

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 Ztar 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 Z7S and MiniZ, and at the side of the Z6 model Ztar. 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 Ztar in detail.

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

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 Ztar 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 :

DC <>OFF<>USB

Turning On the Ztar:

To Power from the AC/DC adapter:

- Use a **5-conductor** MIDI cable (all 5 pins must be wired) from the Ztar MIDI Output to the Controller connection on the PB-1 power supply adapter.
- Connect a MIDI cable from the SYNTH jack of the PB-1 to the MIDI IN on your synth or other MIDI system.
- 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.

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 Ztar MIDI Out Port and will power the Ztar as well as route MIDI data to your synth.

Move the 3-position rocker switch to the DC position.

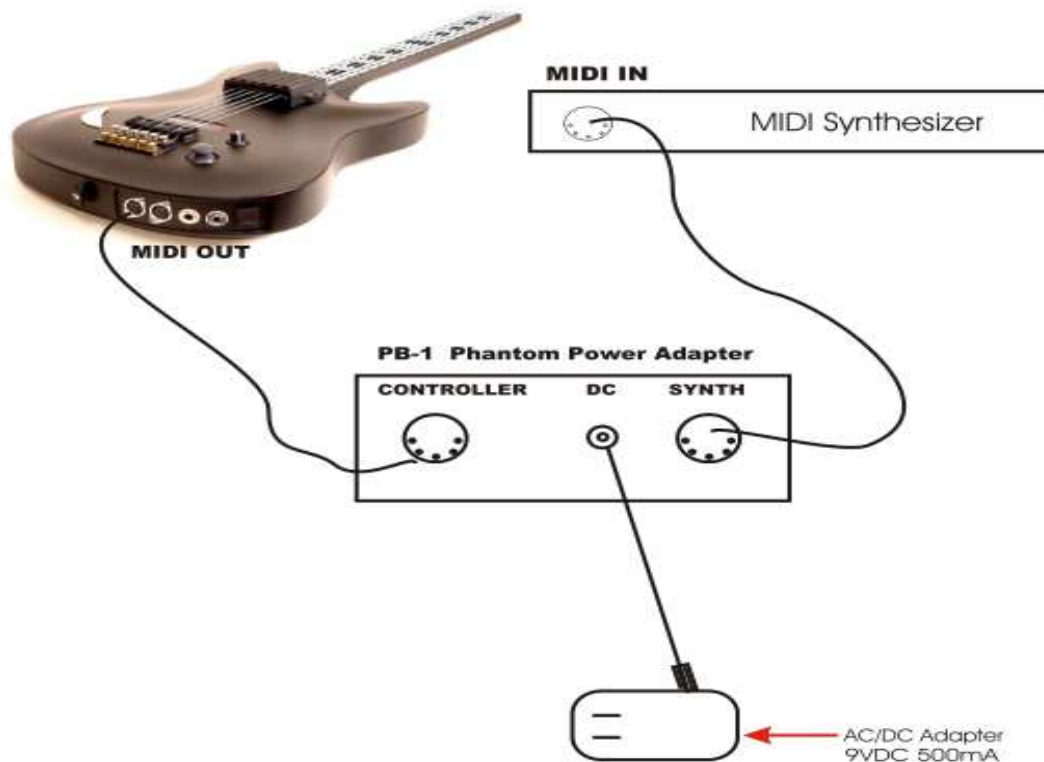
If you have a Starr Labs Phantom Battery Supply for use with your onboard MIDI wireless transmitter, connect it to the Ztar input port instead of the MIDI cable.

Connecting to USB Power:

Connect a USB cable from the USB port on the Ztar to the USB 2.0 compliant USB port on your computer.

Move the 3-position rocker switch to the USB position.

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 Ztar 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.

If there is a Sound Card installed in your zTar

- ◆ 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.
- ◆ If the zTar will not run from the supply that we shipped to you, you can power the instrument from a USB 2.0 port on your computer, which will power just the zTar but not the Sound card.

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 **TRIG** and **G/POLY** LEDs are now lit you're set up like a guitar so start picking! 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 Ztar'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

Basic Building Blocks

"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 Ztar are similar to the Layers that are often found in MIDI keyboards.

EVENTS

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 Ztar 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.

OVERVIEW of the zTar

Congratulations on your purchase of a ZTAR 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.

The Ztar hardware is best understood as two separate systems, one that governs the use of the fingerboard; and one that governs the use of the 'Sensors', the collective term for all of the other hardware devices on the instrument, including the Triggers, Expression Pads, Sliders, Knobs, Pedals, Joystick, Breath controller, Ribbon controller, and Pressure strips. Each of these systems has separate software for its control.

The ZTAR fingerboard is a six string by 24 fret matrix of touch-sensitive keys which may be assigned to various MIDI channels, patches, tunings, response curves and other parameters. Areas of the fingerboard may be blocked out into zones which may be programmed separately according to your musical requirements.

The SENSOR controllers on-board the ZTAR are six Triggers for strumming and picking which may be installed either as String Triggers, real strings that capture a guitarist's picking techniques, or KeyTriggers, pressure- and velocity-sensing bars that may be used to create new, expression techniques for controlling synthesizers and other MIDI controlled devices. There is a wealth of controllable features in modern synths that lies untapped and the various new touch-surfaces of the Ztar attempt to open that door for you. A bank of Expression Pads, usually 6 or 12, is available on most instruments. Two pedal inputs, Sustain and Volume, are fully programmable. Any of the SENSOR controllers may be assigned to control any two MIDI effects or Continuous Controller assignments to four channels each. They may also be used to capture and play back up to eight MIDI notes across one or more channels, control external sequences and looped-samples, and other special functions.

User Interface

The ZTAR 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 Ztar 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 Ztar 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 ZTAR 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 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 ZTAR 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 ZTAR as fully user-programmable as possible some existing MIDI concepts have been expanded and are slightly re-defined:

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

ZONES in the ZTAR 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.

A SOLO mode has been provided to expand the versatility of the zone features in live performance. When notes are being held in one or more zones and the SOLO Hotkey is pressed, those zones will be expanded to fill the entire fingerboard. That is, if a piano is on Zone#1 and a Flugelgong is on zone#2, when notes from both zones are touched and SOLO is pressed now the entire fingerboard will sound Piano/Flugelgong. Sort of an on-the-fly super-layering function. This feature shouldn't be confused with the SOLO function in the Zone menu which allows you to isolate and audition single layers in a multi-layered setup.

HOTKEYS/ FUNCTION KEYS

Several function keys have been placed on the surface of the Ztar 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.

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

TRIG: Turn the Triggers 'On' to strum like a guitar or 'Off' to tap the fingerboard like a keyboard. When the LED is lit the Triggers are 'On'.

G/POLY: When the LED is lit the fingerboard plays one note per string, like a guitar. When it is off, the POLY mode allows you to hear whatever you press.

SOLO: SOLO allows you to select one or more small zones on the fingerboard and expand them to fill the entire fingerboard. This is used to quickly change sounds and try out new combinations of sounds over the full range of notes. Pressing SOLO again will revert the fingerboard to its prior multi-zoned state. If multiple zones are selected when SOLO is pressed those sounds will be stacked and spread over the fingerboard. Use this as a quick layering tool.

WRITE: WRITE lets you copy your current setup "on the fly" to a battery-backed RAM location. There are many adjustable parameters in the Ztar and Write will copy all of them so that the full setup may be recalled with a single keystroke. The WRITE hotkey is a shortcut version of the WRITE function found in the top-level EDIT screen.

REC: This button activates the CHORD RECORD feature. Press the button, hold down some notes on the fingerboard, strum them if necessary to hear them, and tap one of the Pads (or a Trigger, or any other Sensor) to assign the notes to that Pad for playback. This is a quick way to capture notes to a Pad, in addition to the CHORD-NOTES screen.

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,

SENSOR HARDWARE

TRIGGERS

These are the six right hand sensors that are used to trigger the fingerboard the same as you'd play a guitar. Ztars are equipped with either StringTriggers or KeyTriggers and occasionally both.

MUTE-BAR

This is the metallic bar in the tailpiece or plate mounted elsewhere on the instrument that is used to facilitate muting the StringTriggers. If you skin is in contact with both the Mute-Bar and a String Trigger the trigger will mute its triggered note(s).

NECK SENSOR STRIP

This is a narrow strip mounted to the edge of the fingerboard that can be programmed to send a variety of MIDI messages when pressed with a thumb.

JOYSTICK

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 Ztar configurations and are programmed to a variety of performance controls.

PEDALS

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

BREATH CONTROLLER

A breath port is provided as an option to the Ztar which accepts a ¼" vinyl hose for breath input.

POTS AND SLIDERS

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

ZTAR Programmer Menu Tree

- Every function in the Ztar 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

HAMMER-MENU

Hammer-On/ Pull-Off Enable

Hammer Threshold Level

Open String PullOff Enable

Hammer-Pick-Delay

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

Threshold

Gain

Curve

Peak readout 0-255

SHOWALL

SONGS

PADS

EVENTS

GATES

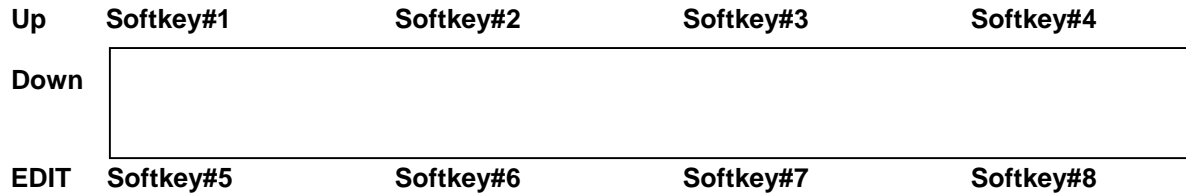
LINKS

CHAINS

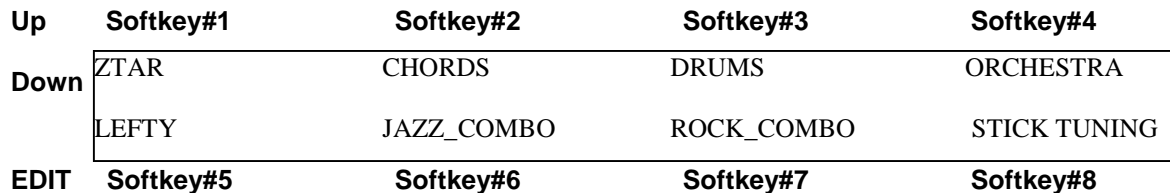
PATCHES

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 ZTAR is in LIVE-mode. The ztar 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 zTar 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 ZTAR. 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 Ztar 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.

