

GETTING STARTED !!!

If you're absolutely new to MIDI and want to know more, you can find the MIDI specifications at www.midi.org/about-midi/tutorial/tutor.shtml

NOTE: If your instrument has String Triggers, you will notice that there is a metal strip on the back of the neck. This is not a protective tape and do not remove it!

Basic layout of the instrument:

- 1] The Zboard is divided into two main sections, the **Fretboard** and the **Sensors**. The Sensors include the String Triggers and all the Pads, Pots, Pedals and other performance devices on the instrument, everything other than the fingerboard
- 2] There is a row of Function “**HotKeys**” on the top of the Zboard. These HotKeys control functions that you are most likely to change quickly while you are playing music.
- 3] There is also a **Programming/Display** module onboard that you will use to setup up the various functions of the Zboard in detail.

Press EDIT and you will see selections for programming the features of the Zboard.

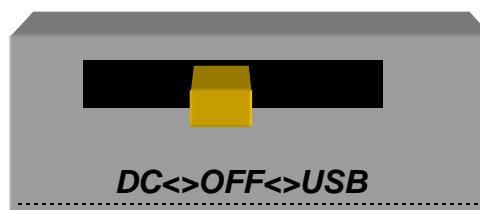
The Fretboard is programmed in the *Fretboard* (or *Zones*) screen.

The Sensors are assigned functions and MIDI Events in the *Sensors* and *Sensors/Events* screens

The physical touch response for the Sensors and the Fretboard is set up in the *Response* menu screens and the *Curves* screen.

The Zboard can be powered from either a **DC power supply** or a **USB 2.0 port** on your computer.

If the instrument is equipped with USB, a 3-position power switch is provided :



Turning On the Zboard:

To Power from the AC/DC adapter:

- Use a **5-conductor** MIDI cable (all 5 pins must be wired) from the Zboard MIDI Output to the Controller connection on the PB-1 power supply adapter.
- Connect the supplied DC wall-supply to the PB-1.
- Connect a MIDI cable from the SYNTH jack of the PB-1 to the MIDI IN on your synth or other MIDI system.
- Move the 3-position rocker switch to the DC position and you should see the display light up. If it doesn't, check your MIDI cable and wall-wart for correct type and connections. If you're stuck here go the Troubleshooting section at the rear of the manual.

DC power is supplied to the instrument from a wall-mount AC/DC power supply that connects to your PB1 **phantom** power adapter. A standard 5-wire MIDI cable is connected from the PB1 "Controller" port to your Zboard MIDI Out Port and will power the Zboard as well as route MIDI data to your synth.

If you have a Starr Labs Phantom Battery Supply for use with your onboard MIDI wireless transmitter, connect it to the Zboard input port instead of the MIDI cable.

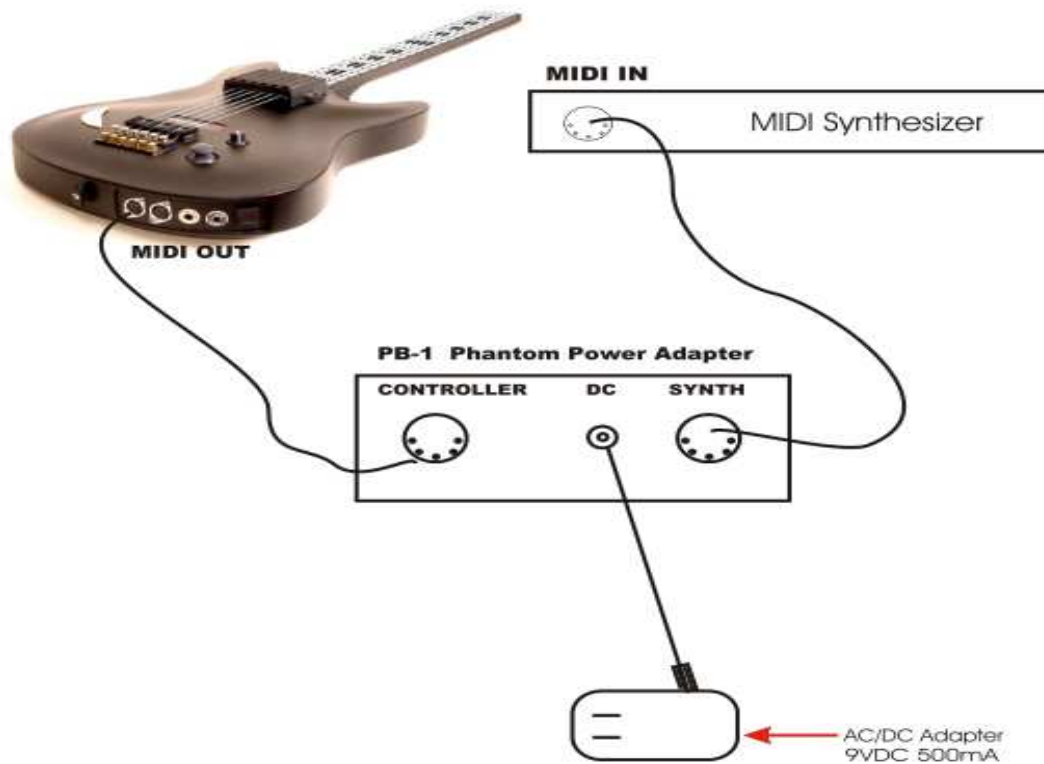
Connecting to USB Power:

- ◆ Connect a USB cable from the USB port on the Zboard to the USB 2.0 compliant 500mA USB port on your computer.
- ◆ Move the 3-position rocker switch to the USB position.

If there is a Sound Card installed in your ZBoard

- ◆ Because of the power requirements of the Sound Card there is a need for a larger power supply to power the system 9VDC @ 1000 mA.
- ◆ A USB 2.0 port on your computer will power the Zboard but not both the Zboard and a Sound Card.

BASIC CONNECTIONS



Use a 5-conductor MIDI cable (all 5 pins must be wired) from the controller to the PB-1, power supply.

Plug into the MIDI Output connector, closest to the center of the guitar. From this position the connectors are: MIDI Out, MIDI In, Sustain, Volume and Reset.

Connect the Zboard MIDI Out cable to the Controller input of the PB-1 power adapter. Connect a MIDI cable from the SYNTH jack of the PB-1 to the MIDI IN on your synth. Connect the supplied DC wall-supply to the PB-1.

Flip the power switch on the instrument and you should see the display light up. If it doesn't, check your MIDI cable and wall-wart for correct type and connections. If you're stuck here go the Troubleshooting section at the rear of the manual.

USB Drivers

The Starr Utilities disc provides both WinXP and Mac USB drivers.

The XP driver is installed by “StarrLabs_Driver_Setup.exe”. The installation guide is also on the disc, “Starr USB Installation Guide.pdf”.

The Mac driver is “zTar Mac Driver 2.1.pkg”

Basic Operation

If the Display lights up and displays the first bank of Song presets, you're up and running.

If the **TRIG** and **G/POLY** LEDs are now lit you're set up like a guitar so start picking! Hold a key and press the **TRIG** button to play the fingerboard tapping-style. Press the **G/Poly** button to play more than one note per string.

Use the Live Menu, the power-up run-time to select onboard patches or **SONGS**.

Hit the **EDIT-KEY** to enter the **Song Menu**, the Zboard's top-level Edit-screen. From there you'll access all of the edit functions.

Use the Zone Menu to set up the fingerboard according to your needs. This includes defining areas of the neck for selected voices, MIDI channels, transpositions, Velocity Inversion, and Base Volume setting.

Use the Sensor Menu to program the Pads, Triggers, Joystick, and Pedals for MIDI effects, chords, and sequences.

Use the Utilities/Tuning Menu to set the tuning for the fingerboard, the Open Strings, Right/Left switch and Enable the HammerOns/PullOffs.

Use the Triggers front-panel key to turn on/off the Triggers. With the Triggers On you can strum them like a guitar. With the Triggers Off you can tap the fingerboard like a keyboard. Hold a fingerboard key and press the TRIG key.

Use the Guitar/Poly key to switch between One-Note-per-String or All-Notes-per-String. You can play the "Open Strings" in GUITAR mode with the TRIGGERS ON. Strike the Trigger with nothing fretted to hear the open string.

Use the Pat+/Pat- and **Oct+/Oct-** Hotkeys to set the synth patch(es) and Octave.

After you've created a special setup for the Fingerboard and the Sensors according to your needs you can save it to battery-backed memory by using the **Write** key or the "Write" menu from the display.

SENSORS

The "Pads" are our general term for the input hardware, the Triggers. Occasionally we refer to a Sensor as a "Pad" in this manual and in the menu-system as the structure that holds setup assignments for each of the hardware inputs within each SONG.

ZONES in the Zboard are similar to the Layers that are often found in MIDI keyboards.

EVENTS

Basic Building Blocks

An Event may be a MIDI note, Continuous Control message, Program change, or any of a number of other MIDI data-types. Each Pad may be assigned up to eight events or a sequence of variable-length.

SONGS

The full group of Sensor inputs may be assembled with all of their various assignments along with the various assignments to the fingerboard and the metronome to form on-board patches or SONGS. There are currently 24 Songs in the Zboard without the addition of a RAM card.

HOTKEYS

These are the strip of named function keys the are mounted on the top or side of the instrument and are provided for quick access to commonly used features.

Congratulations on your purchase of a ZBOARD MIDI guitar controller. With its combination of hardware and software features it may be the most versatile and expressive electronic musical instrument that can be had at any price and 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.

OVERVIEW of the Z-Board

The Zboard 24x24 keyboard provides an array of 576 programmable keys, four programmable rotary pots, Sustain and Volume pedal jacks, and a 4-way programmable joystick.

Use the FRETBOARD menu to program the Keyboard and the SENSORS menu to make assignments to the pots and other Sensors.

Use the Response menu to set up the physical response for both the Keyboard and the Sensors.

User Interface

The ZBOARD 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 to select items depending on the context of the particular menu screen. The menu-system is a tree-like structure. The Zboard has to manage quite a bit of programmable information but every effort has been made to keep the nesting of menus to a minimum and the navigation of the system as simple and intuitive 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 Zboard 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 ZBOARD will continue to play while in the EDIT mode; however, make sure to exit back to the LIVE mode after completing an edit as you may accidentally re-program 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 a necessity to update the Edit screens and look for programming input.

Programming, Mode Selection and Data Entry:

Many of the programming features on the ZBOARD 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

A little more Terminology

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

Patches for the ZBOARD are called SONGS or KITS. You will see both references used. A Song stores the complete configuration for the instrument. This includes all of the finger-board 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 ZBOARD 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. You can use the Zoning system to create some magical performance setups!

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.

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

The PAT, OCT, and SOLO keys are 'Zone-based' controls that allow you to select a zone by playing and holding a note within it and 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.

HOTKEYS/ FUNCTION KEYS

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!:

The first time you hit Panic! It sends All NotesOff and Reset All Controllers to each active channel.

The second time you hit Panic! It sends the same messages to all channels.

The third time and every time thereafter that you hit the Panic! we use the brute force approach that sends a Note-off to every note and a Data-zero (or 127) to reset every Continuous Controller for every MIDI channel . This takes about 2 seconds but should definitely clear any stuck messages for any synth,

JOYSTICK

SENSOR HARDWARE

The joystick is used as a performance device by programming MIDI messages to any of its four directions. Also, when programming the menu-system, the joystick is used for data-entry by scrolling values underneath the blinking cursor.

PADS

These are the touch-sensitive surfaces that come in a variety of shapes and are mounted to many Zboard configurations and are programmed to a variety of performance controls.

PEDALS

There are commonly two jacks provided on a Zboard for pedals, Sustain and Volume which use a SPSPT Normally-open switch and a 50K linear pot, respectively.

POTS AND SLIDERS

The Zboard has one volume pot as a standard feature, and a ModWheel and additional pots available as options.

ZBOARD Programmer Menu Tree

- Every function in the Zboard is listed here according to the Menu Screen in which it appears.

[MENU SCREENS are listed in all CAPS. Functions are listed in lower case]

LIVE-SCREEN [Top-level Runtime screen]

“EDIT” button [Enters the top of the menu system, and Exits from all other menus]

SONG-MENU:[Top-level Edit-Screen]

NAME-EDIT

WRITE

UTILITIES

LIBRARIAN

Songname

Save

Copy

Delete

Swap

Copy-Pad

INITIALIZE

Songs

Response

Sequences

Curves

Triggers

Chains

Coldstart

TUNING

Map#

Presets

EDIT-KEYMAP

CHORD-GENERATE

CHORD-EDIT

BULK-DUMPS

Send

Receive

CLOCKS

Metronome Enable

Metronome Channel

Note#

TempoPad Enable

Clock: Internal/ External

MIDI Clock Output

BPM Setting

Time Signature

MORE>

Time Signature Editor

MORE>

ClockBend

CURVES

(8) Force-Velocity Points

SEQUENCES

Insert-Event

Delete-Event

Programming-Lock

MORE>

MIDI-IN

TRIGGERS

AREPEGGIATOR

FRETBOARD:

Zone-Mode;

Boundaries

TUNING/ TRANSPOSITION:

Map#

Curve

Velocity

Invert

TUNING

MORE>

Solo

Unison

Transposition

MIDI

Patch/Velocity Send ON/OFF

Channel#: RIGHT/LEFT

SEND Pgm Chg and Volume

Patch#

Channel BankMSB#/ BankLSB#

Channel Volume

SCAN-MODE

AutoSustain: On/Off or Fingerboard-Sustain for Key-Trigger units

Trigger-Capture: On/Off

Zone-Solo (Audition): On/Off

Scan-Mode: Guitar/Polyphonic

SPECIAL

Zone Mode

First Pad (for Pad-Zone type)

Fingerboard Mask

Fingerboard Threshold

SENSORS

Sensor Mode

Fingerboard String to Strum

6-TRIGGER, Guitar setup Macro

TIMING MENU

EVENTS

Event-type

Velocity-Window

MACROS

CHORD-GENERATOR

Velocity-Window settings

(8) Event-Settings

OUTPUT SETTINGS

Curve

MIDI Port select
LINKS Enable and 4 Link selections
TRIGGER-FUNCTIONS
Mode select
DUAL Mode
Aftertouch Threshold
Aftertouch CURVE

RESPONSE

Gain
Response Bargraph
Chase On/Off
Scan-Time
Mask-Time
Threshold
Chase On/Off
Trigger-Mask
MORE>



Fingerboard :

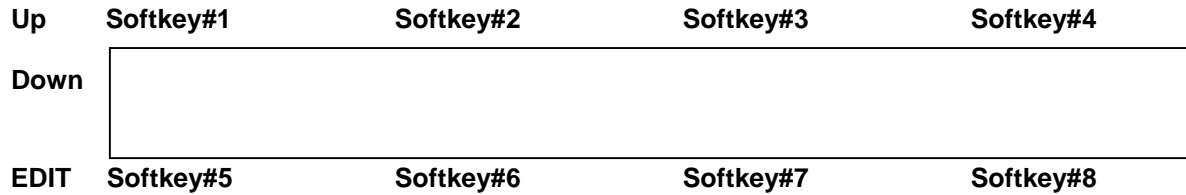
Mask
Threshhold
Gain
Curve
Peak readout 0-255

SHOWALL

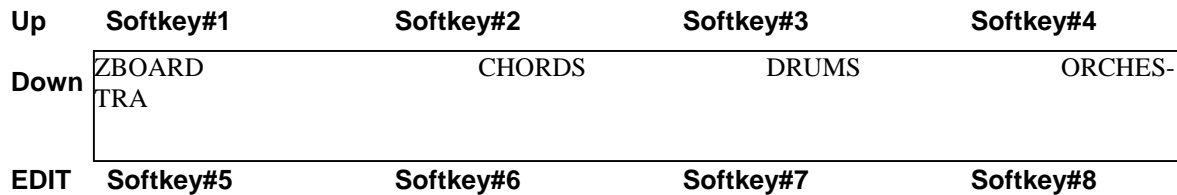
SONGS
PADS
EVENTS
GATES
LINKS
CHAINS
PATCHES

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 ZBOARD is in LIVE-mode. The zboard is in LIVE-MODE when you first power-up.

It displays the names of the various system configurations that have been saved as “SONGS”. A drummer would refer to these as “KITS”; A SONG is a collection of hardware with all of our computer-assigned options and setups. The newest zboard systems (4.1.08) currently provide 36 Song locations to store your setups. The first few songs are provided from the factory as templates for your use and these are saved in flash ROM. All of the Songs that appear in the menu screens are automatically copied into battery-backed RAM so they can be edited and your changes will remain after you remove power from the ZBOARD. The Song 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
- this is the Entry screen for the Zboard Editor -

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
	SONG #01:	GUITAR	WRITE	UTILITIES
Down	FRETBOARD	SENSORS	RESPONSE	SHOWALL
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 (or "Kit") consists of:

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

SONG-MENU Sub-Menus:

Press Softkey#1 to select the Song-number and use the Up/Dn arrow keys to change number

NAME-EDIT: Press SoftKey#2 above the name of the SONG to enter the Name-Edit screen.

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

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

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

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

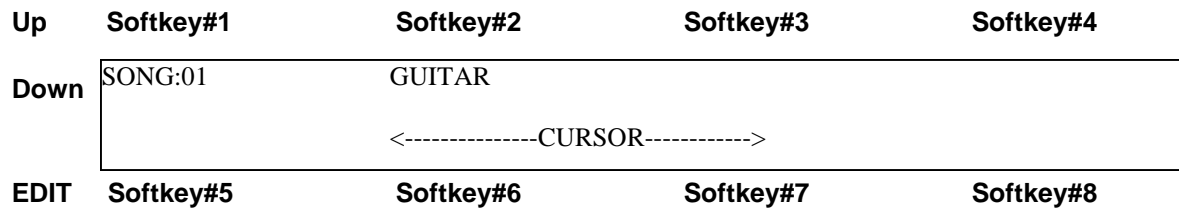
RESPONSE: enters the Response Editor to set up the physical response for all of the Sensors and the Fingerboard.

SHOWALL: Press Softkey#8 to enter the SHOWALL screens for viewing groups of settings at a glance.

SONG-MENU\ NAME-EDIT screen

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.

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.



FRETBOARD (ZONES) MENU

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	ZONE# 1:	KEYS :Fret	LOW: i: 0	HIGH: vi: 24
	TUNING/ TRANS	MIDI	SCAN-MODE	AFTERPRESS
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Every Song-Preset must have at least one active zone.

Keys: (Off/ Tap) A Fretboard Zone may be set up in several ways.

Off: The Zone is disabled entirely.

Tap: Notes are played by simply tapping the keys on the fingerboard.
This is the only note output Mode available on the ZBoard.

Low/High Zone boundaries: The area of a Fretboard Zone is defined by diagonal corner points like a window on a computer screen.

Low: Select this and press a note on the fingerboard to select the lowest note for the zone that you are creating. The string and fret numbers will appear on the screen. Example: "i:0" denotes String#1, Fret#0 (open-string). "iv:6" would denote String#4, Fret #6.

High: Select this and press a note on the fingerboard to select the highest note for the zone that you are creating. The string and fret numbers will appear on the screen.

Key/Trans: selects a menu for zone transposition, Unison tuning select and fixed-velocity/touch-sensing for the current zone.

MIDI: selects the MIDI setup menu. This is where you select the channel and patch number.

Scan-mode: This selects the Scan-Mode menu where you can setup how notes are played from the fingerboard.

Afterpress: Selects the Fretboard Afterpressure menu.

Usually a Zone is set up to play notes but not always. A Zone may be silenced but still have Program Change messages and Volume messages assigned as well as all of the other settings. For example, you might want to send patch changes to your rack-EFX boxes, lighting controller, or other hardware that has no knowledge of Notes. When the Song is selected the Program Changes will be sent.

TO CREATE A ZONE:

Select the **ZONE** menu with the soft-key. Select a zone number. (Keep the numbers in sequence for clarity’s sake.) Using the soft-keys, select the “**Low**” and “**High**” fields and use the fingerboard to enter the note boundaries for the zone. Make sure the “Low” note is lower than the “High” note. To assign a zone to just string six alone, the low note and high note would be “vi-0” and “vi-24”. Experiment with this feature to discover its versatility.

As a convenience, after entering a LOW zone boundary, the cursor will advance to the HIGH boundary automatically.

If you want to play notes from this zone turn the “**Notes**” **ON**. If you wish to send only patch change information from this zone, turn the “**Notes**” **OFF**. By sending only patch changes from a zone you can setup effects units or other devices that do not receive note data at the time this Song is selected.

Select the **KEY/TRANS** menu and the **MIDI** menu to complete the zone setup and don’t forget to save your changes when you’re finished by “**WRITE**”ing this Song to a USER location (Songs 17-Max-Song#).

	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Up	ZONE# 1	MAP: 1	TUNINGS	
Down	Curve:1	VELOC: TOUCH	INVERT: Off	MORE>
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

ZONE#: Softkey#1 selects the Zone you wish to edit

MAP #: Each Zone may be assigned a “Keymap” that contains a Note-number for every key on the Fretboard. Ordinarily, the Map would simply reflect a Guitar-tuning, however it could be edited in many ways for any other tuning, (including tunings adjacent frets for other than ½ step relationships.) Also multiple maps may be layered to play Chords from individual keys. Refer to the Multi-Harp instructions for more information on this.

FRETBOARD>TUNING/TRANS #1 menu

Curve#: Set the number for a velocity-response curve assigned for this Zone. There are 16 edit-able curves in the global pool of curves for the Ztar.

Key velocity [TOUCH or FIXED]: Selects fixed-velocity or touch-sensing for the selected zone. You may not have more than one non-fixed velocity curve active in a song; however, you may mix up fixed and non-fixed zones in one song.

Invert [On/Off]: When Touch-Sensing is active you may choose to “**INVERT**” the velocity response for this zone. Velocity crossfades between voices may be created by layering one zone with a normal velocity response and a Zone playing the same pitch on a different channel/voice with an inverted response. A heavy touch will play one voice. A soft touch will play the other. A medium touch plays both. Use the response curves in your sound module to fine-tune this effect.

MORE> : Selects the Tuning/ Transposition Menu #2

FRETBOARD> TUNING/TRANSPPOSITION SCREEN#2

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	ZONE# 1	Solo:Off	Unison:Off	Transp: 0
				MORE>
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Solo[On/Off]: When SOLO is ON in a multi-Zone setup, only the selected Zone will play while the others are muted. This allows you to easily audition changes to single Zones.

Unison[On/Off]: When **ON**, sets all of the keys in the selected zone to the same MIDI note-number or pitch value. Use this to create drum roll effects. This will let you pick a single drum from a master drum patch. (Use the joystick here for an interesting effect.) When Unison is **OFF**, the fingerboard-zone responds normally, using the assigned Tuning. When Unison=On, “UniNote#:___” appears at the upper-right to allow setting the fixed pitch for this UnisonZone.

Transpose: Use this parameter to alter the base pitch of this zone by half-steps. With this field selected, use the Data buttons or the joystick to change the value and hear the results of your transposition. “TRANSP” appears when UNISON is **OFF**.

FRETBOARD>TUNING/TRANS menu #2

MORE> : Selects the Tuning/ Transposition Menu #1

This menu allows several ways for programming the fingerboard notes.

Map[1-8]: The fingerboard uses *keymaps* to store tunings. We provide eight available maps for each Song-preset, although in most cases you will only need one map to hold just a single tuning. Set the Map# here that you wish to edit, or the base-map # if you are creating chords.

Presets: Selects the Tuning-Preset screen

Edit: Selects the Keymap-Edit screen.

FRETBOARD>TUNING/TRANS> TUNINGS menu

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	MAP: 1	TUNING>	PRESETS	EDIT
		CHORDS	GENERATE	EDIT
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Map#[1-8] Select the Map#

EDIT Preset: Softkey#2 opens the Keymap-Edit screen which allows programming of individual keys.

Preset [Off/Guitar/LowD/ DADGAD:/ Fourths/ 6-string(bass) / Fifths/ Open E Major/ Open A9/ Octaves]: Press Softkey#3 to scroll through the list of pre-programmed tunings.

RIGHT/LEFT:

Press this button to change the instrument's tuning for Right-hand or Left-hand players.

FRETBOARD>TUNING/TRANS> TUNINGS>PRESETS

The Bottom Line shows the Open-String Notes.

To change an open-string tuning:

Press the soft-key nearest the String number you want to change. Soft-keys #6 and #7 each control two string numbers. Alternate between the two strings by pressing the key twice. Alternatively, you can tap the fingerboard string in the TRIGGERS-OFF modes and the menu-cursor will 'chase' to the string you're touching. Or, in the TRIGGERS-ON modes, you can pluck a Trigger to select the string.

Now simply use the Data Up/Down keys or the joystick to adjust the open-string note anywhere within the entire MIDI note-range. If you hold a note while you're doing this you can hear it change.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	MAP: 1	EDIT Preset:	Preset Off	RT/LEFT
	E2 /	A2 / D3	/ G3 / B3	/ E4
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

The Zboard uses both Zones and Keymaps to give the ability to set up an area of the keyboard with a standard tuning or your own tuning.

- ◆ Use the ZONE features to set up a zone with your desired dimensions. Then set the Zone with the Keymap that will hold the tuning you desire.
- ◆ The Keymap has a map of note assignments for the entire keyboard. The Zone is a window within that keymap.

KEYMAPS

A keymap is a table that assigns a MIDI note number to each key on the fretboard

Each Ztar Song preset has 8 keymaps available to it, though for most situations, like playing a guitar tuning, you will only need one keymap.

The Chords-Mode in the Ztar uses 6 keymaps on the fretboard. Each key holds a chord with up to 6 notes, and when you strum the String Triggers, each Trigger plays the note from just one of the maps. When you generate a chord, all 6 maps are programmed for the keys you selected.

A Keymap is assigned to a Zone. It is possible to have each map hold a different guitar tuning, and you can then switch tunings by enabling/disabling Zones.

Keymaps are great for programming Drums!

EDIT-KEYMAP Screen

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
	MAP:1	i: 41 / F2	ii: 46 / A2	iii: 51 / D3
Down	FRET 1	iv: 56 / G#3	v: 60 / C4	vi: 65 / F4
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

You can edit the note-assignments for one keymap at a time.

The display shows one fret at a time for all six strings. The fret-number is shown in the bottom-left corner of the screen. The string numbers are in Roman numerals

Use softkey#5 and the UP/DN keys to select frets 0 (Open-string) through 24.

Use the softkeys to select a string-number for this fret so that you can set the MIDI channel and note-number. Press the softkey to toggle between the Channel and Note fields.

Touch a key and you will see the cursor highlight that note on the screen. You can then change the note-number (0-127).

When you have the map created as you like it, press "WRITE" to save the KeyMap back to its current Song-location.

Using the fingerboard as a DJ/VJ tool for triggering a lots o' samples!

If you want to program 144 unique notes on the fingerboard, you will create a second Zone and set it to a second MIDI channel to reach the notes beyond #128. You can still use just one keymap if you like.

If you want to program the maximum number of notes per Song-preset, you can program all eight Maps with 128 unique Note-numbers. Each keymap is then assigned to a different Zone with a different MIDI channel. Select the different Zones to pull up the different keymaps. One way to select the individual Zones is to assign a group of eight separate keys, each key to eight new Zones, say 9-16, with MIDI channels matching the first eight Zones. While holding one of the new single-key Zones, press the SOLO hotkey and desired Zone and Map will expand to fill the fingerboard. Press SOLO again to revert the fingerboard.

FRETBOARD> AFTERPRESSURE menu

This menu sets the After Pressure parameters for the fingerboard. When Afterpressure is enabled you can press the fingerboard keys with increased pressure to activate either PolyKeyAfterpressure or Channel Afterpressure.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	FRETBOARD	AFTERTOUCH		Pressure: Off
	ChPrs	Threshold: 0	Sensitivity: 0	Curve: 1
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Pressure-Enable: softkey #4 toggles pressure On/off for the selected zone.

Pressure-Type: softkey#5 toggles between **PolyKey** pressure and **Channel** Pressure for the selected Zone.

Threshold: set the lowest pressure level that will initiate an Afterpressure response. By setting the Threshold value to a point above your normal firm key-strike-force you can then press in harder to initiate the aftertouch. If the Threshold is too low, the pressure will be applied when you first hit the key.

Sensitivity: increase this number to make the aftertouch more responsive.

Curve: the fingerboard afterpressure may have a response curve independent of velocity. By setting up a curve that begins the lowest MIDI-pressure value at the Threshold-force, you can scale the Afterpressure above the MIDI velocity of the Key-strike.

FRETBOARD MIDI MENU

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Dn	ZONE#: 1	P&V SEND: N	Channel 1:L	SEND
	Patch: 1	CC#0: 0	CC#32: 0	
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Patch and Volume Send Enable: You may choose to enable Patch and Volume changes sent to the MIDI channel for the selected Zone by using the PAT +/--hotkeys. Or, disable the P/V sends when you're controlling all of your Program Changes from an external sequencer or controller and don't want to disturb the settings when pressing the onboard PAT+/- keys or selecting the saved SONG. The menu's SEND function will operate regardless of this setting.

Note: You may decide to send a single program change from a separate zone that has notes disabled. This could go out to an external MIDI mapper or to a separate program change receive channel in a synth module that would then assert a group of program changes in a multi-channel setup.

Channel: You may set the Zone's MIDI channel to #1-16 for the Left, Right, or Both MIDI output ports. IF you have a second MIDI Output Port installed on your instrument, this is the Right-side MIDI Port and becomes your channels 17-32. Press the softkey #3 to toggle between the Channel# and the Port-select fields. You may also set the Port assignment to NONE to disable all MIDI output from this Zone.

Note: Either the Right or Left channel (or both) must be selected. If NONE is selected there will be no output and the Program Change will not be sent on Song-select nor will you hear any notes. If you select "R" and do not have a second MIDI Output port installed, the instrument may lockup when you play a few notes.

SEND: Press this to send out your programmed Patch, Bank, and Volume settings.

Patch: Sets the Program Change number 1-127 for the selected Zone. This number is sent when the saved SONG is selected.

CC#0: Sets the Bank-number Most Significant byte or MSB. Refer to your synth documentation for the proper settings.

< FRETBOARD MIDI cont.

CC#32: Sets the Bank-number Least Significant byte or LSB. Refer to your synth documentation for the proper settings.

Volume: Sets the base volume for this Zone when the saved Song is selected.

Pre-setting and sending a Program Change with Bank Select

Modern synthesizers are commonly filled with more than 128 patches or programs, the limit that can be addressed with a single ProgramChange command. In order to access these higher-numbered patches MIDI provides two Bank Select messages, ContinuousController #0 (Most Significant byte or MSB) and CC#32 (Least Significant Byte or LSB). You need to enter data values for CC0 and CC32 which you will find by looking in the back of your synthesizer manual. Every manufacturer uses a different set of numbers to select their bank-system.

For instance in the Korg Wavestation SR, if you wanted Patch 21/ Rom Bank5, you would send these three bytes from the FRETBOARD/MIDI menu: "PGM: 21, CC0: 0, CC32: 3" .

Yamaha DB50 note: When setting a Program Change number, the setting in the Ztar will be one less than the number called out in the Yamaha manual.

To program the same Program and Bank select messages to issue from a Pad or Sensor just by striking the Pad, in the SENSOR/ EVENTS menu do this:

set the Sensor Mode = EVENTS

Set the Play-function= ALL

Set Event1 = ControlChange, CC0, 0.

Set Event2 = ControlChange, CC32, 3

Set Event3 = ProgramChange, 21

Refer to SENSOR-MENU for more information.

SENSORS

BASIC CONCEPTS:

The Ztar Sensors are standard and optional hardware devices including the Pads, Triggers, Pots, Breath, Neckstrip, Pedals, and everything else you touch to create a MIDI performance, with the exception of the Fingerboard.

Each Sensor can drive up to 8 MIDI “EVENTS” for each Song or Ztar preset.

Each Sensor can accept a variety of modes called “PlayFunctions” that govern how the assigned Events are played back for each Ztar Song.

Events can be Notes, Program Changes, and MIDI Continuous Control functions.

Event such as Notes can be given timing values or can be timed by your touch on the Pad or other Sensor. You can also use onboard or outboard MIDI clock sources to time the Events.

TIP: To select Sensors quickly, turn CHASE on in the RESPONSE menu. Then, when you touch a Sensor that’s assigned to note-output, the menu-screen will jump to that Sensor. A limitation in this is that when Sensors are set to ‘Continuous Control’ they will not chase in the menu system.

TIP: To turn a Sensor OFF, select it in the Events Menu and set its PlayFunction to OFF, or set its Events to OFF.

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

SENSORS MENU

SENSORS screen #1

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	TRIG1	Mode: Strum	String# 1	6-TRIGS
	TIMING	EVENTS	OUTPUT	TRIGGER-FUNCTION
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

The Sensor-name is shown in the upper-left corner of the screen. Use softkey#1 and the Up/Dn keys to select a Sensor to edit.

(PLAY) MODE: [Off, Events, Strum, Dual]

Off: the Sensor will not output anything.

Events: the Sensor will play its own programmed set of up to 8 events.

Strum-mode: the Sensor will trigger notes from the fingerboard according to the fingerboard's Scan-Mode. The Ztar's Triggers are normally set to Strum-mode. *When the TRIG front-panel hotkey is used to turn off the Triggers and put the fingerboard into Tapping Mode, the Triggers will revert to playing their assigned MIDI events.*

DUAL-mode: the Sensor will both trigger fingerboard-notes and its own programmed set of events. The Dual-Mode will apply to and Sensor. This can have some interesting effects and allow the simulation of various acoustic instruments. Consider setting up the Breath with the Dual-mode to initiate a note and apply volume-changes, as does a real wind instrument. Or a Pad in Dual-Mode with pitchbend applied to act like a conga-head or tympani.

STRING#: Use softkey#3 to select a Fingerboard-String for the Sensor to trigger when in Strum-Mode.

6-TRIGS: Press softkey#4 to automatically set the Ztar's six triggers to Strum like a guitar. This is the default setting and you should rarely need to use this.

Sensors Screen #1 cont.>

Sensors Screen #1 cont. -

TIMING: selects the TIMING menu, which sets up several options to determine how a Sensor's events will be played.

EVENTS: enters the Events menu to assign MIDI functions to a Sensor.

OUTPUT: sets up several parameters that route the Sensor's MIDI output.

TRIGGER-FUNCTION: When The PlayMode is set to STRUM the Trigger-Function menu appears as a choice in the top Sensor Menu-screen. This menu will isolate the Strumming settings.

SENSORS / TIMING menu

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	TRIG1	HitMode: Touch		TRIGGER-GATE: 100
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

HitMode: There are three Hit-modes, **Timed**, **Touch**, and **Latched**.

When set to **TIMED**-mode the Sensors' notes will turn off automatically according the programmed Gate-time in the Events-menu. The Hit-Mode must be set to TIMED for a Sensor to fire a Sequence. This is because the sequence events themselves are using a timed duration. This tells the Sensor to use the BPM timer in the Clocks screen.

When set to **TOUCH**-mode the Sensor will release the notes when your finger releases the sensor.

When set to **LATCHED**-mode the first strike will turn the notes on and the next strike will turn them off. Use this for looped-drum samples and large, sustained chords.

TrigGate: When a Trigger is set to Strum-mode it's possible to have the fingerboard notes terminate automatically according to the TriggerGate timing. Use the softkey#4 and the Up/Dn keys to set a duration in either milliseconds or MIDI clocks.

Sensors/Timing cont >

Sensors/ Timing cont-

Loop: [On, Off, N-times] Use the softkey#5 and the Up/Dn keys to set the selected Sensor's events to loop indefinitely, n-times, or not at all. This applies to chords, sequences, and any event-types. *The LOOP setting option does not appear on the screen when the Pad's PlayFunction is set to ContinuousControl.*

Delay: this sets a delay-time between the time you strike a Sensor and the time the events actually play. Set in either milliseconds or MIDI clocks.

GateShift: When enabled, the Pad-velocity will modify the note-duration for a TIMED-ed Pad (Sensor). A harder hit will give a longer note.

TRIGGER-FUNCTION menu, DUAL-Mode Off

	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Up				
Down	TRIG 1	Strum : String 1		Dual: Off
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

When the Sensor PlayMode is STRUM the Trigger-function menu will appear.

DUAL-MODE ContinuousControl sensing will only respond to the pick attack of String-Triggers, but will respond to varying pressure on the KeyTriggers.

Sensor#: Use softkey#1 and the Up/Dn keys to select the Sensor for editing purposes.

STRUM: Use softkey#3 and the Up/Dn keys to select a fingerboard string that will be triggered by this sensor.

DUAL: softkey#4 toggles the DUAL Mode, and displays the Dual-Mode setups on the bottom line when enabled.

Trigger-Function cont >

Trigger-Function cont-

TRIGGER-FUNCTION menu, DUAL-Mode On

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	TRIG 1	Strum : String 1		Dual: Off
EDIT	DUAL	Aftertouch Threshold:	0	Curve: 1
	Softkey#5	Softkey#6	Softkey#7	Softkey#8

When Dual Mode is enabled (it's one of the 3 Play-Modes) the DUAL-prompt appears in the lower left corner and the aftertouch response settings are displayed.

Aftertouch Threshold: When pressure is applied to a Trigger after the fingerboard-note is triggered, a programmed effect will be applied if the pressure rises above this level. The particular effect is programmed in the Events-menu.

When Dual-Mode is turned OFF the bottom line text will disappear from the DUAL-MODE menu.

EVENTS menu

The Events menu programs the various notes and other events that the Sensor will perform.

Some fields in the EVENTS menu will change depending on the SensorMode or the EventType selected.

The Sensor-Name appears in the upper-left corner of the screen. Use softkey#1 and the Up/Dn keys to select a Sensor to edit.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
	TRIG1	PlayFunction: Basic	Velocity: 0/ 127	MACRO
Down	Evt:1 Note	Channel 10:	35/ B1 PAD	Gate: 100
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

PlayFunction [see PlayFunction List]: use the softkey and the UP/Dn keys to set the type of function the Sensor will play out. See the Play-Function List for descriptions of the various choices.

Sensor Play-Function List:

Off	SequencePlay
Basic	Sequence RePlay
All	Sequence StopPlay
Seqntl	Sequence Record
NtShft	Sequence RecordNext
AltUp	Sequence Undo
AltDn	ReTrigger
AltUpDown	Kit Increment (Song Increment)
AltRandom	Kit Decrement (Song Decrement)
Slice	Chain Increment
ContinuousControl	MuteAll
Ribbon Bi-Directional (RibBi)	
RibbonPot (RibPot)	

SENSORS/ screen #1 cont -

Vel: [0-127/ 0-127]

Each Event has a velocity-range or “window” within which it will respond. The upper and lower limits for this range may be set in this field. By careful setting of these limits a variety of musical effects may be achieved, such as velocity-switching, velocity-shifting, velocity-adding, etc.

All of the velocity-response settings of the Ztar still effect the note that appears within a narrow response window; that is,

To set a velocity-window:

Press softkey#3 to toggle between the Lower and Upper Velocity fields.

Use the Up/Dn keys to set the value.

See the section, “VELOCITY CURVES” for more details.

For clarity’s sake we will refer to these two settings as “Input Velocity-Low” and “Input Velocity-High”

InputVel_L: The lowest velocity value that will trigger this event. This value has already been processed by the velocity curve. (See the Velocity processing Flowchart)

InputVel_H: The highest velocity that will trigger this event.

Event-number: Event-Type Softkey #5 will toggle between the Event-number and its assigned Event-type. Use the **UP** and **DOWN** arrow-keys to change the Event-number and Event-Type. Use the Up/Down keys to adjust the type.

MIDI Channel number:

Use softkey#6 and the UP/Dn keys to select and set the MIDI Channel for this Note.

Event-Data/ Note-number/ Velocity-source:

Use softkey#7 to toggle between the Note-number and the Velocity-source fields.

The Note-number reads both as a decimal number and in standard musical notation.

Use the Up/Dn keys to set the values.

The velocity-source may be set to follow the touch, position, or pressure of the Sensor by setting the screen-value to “PAD” or you may assign a Fixed velocity- or data-value for this Note by assigning a number.

Gate: *This sets the programmed Event-duration when the Pad’s Hit-Mode is “TIMED”, not “TOUCH”*

SENSORS/ Gate-time cont-

Press softkey#8 to toggle time between “absolute” (milliseconds) and “scaled” (MIDI clocks).

MIDI clocks are displayed as nnn#, range 0-999. These events will play out according to the Tsig and BPM (if INT clock is selected), or the external MIDI clock (if A or B is selected).

Note for internal clock: there are 96 MIDI clocks per whole note, so if the Tsig is $x/4$, each beat is 24 clocks, but if Tsig is $x/8$, each beat is 12 clocks - remember that BPM is beats, but events are programmed in clocks. If you're using external MIDI clock, the Ztar's Tsig doesn't affect the event timing.

Note: set BPM as high as possible when importing sequences

To see the Metronome change the timing for a sequence, program a pad in Sequential mode with the “Loop” turned ‘On’. Program each event with a Gate time of 24# (i.e., 24 MIDI clocks). Hit the pad, then go into UTILITIES/CLOCKS menu and change the BPM.

To change the sequence timing from the MIDI Input ports, switch the MIDI clock to an external source, and then change the BPM in your external unit. .

EVENT TYPES

Standard Event-Type List :

Off
Note
Control Change
Program Change
Channel Pressure
PitchBend
Song Select
Start Sequence
Continue Sequence
Stop Sequence
System Reset

When the PlayFunction is set to Control Change these are the available Event-types:

Off
BendUp
Bend Down
Volume Up
Volume Down
Velocity Up
Velocity Down
Mod Wheel
Sustain
Expression
Channel Pressure
Polyphonic Key Pressure
User-entered ControlChange number
UserUp Control-number for center-detented effects
UserDown Control-number for center-detented effect
----- Vacant entry
Clock+
Clock-
Bend
Arpeggiator On/Off

MACRO screen

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
	S01 / TR1	Notes All	VelocityShift	Velocity Add
Down	Velocity = Pad	Chords		
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Each event has a pair of numbers that define a velocity-range where the event will respond. By setting the velocity-ranges for the various events assigned to a pad, several unique effects or pad-modes can be created. Rather than defining set modes in the PlayFunction List, we chose to provide macro settings that initialize the events' velocity-ranges to default values. These values may then be modified in the SENSOR/EVENTS menu to more accurately create the desired result

The Velocity-related MACROS here are just conveniences that set the velocity windows for all 8 events in a Sensor's buffer to default values. You'll want to adjust these values in the EVENTS screen to dial in your touch.

NotesAll

All of the Sensor's events will play simultaneously as a chord. This holds true for ControlChange events as well.

VelSw Velocity Switch

The complete MIDI velocity range is split equally between the 8 events so that none of the ranges overlap. Each event then responds within its own unique range. (This may not be present in your version of software and you'll have to set it up manually in the EVENTS menu.) In this way it's possible to play up to eight different sounds from a single Pad just by varying the force of your hit.

VelShf (Velocity Shift)

Velocity ranges are set for each event so that the ranges of adjacent events overlap, playing both events together. This allows note-events to blend together, usually in pairs, with varying velocity of a pad-hit. This is useful for controlling multiple samples of real acoustic sounds, which tend to vary subtly in timbre according to the input velocity to the patch. Or you can blend samples from completely different instruments for an endless variety of effects.

VelAdd (Velocity Add)

Each event has its velocity-range set with a lower-limit of zero and an upper limit at successively higher points in the MIDI velocity range of 0-127. This way the softest hit will play event #1, a slightly harder hit will add Event#2, a somewhat harder hit event#3, and so on. This is an interesting way to build up chords with velocity.

SENSORS/MACROS cont-

Vel=PAD

This is a handy shortcut that sets all of a Pad's events to track the Pad's hit-velocity rather than output a fixed value. You can otherwise set each event one-by-one in the SENSORS/EVENTS screen

Chords:

This selects the CHORDS screen that allows automatic generation of chord-notes into the 8-event buffer for the selected pad. This is a handy shortcut for many chord types. To generate inversions of these chords, go into the SENSORS/ EVENTS screen, shuffle the notes into a different order, change octaves for individual notes, and add notes to un-assigned events for chordal extensions, or remove notes if there are too many. When a Sensor's Chords are used with velocity-switching/adding/etc, the notes may be changed by varying the force of your touch.

SENSOR PLAY FUNCTIONS, descriptions

Basic

Only the first event is played from the Pad's 8-event block. Also, only the first event is displayed in the EVENTS screen. This mode is normally used in the common situations where only one note or event is required.

All [All-Notes]

When the Pad is struck, all of the events programmed into the Pad's 8-Event buffer will play together as a group according to the response settings for the Pad and the individual event velocity-settings. The various events' durations will time out according to their programmed gate-times. Chords or note-"stacks" may be played in this mode.

Seqntl [Sequential-Notes]. *The 8-note pattern sequencer.*

When the pad is struck once, each of the events programmed into the Pad's 8-Event buffer will play automatically in sequence, according to the programmed gate-times for each event. The sequence may be looped by setting the loop switch in the TIMING menu. (see LOOP). ***Most importantly: you can only hear the Sequential-Notes if the Hit-Mode is set to 'TIMED' in the TIMING menu.***

NtsShft: [Shift Notes]

When a single note is assigned to a Sensor, it's pitch, or MIDI note-number, may be changed by varying the velocity, or force of your touch.

ALTERNATING MODES

The pad's programmed events are played back one by one on each successive hit. These modes will operate on either the fixed 8-event buffer or the variable-length MIDISequence buffer. The order of event-list playback is different depending on the Alt-Mode selected.

AltUp: (Alternating Up)

Events are played starting with Event#1 stepping up to the highest numbered event.

AltDn: (Alternating Down)

Events are played starting with the highest numbered event stepping down to Event#1

AltUpDn: (Alternating Up/Down)

Events are played starting with Event#1 stepping up to the highest numbered event where the direction changes and events are stepped back to Event#1.

AltRnd (Alternating Random)

The order of events is selected randomly.

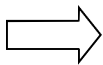
Slice: Slice mode is enabled to operate with variable-length sequences.

Each hit plays the next time slice of the sequence. The time slice is specified in MIDI clocks in the EVENTS screen. Note that a MIDI clock may be either 1/24 or 1/12 of a beat, depending on the metronome time signature. After the last slice is played, the next hit will restart from the beginning of the sequence.

CntCtl (Continuous Control):

This mode is used to issue MIDI Continuous Control messages tracking from an input device, usually a pedal or pressure-pad.

When the Play Function is set to Continuous_Control the list of events in the Events screen changes to show the various CC events that may be programmed to any Sensor. Refer to the previous charts for the list of programmable CC events.



Note: Do not confuse the Continuous Control Play Function with the ControlChange event that's programmed within "All", "Sequential", or the other PlayFunctions. The "CntCtl" PlayFunction will track a pot or pedal for a continuously changing value. The ControlChange Event sends a single one-shot value based on the velocity of a hit.

Continuous Control Events:

Most of the CC events listed in the chart are self-explanatory. A few of them deserve special discussion:

- User-entered ControlChange number allows you to enter any CC number you wish.
- UserUp Control-number for the Up-direction of center-detented effects.

Sensors/ContinuousControl Events cont. -

- UserDown Control-number for center-detented effect
----- Vacant entry
- Clock+: a pot or pedal can increase the rate of the metronome's BPM timer.
- Clock- : a pot or pedal can decrease the rate of the metronome's BPM timer.
- Bend:
- Arpeggiator On/Off: Toggle the Arpeggiator on/off from a footswitch or Pad.

- Sensors/ Play Functions cont -

Ribbon Bi-Directional: Sets up a Ribbon Sensor such that the first tap will become "0" and sliding in either direction from that point will move the value up or down.

Ribbon Pot: Sets up the Ribbon Sensor such that the last touch as you lift your finger will latch that value, allowing you to emulate the action of a potentiometer.

ReTrig: When a Sensor is set to ReTrig, striking it will re-trigger any notes that are fretted on the assigned String-number on the fingerboard. Use this when you want to tap notes from the fingerboard and then re-trigger them with the Key- or String-Triggers. Set the String# to ALL-STRG to have this sensor re-trigger the entire fingerboard.

The Re-Trigger function will follow the fingerboard mode, so that in Guitar-mode you'll still get hammer-ons and in Poly-mode you'll get multiple notes-per-string.

Note: In Guitar-Mode, to eliminate triggering unwanted open-strings, set the fingerboard Zone to have its lower boundary at the first fret instead of the "zero" fret.

KitInc: Increment the Kit number by one

KitDec: Decrement the Kit-number by one.

Chainl: Set the Kit-number to the next Kit in a Chain.

MutAll: Mute all Sensors. A global version of the LINKS/MUTE function.

Sequencers cont. -

The next series of Sensor-modes control the Sequencer functions. You can record and playback basic multi-tracked performances by setting up a Sensor-Pad to initiate recording and separate Pad to initiate playback.

*In discussing the sequencers we use the word "**NOTE**" to refer to any MIDI event whether it's a note, Control Change, ProgramChange, any outgoing message.*

THE SEQUENCERS

TIP: A Sensor or Pad must be set with its Sensor-Mode to "EVENTS" (Sensors menu) and its HIT-mode (SENSORS/ TIMING menu) set to TIMED in order for it to fire a sequence.

There are actually two separate but similar sequencers in the Ztar; one that uses a fixed-length 8-note buffer that allows special control over the individual notes and playback modes, and a variable-length sequencer that can record performances on the fly with a number of special looping modes.

The Fixed Length 8-note sequencer is setup by step-entry in the EVENTS screen.

The Variable Length sequencer is best recorded live but you can enter and edit these sequences via the Sequence-Edit menu with a lot of patience. Also you may download a sequence from an external MIDI sequencer or computer.

You set up whether to use a Fixed length sequence in the EVENTS screen when a Pad is assigned to a NotesSequential (SEQNTL) or Alternating (AltUp/Dn/UD/Rnd by assigned the Sequence to FIXED, the 8-note buffer. Also, the NOTES_ALL function will play all of the notes in the buffer together as a chord.

You set a Sensor to a Variable length sequence in the EVENTS menu by assigning the Play Function to MIDISq and the Sequence# to one of the V.L. sequence numbers 1-999. A V.L. sequence will include all controller-data as well as notes, Program Changes, and any outgoing MIDI messages.

NOTE: In order for the sequence to play out automatically, you must set the HitMode for the Pad or Sensor that triggers it to TIMED. If it's set to TOUCH you'll only hear the first note.

SEQUENCER MODES and Operation:

Note: The zTar currently supports 999 sequences and 56,000 notes.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	TRIG 1	PlayFunction: Play		EDIT
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Play - Assign up to eight Sequences #1-256 in the eight slots on the bottom line of the Sequence-Play screen. A Pad-hit starts at the beginning all of the sequences assigned to the pad. A second hit will stop the sequences

RePlay - each hit re-starts the assigned sequences from the beginning.

StpPly - stops recording, stores the result as the sequence# 'n' assigned to this Pad, and then immediately starts playing back the sequences from the beginning. Successive hits will stop the sequence then re-start from the beginning.

The top line in the display shows the recording sequence-number to be stopped. The bottom line shoes the Sequence-numbers to playback.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	TRIG 1	PlayFunction: Record Sequence#: 1	1 st Note	EDIT
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Record - (Records a variable-length sequence) first press of the Sensor you have set up as a Record-Pad starts recording. The second press stops recording and stores the sequence 'n' associated with this pad.

The top line of the display shows the sequence number to record to.

The bottom line shows the sequence-numbers that are monitored for playback during recording.

Softkey #3 allows you to set the Sequence-number you wish to record. Pressing the Softkey#3 repeatedly will toggle the way the recording Starts:

First-Note: The sequence will begin when you play the first note.

PadHit: The sequence will start recording as soon as you hit the Record-Pad

Sensors/Sequencers cont. -

To set up a Record Pad:

- 1) Assign "Record-Sequence mode to a pad or input trigger and
- 2) Select a MIDI sequence number to store the recorded MIDI events.

SEQUENCERS cont-

Strike the pad once to start recording. Strike it again to stop recording. The sequence is automatically stored.

RecNxt - first press starts Record and increments the sequence number 'n'.
Second press stops the record & stores it.

Importing sequences:

The zTar can import any sequence of MIDI notes or CC commands over its MIDI input port and store them into any sequence number. The zTar can not import Standard MIDI Files at this time.

Capture: [Off, On]

Capture an incoming sequence from the selected MIDI port and store it as a variable-length sequence. Assign the new sequence a number in the global pool of 256 sequences so that it may be played back as a "MIDI_Seq" (pad-mode).

- 1) **Utilities/ MIDI-In:** turn on "Capture". All MIDI events will be captured from all channels.
- 2) Set up a Record-Pad by assigning the Sensor-Pad .Any Pad or String Trigger will do. In the SENSORS/EVENTS menu, set *PlayMode = RecordSeq*. Assign a sequence number on the top line of the display. You can monitor up to eight playback tracks (sequences) by assigning the sequence numbers on the bottom line. In the TIMING menu, set the Hit-Mode for the Sequence-Playback Pad to TIMED. In the UTILITIES/CLOCKS menu you have the opportunity to set the MIDI Clock source to INTernal or the MIDI Input Clock setting which is "L"
Make sure the Metronome is turned Off by setting the Output to "None".
Assign a Play-pad to the same number.

Sensors cont. -

SENSORS/OUTPUT menu

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	TRIG 1	Curve: 4	Pedal: TR1	MIDI: L
EDIT	Link: Off	Off Off	Off Off	
	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Several important parameters for the Sensor's MIDI output are set up here.

Sensor#: use softkey#1 and the Up/Dn keys to select the sensor.

Curve: selects and sets the Curve number assigned to this sensor.

Pedal: sets a continuous controller in the system to control this sensor when acting in a HiHat setup. ***This feature is not currently in use.***

MIDI: set the MIDI output port; Left, Right, or Both, None for 32 channel systems.

Link: Link the activity of this sensor to trigger other sensors' events.

NotesOn: triggers the linked-sensors from a Note-On message.

NotesOff: triggers the linked-sensors from a Note-Off message.

Off: no links enabled

LINKS: Repeatedly press either softkey# 6 or #7 to select up to four Links for this sensor. Use the Up/Dn keys to assign your linked Sensor Pads

UTILITIES MENU

The UTILITIES menu houses a variety of sub-menus and programming features.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	LIBRARIAN	BULK	TUNING	MORE>
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

LIBRARIAN: enters the Librarian menu.

MIDI: enters the setup screen for the MIDI Input ports.

BULK: enters the Bulk Dump menu.

TUNING: enters the Tunings setup menu.

CLOCKS: enters the setup screen for the Metronome.

CURVES: enters the Velocity-Curves' setup screen.

SEQUENCES: enters the step-entry Sequence-Editor.

Locked/ Unlocked: when set, this locks the front panel hotkeys so that your settings can not be accidentally modified. You might use this if you leave the instrument on-stage between sets, or if you hand it to you 9-year-old nephew.

UTILITIES cont>

LIBRARIAN menu

	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Up				
Down	SONGNAME	SAVE	COPY	DELETE
EDIT		SWAP	COPY-PAD	INITIALIZE
	Softkey#5	Softkey#6	Softkey#7	Softkey#8

SONGNAME: enters the Songname-Edit screen, which may also be reached, from the top-level SONG-EDIT-mode screen. Use the softkeys for your CursorRight/Left controls and the Up/Dn arrow keys or joystick to change text-values.

	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Up				
Down	SONG: 01	GUITAR		
EDIT		<<< ——— CURSOR ——— >>>		
	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Save: Writes the Scratch Kit Buffer to a Song-Location. This is the same screen that you enter from the WRITE softkey.

Copy: Copies any song location to any other Song location.

Delete: Restores the selected Song from Song#1.

Swap: Exchanges any two song locations.

COPY-PAD: allows you to copy all the settings from one Sensor to another Sensor for convenience.

INITIALIZE: enters the Initialize screen where you can choose to reset groups of objects to their original factory settings.

Utilities/ Librarian cont.-

LIBRARIAN\ SAVE

To SAVE a song:

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	WRITE SCRATCH KIT >			EXECUTE
EDIT	Scratch #01	GUITAR	——— >>	#03 GUITAR 3
	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Press softkey#8 and use the arrow Up/Dn keys to set the destination Song-location. Press EXECUTE when you're ready. The Scratch Kit buffer will be written to the destination location.

The words "Song Saved! Will appear briefly.

LIBRARIAN\ COPY

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	<UTILITY/ LIBRARIAN/COPY>			EXECUTE
EDIT	##01 GUITAR		———>>	##003 GUITAR 3
	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Softkey5 to select the Source-Song,
Softkey #8 to select the Destination Song,
Up/Dn keys of joystick to set the values, and
EXECUTE to complete the operation.
The words 'Song Saved!' will appear briefly.

DELETE and **SWAP** work in a similar fashion.

COPY-PAD

COPY-PAD works in a similar fashion that allows you to copy the settings for an individual Sensor to any other Sensor. Use the softkeys to select the Source and Destination Sensors fields, the Up/Dn arrows and joystick to set the numbers, and EXECUTE to complete the operation.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	< COPY PAD PARAMETERS >			EXECUTE
	Song 01	Pad P1	———— >>>>	Pad P2
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

LIBRARIAN\ INITIALIZE menu

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	INITIALIZE>	SONGS	RESPONSE	SEQUENCES
	COLDSTART	CURVES	TRIGGERS	CHAINS
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

SONGS: Restores the RAM copy of the first 4 (or 2) ROM songs, then resets all RAM songs to the first ROM song.

RESPONSE: Initializes “global” Sensor-response variables from ROM; Gain, Scan, Mask, Threshold, and Trained high and low curve endpoints. The Curves or curve-numbers are not initialized.

SEQUENCES: clears all sequence data.

CURVES: restores all curves to the Rom default settings.

LIBRARIAN\ INITIALIZE cont -

TRIGGERS: Clears all assignments that map MIDI Input Notes to trigger onboard Sensors.

Perform a complete initialization of the system memory when new ROM software is loaded or whenever you feel you need to clear out everything from memory and start fresh. You may wish to bulk-dump your Songs and Keymaps before you do this.

Press the Initialize-SONGS button. Three dots appear while the routine is working. When it finishes, go on to initialize the rest of the individual areas by pressing the keys, working around the display in clock-wise fashion. The last press will be COLDSTART which will re-start the Ztar.

UTILITIES\ MIDI-IN menu

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	MIDI-L-IN	Channel: 1		
	TRIGGERS	Trigger: Note-On	Follow: Off	Capture: Off
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

The MIDI-In menu provides settings for various functions that monitor the MIDI Input ports

MIDI-X-IN[Left/ Right]: Use softkey#1 and the UpDn keys to select MIDI Input Port Left or Right.

Channel [1-16]: set the MIDI channel 1-16

Trigger[On/ Off/ Both]: Available trigger-types are **Note-On**, **Note-Off**, **Both**. Set to **None** to disable the function. Any one of these settings can fire a Ztar sensor-pad.

Follow-MIDI: When Follow-MIDI is enabled an external MIDI keyboard may be used to enter note-numbers into the Ztar's edit-screens. Enter the screen you wish to edit in order to view the process.

Off: Follow-MIDI disabled

On: Incoming MIDI note-values are captured into the current Event.

Chord: Successive incoming MIDI note-values will fill up all the available Event-slots for the current Pad. Once the 8-event buffer is filled, additional notes will over-write Event #8.

Capture: [Off, On]

Capture an incoming sequence from the selected MIDI port and store it as a variable-length sequence. Assign the new sequence a number in the global pool of 256 sequences so that it may be played back as a “MIDI_Seq” (pad-mode).

TRIGGERS:

Enters the MIDI-In-Triggers screen where you may assign Ztar-Sensors to incoming MIDI note-numbers. Any note-number (C-G9) on the selected channel may be assigned as a trigger. Eight MIDI notes are shown per screen. An Uppercase “L” or “R” shows at the left edge of the screen to indicate selection of the Left or Right MIDI port.

UTILITIES\ MIDI-IN\ TRIGGERS menu

		Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	L	C1 —> P2	C#1 —> off	D1 —> off	D#1 —> off
		E1 —> off	F1 —> off	F#1 —> off	G1 —> off
EDIT		Softkey#5	Softkey#6	Softkey#7	Softkey#8

Use the softkeys and the UpDn keys to select a MIDI-IN Note and assign a Ztar-sensor.

C1 —> P2

This means that the incoming MIDI note C1 is assigned to trigger the sensor “PAD2”

TUNING Menu

This is a second entry point to the Tuning menu. Please refer to the section explaining the FRETBOARD menus for a full description of the TUNING menu. *automatically when you change an Open String Tuning. Make adjustments to individual keys to create new scales or separate instruments in areas of the finger-board.*

BULK-DUMP MENU

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	BULK	SEND	RECEIVE	
EDIT	SONG ##01	GUITAR		
	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Send: Press softkey#2 to dump the selected Song Memory from the ZTAR to a receiving device. Use the Up/Dn keys or the joystick to select a Song. Song '#0' will select ALL Songs. When "ALL" is selected a Bulk-dump will also send all 16 of the global Response Curves and all Keymaps.

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

To Save the Ztar Songs to an external MIDI system:

Connect the MIDI Out port from the Ztar to the computer or sequencer's MIDI IN port.

2) Set up your computer to receive a Sysex data dump. You can use most MIDI sequencer programs or MIDI monitor programs to do this.

When the computer is ready and waiting for data press the **SEND** soft-key on the Ztar keypad. The words "*Sending data...*" will appear while the process is running. The Ztar display will indicate when the operation is finished saying, "*Function Complete*".

To Restore the Ztar Songs from an external MIDI system:

Connect the MIDI IN port from the Ztar to the computer or sequencer's MIDI OUT port.

2) Press the **RECEIVE** soft-key on the Ztar first, then start the transmission from your computer. The ZTAR gives you about 20 seconds to start the transmission before it flags an error.

BULK DUMP ERROR MESSAGES

--- CONDITION ---

--- MESSAGE ---

- | | |
|---|-----------|
| 1) 20 seconds elapse before any data received | “timeout” |
| 2) MIDI cable unplugged / too few data bytes | “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.

- | | |
|-------------------------------------|----------------|
| 3) Wrong SysEx dump / Bad MIDI data | “Data corrupt” |
|-------------------------------------|----------------|

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

- | | |
|--|----------------|
| 4) Wrong checksum / no EOX (End of Transmission) | “Bad Checksum” |
|--|----------------|

- Corrupted transmission. Retry the procedure.

- | | |
|--|-----------------|
| 5) CRC/Framing or Receive buffer overrun | “MIDI off line” |
|--|-----------------|

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

CLOCKS menu

(2 screens)

The Notes and other events played from the Ztar may be timed in reference to either of two separate clocks:

The onboard milliSecond-timer which represents Absolute time, or

The Metronome which is expressed in MIDI clock-ticks or Beats-per-minute.

Clocks Screen #1

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	METRONOME: L	Channel: 10	NoteL 56: G#3	MORE>
EDIT	Tempo Pad: Off	Clock Source: Internal	Clock Outout: L	BPM : 120
	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Metr: this sets the MIDI output channel for the metronome to Left, Right, Both, or None (OFF).

Channel: selects MIDI channel for metronome sound.

Note: selects MIDI note for metronome sound.

MORE> : takes you to the Metronome-Edit screen.

TempoPad: selects the Tempo pad from the Sensor List, or Off for none. Tapping on the TempoPad will adjust the timing of the metronome, the BPM-timer. This can be used to sync the timing of internal or external sequences, either the short 8-note sequences or the variable-length sequences.

This function works whether the metronome is off or on. When the metronome is off, the TempoPad adjusts the Gate-times for the 8-note sequences. Three taps on the TempoPad will set the new timing.

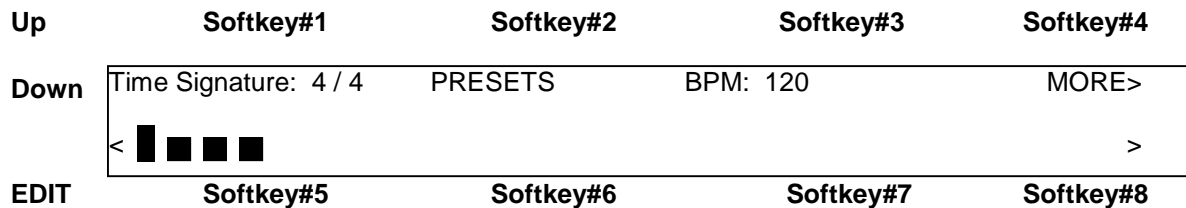
Clock [Int, R, L]: selects the source of the MIDI clock: INT (internal timer), MIDI IN LEFT, or MIDI IN RIGHT. Note that if you select an external clock, and you don't have one connected, the metronome will stop.

UTILITIES/ CLOCKS cont-

Clock Out [On, Off]: Select this and use the Up/Dn keys to enable or disable MIDI clock output over the normally assigned MIDI Output port.

BPM: sets beats per minute for the INTERNAL MIDI clock. Range 6-600.

Clocks Screen #2:



This is the Metronome-Edit screen where you can create custom time-signatures up to 32 beats per measure with multiple accent beats.

Tsig: sets the time signature. Press the softkey once to select the number of beats in a measure, in the range 2-32. Press a second time to select the unit-beat which can be either 4 or 8 (1/4 note or 1/8 note). Use the Up/Dn keys or Joystick to set the number of beats per measure.

Preset: scrolls through four preset signatures in rotation: 2/4, 3/4, 4/4, 6/8.

BPM: selected and set the same as on screen #1.

Bargraph: shows the Time Signature graphically in groups of eight beats. As you change the time signature you'll see the length of this bargraph change to match. Each beat may be given an accent by setting its relative volume as shown on the bar graph.

SoftKeys #5 or #6: move the cursor left to select a beat; The selected beat is indicated by a flashing cursor (except if the beat is at full volume, obscuring the cursor). When a beat is selected, you can press Up and Down to increase or decrease the volume in eight steps from zero to full. Use the zero-setting for a rest.

SoftKeys #7 or #8: move the cursor right to select a beat.

NOTES:

- ***The Preset signatures will also reset all the beats' velocity levels!***
- ***A unique Time Signature may be saved for each Song in the Ztar.***

CURVES Edit screen

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	# [Points1-4] 1-10	15- 30	32-46	48- 62
1	[Points 5-8] 64- 78	80- 92	88- 110	95- 127
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

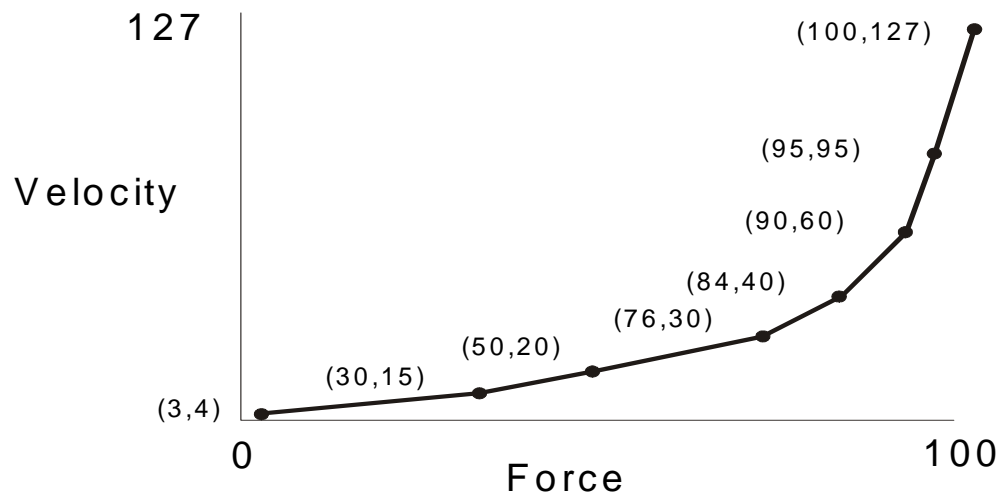
There are 16 programmable curves stored globally in the Ztar that may be applied to individual Sensors or Zones on the fingerboard. Use these curves to adapt your touch to the Ztar and the synth and patch you're using. If one Sensor in a group seems to have a different response than the rest you may give it a special curve to balance its response. Each curve is drafted using eight programmable points and may be thought of as a graph relating physical force and MIDI velocity.

The curves also affect the way that Continuous Controllers such as pedals respond. You can assign and save a curve-number with each Sensor for every Song in the Ztar, so a Sensor may have different response as you select new Songs.

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 Ztar'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 a sensor responds late, then comes on too strong when it does 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.

Ztar 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.

Find the hardware’s endpoints:

Go to the first RESPONSE menu screen that shows the GAIN bargraph. When you hit a pad or string, the bargraph will show the relative strength of the hit. Try to see what the lowest and highest levels are for the pad you’re hitting.

Set the response endpoints:

Now go to the UTILITIES/ CURVES edit screen for the CURVE number that’s assigned to the Pad. Or go to an un-used curve-number and edit a new one for saving.

UTILITIES/CURVES cont-

Set the FORCE value, the left-hand number, for Point#1 to the LOWEST force value from the GAIN screen. Now set the FORCE value for Point#8 to the highest force value you took from the GAIN screen. These are your physical performance limits.

Now 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 system is skewed in some way (“non-linear”) even though you’ve drawn a fairly straight line with your choice of numbers, then you can adjust either the FORCE line of numbers or the MIDI-output line of numbers to make your response smooth for that sensor.

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. Then you can adjust the left-hand (FORCE) numbers anywhere you want to scale the curve to the dynamic range of your touch. You’ll always want a MIDI output of 0-127 but the force requirements will vary with for a number of reasons.

UTILITIES\ ARPEGGIATOR MENU

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	ARPEGGIATOR: ON	Channel: 1	PORT: Left	TIME: 1/16
	CLOCK: INTERNAL	ALL	NONE	LOOP : ON
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

ARPEG: [on/ off]

Toggles the Arpeggiator ON or OFF

Channel: [1-16]

Select MIDI channels to respond to the Ztarpeggiator. Pick the Channel-number and direct its arpeggiator output in the PORT-settings under Softkey#3.

Port: [None, L, R, Both]

Select the “Left” or “Right” MIDI Output ports for each MIDI channel. Instruments that have only a single MIDI Out jack will only respond to the LEFT port.

Time: [0-9999msec or 1/16- 16/16]

Set the duration for each note played by the arpeggiator. This can be expressed either in milliseconds or in 1/16 notes. Press the TIME softkey (#4) repeatedly to toggle between Milliseconds and 1/16 notes.

UTILITIES/ARPEGGIATOR cont-

When you are using the Internal clock in the Ztar, you may set either Milliseconds or 1/16 notes, and you then adjust the clock-rate using the BPM setting in the UTILITIES/CLOCKS menu. To use an External MIDI clock source the setting must be in 1/16 notes. 24 MIDI clocks per ¼ note is the standard.

Clk: [L, R, INT]

Press again to scroll through the settings. External clock from the Left or Right MIDI Input port, or use the Internal Ztar clock source. Most zstars are equipped with only a single MIDI In and MIDI Out. You can switch easily between an External clock and the internal clock source this way.

ALL

Enable the Arpeggiator on all MIDI channels.

NONE

Disable the Arpeggiator on all MIDI channels.

Loop: [On, Off 2-16]

Notes may be set to arpeggiate any number of times when they are held on the fret-board.

ON will arpeggiate for as long as notes are held. Other numeric-settings will loop the programmed number of times while still fingered, and then stop.

SEQUENCE EDIT screen

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	SEQUENCE: 1	INSERT	DELETE	
	0	:		GATE: 200
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

Sequence: press the softkey and use the Up/Dn keys or the joystick to select the Sequence number to edit.

INSERT: press the softkey to insert a MIDI event.

DELETE: press the softkey to delete a MIDI event.

Utilities/ Sequence-Edit cont -

The bottom line of this sample screen reads this way:

“ Event #1 is a Note, Channel# 1, MIDI Note 45 (decimal) or standard pitch A2, velocity is 127 and the note-duration is 100 MIDI clocks.”

Press softkey#1 to toggle between the Event-number and the event-type fields. Use the UP/Dn keys and joystick to set the values. You'll notice that events may be types other than notes.

Press softkey#2 to toggle between the Channel and note-number fields.

Press softkey#3 to select and set the velocity for a note or data-value for a fixed ControlChange command.

Press softkey#4 to select the Note (event's) duration in either Milliseconds or MIDI Clocks. Press the softkey to toggle between the two types. A “#” will appear after the number when MIDI Clocks are selected.