

electro-harmonix

MONO SYNTH

Congratulations on your purchase of the Electro-Harmonix Mono Synth. The Mono Synth allows you to transform your guitar into one of eleven different synthesizers, from vintage synth emulations, to thick, stacked voices, to deep pulsing sounds for an array of sonic landscapes and textures. The Mono Synth was designed to work on your guitar without any modifications or special pickups. Plug right in and immediately join the ranks of legendary synthesists.

WARNING: Your Mono Synth comes equipped with an Electro-Harmonix 9.6DC-200BI power supply (same as used by Boss® & Ibanez®: 9.6 Volts DC 200mA). The Mono Synth requires 125mA at 9VDC with a center negative plug. Using the wrong adapter or a plug with the wrong polarity may damage your Mono Synth and void the warranty.

GETTING STARTED

Connect the supplied power adapter to the 9V power jack. Plug your instrument into the INPUT jack. Connect your amp or other effects pedals to the SYNTH OUTPUT jack. Set the DRY knob to minimum (fully counterclockwise) and set the other top row knobs to 12 o'clock. Select a TYPE and step on the BYPASS footswitch to turn on the LED. Play your guitar and adjust controls to your liking.

ONE NOTE AT A TIME

The Mono Synth is a multi-oscillator monophonic instrument. It synthesizes one note at a time per oscillator. The oscillators have been pre-tuned for each synth type—only TINKER and BLISTER allow for user control over an oscillator. Additionally it can handle only one note from your guitar at a time. It does not work properly when chords or two note intervals are played. The Mono Synth behaves unpredictably and erratically when it receives more than one note at the INPUT jack.

SYNTH TYPE DESCRIPTIONS

- 1. NU WAVE** – pulsating string-like synth.
CTRL: the CTRL knob sets the cutoff frequency of the filter.
EXP: the expression pedal sets pitch modulation depth. As the pedal is swept from heel to toe, modulation depth increases.
- 2. UNISON** – the huge sound of stacking voices on a polyphonic synth.
SENS: higher settings make for wider filter sweeps.
CTRL: controls the volume of a separate oscillator tuned a Perfect 5th higher than the incoming pitch.
EXP: controls the cutoff frequency of the filter.

3. **BLAST** – aggressive and resonant synth with deep filter modulation.
SENS: higher settings make for wider filter sweeps.
CTRL: controls the resonance or frequency peak width of the filter.
EXP: controls the frequency range of the filter envelope. The filter's frequency range increases as the pedal is swept from heel to toe.
4. **TWIN** – a throaty, dual filter synth sound.
SENS: higher settings make for wider filter sweeps.
CTRL: sets the decay time of the filter envelopes.
EXP: controls the filter envelope's sweep depth or frequency range.
5. **BASS** – octave-down synth for adding low end.
CTRL: adjusts both the decay time and sweep depth of the filter.
EXP: controls the filter's cutoff frequency. As the pedal is swept from heel to toe, the cutoff frequency increases.
6. **XOX** – fast decaying synth reminiscent of the TB.
SENS: higher settings make for wider filter sweeps.
CTRL: sets the decay time of the filter envelope.
EXP: controls the filter's cutoff frequency.
7. **WUB** – pulsating synth with a modulating filter.
SENS: higher settings make for wider filter sweeps.
CTRL: sets the speed of modulation.
EXP: controls the filter's center frequency.
8. **TINKER** – quirky synth great for bell-like tones.
CTRL: controls the filter's cutoff frequency.
EXP: controls the pitch of the added note in half-step increments. The pitch ranges from -1 octave—at the heel—to +4 octaves—at the toe.
9. **LAIR** – a dramatic, expressive synth with expression filter control.
SENS: higher settings make for wider filter sweeps.
CTRL: adjusts both the filter's decay time and frequency range.
EXP: controls the filter's cutoff frequency.
10. **GHOST** – haunting synth tone with a warbling modulation effect.
CTRL: this knob sets the depth of VCO pitch modulation.
EXP: sets the rate of modulation which increases as the pedals is swept from heel to toe.
11. **BLISTER** – piercing synth with an added adjustable pitched note.
CTRL: detunes the oscillator. The noon position yields no detune. Turn clockwise from noon to detune sharp or counter-clockwise from noon for flat detune. The further you turn from noon, the more detune.
EXP: controls the pitch of the added note in half-step increments. The pitch ranges from -1 octave—at the heel—to +4 octaves—at the toe.

CONTROLS AND I/O JACKS

DRY VOL Knob

The DRY VOL knob controls the volume of the untreated input signal present at the SYNTH OUTPUT jack.

SYNTH VOL Knob

The SYNTH VOL knob controls the overall volume of the synthesizer sound at the SYNTH OUTPUT jack.

SENS Knob

The SENS knob (short for sensitivity) adjusts the gain of the input signal before the signal hits the Mono Synth's (MS) trigger block. The MS trigger block generates synth notes that match the pitch of your instrument and also resets all envelope sweeps. It only triggers new notes when the input signal exceeds its threshold. Lower settings of SENS will require louder notes to trigger the synthesizer while higher settings of SENS might trigger new synth notes with every note you play. The LED lights orange when the input signal to the synth engine exceeds -4.6dB. Use the LED as an aid when adjusting the SENS knob. Setting the SENS knob so the LED lights orange on your loudest notes is a good place to start. Please note: the LED does not indicate when the input signal has triggered a new note; it lights orange to indicate the loudness output from SENS. If some of your notes do not trigger the synth, turn up SENS. If you hear many false triggers or retriggers without playing a new note then turn down SENS.

For all MS synth types, the gain set by SENS also changes the synth volume over a small range. For some synth types, SENS also adjusts the sweep range of the filter's envelope. Higher settings of SENS yield wider filter sweeps and typically more volume. Check the SYNTH TYPE DESCRIPTIONS on the previous pages to see which synth type filters are directly affected by the SENS knob.

CTRL Knob

This knob can be used to control a specific parameter for each synth type. See the SYNTH TYPE DESCRIPTIONS on pages 1 and 2 to learn more.

INPUT Jack

Plug your instrument or the output of another effects pedal into this ¼" jack. See Tips 1 & 2 on Page 7 for more on connecting your Mono Synth.

DRY OUTPUT Jack

The DRY OUTPUT jack is hardwired to produce a buffered version of the signal present at the INPUT jack. In either EFFECT or BYPASS mode, the dry signal is always present at the DRY OUTPUT jack. The DRY knob **does not** change the volume of the signal at the DRY output jack.

SYNTH OUTPUT Jack

The SYNTH OUTPUT jack produces the mix set by the DRY and SYNTH volume controls. In BYPASS mode, SYNTH OUTPUT outputs the buffered bypass signal.

EXP Jack

The EXP jack accepts a TRS cable from a standard passive expression pedal or control voltage (CV) on a TS cable. Each synth type has a specific parameter controlled by the expression pedal, as explained in the SYNTH TYPE DESCRIPTIONS section.

When saving a preset, the expression pedal position is saved along with the knobs. Upon recalling a preset, if the expression pedal is not present or has not been moved since recalling the preset, the Mono Synth loads the saved expression pedal setting. This allows you to tweak the parameter(s) controlled by the expression pedal to later recall with your presets.

The expression pedal's plug must be wired with the Sleeve connected to the heel position (usually GND), Ring connected to the toe position and the Tip connected to the wiper. The nominal expression pedal impedance is 10k Ω though most other values will work fine. Please do not go below 6k Ω on your expression pedal's potentiometer impedance. Some suggested Expression Pedals: EHX Expression Pedal, EHX Dual Expression, Moog[®] EP-2 and EP-3, Roland[®] EV-5 and Boss[®] FV-500L. Additionally, the EXP IN jack can be connected to a CV source using a TS plug; the acceptable control voltage range is 0V to 5V.

BYPASS Footswitch

Press the BYPASS footswitch to toggle the SYNTH OUTPUT jack between buffered bypass and effect modes. The status LED lights when you are in effect mode.

PRESET Footswitch

Use this footswitch to toggle between Preset and live What You See Is What You Get (WYSIWYG) modes. The PRESET footswitch is also used to save a preset to the current synth type set by the TYPE knob. See the PRESETS section, on the following page, for more information on saving and recalling presets.

Status LED

The Status LED lights when the Mono Synth effect is engaged. The Status LED is off when the unit is in buffered bypass. The LED lights green for WYSIWYG mode and lights red when preset mode is selected. The LED lights orange, in either mode, when loud notes are output from the SENS block into the synth trigger block.

PRESETS

When the LED on the Mono Synth (MS) is green, you are in live WYSIWYG mode, meaning that the current knob and expression pedal settings represent the sound that is produced. You can also save and recall one preset for each of the eleven synth types. All four knobs in the top row are saved along with the setting of the expression pedal—if an expression pedal is attached at the time of saving the preset. The LED lights red when Preset mode is active.

RECALLING A PRESET

1. Turn the TYPE knob to the synth type that you want to recall. If the Status LED is currently red, skip step 2 and go directly to step 3.
2. Press and release the PRESET footswitch. The preset for the current synth type will be recalled and the Status LED lights red.
3. At this time you may turn the TYPE knob to load the preset for each synth type.
4. Press and release the PRESET footswitch to return to WYSIWYG mode.

SAVING A PRESET

1. A preset may be saved while either in WYSIWYG or Preset mode.
2. Press and hold the PRESET footswitch. After holding for about 2 seconds you will see the LED blink red at a fast rate.
3. Once the LED blinks red you may release the PRESET footswitch, the preset is now saved.
4. If an expression pedal is attached we recommend you don't move it while saving a preset.

EDITING A PRESET

1. After recalling a preset, the LED lights solid red.
2. If you move any of the four knobs in the top row of knobs, the LED blinks red to indicate that a preset is loaded but has been changed in some way.
3. The LED **does not** blink if the expression pedal is moved after loading a preset.
4. If you press and release the PRESET footswitch, while the LED is blinking red, it will reload the preset from memory. After reloading, the LED lights solid red again.
5. If you press and hold the PRESET footswitch while the LED is blinking red, your newly edited preset will be saved to memory. Press and hold the PRESET footswitch until you see the LED blink at a fast pace.

EXITING PRESET MODE

To exit Preset mode and return to WYSIWYG mode, simply press and release the PRESET footswitch. The LED will turn green. If the preset had been edited and you see the LED blinking red, press and release the PRESET footswitch twice to return to WYSIWYG mode.

EXPRESSION PEDAL PARAMETERS AND PRESETS

If an expression pedal is connected to the MS at the time you save a preset, the current state of the parameter(s) controlled by the expression pedal will be saved within the preset. Moving the expression pedal while in a preset does not result in the LED blinking (indicating an edited preset). If you later recall a preset without an expression pedal attached, the parameter(s) controlled by the expression pedal will be recalled with their values at the time of saving. Upon moving back to WYSIWYG mode, that parameter will go back its default setting.

FACTORY RESET

To perform a factory reset and restore all default presets do the following:

1. Unplug the power cable from the MS.
2. Press and hold the BYPASS footswitch as you apply power.
3. Continue to hold down the BYPASS footswitch until you see the LED toggle between red and green. Normally it will take four seconds for the LED to begin toggling.
4. Once the LED starts toggling between red and green, you can release the BYPASS footswitch. **DO NOT REMOVE POWER AT THIS POINT!**
5. About four to five seconds later the LED will light green and then shut off. The factory reset is complete and your MS is ready for use.

NOTES AND SPECIFICATIONS

- Buffered bypass
- Input impedance: $2.2M\Omega$
- Output impedance (for both output jacks): 680Ω
- Current draw: 125mA

TIPS FOR OPTIMUM PERFORMANCE FROM YOUR MONO SYNTH

1. The Mono Synth is generally best used as the first pedal in an effects chain. Place modulation, delay and reverb effects after the Mono Synth. The unit will not perform well if placed in the effects loop of a guitar amp.
2. Avoid placing a distortion or overdrive in front of the Mono Synth, which could muddy up the input signal and cause the tracking to be unstable. If you want to add overdrive or distortion—which sound great with the Mono Synth—place it after the Mono Synth.
3. Make sure to play only one note at a time. The Mono Synth acts unpredictably and erratically when it receives two or more notes at once.
4. You might find the SENS knob needs to be adjusted for each synth type. This is normal; each synth type reacts differently to the gain provided by the SENS block.

- COMPLIANCE -

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.*

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.



The CE logo indicates that this product has been tested and shown to conform with all applicable European Conformity directives.

- WARRANTY INFORMATION -

Please register online at <http://www.ehx.com/product-registration> or complete and return the enclosed warranty card within 10 days of purchase. Electro-Harmonix will repair or replace, at its discretion, a product that fails to operate due to defects in materials or workmanship for a period of one year from date of purchase. This applies only to original purchasers who have bought their product from an authorized Electro-Harmonix retailer. Repaired or replaced units will then be warranted for the unexpired portion of the original warranty term.

If you should need to return your unit for service within the warranty period, please contact the appropriate office listed below. Customers outside the regions listed below, please contact EHX Customer Service for information on warranty repairs at info@ehx.com or +1-718-937-8300. USA and Canadian customers: please obtain a **Return Authorization Number** (RA#) from EHX Customer Service before returning your product. Include—with your returned unit—a written description of the problem as well as your name, address, telephone number, e-mail address, RA#, and a copy of your receipt clearly showing the purchase date.

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