunings and fingerings of your own design, without regard for the default chromatic layout.

User Interface

The UZONE is supported by a Programming/Display system with a 2 line by 40 character backlit LCD and a 'softkey' based User Interface. What this means is that the eight keys that surround the display are used in varying ways to select different items depending on the particular menu screen showing. The menu-system is a tree-like structure. The UZone has quite a few programmable parameters but every effort has been made to keep the nesting of menus to a minimum and the navigation to the system as simple as possible.

The EDIT key is used both to enter an edit-screen in some menus and more often to exit from a menu-screen when you're finished programming. In general, pressing EDIT several times will back you out of a series of menus and bring you back to the top SONG-MENU, or LIVE-mode

The UZone Operating System has a LIVE mode and an EDIT mode. Pressing the EDIT key from the SONG-MENU enters the EDIT mode to alter the various setup parameters of the fingerboard, pads, triggers, joystick and pedals. The UZONE will continue to play while in the EDIT mode. Make sure to exit back to the LIVE mode after completing an edit, however, as you may accidentally change one of your setups by hitting the joystick or another programming key. Also, the instrument will play a bit faster in the LIVE mode as there it isn't the necessity to update any Edit screens.

When selecting Songs (uZone "patches" or "presets"), two Song-names show on each screen-view. Use the Up/Dn keys to scroll through your Songs.

Programming, Mode Selection and Data Entry:

Many of the programming features on the UZONE have been implemented in the screen/menu system and also in shorthand fashion on the front-panel "hot-keys". In the screen/menu system the eight "soft" keys surrounding the display will be physically near their selections on the screen. Use of the hot-keys will save a number of keystrokes. Also, the joystick is used both as a performance tool and a data entry device in conjunction with the data Up/Down buttons when programming the system.

"Chase" features:

In several of the menus a String, or a Key, or other Sensor may be selected by simply touching it, in addition to using the Display keys

Terminology

In an effort to make the UZONE as fully user-programmable as possible some existing MIDI concepts have been expanded and are slightly re-defined:

Patches for the UZONE are called SONGS. A Song stores the complete configuration for the instrument. This includes all of the fingerboard splits/zones, transpositions, patches, tunings, and all of the MIDI control assignments for the SENSORS, including any recorded Notes, Chords or Drums, Continuous Control EFX, and a list of other parameters.. SONGS may be thought of as 'Kits' in the sense used in an electronic percussion device, a set of assignments of hardware Triggers to MIDI output functions and the player's response setups for all of the hardware. There is no analogous term in guitar playing so we chose 'SONGS' as you might use a different configuration for each song in a set, different voices, etc.

ZONES in the UZONE environment are arbitrary rectangular areas of the fingerboard defined by two diagonal corner points like a select-window on a computer screen. Zones are each assigned a MIDI channel as well as a number of other values.

Up to 32 zones may be configured at any time. A zone may be as small as one note or as large as the entire fingerboard. Where Zone boundaries overlap they will share qualities in those areas. A 'keyboard-split' occurs where adjacent zones do not overlap. Zones may be defined by simply picking a high and a low note from the fingerboard. When all of the desired parameters influencing a zone have been punched in the zone may be saved into a Song Memory location. Zones may thus be set up to perform melody, accompaniment, percussion and effects all from a single instrument. Library functions are available for copying a previously configured Song for use as a template in creating a new Song.

HOTKEYS/ FUNCTION KEYS

Several function keys have been placed on the surface of the UZone to allow quick changes to the setup of the instrument:.

OCT Up/Down: These buttons allow you to change the Octave for any Zone on the fingerboard giving you access to the full MIDI note range.

PAT Up/ Down: These buttons allow you to access up to 128 MIDI patches within any Zone

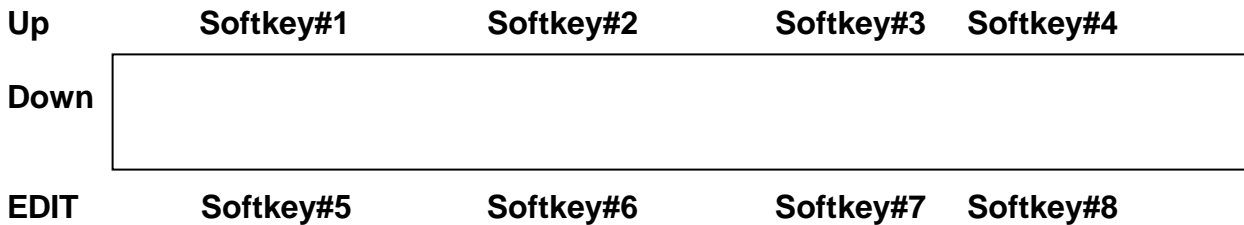
PANIC!: Sends a note-off to every note on and resets all controllers for every channel

Currently we use the brute force approach that takes a little extra time but should definitely clear any stuck messages for any synth,

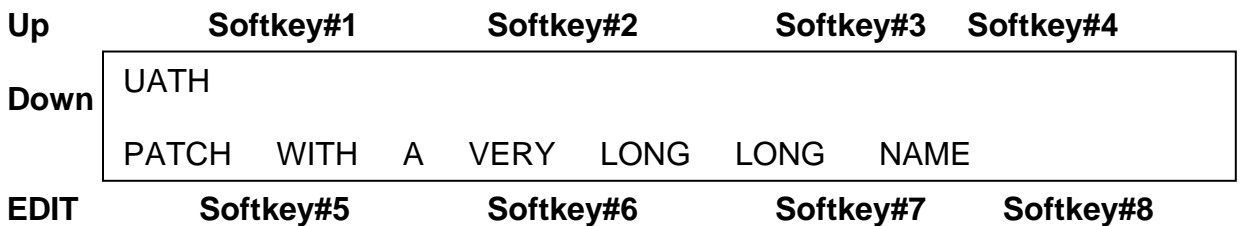
The **PAT** and **OCT** keys are 'Zone-based' controls that allow you to select a zone by playing and holding a note within it, and then adjust the parameter for just that Zone. So, if you have, say, two zones on the fingerboard, you can touch a key in one (or both) and then press the hotkey to change the Patch, etc for that zone. This shortcut lets you make changes while you're performing rather than having to wade through menus to re-program the system.

MENU SYSTEM – DATA ENTRY

The menu system uses eight “soft” keys around the perimeter of the display to select various functions as indicated by the messages on the screen. Press the button nearest to your desired selection in order to activate it. An UP and a Down key are provided for data entry. The joystick, when installed, may also be used for data entry. Use the EDIT key to enter and exit the programming menus. The soft-keys are numbered here for reference in this manual.



LIVE-MODE MENU



This is the top-level menu, which appears when the uZone is in LIVE-mode. The uZone is in LIVE-MODE when you first power-up.

It displays the names of the various system configurations that have been saved as an onboard patch or “Song” in our menu-system. A drummer would refer to these as “KITS”; A Song is a collection of your programmed options and setups for the available hardware, including all of the keyboard zones, MIDI assignments, keymaps, and slider and pedal assignments. The first eight songs are provided from the factory as templates for your use and are listed two per bank. These are saved in ROM and may not be overwritten. You can view additional banks by scrolling with the UP and Down keys on the keypad. The following twenty-four song locations are provided to store your own setups. These are saved in a battery-backed RAM so that your changes will remain after you remove power from the UZONE. The Patch banks may also be stored off-line via the MIDI Bulk-Dump utility.

Use the EDIT key to leave the LIVE mode and enter the EDIT mode. After editing, use the EDIT key again the return to the LIVE mode.

SONG MENU, the Top-Level SONG-EDIT screen

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	SONG: #01 UATH ZONES	SENSORS	UTILITIES	WRITE
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

This is the top-level edit screen, which displays sub-menus for the various programmable features for each Song.

A *Song* consists of:

- 1) One or more Zones with all of their programmed settings.
- 2) Assignments for the Sensors.
- 2) Physical response settings for the Sensors.
- 3) A Tuning for the fingerboard keys and Open-Strings, and settings for Triggering modes.
- 4) A setup for the metronome.

SONG-MENU sub-menus:

Name-Edit: Press the name of the SONG to enter the Name-Edit screen.

Zone: enters the Zone menu to set up the fingerboard. All of your settings can be made into 32 independent fingerboard Zones.

Sensor: enters the Sensor menu to set up the Pads/Triggers/Joystick configuration.

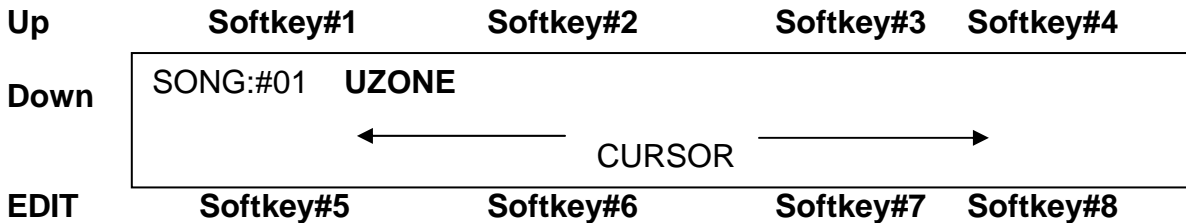
Utility: enters the Utility menu to edit a variety of objects.

Write: Takes you to the Write screen so that you may save your current setup

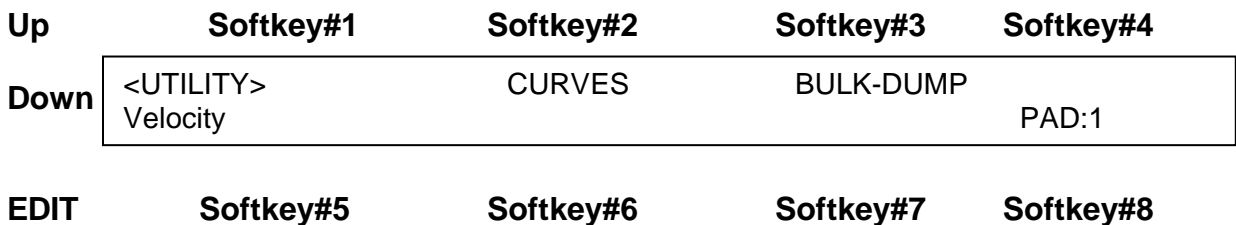
The top-left of the screen shows the Song number followed by its name. By placing the cursor over the song number and using the joystick or Up/Down buttons you may scroll through the Song Banks without going back to the LIVE menu to make your selection.

SONG-MENU\ NAME-EDIT screen

To enter a new Song name: Place the cursor over the name field using the softkey#2 button above the name. Use the Joystick or Up/Down buttons to enter a character, then use the soft keys to the left and right of the "CURSOR" message to move the cursor over to the next character position.



UTILITIES MENU



The UTILITIES menu consists of the CURVES and BULK-DUMP Sub-menus and the Velocity curve settings for you Sensors

CURVES Edit screen

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	# 1-4: 3- 4	30- 15	50- 20	76- 30
	1 5-8: 84- 40	90- 60	95- 95	100-127
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

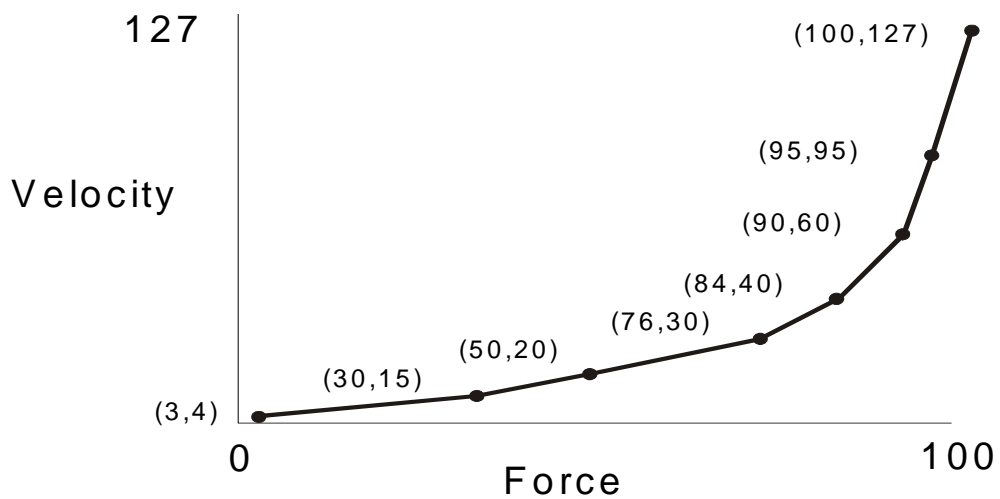
There are 16 programmable curves stored globally in the UZone that may be applied to the keyboard. Use these curves to adapt your touch to the UZone and the synth and patch you're using. Each curve is drafted using eight programmable points and may be thought of as a graph relating physical force on the X-Axis to MIDI velocity on the Y-Axis.

Each Zone assigned on the keyboard may have a different velocity-response curve.

The left-hand side of the menu-screen shows the Curve-number. *When you first enter the menu, use the Up/Dn keys to select a new Curve-number for editing. If you press any other key first, you'll have to exit the menu and re-enter it to select a different curve.* When you make your edits to a curve you're changing the MIDI Velocity output to match the Force of your touch or the travel of a pedal-type sensor.

Each of eight points on a curve is described by a pair of numbers. Each pair has the Force-value on the left and the Velocity-value on the right. The UZone's computer draws a smooth curve between these eight points to create the velocity-response for the selected curve-number. For the curve shown here, you might read Point#3 as *"having a Force of 50% and a MIDI Velocity 20"*. This particular curve is skewed to give more response in the lower force-range with full volume only coming with maximum force.

Use the softkeys to select a point and toggle between the Force-field and the Velocity-field. Use the Up/Dn keys and the Joystick to set the values.



Troubleshooting response problems:

If you notice that the keys responds late, then come on too strong when they do fire, probably the threshold, the lowest point of the curve is set too high.

If a sensor seems too "Hot" you may notice that it's showing a MIDI 127 at a force level much lower than you'd like, say 50%. Try to match the MIDI velocity to the relative force you feel when you play.

UZone ZPC Curves Tutorial

Describing how to set the response curve for a Sensor using the Curve-edit menu.

We're going to draw a response curve that gives a Sensor a smooth response to your touch using 8 programmable points, in the way you might enter them on a piece of graph paper.

Set the response endpoints:

Go to the UTILITIES/ CURVES edit screen for the CURVE number that's assigned to the Zone. Or go to an un-used curve-number and edit a new one.

Set the FORCE value, the left-hand number, for Point#1 to the LOWEST force you expect, say 0-10. Now set the FORCE value for Point#8 to the highest force value you expect, say 90-100 These are your physical performance limits. Lower this number if you don't reach MIDI 127.

Go to the MIDI value, the right-hand number, for Point#1 and set it to a low MIDI velocity like 10. Now go to the MIDI value for Point #8 and enter a 127, the highest MIDI velocity value.

Go to Points#2-7 and enter values that ascend evenly from point #1 to Point#8 for both the FORCE and MIDI-output values. If the actual response of the entire curve is uniformly too high or low, leave the MIDI values constant and adjust the force values to change the response. To make the curve hotter, or more sensitive, lower the Force values.

The easiest way to create new curves is to set all of the right-hand numbers in equal increments from Point#1=0 to Point#8=127. A linear curve using these endpoints will have difference of FORCE=14 and MIDI=18 between adjacent points.

ZONES

A Zone is a group of keys that share a common set of parameters: Keymap, MIDI channel, MIDI patch number, transposition, volume level, and offset into the keyboard's larger virtual keymap.

<ZONE 1	Notes:ON	Keymap # 1	X: 0	Y: 0
MISC	EFX	KEYMAP-EDIT		MIDI

<ZONE 'n': Prompt that shows the currently selected Zone. Press the softkey near the word "ZONE" and use the Up/Dn keys or the joystick to change the Zone number.

NOTES:

A zone may be instructed to play notes or not play notes. This is useful for test and for creating 'dummy' zones that can be used to set up patch changes to external equipment such as EFX processors, etc.

KEYMAP:

One of 32 global keymaps may be selected and assigned to a Zone. A Keymap is a list of all of the keys on the keyboard by row and column. Each key may be assigned a MIDI note number and channel within the Keymap editor.

X: # ; Y: # :

This specifies the offset of the physical keyboard within the larger virtual keyboard of 10 rows and 108 columns. "X" refers to the column offset and "Y" is the row offset.

MISC:

Jumps to the "MISC" menu.

EFX:

Jumps to the EFX menu.

KEYMAP-EDIT:

Jumps to the Keymap-Edit menu.

MIDI:

Jumps the the MIDI menu.

ZONE/MISC Menu:

ZONE# 1 /MISC>	Unison: Off	Transpose: 0
Solo: Off	Vel:Touch Sensitive	Invert: Off

ZONE#:

Shows and selects a Zone for editing.

UNISON:

A zone may be instructed to have all of its keys play the same note number for certain percussive effects. Otherwise the zone will play normally according to its keymap assignments.

TRANPOSE:

A zone may be transposed up or down by 24 half-steps. Place the cursor over the transpose field with the softkey and use the joystick or Up/Dn Keys to adjust the value.

SOLO:

When Zones overlap they create a layered effect with multiple sounds coming from each key. Press the SOLO softkey to isolate the current zone from the stack so that it may be edited and auditioned.

VEL:

A zone may play with a touch-sensing response or a fixed velocity which is specified. Place the cursor over the field and adjust with the UP/Dn keys or joystick.

INVERT:

When this field is turned "ON" the velocity response for this zone is inverted. That is, when played softly the velocity is high and when played hard the velocity is soft. When an 'Inverted' zone is layered over a 'Normal' zone a velocity-crossfade effect is created between those two voices.

EFX Menu:

ZONE#: 1	FretBoard PolyKeyPressure: On/Off
P-K Threshold: 16	P-K Sens: 4

ZONE#:Zone prompt

FretBoard PolyKeyPressure: On/Off

PolyKey Afterpressure may be turned on for the selected zone

P-K THRESHOLD:

Set the lower pressure threshold value that will activate a PolyKey Afterpressure message from the keys;

P-K SENS:

Set the minimum value of pressure change that will initiate a Pressure message.

<ZONES>KEYMAP-EDIT Menu:

<MAP# 1		
EDIT	MASK	RESET

MAP#:

Shows the currently selected keymap for this Zone. Select the field with the softkey and use the Up/Dn keys and the joystick to select other keymaps.

EDIT:

Jumps to the Keymap-Edit screen for this keymap

MASK:

Jumps to the Mask screen for this keymap

RESET:

Resets the keymap to the basic ROM default map.

<ZONES>KEYMAP-EDIT\ EDIT Menu:

Row 1, 1:	1-- 11	1-- 12	1-- 13
Col 4:	1-- 14	1-- 15	1—16

This screen is a little tricky to read due to the small size of the display and the large amount of information to be shown.

Referencing the selected Keymap (from the prior screen):

Each screen shows six keys and their note.channel assignments.

The top line of the sample screen reads “Row #1, Column #1”, then the assignments for columns 1,2, and 3 are shown.

The bottom line shows the “Column select” prompt and the assignments for columns 4,5, and 6.

Press the softkey at the word “**Row**” and use the Up/Dn keys or joystick to select a row. Each set of “black-and-white” piano keys corresponds to a row and will power-up default to a single MIDI channel.

Press the softkey and the word “**Col**” to allow the selection of other columns and column screens. Use the Up/Dn keys and joystick to move around.

To change a note/channel combination for a key, press the softkey once to select the channel number. Press it again to select the note-number.

Notes may be turned ‘OFF’ by selecting the Channel field and decrementing past “0”. You can do this block out single notes from a zone.

The power-up default keymap arrangement for the Wilson keyboard has a separate zone and a separate keymap for each of the ranks, or ‘pianos’ on the keyboard. When you investigate the keymap for each zone you’ll see that the notes are turned ‘OFF’ in all rows other than the current rank.

<ZONES>KEYMAP-EDIT\ MASK Menu

<MAP# 1 /MASK	ON	OFF
Low X: 1	Y: 1	High X: 40 Y:20

This menu allows you to select a 'rectangular' group of keys as defined by diagonal points similar to the corners of a select-window on a computer screen. The selected block of keys may then be turned on or off within the keymap for the selected Zone#. This way isolated islands of keys or irregularly shaped zones may be created.

MAP#:

Shows and selects the Map#.

ON: Turn on keys outlined by the boundaries shown in the bottom row of this screen.

OFF: Turn off the keys outlined by the boundaries shown in the bottom row of this screen.

LOW X:

Enter the lowest Row number for MASK select-block. The Low X and Y define the low corner of the mask block.

LOW Y:

Enter the lowest Column number for the selected block of keys.

HIGH X:

Enter the highest Row number for the Mask block.

HIGH Y:

Enter the highest Column number for the Mask Block.

Press either the "ON" or the "OFF" keys to add or delete keys from the keymap in this zone.

<ZONE>MIDI Menu

ZONE# 1	P&Vsend: N	Patch: 1	Channel: 1
CC#0: 0	CC#32: 0	Volume: 127	SEND

ZONE#:

Press the softkey here to select and change the ZONE number

P&V Send:

Turn this on (yes) to enable patch and volume changes to be sent from this zone. You sometimes may wish to turn this "off" if all of your patch and volume changes are sent from another master sequencer or controller.

PATCH:

Set the Program default hange number for this Zone.

CHANNEL:

Set the default Channel number for this Zone.

CC#0:

This is the MSB of the two-byte Bank select command that allows accessing external patches above MIDI 127.

CC#32:

This is the LSB of the two-byte Bank select command that allows accessing external paches above MIDI 127.

Different synth manufacturers specify various values for CC0 and CC32 in order to access their patch banks. Please refer to the manufacturer literature for these values.

VOLUME:

Set the base default volume level for this channel/zone.

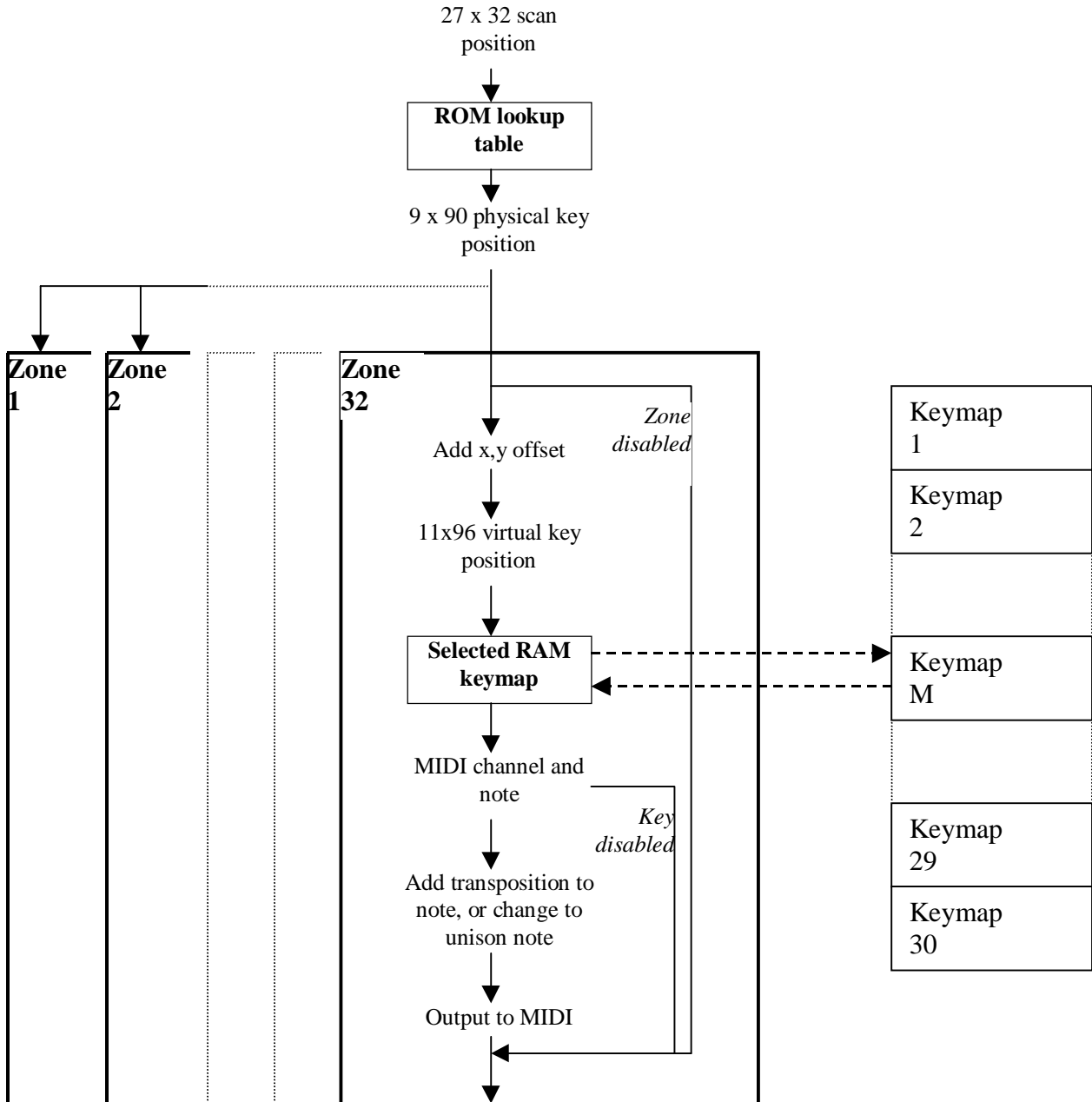
SEND:

Press this to immediately send any patch, channel, or volume updates from this screen.

Key and Zone Processing in the Microzone

"Internal" hardware mapping

Although the Microzone keyboard is physically 9 rows of 90 keys each, it is wired electrically in a 27x32 matrix. The keyboard scanning software produces this 27x32 "scan position." A ROM lookup table converts this to a 9x90 physical key position. *This is strictly an internal operation, which is done to allow flexibility in the printed-circuit-board layout.* There is never any reason for the user to know the scan position of any key. The ROM table is uniquely determined by the printed-circuit-board layout of each keyboard.



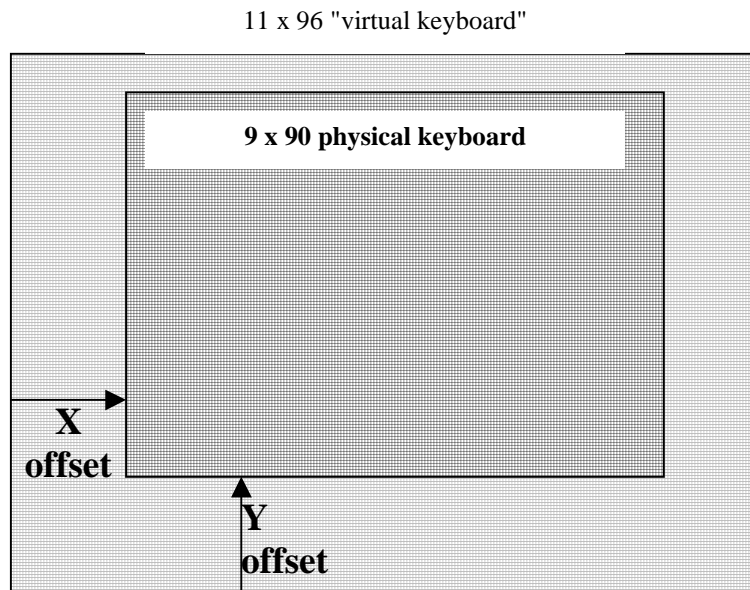
Mapping of keys to notes (Zone processing)

A given key may be active in any combination of 32 independent "zones." That is, a key may be active in no zones, a single zone, several zones, or all zones.

The zones are not defined by rectangles. They may have any shape, which is defined by a *RAM keymap*. Each zone independently decides whether a given key is active, as follows:

First, an *X and Y offset* are added to the column and row number of the key, producing a "virtual" key position. This allows the physical keyboard to be shifted up and/or to the right before being applied to the RAM keymap.

The RAM keymap is an 11x96 lookup table that corresponds to the *virtual* keyboard. This table contains an "active" flag for each key on the keyboard. So, *after* the X and Y offsets are applied, the selected keymap indicates whether that key is active.



If the X or Y offset pushes the key "off the edge" of the virtual keyboard, that key will be inactive in that zone.

If the key is active, the keymap gives the MIDI channel number and note to be output for that *virtual* key. If the key is *not* active in the keymap, it is deemed to be inactive in this zone, and no further processing takes place *in this zone*. (The key may be active in other zones.)

There are 30 RAM keymaps. Each zone must specify which keymap it is using. So, one keymap may be used by several zones, *possibly with different X and Y offsets for each zone*. Or, each zone may use a different keymap (subject to the limitation that there are 32 zones, and only 30 available keymaps).

When the MIDI channel and note are obtained from the keymap, the *zone* may further modify the note number. If unison tuning is enabled, a fixed note number will be used instead of the number obtained from the keymap. If unison is disabled, a transposition value is added to the note number obtained from the keymap. In either case, the channel number is unchanged (the channel number output is the number obtained from the keymap).

To recap: X and Y offset, unison, and transposition are defined *per-zone*. MIDI channel and note are defined *per-keymap*. Any zone can use any keymap.

(The default settings are: zones 1-30 use keymaps 1-30. All X and Y offsets are zero. Unison is disabled, and transposition is zero.)

SENSORS MENU

The word PAD is often used interchangeably with the word SENSOR. The word Note is often used interchangeably with the word EVENT.

Sensors screen #1

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	<SENSOR> SLIDER 1		MIDI CHANNELS	
	Effect #1: VOLUME UP			
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Sensor: displays the list of available on-board sensors. Use the Up/Down arrow-buttons or joystick to see the entire list and make your selection.

Effect: displays the list of available effects which can be assigned to the on-board sensors. Use the data buttons or joystick to see the entire list and make your selection. Two effects may be assigned to each sensor.

MIDI-Channels: Selects the Sensor/MIDI menu for Continuous Control EFX. Any sensor may send its output to up to four channels simultaneously.

To set up an on-board sensor:

- 1) Select the **SENSOR** menu.
- 2) Move the cursor to the top-left screen position with the soft-key. The first example shows the "Joystick Down" direction as the selected sensor. Use the joystick or data buttons to scroll through the list of on-board controllers. Each sensor may send two separate effects to four channels each. For instance, one channel may receive a "pitchbend-up" while another channel receives a "pitchbend-down" message.
- 4) Soft-key #5 toggles the MIDI effect number 1 or 2 you wish to program. Softkey #6 selects the effect-type. Use the joystick or data buttons to select a MIDI effect or Controller number.

5) Select the **MIDI CHANNELS** menu. Effect #1 and Effect #2 may each transmit to four channels. Use the soft keys to pick any of the four channels per effect and use the joystick or data buttons to enter a channel number at that location.

This completes the Sensor assignment for effects. Repeat the process for each on-board sensor on the UZONE and don't forget to save your changes.

SENSORS\ MIDI CHANNELS MENU

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	<SENSOR/MIDI OUTPUT CHANNELS> Ch.A: 1 Ch.B: OFF Ch.C: OFF Ch.D: OFF			
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Select an output and adjust the value to the proper channel.

Sensor Functions:

No assign: No output function.

Pitchbend Up: Sends Pitchbend 64-127

Pitchbend Down: Sends Pitchbend 64-0

Volume Up: Sends Master Volume 0-127

Volume Down: Sends Master Volume 127-0

Velocity Up: Sensor actuation adds to Fingerboard/Trigger note-velocity.

Velocity Down: Sensor actuation subtracts from Fingerboard/Trigger note-velocity.

Modulation: Continuous Controller #1, Mod Wheel

Sustain: Continuous Controller #64.

Expression: Continuous Controller #11.

Channel Pressure: Sensor actuation applies an effect to the selected channel.

Poly Key Pressure: Sensor actuation applies an effect to the active notes on the fingerboard.

User Control # (for single byte parameters): A Continuous Control message may be assigned to an arbitrary controller number. Many synths accept control data on Controller-numbers that are specific to that piece of equipment. Also, there are a number of MIDI controller EFX that have not been listed by name in the assignment-list, such as Breath-control on CC#2.

User Upper Control #: Used for center-detented effects similar to Pitchbend. Control MIDI 64-127.

User Lower Control #: Used for center-detented effects similar to Pitchbend. Control MIDI 64-0.

Program Change: Send up to (8) Program Changes when the Sensor is actuated.

Single-Key Re-Trigger: Re-trigger active fingerboard notes for a selected channel.

Sequence Stop/Continue: External Sequencer control for a selected sequence number.

Sequence Restart: External Sequencer control for a selected sequence number.

Sequence Stop: External Sequencer control for a selected sequence number.

Chord Hold #1 Release: All active notes in a Chord-hold group will turn Off. Use this if you're not sure which Sensor's notes are currently playing.

Chord Hold #2 Release:

Chord Hold #1 Re-Trigger: The notes assigned to this Sensor will re-trigger on actuation rather than toggling On/Off.

Chord Hold #2 Re-Trigger

Chord Hold #1: Up to (8) programmed note/channel pairs are latched on when the Sensor is struck. The next strike toggles the notes off. When several sensors are programmed to this function, the actuation of one sensor will cancel the note(s) of another sensor that is currently playing, and then it will issue its own notes. You can use this to create chordal accompaniment or trigger looped drum samples. Two groups of sensors may be operated in this way independently and simultaneously, #1 and #2. You can use two "chains" of note-messages to orchestrate a performance or to create polyrhythmic compositions.

Chord Hold #2

Chord Trigger: Up to (8) Note/Channel pairs may be played from the Sensor. When the sensor (Pad) is released the notes will release, similar to the action of a keyboard key.

When an effect is assigned to "**CHORD TRIGGER**", "**CHORD NOTES**" appears at the upper-right of the **SENSOR** menu. Use the soft-key to select the menu for making note assignments to the sensors.

<UTILITY/BULK-DUMP> MENU

Send: Dumps the entire Song Memory from the UZONE to a receiving device.

Receive: Prepares the UZONE to receive a Bulk-dump to its Song-Memory.

Pedals:

Volume/Expression Pedal:

We're looking for a 50 KOhm 3-terminal pot wired to a 1/4" stereo phono plug with the center tap being the ring terminal. 25 KOhm pots don't quite swing all the way. 100 KOhm pots are fine but no one seems to use them. The Yamaha FC-7 is ideal. Music Industries I think has a not-so-rugged pedal which is electrically about right. Kurzweil re-sells these. Also, I've seen them in Guitar Center at various times. The Roland EV5 has a different pot with different wiring but still works a little. I'd assume the Boss pedal is about the same but I haven't tested it. Also, I think a Korg expression pedal works.

Sustain Pedal: Normally Open momentary footswitch wired to a 1/4" mono plug.

BULK-DUMP menu

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	<BULK-DUMP>	KEYMAPS	SEND	RECEIVE
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

KFYMAP# All

To save the song banks to an external MIDI system:

- 1) Connect the MIDI In port on the UZONE to MIDI Out on your computer or other device.
- 2)
- 3) Set up your computer to receive a Sysex data dump. You can use most MIDI sequencer programs or MIDI monitor programs to do this.
- 4) When the computer is ready and waiting for data press the **SEND** soft-key on the UZone keypad. The UZone display will indicate when the operation is finished saying, "Function Complete".
- 5) Your computer should indicate the receipt of about 15k-18kbytes depending on the UZone model-type.

KEYMAPS: Press softkey#2 to toggle bulk dumps for Keymaps or Songs

SEND: Send data from the uZone.

RECEIVE: Receive data from the computer.

The bottom line will show whether Keymaps or Songs are selected.
Press Softkey#5 and use the Up/ Dn keys to select which Song or Keymap, or All.
Sending All Songs will also send all Keymaps.

*To **restore** the UZONE song banks from an external MIDI system:*

- 1) Make the same cable connections as for the MIDI "send" procedure.
- 2) Press the **RECEIVE** soft-key on the UZone first, then start the transmission from your computer. The UZONE gives you about 20 seconds to start the transmission before it flags an error.

ERROR MESSAGES

Bulk receive prints the following error messages:

--- CONDITION ---

--- MESSAGE ---

20 seconds elapse before any data received
MIDI cable unplugged / too few data bytes

“timeout”
“timeout”

- Check your cables and connections
- Make sure the MIDI device in your computer is set up correctly and the sending program is configured to use it.

Wrong SysEx dump / Bad MIDI data

“Data corrupt”

- Possible faulty cable or loose connection
- Corrupted file stored in computer

Wrong checksum / no EOX (End of Transmission)

“Bad Checksum”

- Corrupted transmission. Retry the procedure.

CRC/Framing or Receive buffer overrun

“MIDI off line”

- Corrupted transmission. Retry the procedure.
- Possible faulty cable

[678 total bytes per song. 24 user-songs available.]

The format of this specification shows the number of 8-bit bytes allotted to each parameter. Where a given byte is packed with single-bit parameters, the packing scheme is detailed.

GLOBAL [18 bytes]

- 9 Ascii name.
- 1 Scan-mode: 0abcdefg
 - a Sustain Mode... 1= Enable
 - b Dual Mode... 1= Enable
 - c TriggerCapture Mode... 1= Enable.
 - d Guitar / Polyphonic... 1 = Poly.
 - e Triggers On/Off... 1 = Triggers Off.
 - f Hammeron/ Pulloff enable... 1 = On
 - g OpenPullOff... 1 = Enable
- 6 Tuning -- one MIDI note number for base tuning of each string, starting with the lowest string for a right handed player.
- 1.Fingerboard PolyKey Aftertouch Threshold
- 2 Fingerboard PolyKeyAftertouch Sensitivity

ZONE [12 bytes per zone x 16 zones = 192 bytes]

- 2 Fret boundaries:
 - 0n0ffff = n is zone disable if set, ffff is low fret boundary.
 - 000ffff = ffff is high fret boundary, inclusive.
- 2 String boundaries:
 - 00000sss = sss is low string boundary.
 - 00000sss = sss is high string boundary.
- 1 Bit-packed parameters:
 - 0pvtmmmm
 - p = Patch change and velocity send: 1 = enable, 0 = disable.
 - v = Velocity on or off:
 - 1 = use pressure of keys/triggers for note velocity
 - 0 = use default velocity for channel.
 - t = Unison or default tuning:
 - 1 = unison, 0 = default tuning.
 - unison => transposition is pitch
 - default => tuning(string) + fret# + transposition.
 - mmmm = Midi channel for note output and patch/vol change.
- 1 0tttttt = Transposition / note number (hex)00, 0C, 18, 24, 30 are octaves.
- 1 0nnnnnnn = Fixed note velocity level for channel (if v=0)
- 0000000i = Velocity inversion on or off (if v=1).
- 1 0ppppppp = Patch change number, sent only if enabled.
- 1 0vvvvvvv = Master volume change number, sent only if enabled.
- 1 0bbbbbbb = Bank Select value sent out on Continuous Controller #0
- 1 0bbbbbbb = Bank Select value sent out on Continuous Controller #32

1 0axxxxxx = Zone Flags: a;Poly Aftertouch Enable. x; reserved for future use.
SENSOR x 18 (6 triggers, 6 pads, 4 joystick poles, 2 pedals.)

[18 bytes per Sensor x 26 sensors = 468 bytes]

The Output channels are used in the case of an effect selection.

If Chord Trigger is selected (only possible as Effect #1) then the following 16 bytes after the two Effect Select bytes are all used for eight notes of chord data, in the format:

0000mmmm MIDI channel 1-16

0nnnnnnn MIDI note 0-127

[the 18th Sensor byte is not used when the chord memory is enabled]

1 0000xxxx = xxxx is *Effect #1* selected from the SENSOR FUNCTION LIST.

1 000ammmm = a is disable flag for Output A on MIDI channel mmmm.

1 000bmmmm = b is disable flag for Output B on MIDI channel mmmm.

1 000cmmmm = c is disable flag for Output C on MIDI channel mmmm.

1 000dmmmm = d is disable flag for Output D on MIDI channel mmmm.

4 storage for chord data, or user control number in first byte.

<continue next page>

1 0000xxxx = xxxx is *Effect #2* selected from the SENSOR FUNCTION LIST.

1 000ammmm = a is disable flag for output A on MIDI channel mmmm.

1 000bmmmm = b is disable flag for output B on MIDI channel mmmm.

1 000cmmmm = c is disable flag for output C on MIDI channel mmmm.

1 000dmmmm = d is disable flag for output D on MIDI channel mmmm.

4 storage for chord data, or user control number in first byte.

SENSOR ASSIGNMENT LIST

The listed hexadecimal value for each message output type is loaded into the "xxxx" Effects Select byte for each hardware sensor in the "Sensor" byte-block within each Song preset.

0 = no assign

1 = Pitchbend Up

2 = Pitchbend Down

3 = Volume Up

4 = Volume Down

5 = Velocity Up

6 = Velocity Down

7 = Modulation

8 = Sustain

9 = Expression

A = Channel Pressure

B = Poly Key Pressure

C = User Control # (for single byte parameters)

D = User Upper Control #

E = User Lower Control #

**(D and E are for center-detented effects which swing both sides of zero,
and require two bytes for full-scale.)**

0F = Program Change

10 = Single-Key Re-Trigger

11 = Sequence Stop/Continue

12 = Sequence Restart

13 = Sequence Restart

14 = Sequence Stop

15 = Chord Hold #1 Release

16 = Chord Hold #2 Release

17 = Chord Hold #1 Re-Trigger

18 = Chord Hold #2 Re-Trigger

19 = Chord Hold #1

1A = Chord Hold #2

1F = Chord Trigger