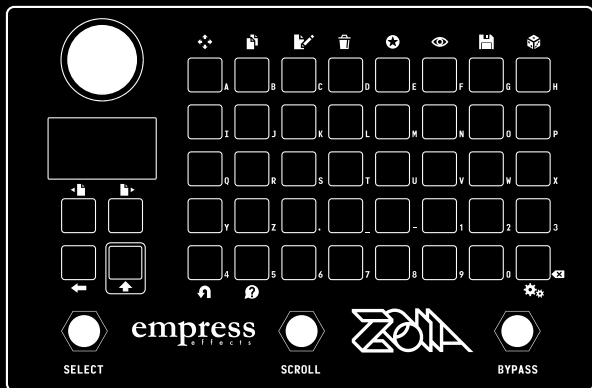


empres
effects

ZOLA



USER_MANUAL

FOR SUPPORT AND TO REPORT BUGS

Please call 1-888-676-1853 (toll free world-wide!)
or email support@empresseffects.com

FOR FIRMWARE UPDATES

www.empresseffects.com/ZOIA-firmware

FIND GREAT ZOIA PATCHES

www.patchstorage.com/platform/ZOIA

TO UNDERSTAND WHAT THE VARIOUS MODULES DO, CHECK OUT THE MODULE INDEX

www.empresseffects.com/ZOIA-module-index

FOR HELPFUL TIPS AND TRICKS

www.empresseffects.com/ZOIA-tips-and-tricks

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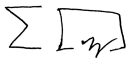
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INTRODUCTION

WHAT IS ZOIA?

ZOIA is an open canvas to paint your sonic ideas. FM synthesis, CV tools, MIDI tools, audio effects, interface options - all at your fingertips. ZOIA transforms the rigmarole of interfacing a studio full of music gear and condenses it into one handy little box, which you can then interface with your own studio full of music gear.

In short, ZOIA is an infinite trick pony whose utility is limited only by your imagination. We're stoked you've chosen to make the Empress ZOIA a part of your life! Please enjoy responsibly.



Steve Bragg

Designer



Jason Fee

Designer

THE BIG PICTURE

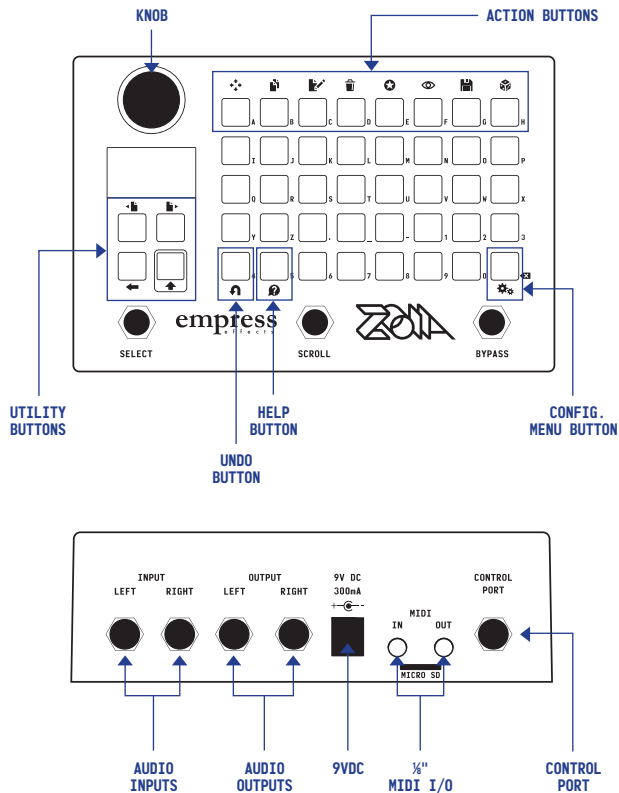
ZOIA is, in essence, a fully featured modular synthesizer in pedal form. Modules are laid out on the button grid, with each module consisting of a number of parameters. Each parameter is represented by a button on the grid which accesses a specific function of that module.

The button grid represents one page within a patch. When you save a patch, it saves to ZOIA's internal memory each page you've created, along with all of the modules you've added, parameters you've changed, and connections you've made. You can then go on to create a whole new patch and use the stompswitches to navigate between them.

If you are familiar with guitar effects but don't have much experience with synthesizers, ZOIA might seem a little scary, but the good news is that guitar effects are built using the same basic blocks that make up modular synths. For instance, the tremolo effect is just a VCA (voltage-controlled amplifier) being controlled by an LFO (low-frequency oscillator). A delay effect is just a delay line with its output fed back into its input. To jazz it up, you can put a filter in the feedback loop, maybe modulate the delay line length with an LFO and voila - you've created your own tape delay emulation! We've stacked ZOIA with a plethora of pre-built effects, but all of the basic building blocks are there as well for your sonic experimentation.

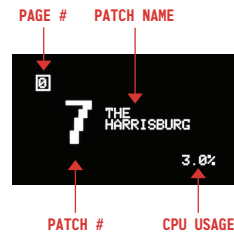
Instead of thinking of ZOIA as simply a pedal, it is probably more accurate to think of it as a platform. It provides the basic tools so that you can build your own effects, synths, and instruments.

PEDAL LAYOUT

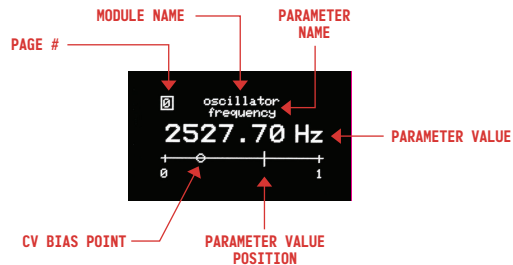


SCREEN LAYOUT

There are many ways ZOLA displays information on the screen. Here are two of the most common views.






The patch screen (above) is visible when no module, list, or connection is selected. It gives you general information at a glance as to the patch you're on and the performance of ZOLA. You can always get to the patch screen by pressing the **← BACK** button several times.



The parameter adjust screen (above) appears when you select a button within a module. The CV bias point is represented by the small circle, and the parameter value position is represented by the small line. When an incoming CV signal from a connection changes the parameter, you'll see the bias point stay in position while the line moves according to the change. **See Signals, page 12** for an explanation of what a CV signal is.

CONTROLS

THE KNOB

The rotary  **KNOB** is used for many different interactions with ZOIA. Navigate between and select patches, options, pages, modules, or connections. Dial in parameters within modules, or move a cursor around while typing. Hold the  **KNOB** down while turning to fine tune a parameter. Hold  **SHIFT** while turning for a super fine tune.

ACTION BUTTONS



Move

Moves modules, pages or patches.



Copy

Copies modules, pages or patches.



Edit

Edits modules, page names or patch names.



Delete

Deletes modules, pages or patches.

Star



Press star on a parameter or connection to add it to the starred list. Press star with nothing selected to view the starred list. **See Starred List, page 22.**

View



Cycle through screens of the selected parameter. View its value, audio/CV visualization, or connection list.



Save

Save pages or patches.



Random

Randomly modifies a parameter or connection.

UTILITY BUTTONS



Page Left/Right

Scroll to next/previous page.

Back



Back out of active selection or menu.

Shift



Hold to access action buttons or to capitalize text.

Note: Auto-shift feature inverts function of this button for the top row of the button grid. This allows one-touch interaction with the action buttons. When Auto-shift is active, hold shift to access grid buttons as normal. See [Config Menu, page 23](#).

OTHER BUTTONS

Undo



Undoes the last action if it's one of the following: add/modify/delete connection, add/move/copy/delete module, modify parameter.



Help

Press for help on currently selected item.



Backspace

When typing, delete character at cursor.

Config



Press  **SHIFT** and  **CONFIG** to open the config menu. **See [Config Menu, page 23](#).**

STOMPSWITCHES


The stompswitches can be used to navigate through and select patches. This can be done in two different ways - Scroll Mode or Bank Mode. You can choose which mode to use in the Config Menu under Patch System.

In either mode, the four grid buttons below the screen indicate whether the pedal is bypassed or engaged. They will be lit red when bypassed, and green when engaged.





SCROLL MODE (DEFAULT)

In Scroll Mode, the stompswitch functions correspond to their labels.




BYPASS

The  **BYPASS** switch bypasses the unit, much like a standard guitar pedal.

SCROLL

Press  **SCROLL** to cycle up between patches, or  **SELECT** and  **SCROLL** together to cycle down. You can set the maximum number of patches to scroll through in the Config Menu. Engage your selected patch by pressing  **SELECT**.





SELECT

This switch will engage the patch you are on as selected by the  **SCROLL** switch. In Scroll Mode, the  **SELECT** switch has no other function than to interact with the  **SCROLL** switch. This makes it an ideal choice for use with the stompswitch module, which can be done by selecting stompswitch: left as you place the module.

BANK MODE



Bank Mode will allow you to quickly switch between 3 different patches on the fly. Each bank consists of 3 patches, organized 1-3, 4-6, 7-9, and so on.

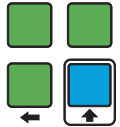
To select and engage a patch, press the corresponding stompswitch. Press the stompswitch again to bypass that patch.






To change banks, press together either  **SCROLL** and  **BYPASS** (bank up) or  **SCROLL** and  **SELECT** (bank down). Press any stompswitch to engage one of its patches, thereby selecting that bank.

You can select the maximum number of banks to scroll through in the Config Menu.

ENTERING AUXILIARY MODE

All three of these switches can be interfaced to perform functions using ZOLA's stompswitch module. However, since the  **BYPASS** and  **SCROLL** switches have primary functions, they must be toggled to auxiliary mode to function in this way. This can be done by holding



holding  **BYPASS** and  **SCROLL** together for one second until the  **SHIFT** button turns cyan. ZOLA's stompswitch module will now respond to the  **SCROLL** switch (middle) and the  **BYPASS** switch (right) for use within the grid. Hold them together again to return them to normal functionality.

EXTERNAL SWITCH

You can also connect a single external footswitch through the Control Port. For information on how to set up an external footswitch, see **External switch, page 29**.

THE BASICS

SIGNALS

Each button of a module has several characteristics. With a few exceptions, each button of any given module acts as either an input or an output of either an audio or a CV path.

Audio signals flow from the output button of one module to the input button of another module. Audio processing occurs as the audio goes through the module and the altered audio comes out of the output, much like a standard guitar pedal or synth module. Analysis modules analyze audio signals in some way and output CV signals.

CV (control voltage) signals in ZOIA are a lot like the CV signals you may be familiar with from the synth world. They are a means of transmitting information from one module to another, or put more simply, they allow you to control various module parameters. You can think of CV like an automatic expression pedal: as the CV signal sweeps between the ends of its range, it modifies the parameter it's connected to. In the synth world, CV signals range from -15 volts to +15 volts. In ZOIA, however, CV signals range from 0 to 1, or in some cases from -1 to +1.

If a button is a CV input, it can be connected to other buttons that are CV outputs. Each CV input button also has a bias value that can be set by pressing the corresponding button and twisting the knob. The bias value determines the starting point of the CV signal. For example, setting a bias value of +0.5 would limit the range of the CV signal from +0.5 to +1.

MODULES

A module is a collection of inputs, outputs, and parameters, each of which is represented by a button on the grid. Many modules have various optional parameters so you can tailor them to your needs. Individual modules can be renamed, and you can also choose a module's colour so that it's easy to identify on the grid. The number

of buttons a module occupies is determined by the number of inputs, outputs, and parameters it has. See the Module Index at empresseffects.com/zoia-module-index for a complete description of all the modules and their parameters.

MODULE CATEGORIES

Interface Modules: modules that import the audio, control voltage, MIDI, stompswitch, expression pedal or grid button presses from the outside world for use in ZOIA.

Audio Modules: these audio processing modules are more commonly found in the world of modular synthesis. VCAs, filters, oscillators, and many more utilities and effects.


Control Modules: modules that generate and manipulate CV signals within ZOIA. Sequencers, LFOs (low-frequency oscillators), and ADSRs (attack-decay-sustain-release) are classic examples of control modules.

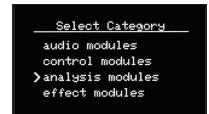
Analysis Modules: modules which take in audio and analyze it in some way, outputting a control voltage signal.

Effect Modules: pre-built effects, such as modulations, reverbs, distortions etc.

ADD A MODULE

1. Select where the module will go by pressing an empty grid button.
2. Select the category of the module you wish to add.
3. Select the module you wish to add.
4. Edit the options of that module and select "Done?" For more information on how to edit options, see the "Edit a module" section below.

If you find you don't like the placement of the module once it's laid down, don't worry. You can move it after by using the  **MOVE** key.



SELECT A MODULE

Press one of the grid buttons occupied by the module. That button will light up, allowing you to adjust its parameter. This also selects the whole module for moving, copying, or deleting.

EDIT A PARAMETER

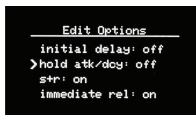
Select a grid button on the module and use the rotary **KNOB** to modify the value of the selected parameter. Hold the **KNOB** down while turning to fine tune a parameter. Hold **SHIFT** while turning for a super fine tune.

On certain modules you can click the **KNOB** to change the way information is displayed.



EDIT A MODULE

Select a module and press **EDIT**. Scroll to the option you'd like to edit and click the knob. Once you've found your desired value click again to select it. Be sure to select "Done?" when finished, or the changes you made will be forgotten.



DELETE A MODULE

Select a module and press **DELETE**.

MOVE A MODULE

Select a module and press **MOVE**. Press an unoccupied grid button where module will fit. To move the module to a different page, simply select the module, press **MOVE**, navigate to the destination page, then press an unoccupied grid button.

COPY A MODULE

Select a module and press **COPY**. Select where you want to place it on the grid, then from the menu, select which connections, if any, you'd like to keep for the new module, then select "Done?". To copy a

module to a different page, simply select the module, press **COPY**, navigate to the destination page, then press an unoccupied grid button.

RENAME A MODULE

Select a module and press **EDIT**. Scroll to "Name" then click the **KNOB** to edit the module name. Click the **KNOB** to confirm the name or press **BACK** to cancel, then select "Done?" to save.

Note: If you place, move, or copy a module into a space where it doesn't fit, it will overlap a previous module, wrap itself to the next row of buttons, or lose some buttons at the bottom corner of the page. Use a new page instead if you need to.

CONNECTIONS

A connection links one button to another. Use them to allow modules to interact with each other or themselves. Think of a connection like a patch cable. For example, you can connect an oscillator to a VCA, a stompswitch to a tap tempo, or you can feed a delay line back on itself to create repeats. Be extra careful when connecting an audio module's output back into its own input. This will create a feedback loop, and while it can be useful, it can also get out of hand very quickly!

MAKE A CONNECTION

When two parameters (buttons) you wish to connect are on the same page, hold them down at the same time. The screen will show you what you're connecting. Turn the **KNOB** to adjust the strength of the connection, or click the **KNOB** to change units. When two modules you'd like to connect are on different pages, press one button, move to the other page and press the other button.



Note: whether bypassed or engaged, changing

pages with a parameter selected will display two yellow LEDs to indicate that you're about to make a connection. You can make this connection or cancel by pressing **BACK**.

SELECT A CONNECTION

Press both buttons if on the same page, or press one, then the other if the connection is across pages. From this state you can adjust the strength of the connection by turning the

KNOB. You can also select a connection by

switching to that parameter's connection list. Press the grid button and press **VIEW** until you see the connection list screen. From here you can adjust the strength of each connection listed by using the

KNOB. Highlight a value, click adjust, make your adjustment and click again to save or press **BACK** to cancel.

```
Connection List
>oscillator pre: 141
  adsr attack: 100
```

DELETE A CONNECTION

This can be done by selecting the connection and pressing

DELETE.

SEE WHAT IS CONNECTED TO A MODULE PARAMETER

When you press a button, all the buttons it's connected to will light up. You can also see which connections exist in the connection list screen.

SET YOUR CONNECTION STRENGTH

When using connections to alter parameters, it's important to understand how changes will affect your module. The first step is to set your destination parameter to your desired CV bias, which is the point that will either be its minimum (if you apply positive CV), its maximum (if you apply negative CV), its midpoint (if you apply CV that swings between positive and negative), or its resting place (in the absence of applied CV). Once that is set, the connection strength you set with the **KNOB** will determine how far in any given

direction your parameter will travel. Click the **KNOB** while making a connection to toggle between seeing your connection strength expressed as a % (useful for CV connections) and a dB value (useful for audio connections).

Note: You cannot set a bias point for audio connections.

Note: While you can make module connections across pages, you cannot make connections across patches. See Patches, page 20.

ENTERING PERFORMANCE MODE

You may wish to prevent ZOIA from creating new connections or deleting existing modules during a live performance. Performance mode helps prevent accidental unwanted changes and lets you focus on your set. You can toggle this mode on and off by pressing **SHIFT** and **BACK**. You will see the back LED turn magenta to denote that performance mode is active.



PAGES

A page is represented by one full 8x5 grid of buttons. Each patch can contain up to 64 pages, numbered 0 through 63. Each page can be named, and connections can be made across pages.

PAGE LIST

Press **←** **PAGE LEFT** or **→** **PAGE RIGHT** to enter and navigate through the page list.

SELECT A PAGE

While in the page list, navigate to the desired page and click the **●** **KNOB**.

NAME A PAGE

Scroll to a page in the page list and press **✎** **EDIT**. From here, you can type in your desired page name. Click the **●** **KNOB** to confirm the name or press **←** **BACK** to cancel. Make sure to save your patch or the name will not be saved. See **Typing Text, page 25** for more information.

MOVE A PAGE

Scroll to the page you want to move. Press **⚡** **MOVE**. Now select another page. The page that you are moving will be inserted in front of the second page that you select.

COPY A PAGE

Scroll to the page you want to copy. Press **📄** **COPY**. Now select another page. The page that you are copying will be inserted in front of the second page that you select.

```
Page List
0.
>1.
2.
3.
```

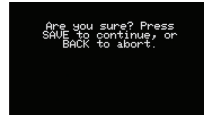
```
page name
voice1_
```

```
Move page 4 before:
2. voice 2
>3. sequencer
4. drums
5.
```

```
Copy patch 8 to:
3.
>4. Electric Farts
5. BitGate UI
6. GoldenPhase II
```

DELETING A PAGE

Press **←** **PAGE LEFT** or **→** **PAGE RIGHT** to enter the page list, scroll to the page you wish to delete and press **🗑** **DELETE**. You will be asked to confirm the deletion.



IMPORTING A PAGE




Press **←** **PAGE LEFT** or **→** **PAGE RIGHT** to enter the page list, scroll up to Import Pages, and click the **●** **KNOB**. From there, select which patch you'd like to import pages from and click the **●** **KNOB** again. ZOIA will show you a list of all the pages within that patch. Using the **●** knob, put a star beside all desired pages and click Selection Complete. ZOIA will ask where in your current patch you'd like your pages to go. Click your desired page slot, and ZOIA will push any pages after it down the line to make space. All existing connections within and between pages will be preserved after the Page Import.

PATCHES

A patch represents the entire collection of pages in your page list, including all modules, connections, button values, and page names that you've created. Think of it as the project file that encompasses the whole of your work that you can then save, name, and navigate between using either the knob or the stomp switches.


NAME A PATCH

With no module selected, press  **EDIT**.

From here, you can type in your desired patch name. You can also select a patch from the Patch List and press  **EDIT**. Click the  **KNOB** to confirm the name or press  **BACK** to cancel. Make sure to save your patch or the name will not be saved. See [Typing Text, page 25](#) for more information.






SAVE A PATCH

Whether a module is selected or not, you can save your patch by pressing  **SAVE**. It is always a good idea to save often.

Note: Saving a patch will write to ZOIA's internal memory, but it won't write to the SD card until prompted to in the Config Menu. It's a good idea to save edits to patches with a version number as part of the file name to prevent accidental overwriting. (e.g. Hot Fuzz 3)

SELECT A PATCH

There are three ways to do this:

- 1. Knob method:** With no module selected, you can use the  **KNOB** to scroll through your Patch List. Click the  **KNOB** to select a patch, or press  **BACK** to cancel.




- 2. Stompswitch Method:** Depending on whether you have Scroll or Bank mode engaged, this method will be different. See [Stompswitches, page 10](#).




- 3. MIDI Method:** Using an external MIDI controller, you can send ZOIA a Program Change command on any MIDI channel as selected in the Config Menu.

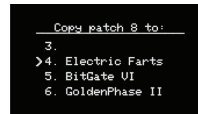
MOVE A PATCH

In the patch list, scroll to the patch you wish to move and press

 **MOVE**. Then place your patch in the desired location and click the  **KNOB** to save or press  **BACK** to cancel.

COPY A PATCH




In the patch list, place your cursor next to the patch you wish to copy and press  **COPY**. Then place your copied patch to the location you'd like and click the  **KNOB** to save, or press  **BACK** to cancel.

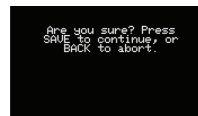


Note: Copying a patch will bump all the Patches under your copy location down by 1 slot, and erase patch 63.

DELETE A PATCH

Scroll to a patch from the patch list and press

 **DELETE**. A confirmation screen will come up. Press  **SAVE** to continue or  **BACK** to abort.



STARRED LIST

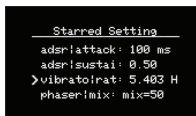
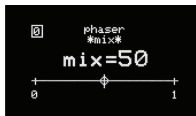
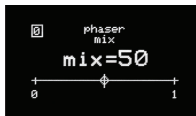
When you have a nice big patch built and you'd like to be able to quickly and easily adjust frequently used parameters from the same place, you can add them to the Starred List.

Simply select your desired parameter or connection and press **★ STAR**. You will see asterisks around the parameter or connection name, and that parameter or connection will appear in the Starred List.

View the Starred List by pressing **★ STAR** with nothing selected. You will see a list of parameters or connections you've added in the order you added them. From here, you can make adjustments to them using the **● KNOB** or remove them from the list by pressing **🗑 DELETE**.

STARRED PARAMETER MIDI CC CONTROL

When viewing the Starred List, pressing **★ STAR** again will allow you to view and assign MIDI CCs to the starred parameters. Selecting the 'learn' option will assign the next CC received by ZOIA to that parameter. You can set which channel ZOIA will listen for starred CC's in the Config Menu.



CONFIG MENU

The Config Menu is the global options menu for ZOIA. Here, you have access to options that are not specific to modules, pages, or patches.

Save and exit?: Press this to save any changes you have made and return. If you press **← BACK** instead, your changes will not be saved.

CPort: Use this to select how you'd like to use the control port. You can connect an expression pedal (default), a control voltage from 0 to 5 volts, MIDI in and out, or an external switch. **See MIDI, page 26** and **Control Port, page 28** for more info.

MIDI Ch: Select which MIDI channel ZOIA will respond to when sending Program Changes, from 1-16. Default: 1. **See MIDI, page 26** and **Control Port, page 28** for more info.

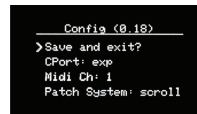
Patch System: Select whether you'd like to use Scroll mode (default) or Bank mode for recalling patches with the stomp switches. **See Stomp switches, page 10.**

Num Patches: This sets the number of patches you can scroll through using the stomp switches (in Scroll mode). By default, ZOIA can save up to 64 patches (numbered 0-63), though if you don't wish to scroll through a bunch of empty patches, you can bring the Num Patches value down. Remember, you can still select these patches using the Patch List.



Num Banks: Select how many banks to cycle through when using bank mode. Use up to 21 banks, from which you can select 3 patches per bank. Default: 4.

Start Patch: Select which patch you'd like ZOIA to boot into when you power it on. Default: 0.

Start State: Select whether you'd like ZOIA to start up bypassed (default) or engaged.



Input Pad: Here, you can adjust ZOIA's input headroom. The default setting is -6dB. If you hear any clipping distortion when feeding your ZOIA a hot signal, you can set the pad to -12dB. If you have a quiet signal and you'd like to increase your signal-to-noise ratio you can select 0dB. Note that the input pad setting affects both inputs.

Auto Shift: Turning on Auto Shift will change the behaviour of the top row of buttons on the grid, so that they will perform their secondary function without having to press  **SHIFT** . This can be very handy when building a patch. You can still place, edit, and connect modules on that row by pressing  **SHIFT** while pressing a grid button. It's basically reversing the behaviour, but only for the top row. We recommend against placing modules like keyboard or pushbutton in the top row if you make regular use of the Auto Shift feature.

Starred CC ch: Select which channel ZOIA will listen to for starred parameter MIDI CC messages. Default: 1.

MIDI Consume: Select the desired MIDI pass-through behaviour. "All" will completely disable any MIDI throughput, "some" (default) will block MIDI signals used by existing modules, and "none" will allow all incoming MIDI to pass through.

Patches to SD: Manually export all the patches from ZOIA's internal memory onto the SD card. You can select an existing folder on the SD card, or create a new one. If saving to an existing folder, any patch with the same name will be overwritten.





Patches from SD: Manually import all the patches from the selected SD card folder. Each time patches are imported, a backup folder is created that contains the patches currently loaded on ZOIA. The number of backup folders is limited to 256.

DSP Usage: Shows RAM usage, DSP used by the connection matrix, and DSP usage of the individual modules in your current patch.

Factory Reset: Erase all saved patches and reset Config Menu to its default factory setting.

Hide Firmware: This prevents ZOIA from beginning a firmware update during the boot sequence by renaming any detected firmware files on the card .

TYPING TEXT

Use the button grid to enter text when naming or renaming a patch, page, or module. You can enter a space using the  **SPACE** key, delete a character using the  **DELETE** key, or enter a capital letter by pressing the  **SHIFT** key and the letter. Use the rotary knob to move the cursor around, and click the knob to enter your changes, or press  **BACK** to cancel.



patch name
THE HARRISBURG_

PHYSICAL CONNECTIONS

ZOIA can interface with MIDI in two different ways: using the on-board MIDI ports and with the Control Port.

On-board 1/8" MIDI ports: These can be used with the included 1/8" to-5-pin dongles. These ports are designed to work with MIDI only and will not respond to CV from your external synth modules. ZOIA uses MIDI Type A spec classification dongles, the same type used by manufacturers such as Make Noise, Korg, Akai, and many others.

Control Port: The Control Port can send and receive MIDI signals on the ring and tip of a 1/4" TRS connector, respectively. Remember to set the Control Port to recognize MIDI messages in the Config Menu. The Control Port is a pretty tidy way of interfacing your Empress ZOIA with your super sweet Empress MIDIbox2. When set to MIDI, using a TS instead of a TRS patch cable in the Control Port will bridge the ring to ground, rendering ZOIA unable to send MIDI.

CONTROLLING ZOIA WITH MIDI

While any MIDI module can be set to interact with any MIDI channel from 1-16, ZOIA has some basic functionality that is not directly module-related. You can change the bypass state, and simulate a number of different user interactions using MIDI CC messages on the MIDI channel selected in the Config Menu (see the table on the next page).

LOAD A PATCH VIA MIDI (PROGRAM CHANGE MESSAGES)

You can activate a patch by sending a MIDI program change message on the MIDI channel selected in the Config Menu. Send the Program Change number that corresponds to the patch you'd like to load, keeping in mind that ZOIA patches begin at number 0.

| Action | MIDI CC Message | MIDI CC Value |
|------------------------------------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Engage or Bypass pedal | 60 | Bypass: 0 Toggle: 64 Engage: 127 |
| Button, Stompswitch, Rotary Switch press | 61, 62 | Buttons: Grid: 0-39 Page Left: 40 Page Right: 41 Back: 42 Shift: 43 Euroburo Pushbuttons: 44-45 Euroburo CV Inputs: 46-49 Euroburo CV Outputs: 50-53 Euroburo Audio Inputs: 54-55 Euroburo Audio Outputs: 56-57 Euroburo Headphone: 58 Right Stompswitch: 124 Middle Stompswitch: 125 Left Stompswitch: 126 Rotary Switch: 127 |
| Rotary turn | 63 | Value - 64 = Number of turns (positive clockwise, negative counter-clockwise) Example: sending a value of 65 would emulate one clockwise turn, sending a value of 63 would emulate one counterclockwise turn |

CONTROL PORT

The control port jack allows ZOIA to be controlled by a multitude of devices. Note that ZOIA can only be connected to one such device at a time, and the device must be selected in the Config Menu.

MIDI

ZOIA Control Port can receive MIDI messages on the tip of a ¼” TRS connector and send MIDI messages on the ring of a ¼” TRS connector. Note that when the MIDI ports are in use, the Control Port will only be able to send MIDI out, and not accept MIDI in. Be sure to use a TRS connector instead of a standard TS patch cable if you wish to send MIDI messages from ZOIA.

EXPRESSION PEDAL (EXP)

ZOIA is compatible with expression pedals that output signal on the tip. You can enable expression pedal functionality into your page using the module “cport exp/cv in” under the “interface modules” list. You can then connect this module to various buttons of other modules including audio effects parameters, oscillator frequencies, VCAs etc. Have fun!

CONTROL VOLTAGE (CV)

With CV control, ZOIA responds to CV signals from 0 to 5 volts. Otherwise, the CV configuration works exactly like the expression pedal configuration. Integrate CV by first placing “cport exp/cv in” or “cv out” modules on your page. You can then connect these buttons to various other modules. ZOIA will receive control voltage signal on the tip of a ¼” TRS connector, and it will send control voltage on the ring of a ¼” TRS connector. In this way you can interface your external synth modules to ZOIA’s internal modules. There are tons of possibilities for experimentation! Be sure to use a TRS connector instead of a standard TS patch cable if you wish to send CV from the Control Port, or use an insert cable if your device receives CV on the tip.

EXTERNAL SWITCH

ZOIA can be used with either a normally-open or normally-closed momentary or latching external switch. Select your switch type as either “open sw” or “close sw”. The switch will be read as engaged when there is connectivity between the tip and the sleeve of the TRS jack, so you can use a standard guitar patch cable to connect your switch.

Interact with your external switch by placing the stompswitch module from the “interface modules” category and set the stompswitch option to read external. From there, you can connect this module to anything from tap tempo inputs to sequencers to gain stages. Experiment!

FIRMWARE UPDATES

PERFORM A FIRMWARE UPDATE

1. Download the firmware file off the website empresseffects.com/zoia-firmware
2. Copy the .bin file to the root directory of the microSD card. The card must be specifically be SDHC or SDXC, and it must be formatted FAT32, with a single partition.
3. Insert the microSD card then power on the pedal. If you’re using ZOIA pedal, make sure that the orientation of the card is such that the pins are facing **upward**, or else ZOIA won’t see the card. If you’re using ZOIA Euroburo, the pins on your microSD card should be facing **downward**.
4. ZOIA will boot, load, and verify the firmware file. There are two processors on ZOIA. It will take approximately 40 seconds for the 2nd processor to be programmed.

SAVING & LOADING PATCHES FROM THE SD CARD

A user-curated repository of patches can be found at patchstorage.com. You can import and export patches to and from the Micro SD card from the Patches to SD and Patches from SD options in the Config Menu. See **Config Menu, page 23** for more information.

Patches being loaded from the SD card to ZOIA must be prefaced with a 3 digit patch number (e.g. 001, 002, 003, etc.) and have a .bin file extension. (e.g. 003_Hot_Fuzz_3.bin)

If you're using ZOIA pedal, make sure that the orientation of the card is such that the pins are facing **upward**, or else ZOIA won't see the card. If you're using ZOIA Euroburo, the pins on your microSD card should be facing **downward**.

THANK YOU

ZOIA wouldn't be possible without our team of beta testers, factory patch makers, videographers, and co-op coders. Thanks to KNOBS, Andreas Paleologos, Daniel Fisher, Mitch Lantz, Simon Labelle, JT Norton, Ash Sargant, Nihal / Fireghosting, Evan Sirchuk, Gabriel Tanaka, Paul Uhl, Ian Pritchard, Benn Jordan, Erik Ångman, Joseph Pailo, aBunchOfPedals, Jake Miller, Patrick Zdunich, Eric Nyffeler, Alexander C. Sprungle, Matthew Cyr, Taylor Hunt, Colin King, and Andy Nguyen.

POWERING ZOIA

ZOIA requires at least 300mA of current to function properly. Any power supply rated at 9V DC, supplying negative tip polarity (+-⊖-) and at least 300mA of current should work.

Visit empresseffects.com/power for instructions on how to ensure your power supply works for your pedal.

REGULATORY COMPLIANCE INFORMATION

ICES-003 (Canada)

CAN ICES-003(B) / NMB-003(B)

FCC (USA)

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible Party in the USA

Americas Compliance Consulting LLC dba iCertifi
1001 SW Disk Drive, Ste 250
Bend, Oregon 97702 USA
FCC_sDoC@icertifi.com
icertifi.com

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help.

CE (EU) and UKCA (UK)

This declaration of conformity is issued under the sole responsibility of Empress Effects Inc- 105-62 Steacie Dr, Kanata Ontario K2K 2A9. The device identified on the front page of this manual is in conformity with the requirements of:

- European Union: Electromagnetic Compatibility Directive 2014/30/EU
- United Kingdom: Electromagnetic Compatibility Regulations 2016 (SI 2016 No. 1091)

The following harmonized/designated standards have been applied:

- EN 55032:2015/A11:2020 – Electromagnetic compatibility of multimedia equipment - Emission Requirements
- EN 61000-3-2:2014 – Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)
- EN 61000-3-3:2013 – Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection
- EN 55035:2017/A11:2020 – Electromagnetic compatibility of multimedia equipment - Immunity Requirements



Colin King
Design Engineer
Empress Effects Inc
August 19, 2023
62 Steacie Dr, Suite 105, Kanata, Ontario K2K 2A9 Canada

WEEE (2012/19/EU)



This product must not be disposed of with regular household waste. In compliance with WEEE regulations, please take this product to a designated collection facility or return to the supplier for proper recycling. Comply with local laws and regulations for disposal. Contact your local authority or support@empresseffects.com for specific information.



Disposal of the packaging material

For the transport and protective packaging, environmentally friendly materials have been chosen that can be supplied to normal recycling.

Ensure that plastic bags, packaging, etc. are properly disposed of. Do not just dispose of these materials with your normal household waste, but make sure that they are collected for recycling. Please follow the notes and markings on the packaging.



Further Information

On our website (www.empreseffects.com) you will find lots of further information and details on the following points:

Download

This manual is also available as a PDF file for you to download.

Keyword Search

Use the search function in the electronic version of this manual to find your topics of interest quickly.

Customer Support

If you have any problems with the device our Customer Support team will gladly assist you.

Symbols and Signal Words








| Signal Word | Meaning |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| DANGER! | This combination of symbol and signal word indicates an immediate dangerous situation that will result in death or serious injury if it is not avoided |
| CAUTION! | This combination of symbol and signal word indicates a possible dangerous situation that can result in minor injury if it is not avoided. |
| NOTICE! | This combination of symbol and signal word indicates a possible dangerous situation that can result in material and environmental damage if it is not avoided. |

| Warning Signs | Type of Danger |
|---------------|----------------------|
| | General warning sign |
| | Electricity Hazard |
| | Hot Surface |
| | Sudden Loud Noises |

Intended Use

This pedal is designed for enhancing guitar tones in live performances and studio recordings. Use as outlined in the user manual. The manufacturer is not liable for damages resulting from improper use or use under non-recommended conditions.

Safety

| | |
|----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | DANGER! Danger for children Dispose of plastic bags and packaging properly to keep them out of reach of babies and young children to prevent choking hazards. Ensure children don't detach small parts like knobs to avoid choking. Never leave children unattended with electrical devices. |
|  | DANGER! Electrical shock Risk of electrical shock from exposed wires or damaged components. Inspect pedals for damage before use. If damaged, stop use and seek professional repair. |
|  | DANGER! Power Supply Issues Use the right voltage and current for your pedal's power supply to prevent damage and safety risks. Check the power supply's condition, and for multiple pedals, opt for a dedicated supply to avoid overloading by daisy-chaining. |
|  | CAUTION! Overheating Avoid overheating. Do not stack pedals or place in confined spaces. If a pedal overheats, stop using and let it cool. |
|  | CAUTION! Tripping Hazard / Pedal Placement Prevent tripping: Secure cables and place pedals firmly to avoid slips and falls. |
|  | CAUTION! Volume Spikes Beware of volume spikes and unexpected sounds when adjusting pedal settings |
|  | NOTICE! Allergies or Sensitivities Allergy Alert: Some pedal materials, like adhesives and coatings, may cause reactions. Stop use and seek medical advice if needed. |
|  | NOTICE! Fire Hazard Keep away from direct heat and open flames. |

SPECIFICATIONS

Input Impedance: $\geq 1\text{M}\Omega$

Left Output Impedance: 100Ω

Frequency Response (-3dB): 10Hz – 23.4kHz

Total Harmonic Distortion: $<0.22\%$

Dynamic Range: 105.5 dBA1

Input Headroom (no pad): +0.5 dBu

Input Headroom (6dB pad): +5.7 dBu

Input Headroom (12dB pad): +10.8 dBu

Output Headroom: +16.2 dBu

Power Voltage: 9V DC Center-Negative

Power Input Connector: 2.1mm Barrel Connector

Required Current: 300mA

Height: 2.625"

Length: 5.7"

Width: 3.75"

Weight: 1.5 lbs

FOR SUPPORT AND TO REPORT BUGS

Please call 1-888-676-1853 (toll free world-wide!)
or email support@empresseffects.com

FOR FIRMWARE UPDATES

www.empresseffects.com/ZOIA-firmware

FIND GREAT ZOIA PATCHES

www.patchstorage.com/platform/ZOIA

TO UNDERSTAND WHAT THE VARIOUS MODULES DO, CHECK OUT THE MODULE INDEX

www.empresseffects.com/ZOIA-module-index

FOR HELPFUL TIPS AND TRICKS

www.empresseffects.com/ZOIA-tips-and-tricks

JOIN THE EMPRESS ZOIA USERS FACEBOOK GROUP

www.facebook.com/groups/EmpressZOIAUsers

JOIN THE DISCUSSION ON REDDIT

www.reddit.com/r/ZOIA

