# electro-harmonix

# CANYON
## Multifunction Delay & Looper

Congratulations on your purchase of the Canyon, an extremely powerful yet easy-to-use Delay and Looper pedal. Within the compact Canyon chassis there's a vast array of awe-inspiring tones including 10 different types of delays: from pristine digital to warm tape and more. We've even included an exquisite Deluxe Memory Man emulation plus otherworldly octave delay and shimmer effects. Add in a full-featured looper, built-in or external tap tempo with tap divide, a selection of secondary controls and you're in for a truly grand delay experience.

### - GETTING STARTED WITH THE CANYON -

1. Plug the supplied EHX9.6DC AC Adapter into the jack at the top of the CANYON.
2. Plug your guitar into the INPUT jack and plug the OUTPUT jack into your amplifier.
3. Turn the 11-position mode knob to the ECHO setting for a standard digital delay.
4. Set the number of repeats with the FEEDBACK knob, the delay time with the DELAY knob, and the delay volume with the FX LVL knob.

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## - CONTROLS -

**FX LVL Knob** – Controls the output volume of the delay effect. When this knob is at the minimum position, the output is only your dry signal. As the knob is turned up, the delay output increases in volume. As the knob is turned past 2 o'clock, the dry signal decreases in volume. When the knob is at the maximum position, the output is only the delay output. *Note: in S/H and LOOP modes, the dry signal remains at unity volume even as FX LVL is turned to maximum*

**DELAY Knob** – Controls the delay time of the CANYON, from a minimum position of 5 milliseconds to a maximum of 3 seconds.

**FEEDBACK Knob** – Controls the number of repeats of the delayed signal. As this knob is turned clockwise, the number of repeats increases.

In S/H mode, this knob controls the pluck detection sensitivity. As the knob is turned clockwise, the sensitivity increases.

In LOOP mode, this knob controls how much of the existing loop is preserved when overdubbing. As the knob is rotated clockwise, more of the existing loop is preserved. At the maximum position, the loop will stay the same volume while overdubbing.

**MODE Knob** – This knob is an 11-position rotary switch that selects which of the CANYON's delay modes is active.

**TAP/DIVIDE Switch and LED** – This switch controls the Tap Divide setting. When the delay time is set using tap tempo, this button controls the division of the tapped tempo. Press the switch to cycle through the Tap Divide options, which are indicated by the LED color. Red indicates quarter notes, orange indicates dotted eighth notes, and green indicates eighth notes. If the LED does not change color when pressing this switch, internal Tap Tempo is disabled. See "Tap Tempo with the CANYON" on page 7 for the details of tap tempo use.

**Footswitch** – Press this footswitch to switch the pedal between bypass and effect modes. When the pedal is in effect mode, the LED will be lit. The footswitch can also be used to set the delay time by tapping it at least two times. This functionality is enabled from the factory, but can be disabled. See "Tap Tempo with the CANYON" on page 7 for details.

**TAILS Switch** – The CANYON allows you to choose whether delayed echoes continue to repeat or stop immediately after the pedal is switched to bypass. To control this, remove the CANYON's bottom cover and locate the small slide switch on the bottom of the board labeled "TAILS."

When Tails are set to ON, the echoes will continue to repeat after the pedal is switched to bypass, with the number of repeats set by the FEEDBACK knob. Anything you play after entering bypass will not repeat. If the pedal is set for infinite feedback (i.e. the FEEDBACK knob is set to maximum) the repeats will continue until you turn the FEEDBACK knob down or switch to a different mode.
**Note:** In Sample/Hold mode, repeats will not continue indefinitely when Tails are ON. The repeats will fade out over half a second.

When Tails are set to OFF, all repeats will stop as soon as the bypass switch is pressed, regardless of the FEEDBACK knob setting.

### - CONNECTIONS -

**INPUT Jack** – This ¼" jack is the audio input of the CANYON. The input impedance is 1M$\Omega$.

**OUTPUT Jack** – This ¼" jack is the audio output of the CANYON. The output impedance is 680$\Omega$.

**TAP IN Jack** – Connect an external momentary footswitch to this ¼" jack to control the delay time by tapping in a tempo. The external switch should be normally open. Upon engaging the switch, it should create a short circuit between the Tip and Sleeve of the plug. See "Tap Tempo with the CANYON" on page 7 for details on using Tap Tempo.

**9V Power Jack** – Plug the output of the CANYON's supplied EHX9.6DC 200mA AC adapter in the 9V power jack located at the top of the pedal. The CANYON requires 150mA at 9VDC with a center-negative plug.

# - DESCRIPTION OF MODES -

**ECHO** – This mode is a simple digital delay, in which each delayed repeat sounds exactly like the previous one, and the repeats gradually decrease in volume.

**MOD** – Modulated delay – This mode is the same as the ECHO mode, but with added modulation to the delayed repeats to give the delayed tone complexity and warmth.

**MULTI** – Multi-tap delay – In this mode, each repeat of the delayed signal occurs at exactly the same volume. The FEEDBACK knob sets the total number of constant-volume repeats.

**REVRS** – Reverse delay – Echoes will play back in reverse. This is an intelligent reverse echo: it studies your playing so that it can produce reversed echoes that best suit your delay time setting. ***Tip***: *Use the CANYON's Secondary Knob Mode to adjust the sensitivity of the intelligent pluck detection algorithm.*

**DMM** – Deluxe Memory Man – This is a faithful emulation of the tone of the EHX Deluxe Memory Man bucket brigade analog delay pedal. Organic echoes transform as they repeat, and lush modulation is available using the Secondary Knob Mode.

**TAPE** – Tape delay – This mode simulates the prized analog tape echo units of the 1970s. Echoes degrade and distort as they repeat, as tape Wow and Flutter provide true tape character.

**VERB** – Reverb plus delay – In this mode, each echo also has plate reverb applied to it. ***Tip:*** *Turn FEEDBACK all the way down to get a pure reverb effect, where DELAY controls the pre-delay of the reverb.*

**OCT** – Octave delay – In this mode, each repeat is progressively pitch shifted up one octave. ***Tip:*** *A sub-octave is also available by using the CANYON's Secondary Knob Mode.*

**SHIM** – Shimmer – This mode creates a shimmer effect, generating a rich octave-shifted wash of harmony with your guitar. The CANYON achieves this by modeling a chain of four EHX pedals:



**SHIMMER MODE**
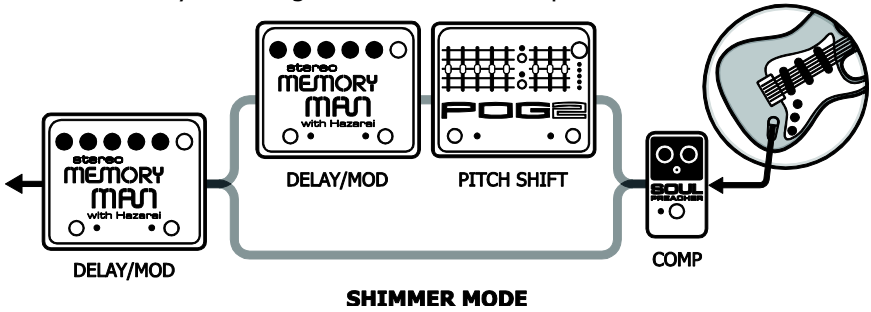
**S/H** – Sample and Hold – This mode senses guitar plucks, and repeats them indefinitely until another pluck is sensed. In this mode, the FEEDBACK knob controls the CANYON's sensitivity to guitar plucks. At the minimum position, only the strongest plucks will trigger the S/H mode. As FEEDBACK is turned up, the sensitivity of this mode increases.

**LOOP** – Looper mode – When the CANYON is in LOOP mode, it becomes a looper pedal with a maximum loop length of 62 seconds. A recorded loop is stored permanently, even when the CANYON is removed from power. As a special feature, the FEEDBACK knob controls the level of the existing loop that is preserved when overdubbing.

### - USING THE CANYON'S LOOP MODE -

### RECORDING A LOOP

1. To record a loop, press the footswitch once. The LED will light red and recording begins immediately.
2. To stop recording the loop, press the footswitch again once. The LED will light green, and the loop will begin playing immediately.
3. The FX LVL knob controls the output level of loop playback. Your dry signal remains at unity signal level.
4. The loop plays indefinitely. Each time the loop repeats, the LED will briefly turn off.
5. **Note:** If the full 62 seconds of loop recording time is reached, recording will stop automatically.

## STOPPING & STARTING LOOP PLAYBACK

1. To stop loop playback, press the footswitch two times quickly.
   **Note:** the LED will turn orange during the first press.
2. The LED will light dim green to indicate the presence of recorded loop memory. When powering on the CANYON in LOOP mode, or when switching from an echo mode to LOOP mode, the LED will light bright green for a half second to indicate the presence of loop memory, then turn dim green until playback is started.
3. While playback is stopped, press and release the footswitch once to start loop playback. The LED will light green to indicate that the loop is playing.

## RECORDING AN OVERDUB

1. To record an overdub, first begin playing back a recorded loop by pressing the footswitch once to begin playback. The LED will turn green and the loop will begin playing immediately.
2. To start recording an overdub, press the footswitch once. The LED will turn orange and new audio will be recorded on top of the original loop.
3. The level of previously recorded loop memory preserved after overdubbing is set with the FEEDBACK knob. When this knob is at the maximum position, no volume loss will occur to the previously recorded portion of the loop. When the FEEDBACK knob is set lower, the previous loop memory will be at a lower volume than the recorded overdub.
4. To stop overdubbing the loop, press the footswitch again once. The LED will turn green, and the loop will continue playing along with the overdubbed audio.
5. Overdubbing will never change the length of the loop.
6. If the loop repeats during overdubbing, the LED will turn off briefly. The CANYON can overdub indefinitely, allowing you to continuously add new audio to your loop.
7. After finishing an overdub, the Undo/Redo function is enabled. You may undo, then redo the last overdub as many times as you like.

## UNDO-REDO FUNCTION

1. To undo an overdub (remove the last take) during loop playback, press and hold the footswitch for 1 second. The LED will blink twice and the previous overdub will be removed.

2. To redo an overdub (restore the last removed take) during loop playback, press and hold the footswitch for 1 second. The LED will blink twice and the previous overdub will be restored.
3. The Undo/Redo function can only be initiated while a loop is playing back. Undo/Redo cannot be performed during overdub, record, or stop modes.
4. **Note:** once Undo/Redo is enabled, this function is available until the loop is erased. This is true even after power cycling the CANYON.

## ERASING A LOOP

1. To erase a loop, playback must be stopped. If a loop is playing, press the footswitch two times quickly to stop it.
2. Press and hold the footswitch for 2 seconds to erase the loop memory. The LED will blink red six times then remain off, indicating that the loop is erased.
3. **Note:** the ERASE function is only available when the loop has recorded memory, as indicated by the dim green LED.

## LOOP MEMORY

1. Any recorded audio is stored automatically to the CANYON's internal memory.
2. The recorded loop will remain in memory until it is erased. Power cycling does not erase the saved loop unless power is cut while recording the loop. Any loop or overdub that was being recorded at the time of power loss will not be saved by the CANYON.
3. Switching from LOOP mode to any other delay mode on the CANYON does not erase the loop unless the MODE knob is moved while recording the loop.
4. If the CANYON has a loop saved in its memory and is turned on in LOOP mode, or if the MODE knob is turned to LOOP mode, the LED will light bright green for half a second, then turn dim green to indicate that there is previously recorded loop memory. If there is no loop in memory, the LED will stay off until a loop is recorded.

### - TAP TEMPO WITH THE CANYON -

In all CANYON modes except for LOOP, the delay time can be set with tap tempo. The CANYON offers two ways of tapping in a tempo: using the built-in footswitch, or using an external tap tempo switch. With either method, you can achieve different rhythms using the TAP DIVIDE button. Pressing the TAP DIVIDE button cycles through three subdivision

options, each indicated by the LED color. If you tap in a quarter-note tempo, the tap divide subdivisions will be:

- Red LED:           quarter notes (no division)
- Orange LED:     dotted eighth notes (3/4 of tapped delay time)
- Green LED:        eighth notes (1/2 of tapped delay time)

## USING THE INTERNAL FOOTSWITCH

Tap the CANYON's internal footswitch at least two times at a steady tempo. The delay time will be set to your tapping speed, divided by the tap divide setting. The LED will blink at the rate of the delay. **Tip:** *When you tap the internal footswitch, the CANYON will enter/exit bypass. If you don't want echoes to stop while setting tap tempo, make sure the TAILS switch is set to ON, or use an external footswitch.*

You can also disable the internal footswitch's tap tempo function. This is useful when you want to turn the pedal on/off very quickly. To disable/enable internal tap tempo, unplug power from the CANYON, press and hold the footswitch, then plug power back in while holding the footswitch. The LED will slowly blink five times if tap tempo is turned off, and will blink twice if tap tempo is turned on. The CANYON saves your tap tempo enable/disable setting until it is changed again, even if the pedal is removed from power. **Tip:** *If you set the Tails switch to ON and disable internal tap tempo, you can quickly switch the CANYON in and out of effect mode to "grab" individual notes or phrases to repeat, or to keep high FEEDBACK settings from becoming too busy.*

You can also reset the internal footswitch's tap tempo to the factory setting of enabled by holding the footswitch when resetting secondary knob settings. See step 11 in "Using Secondary Knob Mode" below.

## USING AN EXTERNAL FOOTSWITCH

Connect an external momentary footswitch to the TAP IN jack to control the delay time by tapping in a tempo. The external switch should be normally open. Upon engaging the switch, it should create a short circuit between the Tip and Sleeve of the plug. Tap the external footswitch at least two times at a steady tempo. The delay time will be set to your tapping speed, divided by the tap divide setting. The LED will blink at the rate of the delay.

Plugging in an external tap switch always disables the internal footswitch's tap tempo functionality.

## - SECONDARY KNOB FUNCTIONALITY -

The CANYON allows you to take even more control over the tone of each delay mode by accessing "hidden" parameters through Secondary Knob Mode. Use the secondary knob functions to fine tune the exact tone you want, or push the CANYON into wild, unexpected sonic territory.

## USING SECONDARY KNOB MODE
1. Turn the MODE knob to the mode you would like to edit. Secondary knob functions are available in every mode except for ECHO and LOOP.
2. Press and hold the TAP/DIVIDE switch for 1 second. The LED will blink in an on-on-off pattern to indicate that the CANYON is now in Secondary Knob Mode.
3. Turn the DELAY or FEEDBACK knobs to edit the secondary knob function for that delay mode.
4. To exit Secondary Knob Mode, press and release the TAP/DIVIDE switch. The LED will stop blinking. The delay time and feedback amount set by the DELAY and FEEDBACK knobs before entering Secondary Knob Mode is preserved until those knobs are moved.

## USING OTHER CONTROLS IN SECONDARY KNOB MODE
1. The FX LVL and MODE knobs always function normally in Secondary Knob Mode. The FEEDBACK knob functions normally if there is no secondary knob function for that knob (in MULTI, REVRS, and S/H delay modes). Turning the MODE knob to ECHO or LOOP will exit Secondary Knob Mode.
2. When using the DELAY or FEEDBACK knob to set a secondary knob function, the delay time and feedback amount that was set by those knobs before entering Secondary Knob Mode is preserved.
3. The footswitch functions normally in Secondary Knob Mode. If the footswitch is used to put the CANYON in bypass mode, Secondary Knob Mode will remain active, and moving the knobs will change their secondary knob functions. The LED will blink in a shorter version of the Secondary Knob Mode pattern. If tap tempo mode is enabled, you can use the footswitch to tap in a new delay time.
4. Secondary knob settings are preserved when switching away from a particular delay mode, and are preserved when power cycling the CANYON. When secondary knob functions are set in one delay mode, they do not affect the secondary knob functions of another mode (example: changing the modulation depth of MOD mode does not change the modulation depth of DMM mode).

## ERASING SECONDARY KNOB SETTINGS

1. To erase the secondary knob settings of a particular mode, press and hold the TAP/DIVIDE switch. Then, while holding TAP/DIVIDE, press and hold the footswitch for 2 seconds. The LED will blink quickly indicating that the secondary knob settings of the current mode have been reset to the default factory settings.
2. To erase the secondary knob settings of every mode and restore them all to factory defaults, first unplug the CANYON from power. Press and hold the TAP/DIVIDE switch. Then, while holding TAP/DIVIDE, plug power back in to the CANYON. The LED will blink quickly, indicating that all secondary knob functions have been restored to the factory default.
3. To erase the secondary knob settings of every mode and reset the internal footswitch's tap tempo to the factory default, first unplug the CANYON from power. Press and hold both the TAP/DIVIDE switch and the footswitch. Then, while holding both switches, plug power back in to the CANYON. The LED will cycle through red, orange and green to indicate that the CANYON has been restored to factory default secondary knob settings and tap tempo settings.

## SECONDARY KNOB FUNCTIONS BY DELAY MODE

**ECHO** – No secondary knob functions.

**MOD** – The DELAY knob controls modulation rate. Factory default is 0.15Hz, at the 8 o'clock position of the knob. This can be adjusted from 0.01Hz to 328Hz. The FEEDBACK knob controls modulation depth. Default is at the 12 o'clock position of the knob.

**MULTI** – The DELAY knob controls volume decay/swell. Factory default is at 12 o'clock, with no decay or swell. As the knob is turned up, the first delayed echoes will become quieter. At maximum position, the echoes will increase in volume from silence. As the knob is turned down, the last delayed echoes will become quieter. At minimum position, the echoes will decay to silence, which will sound identical to ECHO mode.

**REVRS** – The DELAY knob controls pluck sensitivity. Turn the knob up to make the CANYON more sensitive to your pluck attack, turn it down to reduce sensitivity. Factory default is maximum sensitivity with the knob fully clockwise.

**DMM** – The CANYON can emulate the lush analog modulation of the EHX Deluxe Memory Man. It is disabled as a factory default, but can be

turned on using the FEEDBACK knob in secondary knob mode. FEEDBACK controls modulation depth, and factory default is zero, with the knob fully counterclockwise. Turn the knob up to increase modulation. The DELAY knob controls modulation rate. Factory default is 0.75Hz, at the 10 o'clock position of the knob, which corresponds to the Deluxe Memory Man's Chorus setting. Set this knob to the noon position to reach the DMM's Vibrato setting.

**TAPE** – The DELAY knob controls the amount of tape distortion, emulating an aging tape. Factory default is 10 o'clock. The FEEDBACK knob controls Tape Flutter modulation depth. Factory default is 9 o'clock. Turn both knobs to the minimum position for a clean, fresh tape tone.

**VERB** – The DELAY knob controls the reverb time. Factory default is 11 o'clock. Turn this knob up for longer reverb tails, turn it down for shorter. The FEEDBACK knob controls a low pass filter on the reverb. Factory default is set to maximum. Turn this knob down to get a darker reverb sound.

**OCT** – Using Secondary Knob Mode, it is possible to get ascending octaves, descending octaves, or both with the CANYON. The DELAY knob controls the Up Octave (ascending). Factory default is the maximum position. The FEEDBACK controls the Sub Octave (descending). Factory default is the minimum position, in which the Sub Octave is muted.

**SHIM** – The DELAY knob controls a low pass filter on the shimmer effect. Factory default is set to maximum (filter wide open). Turn this knob down to get a warmer shimmer sound. The FEEDBACK knob controls modulation depth. Factory default is set to 9 o'clock.

**S/H** – Similarly to MULTI mode, the DELAY knob controls volume decay/swell on Sample/Hold mode. Factory default is set to 12 o'clock with no decay or swell. If the knob is turned above 12 o'clock, the echoes will begin silent and increase in volume until the level set by the FX LVL knob. As the knob is turned up, the amount of time it takes to reach full volume increases. If this knob is turned below 12 o'clock, the repeats will decay. As the knob is turned down, the amount of time it takes to reach silence decreases.

**LOOP** – No secondary knob functions.

## SECONDARY KNOBS CHART

*Tip:* cut out this chart as a handy go-to reference for the Canyon's Secondary Knob Controls.

| MODE | DELAY | FEEDBACK |
|---|---|---|
| ECHO | – | – |
| MOD | Modulation rate | Modulation depth |
| MULTI | Volume decay/swell | – |
| REVRS | Pluck sensitivity | – |
| DMM | Modulation rate | Modulation depth |
| TAPE | Tape distortion | Flutter mod depth |
| VERB | Reverb time | Reverb tone |
| OCT | Octave up level | Sub octave level |
| SHIM | Low-pass filter | Modulation depth |
| S/H | Volume decay/swell | – |
| LOOP | – | – |

# - 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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To hear demos on all EHX pedals visit us on the web at **www.ehx.com**
Email us at **info@ehx.com**

## — FCC 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.*