Analog Heat

Stereo Analog Sound Processor

Quick Guide

elektron™

Analog Heat

THANK YOU

Thank you for purchasing Analog Heat. The Analog Heat is a stereo analog sound processor with many great features such as; 8 different analog effect circuits, an analog multimode filter, analog EQ, and support for Elektron's groundbreaking software suite Overbridge.

Its innovative combination of modern technology and tried and trusted ways of analog sound processing lets you add sparkly brilliance, or grimy roughness, to any sound source. Samplers, drum machines, synths, the master bus, you name it. Analog Heat is a fiery furnace destined to make your music glow.

This Quick Guide will guide you through the basic functions of this product. For more detailed information, please see the Analog Heat User Manual that you can download on www.elektron.se.

We wish you a happy analog experience. Have fun!

- The Elektron Team

IMPORTANT SAFETY INSTRUCTIONS

1. Do not use the unit near water.
2. Never use aggressive cleaners on the casing or on the LCD screen. Remove dust, dirt and finger-prints with a soft, dry and non-abrasive cloth. More persistent dirt can be removed with a slightly damp cloth using only water. Disconnect all cables before doing this. Only reconnect them when the product is safely dry.
3. Install in accordance with the manufacturer's instructions. Make sure you place the unit on a stable surface before use.
4. Connect the unit to an easily accessible electrical outlet close to the unit.
5. When transporting the unit, preferably use accessories recommended by the manufacturer or the box and padding the unit was originally shipped in.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or any other appliance (including amplifiers) emitting heat.
7. Do not block the ventilation holes located on the bottom of the enclosure of the unit.
8. This product, in combination with an amplifier and speakers or headphones, is capable of producing sound levels that can cause permanent hearing loss. Do not operate for a long period of time at a high volume level or at a level that is uncomfortable.
9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the unit.
10. Use attachments/accessories specified by the manufacturer.
11. Unplug this unit during lightning storms or when it is not used for an extended time.
12. Refer all servicing to qualified service technicians. Servicing is required when the unit has been damaged in any way, liquid has been spilled or objects have fallen into the unit, the unit has been exposed to rain or moisture, does not operate normally, or has been dropped.

WARNING!

TO REDUCE THE RISK OF FIRE, ELECTRICAL SHOCK OR PRODUCT DAMAGE

- Do not expose the unit to rain, moisture, dripping or splashing and also avoid placing objects filled with liquid, such as vases, on the unit.
- Do not expose the unit to direct sunlight, nor use it in ambient temperatures exceeding 35°C as this can lead to malfunction.
- Do not open the casing. There are no user repairable or adjustable parts inside. Leave service and repairs to trained service technicians only.
- Do not exceed the limitations specified in the Electrical specifications.

SAFETY INSTRUCTIONS FOR THE POWER ADAPTER ELEKTRON PSU-3B

- The adapter is not safety grounded and may only be used indoors.
- To ensure good ventilation for the adapter, do not place it in tight spaces. To prevent risk of electric shock and fire because of overheating, ensure that curtains and other objects do not prevent adapter ventilation.
- Do not expose the power adapter to direct sunlight, nor use it in ambient temperatures exceeding 40°C.
- Connect the adapter to an easily accessible electrical outlet close to the unit.
- The adapter is in standby mode when the power cord is connected. The primary circuit is always active as long as the cord is connected to the power outlet. Pull out the power cord to completely disconnect the adapter.
- In the EU, only use CE approved power cords.

TABLE OF CONTENTS

1. INTRODUCTION

1.1 CONVENTIONS IN THIS MANUAL

We have used the following conventions throughout the manual:

Key names are written in upper case, bold style and within brackets. For instance, the key labeled "Settings" on the main panel is written as **[SETTINGS]**.

Knobs are written in upper case, bold, italic letters. For instance, the knob "Frequency" is called *FREQUENCY*.

LED indicators like the Active LED are written like this: <ACTIVE>.

Menu names are written in upper case letters. The AMP menu is an example of that.

Parameter names and certain menu options where settings can be made or actions performed are written in bold, upper case letters. For example, **ATTACK**.

Upper case letters are used for parameter setting alternatives, for example OFF.

Messages visible on the screen are written in upper case letters with quotation marks. For example, "INPUT LEVEL TOO HIGH!".

2. PANEL LAYOUT AND CONNECTIONS

2.1 FRONT PANEL CONTROLS
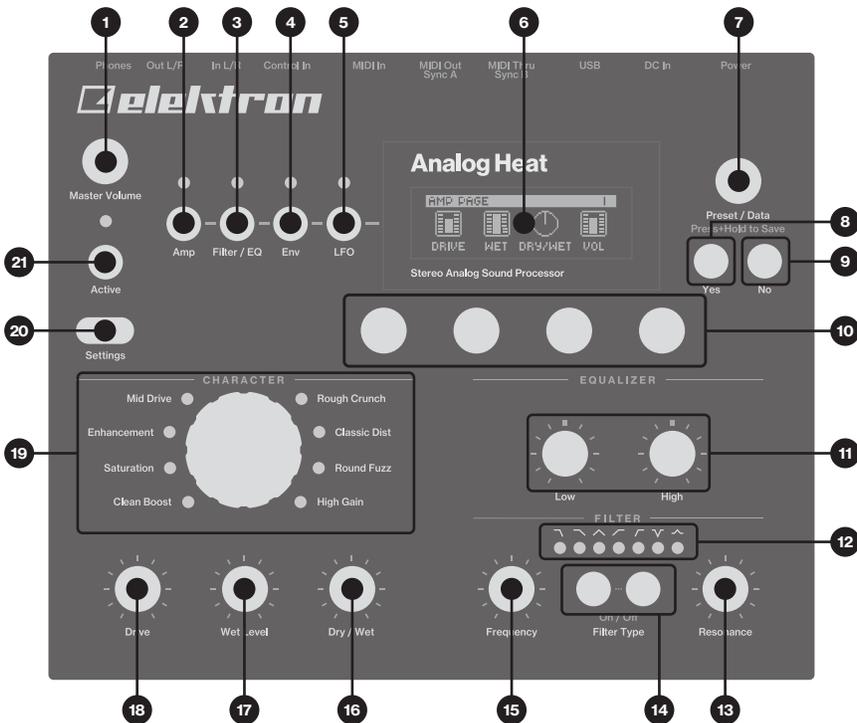
1. *MASTER VOLUME* sets the master volume for the L/R and Headphones outputs.
2. **[AMP]** key accesses the AMP parameter page where you can set things such as drive amount and the volume of the preset.
3. **[FILTER/EQ]** key accesses the FILTER/EQ parameter pages where you, among other things, can select filter types and adjust the equalizer. Press twice to access the second page.

4. **[ENV]** key accesses the ENV parameter pages where you adjust the settings for the envelope generator/envelope follower. Press twice to access the second page.
5. **[LFO]** key accesses the LFO parameter pages where you set all things related to the Low Frequency Oscillator. Press twice to access the second page.
6. LCD screen.
7. *PRESET/DATA* Used for preset management and data entry.
8. **[YES]** key is used for entering sub-menus, selecting and confirming.
9. **[NO]** key is used for exiting the current menu, backing to a higher level menu and negating.
10. *DATA ENTRY* knobs. Used to set parameter values. For more information, please see "5.11 PARAMETER EDITING" on page 19.
11. *LOW* and *HIGH* adjusts the amount of low-end and high-end frequency content.
12. <FILTER TYPE> LEDs that indicate the current type of filter and also if the filter is on or not.
13. *RESONANCE* sets the resonance of the filter.
14. **[FILTER TYPE]** selects between the different filter types. Also, pressing both keys at the same time toggles the filter on and off.
15. *FREQUENCY* sets the filter's cutoff frequency.
16. *DRY/WET* sets the balance between the unprocessed (dry) signal and the processed (wet) signal.
17. *WET LEVEL* sets the level of the processed (wet) signal.
18. *DRIVE* controls the amount of drive. This will increase the effect of the selected circuit type, typically resulting in more distortion.
19. *CIRCUIT SELECTOR* chooses between the eight different types of effect circuits.
20. **[SETTINGS]** key accesses the SETTINGS menu. Both preset-specific settings and global settings are found in this menu.
21. **[ACTIVE]** toggles the effect between active and bypassed.

2.2 REAR PANEL CONNECTIONS
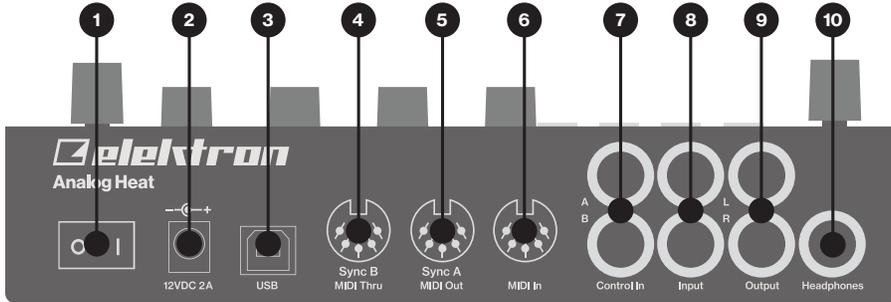
1. **POWER,** Switch for turning the unit on and off.
2. **DC In,** Input for power supply. Use the included PSU-3b power adapter connected to a power outlet.
3. **USB,** For connecting the unit to a computer. For MIDI control or Overbridge use. Connect to a computer host using the included A to B USB 2.0 connector cable.
4. **MIDI THRU/SYNC B,** Forwards data from MIDI IN. Can also be configured to send DIN sync to legacy instruments. Use standard MIDI cable to connect another MIDI unit in chain.
5. **MIDI OUT/SYNC A,** MIDI data output. Can also be configured to send DIN sync to legacy instruments. Use standard MIDI cable to connect to MIDI In of an external MIDI unit.
6. **MIDI IN,** MIDI data input. Use standard MIDI cable to connect to MIDI Out of an external MIDI unit.
7. **CONTROL IN A/B** Inputs for an expression pedal, footswitch, or CV. Use 1/4" mono phone plug for CV signals.
8. **INPUT L/R,** Audio inputs. Use either 1/4" mono phone plug (unbalanced connection) or 1/4" (Tip/Ring/Sleeve) phone plug (balanced connection).
9. **OUTPUT L/R,** Main audio outputs. Use either 1/4" mono phone plug (unbalanced connection) or 1/4" (Tip/Ring/Sleeve) phone plug (balanced connection).
10. **HEADPHONES,** Audio output for stereo headphones. Use 1/4" (Tip/Ring/Sleeve) phone plug.

3. FIRST STEPS WITH THE ANALOG HEAT

3.1 CONNECTING THE UNIT

Make sure you place the Analog Heat on a stable support, such as a sturdy table with sufficient cable space. Before you start connecting the Analog Heat to other units, make sure all units are switched off.

1. Plug the supplied DC adapter to a power outlet and connect the small plug to the 12 V DC connector of the Analog Heat unit.

2. Connect the audio source to INPUT L/R.

3. Connect the OUTPUT L/R from the Analog Heat to your mixer or amplifier.

4. To process sound and/or control the Analog Heat from a computer, connect a USB cable between the computer and the USB connector of the Analog Heat. You must also download and install the Overbridge Suite that is used for these actions.

5. If you want to use MIDI to control the Analog Heat, connect the MIDI OUT port of the device you wish to send data from to the MIDI IN port of the Analog Heat. The MIDI THRU port duplicates the data arriving at the MIDI IN port, so it can be used for chaining MIDI units together.

6. Switch on all units. Switch on the Analog Heat by pressing the Power switch located at the back of the unit.

3.2 SETTING THE INPUT SENSITIVITY LEVEL

To make sure the Heat distorts as intended it is important to set the audio input sensitivity so that it matches the level of the sound source. (Note that the settings made here only affects the analog input, and not the digital input from Overbridge.) Use the audio input meter on the LCD screen to monitor your audio input level and follow these steps to set the input sensitivity level:

1. Connect your sound source to the IN L/R inputs of the Analog Heat and make sure that the volume of the sound source is as strong as possible.

2. Press [SETTINGS] and the select INPUT SENSITIVITY. Keep an eye on the audio input meter and change the input sensitivity until you find a setting where the bar reaches the vertical line but without clipping. The message "INPUT LEVEL TOO HIGH" is displayed on the LCD screen when the input level is too high, and clipping occurs.

```
INPUT SENSITIVITY          HIGH
L ▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒ ▐
R ▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒ ▐
```

Optimal input level.

```
INPUT SENSITIVITY           MAX
L      INPUT LEVEL TOO HIGH!
R      INPUT LEVEL TOO HIGH!
```

Too high input level.

3. Adjust the level at the sound source if needed.

3.3 SETUP EXAMPLES

The Analog Heat is very well suited for use in both an analog setup and in a more digital environment. Here are a couple of examples of how you can use the Analog Heat.

ANALOG HEAT AS AN EXTERNAL EFFECT

In this example, the Analog Heat is used as an external effect to add color to the Elektron Octatrack before the signal reaches the mixer.
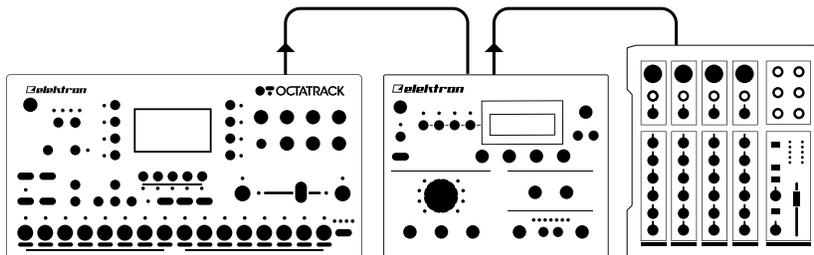
ANALOG HEAT AS A VST/AU PLUGIN USING OVERBRIDGE

Analog Heat can also be used together with Overbridge to allow you to use the Analog Heat as a plug-in for analog distortion processing in your DAW.
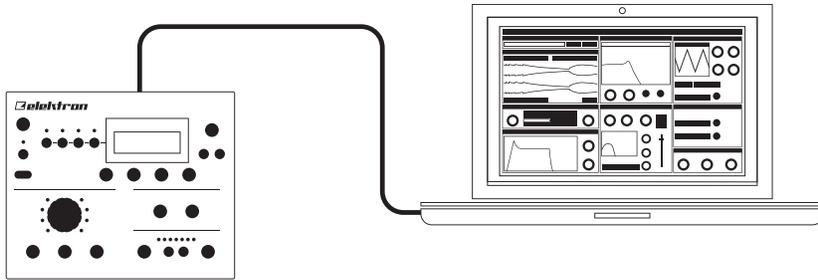
ANALOG HEAT AS A SOUND CARD

Analog Heat also functions as a 2 in/2 out sound card for your computer and can be used for both recording and monitoring audio. At the same time you can, via Overbridge, use the effect to process another set of audio signals.
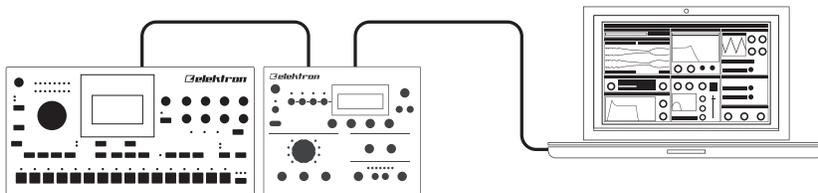
4. SIGNAL FLOW

The following illustrations show the signal flows of the Analog Heat and illustrates how the different components interact with each other.

4.1 AUDIO SIGNAL FLOW

This illustration shows the general flow of audio through the Analog Heat. The complete signal chain is in stereo.
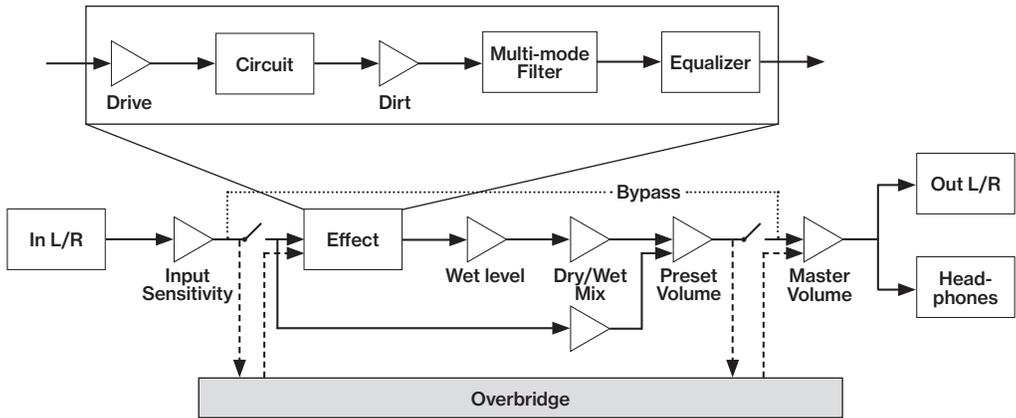
4.2 MODULATION SIGNAL FLOW

This illustration shows the flow of how modulation signals are generated and routed through the Analog Heat.
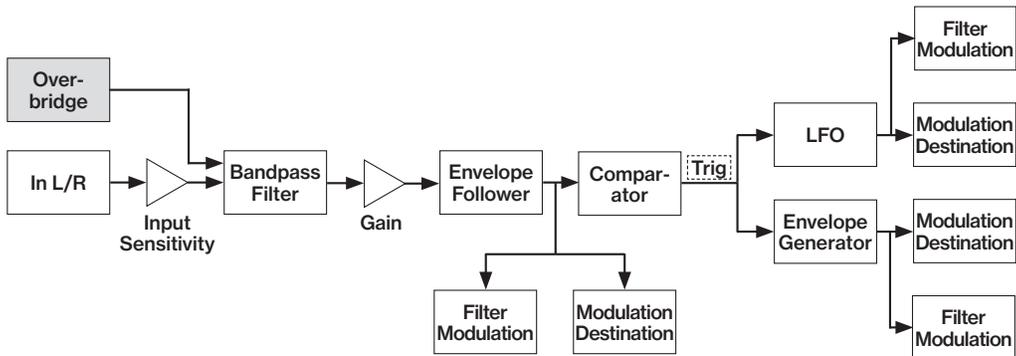
5. THE USER INTERFACE

5.1 PRESETS

The Analog Heat has 128 preset slots where you can store your presets. Preset slot 000 is an INIT preset with default values. Note that, when switching off the power to your Heat, any changes to the currently active preset will be lost unless the preset is first saved. There is an indicator (next to the preset number) on the LCD screen showing when changes have been made to the preset. For more information, please see "5.12 LCD SCREEN TITLE BAR" on page 20.

LOADING A PRESET
1. Turn *PRESET/DATA* to select a preset.
2. Press *PRESET/DATA* or **[YES]** to load the preset.

SAVING A PRESET
1. Press and hold *PRESET/DATA* for two seconds. The selected preset now starts to blink to illustrate that you are about to overwrite the preset position.
2. Turn *PRESET/DATA* to select the preset slot to where you want to save your sound, and then press **[YES]**.
3. Turn *PRESET/DATA* to the character you wish to edit. Press and hold **[SETTINGS]** and then turn *PRESET/DATA* to move the cursor to the desired character and select it by releasing **[SETTINGS]**. To delete a character, turn *PRESET/DATA* to move the cursor to highlight the character after the one you wish to delete, then press and hold **[SETTINGS]** and press **[NO]** twice.
4. Press **[YES]** to save the preset.

5.2 ACTIVE MODE

Active Mode is toggled on and off by pressing **[ACTIVE]**. If the Analog Heat is not in Active Mode, the effect is bypassed. The <ACTIVE> LED indicates if the effect is active or not. You can also use a Footswitch to toggle the Active Mode. You also have the option to set if you want the Analog Heat to start in active mode or not when you turn it on.

5.3 EFFECT CIRCUITS

You can use the *CIRCUIT SELECTOR* to choose between 8 different types of effect circuits for a wide variety of drive and distortion sounds.

- **CLEAN BOOST**
  Makes the signal louder. When fully driven, it sounds similar to overdriving old mixers. Use for minimal distortion or when you only want to use the filter and EQ.

- **SATURATION**
  This circuit is reminiscent of classic tape saturation. Wooly and warm.
- **ENHANCEMENT**
  Adding tube-like glow and sheen to a track or loop.
- **MID DRIVE**
  Mid-range focused overdrive with a solid and distinct body.
- **ROUGH CRUNCH**
  Gritty, worn and gnarly character. Full of flavor.
- **CLASSIC DIST**
  Pleasantly distorts upper mid-range frequencies. Ideal for acid bass lines.
- **ROUND FUZZ**
  Adds a lot of harmonics and alters the signal in interesting and often unpredictable ways.
- **HIGH GAIN**
  Probably the most aggressive of all the circuits. Very maxed out!

5.4 FILTER TYPE

Change the type of filter by pressing one of the two **[FILTER TYPE]** keys. You can also press the two **[FILTER TYPE]** keys simultaneously to toggle the filter on/off. It is possible to change the filter type even if the filter is turned off.

There are seven different analog filter types in the Analog Heat to help to shape the sound.

- **LOW PASS 2** (two-pole, 12 dB per octave)
- **LOW PASS 1** (one-pole, 6 dB per octave)
- **BAND PASS**
- **HIGH PASS 1** (one-pole, 6 dB per octave)
- **HIGH PASS 2** (two-pole, 12 dB per octave)
- **BAND STOP**
- **PEAK**

5.5 EQUALIZER

LOW and *HIGH* adjusts the amount of low-end and high-end frequency gain or attenuation of the effect circuit. Each character circuit comes with its tailor-made equalizer characteristics.

5.6 DRIVE

Sets the gain level in the effect circuit. A higher setting increases the effect of the selected circuit type, typically resulting in more distortion.

5.7 WET LEVEL

Sets the level of the signal coming from the effect. It is applied before the DRY/WET mix. It is used to match the level of the dry signal for easy mixing of the two.

5.8 DRY/WET

Sets the mix between the clean signal and the signal that is affected by the effect.

5.9 SETTINGS MENU

Press [SETTINGS] to access the SETTINGS menu.
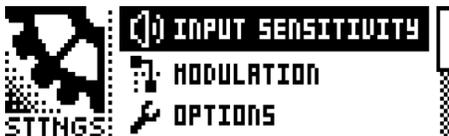
Scroll through the list of settings by using the *PRESET/DATA* knob. Open a highlighted menu by pressing the *PRESET/DATA* knob or [YES]. To change the settings in the menus, first press, and then turn the *PRESET/DATA* knob.

5.10 PARAMETER PAGES

Access the parameter pages by pressing the corresponding key [AMP], [FILTER/EQ], [ENV], and [LFO]. There are two pages associated with each key (AMP has only one page). You can access the secondary pages by pressing the [PARAMETER] key a second time.

5.11 PARAMETER EDITING

The four *DATA ENTRY* knobs are used to change the parameter values that are shown on the LCD screen. (Some parameters also have dedicated knobs on the panel.) The physical location of the knobs on the front panel correspond to the layout of the parameters on the screen.

- The parameters will be adjusted in larger increments if you press down the *DATA ENTRY* knob while turning it. This makes it much quicker to sweep through a whole parameter range.

- Press [SETTINGS] + turn *DATA ENTRY* knob to quantize the parameter value to integers.

- Press *DATA ENTRY* knob + [NO] to reset the parameter to the default value.

- Press [PARAMETER] key + [NO] to reset the selected parameter group to default values.

- Use the [NO] key to exit an active menu, back to a higher level menu and to negate.

5.12 LCD SCREEN TITLE BAR

Preset number   Change indicator   Preset name   Audio input meter   Trigger icon
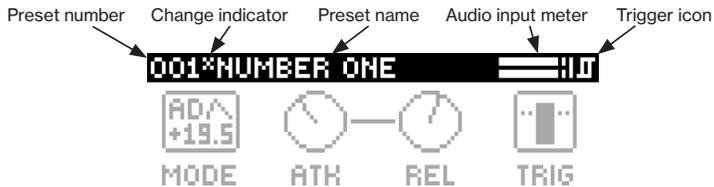
- The Preset number and Preset name displays the currently selected preset. If you push one of the parameter keys, the title bar briefly shows the name of the active parameter page. This text is replaced by parameter names when turning the *DATA ENTRY* knobs or the dedicated controllers.

- Between the preset number and the preset name, there is an indicator showing if the preset has been altered. (i.e. changes that may be lost unless you save the preset.)

- The Audio input meter displays the level of the incoming audio.

- The Trigger icon signals that a trigger event has been generated by the Envelope Follower.

5.13 OVERBRIDGE

Overbridge allows you to use the Analog Heat as a VST/AU plug-in for analog distortion and filter processing in your DAW. It also has a librarian for a clear overview of your presets and gives the ability to load, edit, and save them.

When using the Overbridge setup, the user interface for the Analog Heat will present itself as a clearly laid out plug-in window in your DAW. Browse through and organize presets. Access, edit or automate parameters for sound shaping on screen. Always find your device preset parameters in the same state as you left them when you return to your DAW project, with the convenient total recall functionality.

You need an Analog Heat, a USB cable, a computer running Overbridge, and a DAW.

N.B. You must have Analog Heat OS 1.02 or later, and Overbridge 1.15 or later to run Overbridge with Analog Heat.

Overbridge is available as a complimentary download on the Elektron website. Please read the Overbridge User Manual (available on the Elektron website in the Support section) to learn more about its setup, uses and capabilities.

6. TECHNICAL INFORMATION

ELECTRICAL SPECIFICATIONS

Impedance balanced audio outputs
Main outputs level: +22 dBu peak
Output impedance: 440 Ω unbalanced

Headphones output
Headphones out level: +22 dBu peak
Output impedance: 55 Ω

Balanced audio inputs
Input level: +22 dBu peak
Audio input impedance: 39 kΩ

Control inputs
Input level on tip: -5 V – +5 V
Supplies +5 V on ring
Accepts CV, Expression pedals, Foot switches

Unit power consumption: 12 W typical
Compatible Elektron power supply: PSU-3b

HARDWARE

122 x 32 pixel back-lit LCD
MIDI In/Out/Thru with DIN Sync out
2 x 1/4" impedance balanced audio out jacks
2 x 1/4" balanced audio in jacks
1 x 1/4" stereo headphone jack
2 x 1/4" control input jacks
48 kHz, 24-bit D/A and A/D converters
Electrically isolated hi-speed USB 2.0 port
Power inlet: Center positive 5.5 x 2.5 mm barrel jack, 12 V DC, 2 A

PHYSICAL SPECIFICATIONS

Sturdy steel casing
Dimensions: W 215 x D 184 x H 63 mm (8.5" x 7.2" x 2.5") (including power switch, jacks, knobs and feet)
Weight: approximately 1.5 kg (3.3 lbs)
100 x 100 mm VESA mounting holes. Use M4 screws with a max length of 7.4 mm.
Maximum recommended ambient operating temperature: +35˚C (+96˚F)

7. CREDITS AND CONTACT INFORMATION

CREDITS

PRODUCT DESIGN AND DEVELOPMENT

Oscar Albinsson
Ali Alper Çakır
Oscar Dragén
Magnus Forsell
Anders Gärder
Fabian Hundertmark
Christer Lindström
Jimmy Myhrman
David Revelj
Mattias Rickardsson

ADDITIONAL DESIGN

Johan Damerau
Ufuk Demir
Thomas Ekelund
Simon Mattisson
Jon Mårtensson
Olle Petersson
Cenk Sayınlı

DOCUMENTATION

Erik Ångman

CONTACT INFORMATION

ELEKTRON WEBSITE

http://www.elektron.se

OFFICE ADDRESS

Elektron Music Machines MAV AB
Sockerbruket 9
SE-414 51 Gothenburg
Sweden

TELEPHONE

+46 (0)31 743 744 0