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>
	CLOCKS	CURVES	SEQUENCES	Unlocked
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.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	SONGNAME	SAVE	COPY	DELETE
		SWAP	COPY-PAD	INITIALIZE
EDIT	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.

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	SONG: 01	GUITAR		
		<<< ———— CURSOR ———— >>>		
EDIT	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
	Scratch #01	GUITAR	——— >>	#03 GUITAR 3
EDIT	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
	##01 GUITAR		———->>	##003 GUITAR 3
EDIT	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.

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 fingerboard.*

BULK-DUMP MENU

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	BULK	SEND	RECEIVE	
	SONG ##01	GUITAR		
EDIT	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>
	Tempo Pad: Off	Clock Source: Internal	Clock Outout: L	BPM : 120
EDIT	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.
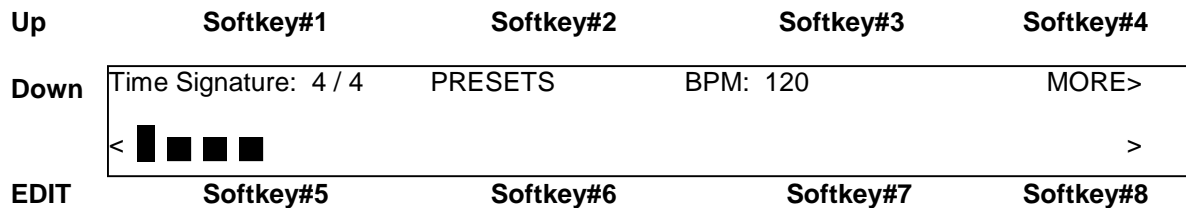
 Clock [Int, R, L}: selects the source of the MIDI clock: INT (internal timer), MIDI IN LEFT, or MIDI IN RIGHT. Note that if you select an external clock, and you don't have one connected, the metronome will stop.

C**lock 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:

Up	Softkey#1	Softkey#2	Softkey#3	Softkey#4
Down	Time Signature: 4 / 4	PRESETS	BPM: 120	MORE>
	< ■ ■ ■ ■			>
EDIT	Softkey#5	Softkey#6	Softkey#7	Softkey#8

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, ¾, 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
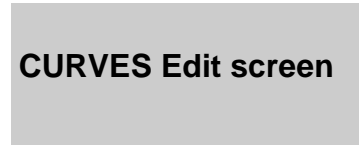
| Up		Softkey#1		Softkey#2	Softkey#3	Softkey#4
Down	#1	[Points1-4]	1-10	15– 30	32-46	48– 62
		[Points 5-8]	64– 78	80– 92	88– 110	95– 127
EDIT		**Softkey#5**		**Softkey#6**	**Softkey#7**	**Softkey#8**

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 se-lected 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 re-sponse 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.
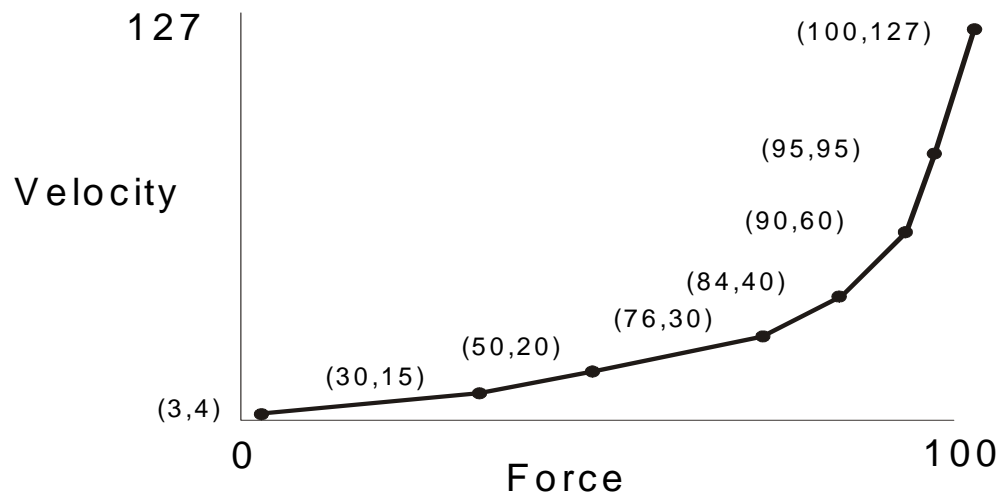
Troubleshooting response problems:

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.

Set the FORCE value, the left-hand number, for Pont#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. The 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.

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 ztars 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 fretboard.
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.

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.