

SIVA

***Instruction Manual
Version 1.0***

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Quick Start

Power

Connect the supplied AC adapter and flick the power switch to start.

Outputs

Connect headphones or to an amplifier or monitors by 1/4" jack or XLR.

Inputs

If not using wireless, connect guitar, bass or something else here.

Wireless Input

If wireless option included, connect supplied antennas.

Only tighten to finger tight for easy removal.

Transmitters bought with SIVA will connect on power up. See Bind a Wireless Transmitter on page 16.

Use the joystick to move the cursor around and try clicking on things to add effects or make connections.



Rear Panel Connections

Inputs

SIVA has two primary audio inputs. They are high impedance instrument inputs with wide input range capable of taking instruments or line sources.

Headphone amp

The headphone amplifier is a proprietary class A design capable of driving a wide range of headphones with very low distortion with volume control.

Expression

Two expression pedals can be connected to the 1/4 inch jack sockets marked EXP1 and EXP2.

Power

Connect the supplied AC adapter and flick the power switch to start.



Send/Return

There are two send/return loops. To use external effects connect a SEND output to the input on the effect and connect the output of the effect to the corresponding RETURN input.

Note that the RETURN inputs and SEND outputs can be used as additional general purpose inputs and outputs. The audio performance on these is identical to the of the main INPUTS and MASTER OUTPUTS.

Outputs

The MASTER LEFT/RIGHT outputs can be connected by XLR, 1/4 inch jacks or headphones.

The master XLR outputs have differential drive for lowest noise connection over long distances to mixing desk or monitors. The ground lift (GND LIFT) switch may be useful in some cases to reduce mains (50 or 60Hz hum) noise but should normally be left in the off position (to the right).

The 1/4 inch jacks feature extremely low distortion discrete class A bipolar drivers with TRS balanced 100 ohm output impedance.

MIDI

SIVA is equipped to transmit and receive MIDI data via the two 5 pin DIN sockets marked MIDI OUT and MIDI IN respectively.

MIDI functionality will be implemented in a future firmware release.

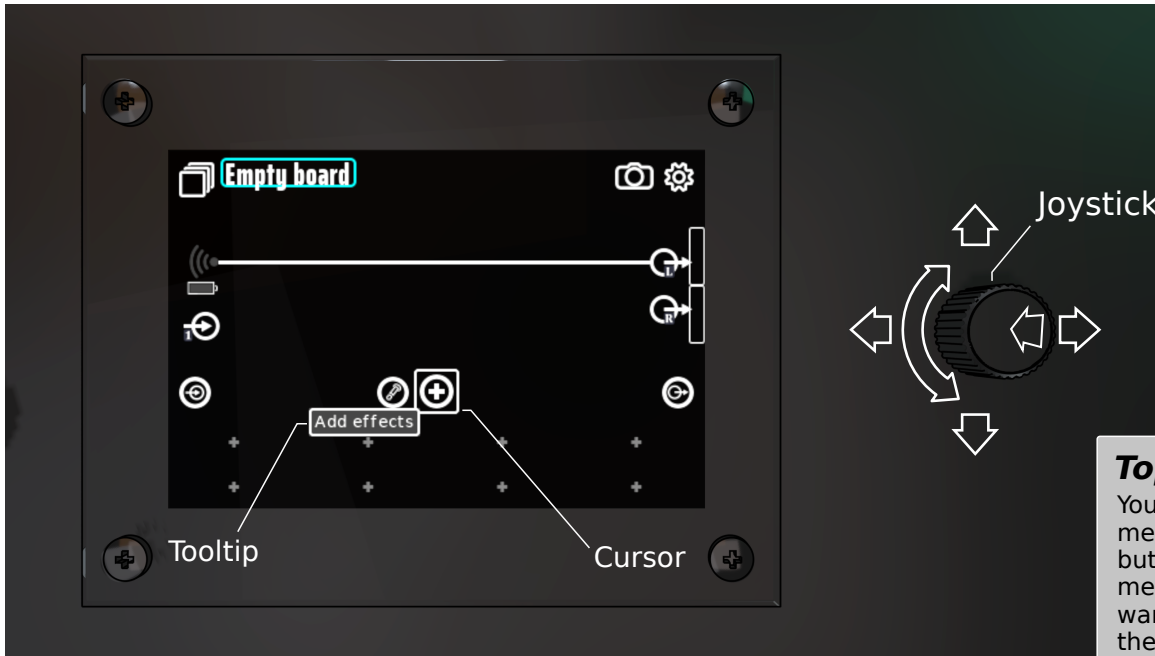
USB

The USB socket can be connected to a laptop or PC for firmware upgrades and stereo audio playback and capture.

Navigation

Cursor

The SIVA screen shows a white square cursor in every operational mode. It identifies the object that is selected. When an item is selected you'll often see a *Tooltip* text box appear with information about what you can do with that item.



Top Tip:

You can also navigate menus using the stomp buttons. If you ever have a menu open that you don't want open, just press on the red lit CANCEL stomp button to close it.

Joystick

Use the joystick to move the cursor around the screen to select different items. Click (centre press down) on the joystick to select the item and show the options available in a menu. You can now either move the joystick up and down or rotate to select items from the menu. If more than one column is shown, you can move the joystick left and right to select the column to use.

Footswitches

The eight footswitches have a number of different functions depending on the state of the user interface. They can be used to switch effects on and off, to set rate controls as a tap tempo and more (see page 13 - Assigning Footswitches). When a menu is displayed, they will automatically change to menu direction buttons and provide an alternative control method to the joystick.

The lower strip of the display shows the currently assigned functions with colours that match the LED colours on the footswitches themselves.

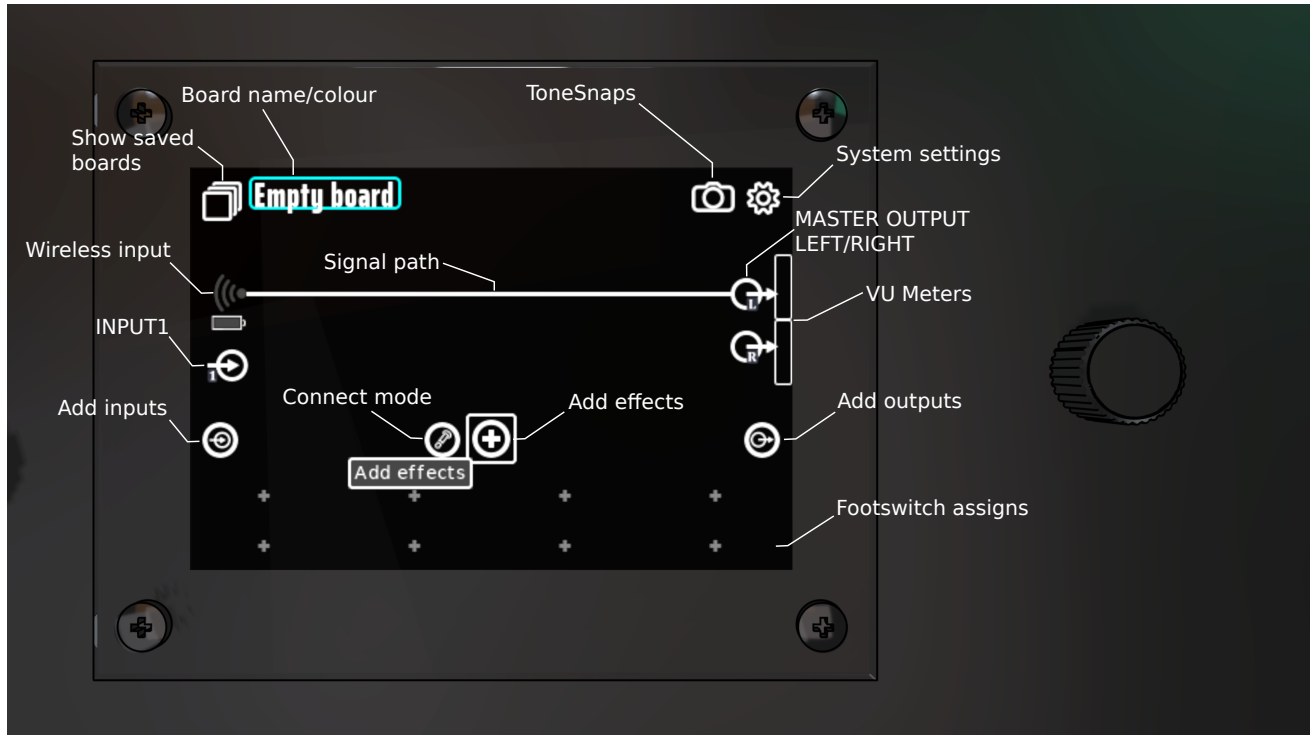
In the case shown here, the lower left button is assigned to bypass an overdrive pedal and the lower right is assigned as a tap tempo control for the analogue echo. The other six buttons are unassigned.



Board View

In SIVA, we refer to a configuration of inputs, outputs and effects as a 'board' (like a pedal board that can also include amps and speakers). The Board View is the place where boards are edited and controlled.

Click on the plus icon to add effects to the chain. Use connect mode to change the signal path. Click on the footswitch icons (or press relevant button) to assign footswitch functions. ToneSnaps let you record the current board state for fast changes. Use the saved boards icon to swap to other boards in your collection.



Adding Effects

In the Board View, move the cursor to the plus symbol and click.

You will see a menu of effects arranged in groups.

DRV: overdrive and fuzz effects

MOD: modulation effects

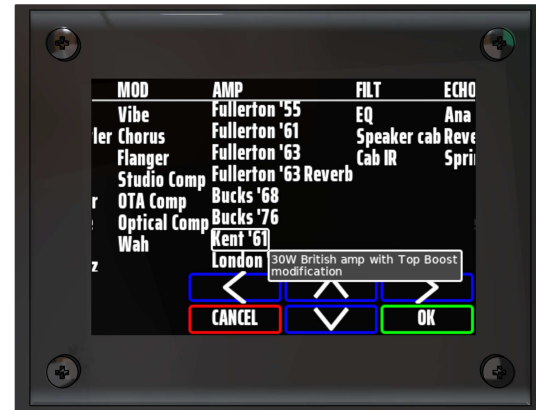
AMP: amplifiers

FILT: frequency response changing filters

ECHO: echo and reverb

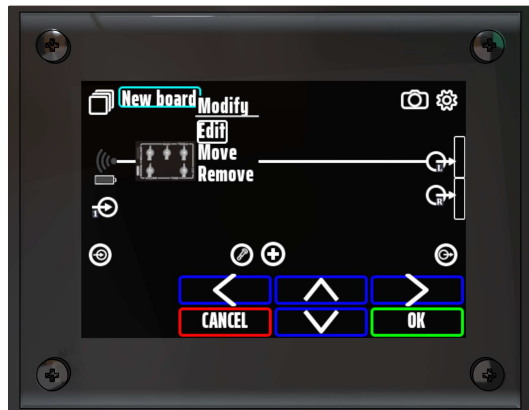
OTHER: any other (eg split/join path, tuner, looper)

Use the joystick (rotate as well as up/down/left/right) to choose the effect to be added to the signal chain.

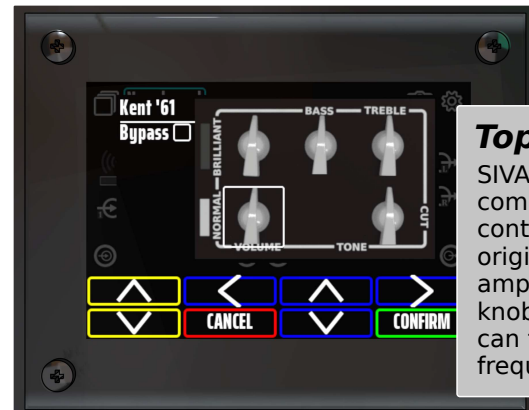


Editing Effects

Move the cursor to the effect you want to set up and click to see the modify menu.



Click on the Edit option to open the Effect Editor. Move the cursor to the control you want to change and turn the joystick.

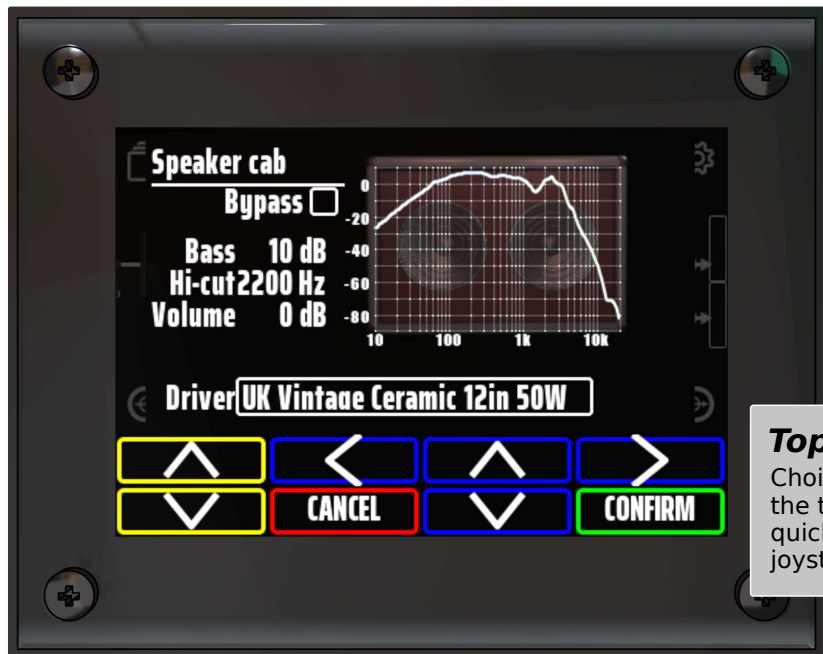


Top Tip:

SIVA simulations are component level so controls match the original circuits. This amp has no presence knob. The cut control can tame high frequencies.

Speaker Cabinet Models

A broad range of speaker cabinets can be simulated using the 'Speaker cab' effect. The effect includes more than fifty speaker driver frequency responses from well known manufacturers on both sides of the Atlantic.



These frequency responses are closely matched to measurements of the devices in question in an infinite baffle.

Treble and bass adjustments can be used to produce off axis response and adjust effective cabinet size and porting.

Top Tip:

Choice of speaker driver makes a big difference to the tone of a guitar/amp combination. You can quickly try lots of different drivers using the joystick rotary to step through them.

Impulse Responses

SIVA can also use impulse response files to simulate cabinet frequency responses using the 'Cab IR' effect. IR files can be uploaded by dropping them on the SIVA USB drive. Any mono audio file that is shorter than 96000 samples will be interpreted as 48000 Hz 1024 sample impulse responses.

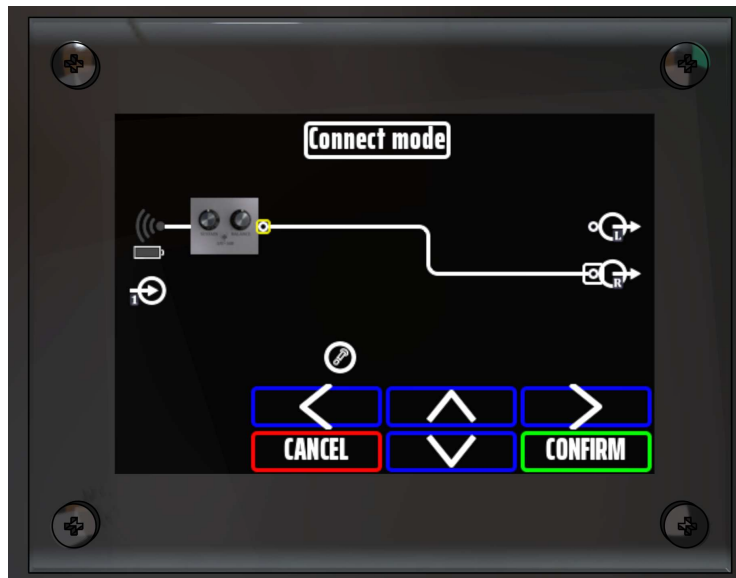
Making Connections

Click on the Connect mode icon (jack plug) to change the signal path. In connect mode, all available inputs and outputs are represented by small circles.

Move the cursor to an input or output you want to reconnect. Click to start making a connection (the start point will be highlighted) move to the output or input you want to connect to and click again to complete the connection.

Press the red lit Cancel footswitch to exit at any point.

SIVA automatically rearranges boards when changes are made. It doesn't do this while you're making a change otherwise things would move around making selections confusing. As a result, your board may look a little ugly during the connect process!

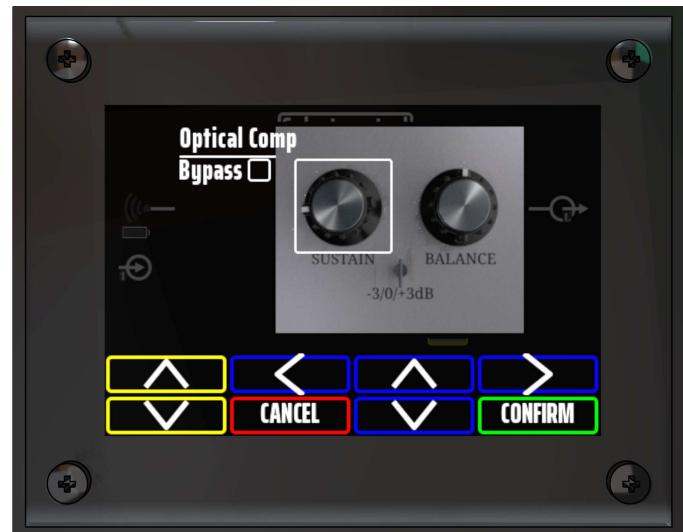


Expression Pedals

Plug an expression pedal in to either the EXP1 or EXP2 jack socket on the rear panel. SIVA will show the relevant expression pedal icon.

Click on the icon and select Connect to start connecting the pedal to controls of effects on the board. Use the cursor to select the effect and then the control within that effect.

Select as many controls as you want.



Auto-engage

If you select the bypass control, that effect will be automatically bypassed when you rest the expression pedal in the heel down position.

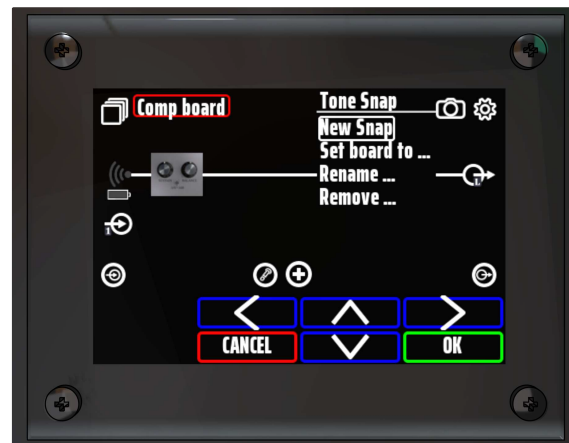
Tone Snaps

Click on the camera icon to show the Tone Snaps menu.

Tone Snaps are a record of the position of every control on a board.

Those settings can then be recalled either by selecting the 'Set board to ...' option from the Tone Snap menu or by assigning a Tone Snap to a footswitch (see Assign Footswitches on page 13).

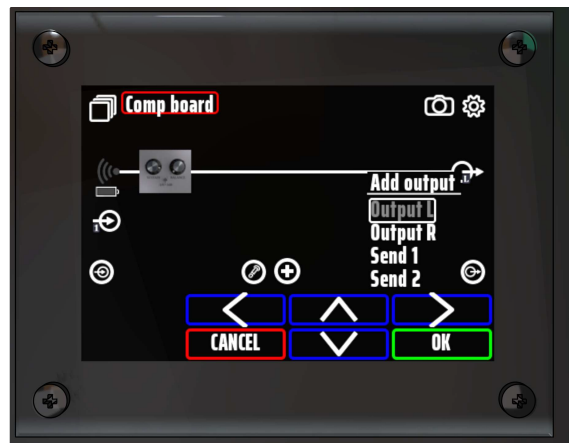
Note that effects that are added after a Tone Snap has been taken will not be affected when the snap is recalled.



Add/Remove Inputs/Outputs

Inputs and outputs that you do not intend to use on a board can be hidden by clicking on them and selecting Remove.

If you change your mind, you can reinstate them using the Add input or Add output menu.



Assign footswitches

To assign a footswitch either press an unassigned one (unassigned switches show a plus icon) or move the cursor over the one you want to use and click to show the Assign Footswitch menu.

You can choose to add a new effect and bypass that, bypass an existing effect, provide tap tempo rate control, recall a Tone Snap, move to a different board or show all saved boards.

Select the type of assignment and select the effect/control etc as directed.

In the case illustrated, the compressor effect already on the board was selected to bypass.



You now have an assigned footswitch and can activate it with a brief press.

Hold the switch down (more than 1 second) or click it with the cursor to bring up the Footswitch menu. From here you can open the effect editor, change the colour of the assigned footswitch or de-assign it.



Saved Boards

Click on the Show Saved Boards icon (or pressed an assigned footswitch) to show the Saved Boards view. Note that any changes to a board are automatically saved (there's no save now function).

Saved boards can be organised into Collections. Click the collection name to manage collections (add rename and delete collections). By default, a collection starts with six board slots as seen below. Once one of the lower three slots is occupied the option to add another row of three shows.

In this view, the board icons correspond to the action of the footswitches.

To change to a different board, just press the corresponding footswitch or use the cursor to select the board and Load it.

Using the cursor, you can also duplicate, move to another footswitch, move to another collection and delete a board.

Return to Board View

To return to Board View either hold the corresponding footswitch for a second or select Edit from the cursor menu.

Top Tip:

To set board names and colours, open the Board View and click the name in the top left of the screen.



USB

Use the supplied cable to connect SIVA to a laptop or PC.

Audio

SIVA provides a standard stereo record and playback channels connected to the master output.

Whatever is connected to Master Left/Right outputs will be transferred to a connected device for recording.

Audio tracks played back from a connected device are mixed with whatever else is connected to Master Left/Right.



File Transfer

In addition to the audio function, SIVA will show on a connected device as a USB hard drive. This can be used to upgrade the SIVA firmware, upload impulse response files and download board configuration data for backup.

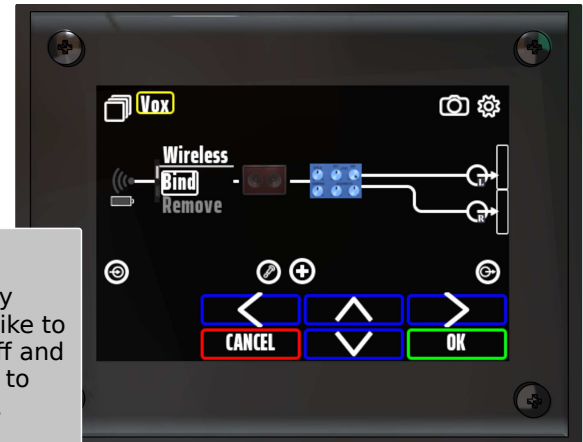
Bind a Wireless Transmitter

To bind a Smooth Hound wireless transmitter to SIVA:

1. Start with the transmitter turned off
2. Turn the transmitter on and (within 5 seconds) double click the button. The button should double blink green. That shows the transmitter is in Bind mode



3. In Board View, move the cursor to the wireless icon, click it and select Bind. Click or press OK to start the bind process
4. The wireless icon should turn green showing you're now connected



Top Tip:

You can bind as many transmitters as you like to SIVA. Just turn one off and turn the next one on to swap between them.

Specifications

Audio

All input and output analogue circuitry is class-A bipolar design for super low distortion (there are no op-amps in the signal chain).

Analogue to digital and digital to analogue convertors are 24 bit Burr Brown devices chosen for their linearity and operating at a crystal fixed 48kHz for lowest phase jitter.

Inputs

Range: 3Vp-p
Dynamic range: 99dB
THD: 0.003%
Impedance: 910kΩ

Outputs

Range: 4Vp-p
Dynamic range: 105dB
THD: 0.003%
Impedance (1/4" outputs): 115Ω
Impedance (differential XLR): 120Ω

Headphone output

Range: 4Vp-p
Dynamic range: 105dB
THD: 0.007%
Impedance: 20Ω
Output power: 200mW

Processors

User Interface: 32 bit 528MHz ARM Cortex-A7
Audio Processing Unit: Quad core 64 bit 1.2GHz ARM Cortex-A53

USB

USB 2.0 compatible

Record and Playback direct from/to master outputs (note latency configured for ease of use)

Upload impulse responses & firmware updates

Download board configurations backup or sharing

Hardware

Folded galvanised steel panel construction with hard wearing plastic coated finish

Dimensions: 30 x 24 x 6cm

Weight: 2.6 kg

Three axis joystick with Bourns rotational encoder

Backlit full colour LCD 3.5" 480x320 resolution

Power Supply

Voltage: 9-12V

Current: 1A

Connector: Centre negative 5.5x2.1mm barrel

Effects Listing_{1/2}

Overdrives & Fuzz

Horseman : Early 90's transparent overdrive

Valve Howler : Soft clipping op-amp overdrive from the late 70's

Obsession : Overdrive with asymmetric FET diode hard clipping

Rodent : Overdrive with symmetric hard clipping from '78

RedsBuster : Soft double diode clipping overdrive from early '90s

Big Cheese : Hard clipping overdrive with tone stack from late '80s

Shredder : High gain overdrive/distortion with tone stack from early '90s

Round Fuzz : Late 60's two transistor fuzz

Triangulator : Version 1 of the high gain NY smooth fuzz early '70s

Octave Fuzz : Circuit from the Tycobrahe pedal from the late '60s

Harmonicator : Circuit from the Interfax HP-1 of the early '70s

Modulation

Vibe : Circuit from the Shin-ei vibe from '68

Chorus : Circuit from the large format Japanese chorus from '76

Flanger : Circuit from the deluxe version of the '78 NY flanger

Studio Comp : Circuit from the 1976 Peak Limiting amplifier

OTA Comp : Transconductance amp style compressor

Optical Comp : Compressor using light controlled resistors to control gain

Wah : Circuit from the Thomas Organ Company wah from '67

Echo

Ana Echo : Circuit from the classic Japanese analog echo from '81

Plate Reverb : Variable space plate reverb with adjustable wet/dry levels and bandwidth

Spring Reverb : Variable decay and level

Effects Listing_{2/2}

Amps

Fullerton '57 : Single input class A output stage produced from '57 to '60

Fullerton '55 : Two input class AB output stage (with cathodyne phase inverter - no feedback) produced from '55 to '60

Fullerton '61 : Two input long tail pair phase inverter and bias wiggle tremolo produced from '61 to '63

Fullerton '63 : Reverb model produced from '63 to '67

Bucks '68 : 50W British two input head with buffered tone stack produced from the late '60s

Bucks '76 : Stacked input stages for high gain master volume 50W

Kent '61 : 30W British amp with Top Boost modification

London '72 : 120W output stage with cathodyne phase inverter and filtered presence control

Filter

EQ : A precision gain 10-band equaliser

Cab Sim : Detailed recreations of more than 50 speaker responses from both sides of the Atlantic

Cab IR : 1024 point impulse response. Use the USB cable to upload your own impulse responses to SIVA

Other

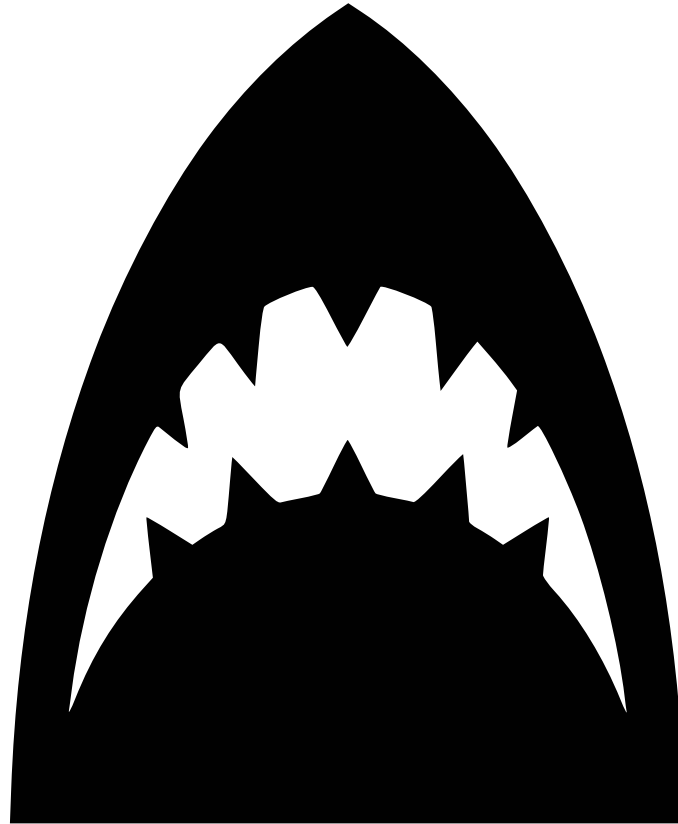
Looper : Simple one button looper. Press once to start/loop/overdub. Double press to stop at end. Triple press to stop now.

Tuner : Polyphonic tuner

Noise Gate : Noise gate with variable threshold

Notes

There's no limit on the number of effects that can be added to a board so long as the Audio Processing Unit has spare capacity. Processing load varies with different effects. Amp simulations are the most complex. SIVA can simulate two amps concurrently along side typically four or five other effects..



SMOOTH HOUND