



Binary Eko Owner's Manual

HOTONE
DESIGN INSPIRATION

Welcome

Congratulations on your new Hotone Binary pedal! You have just added some serious power to your pedalboard.

The Binary series lets loose versatile pro effects in compact cases. A dual-DSP powered platform and CDCM modeling system ensure a realistic playing experience, dual-footswitch design and variable I/Os make it easy to use, and an OLED screen offers clear, detailed display.

Binary Eko is a CDCM-based multi modulation effects pedal with stereo I/O and expression pedal support, delivering precise classic delay pedal sounds along with new and inspiring Hotone original delay effects.

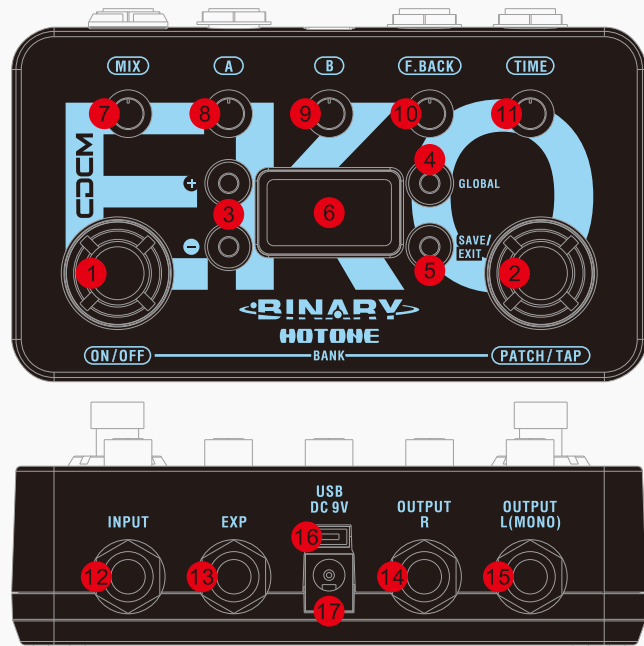
Features

- ✦ Grown out of next-gen XTOMP technology
- ✦ Compact, easy-to-use dual footswitch delay pedal with tap tempo
- ✦ Advanced CDCM modeling system ensures realistic playing experience
- ✦ Dual DSP-powered platform ensures high sound quality
- ✦ 24-bit A/D/A conversion, up to 110dB S/N ratio
- ✦ 17 high quality delay effects including CDCM-based classics and Hotone originals
- ✦ Variable maximum delay time ranging from 1000ms to 4000ms
- ✦ Tap Tempo function with Tap Divide
- ✦ Stereo I/Os
- ✦ EXP jack for expression pedal control
- ✦ USB jack for firmware upgrading, loading/managing effects with free PC/Mac software
- ✦ 10 Presets (2 banks x 5 patches)
- ✦ Built-in OLED screen with clear display
- ✦ 5 transparent knobs with LEDs
- ✦ 9V DC power supply

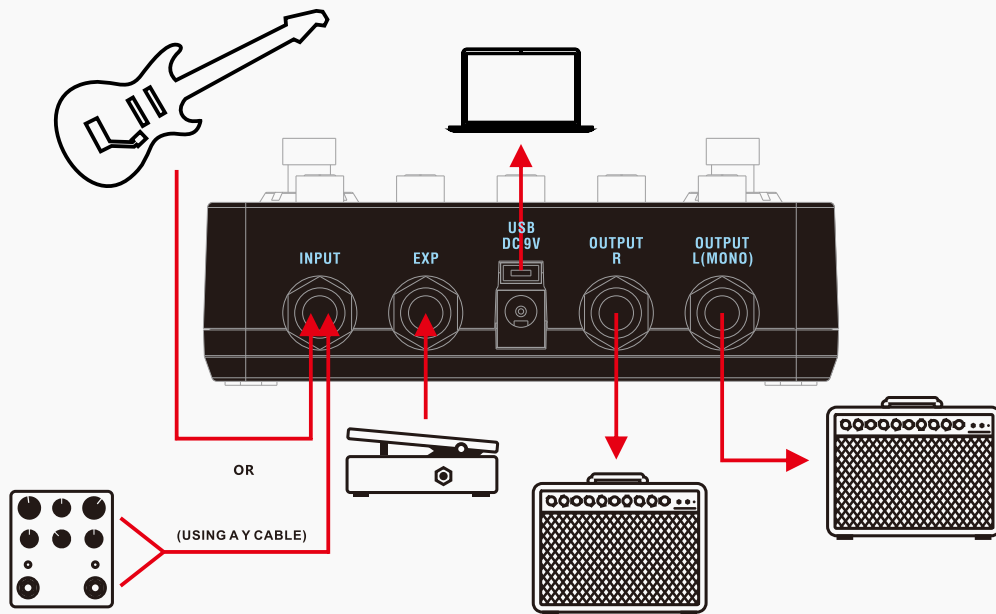
Panel Introduction

1. ON/OFF: For switching this unit on/off. The LEDs under the upper 5 knobs indicate effect on/off status.
2. PATCH/TAP: Tap for selecting forward patches in current bank, hold for engaging/disengaging tap tempo mode.
3. +/- buttons: For selecting effects and adjusting parameters.
4. GLOBAL: For setting expression pedal, input mode, and other parameters.
5. SAVE/EXIT button: For saving or canceling parameter changes.
6. OLED screen: Shows bank/patch numbers, setting values and other operation info.
7. MIX: Controls effect wet/dry signal ratio (varies with effects).
- 8-9. A/B: Control detailed effect character (varies with effects).
10. F.BACK: Controls the delay feedback amount (varies with effects).
11. TIME: Controls the delay time. In Tap Tempo mode, use TIME knob to set a Tap Tempo subdivision*, and the TIME LED will keep flashing.
12. INPUT: 1/4" (6.35mm) stereo jack, for plugging in instruments or other effects. A Y cable is needed when connecting to stereo pedal outputs.
13. EXP: 1/4" (6.35mm) TRS jack, for connecting expression pedals. The expression pedal should have a TRS cable attached to it. We recommend using a Hotone Soul Press (switched to EXP mode) for expression control.
- 14-15. OUTPUT (L & R): 1/4" (6.35mm) mono jacks, for connecting to amps or other effects.
16. USB jack: Mini USB jack, for effects editing, firmware updates, and factory reset.
17. DC 9V: Plug in your power supply here (DC 9V, center negative).

*Requires firmware v1.1.1 or later



Connections



Note: TURN ON FIRST, TURN OFF LAST. Always mute the mixer/audio interface before plugging or unplugging power jacks, cables, etc. When you're using a mixer or an audio interface, please adjust the onboard knobs carefully to avoid signal clipping.

Display

Plugging in your power supply will turn on the device. The main display will come up as shown below:



- 1 - Current bank/patch number
- 2 - Shows the expression pedal controlled parameter
- 3 - Indicates the effect you're using in current patch

Select a Patch/Bank

Tap the PATCH footswitch once to switch to the next patch. Tap it repeatedly to cycle through patches of the current bank in the order 1, 2, 3, 4, 5, then 1.



Tap the two footswitches at the same time to switch to the next bank. Tap them repeatedly to cycle through banks in the order A, B, then A.



Tap Tempo and Tap Tempo Subdivision

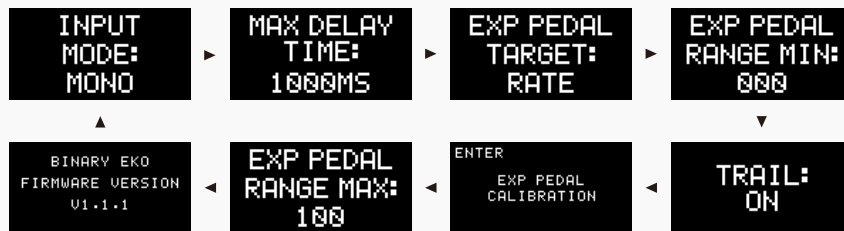
Hold the PATCH/TAP footswitch to engage Tap Tempo mode when the effect is on. Then tap the PATCH/TAP footswitch to set a tempo speed. In this mode, the LED under the TIME knob will pulse to indicate the effect time you set. Hold the PATCH/TAP footswitch again to disengage. In Tap Tempo mode, turn the TIME knob (or B knob when using DUAL EKO) to set a proper tap tempo subdivision shown as below:

SUBDIVISION	DIVIDE RATIO	DISPLAY
Whole Note	4	1
Half Note	2	1/2
Dotted Half Note	3	1/2D
Half Note Triplet	4/3	1/2T
Quarter Note (no division)	1/1	1/4
Dotted Quarter Note	3/2	1/4D
Quarter Note Triplet	2/3	1/4T
8th Note	1/2	1/8
Dotted 8th Note	3/4	1/8D
8th Note Triplet	1/3	1/8T
16th Note	1/4	1/16

- Note: 1. The default division is Quarter Note (1/4, no division). Disengaging Tap Tempo function will reset the subdivision to default.
2. Tap Tempo subdivision function requires firmware v1.1.1 or later.*

Global

Press the GLOBAL button repeatedly to cycle through input mode, max delay time, expression pedal, trail settings and firmware version info:



Use the +/- buttons to set the parameters, press the SAVE/EXIT button (or wait for 5 seconds without any operation) to confirm settings and exit to the main display.

Note: 1. There is no parameter in firmware info display.

2. To check firmware version on your Binary Eko, you need to update to firmware v1.1.1 or later.

Edit

1. Adjust the parameters

Use the onboard knobs to adjust the effect parameters. The screen display will be shown as below when adjusting:



1 - Current parameter value you're adjusting (shown: feedback)

2 - Saved parameter value in the current patch (PREV. = Previous value)

Note: In this status, you can use the +/- buttons to fine tune the delay time.

Edit

2. Select a different effect

Use the +/- button to change to another effect:



The inverted bank/patch number indicates that the current patch has been edited.

Edit

3. Set the expression pedal

If you have an expression pedal, you can control an effect parameter in real time. In main display, press the GLOBAL button three times to edit control target:



EXP PEDAL
TARGET:
TIME

Use the +/- buttons to select a target among OFF, MIX, A, B, F.BACK, TIME.

Note: If you change to another patch before saving your edits, all your changes will be lost. Save the patches to keep your changes.

Save

Hold the SAVE/EXIT button to activate save function. The screen will be shown as below:



Use the +/- buttons to choose a location. Tap the SAVE/EXIT button to confirm saving.

Tap PATCH/TAP footswitch to cancel saving and go back to edit status.

Input Mode, Max Delay Time and Trail

1. Input mode

In main display, press the GLOBAL button once to select an input mode:



Use the +/- buttons to choose from MONO and STEREO. If you choose to use STEREO mode while using mono (L) input, the right output will be MUTED.

Input Mode, Max Delay Time and Trail

2. Max delay time

In main display, press the GLOBAL button twice to set a max delay time:



MAX DELAY
TIME:
1000MS

Use the +/- buttons to choose from 1000ms/2000ms/3000ms/4000ms. The default setting is 1000ms.

Input Mode, Max Delay Time and Trail

3. Trail

A trail will affect the effect “tail” when you turn off the pedal. When trail is on, the delay repeats will continue after you bypass the effect; when trail is off, the effect will disappear immediately. The default trail setting is OFF.

In main display, press the GLOBAL button seven times until the message below is shown:



Use the +/- buttons to select trail on/off.

Input mode, max delay time and trail settings are all global settings (it won't change your patches) and changes will be automatically saved.

Expression Pedal Range and Calibration

In main display, press the GLOBAL button four times/five times to set the minimum/maximum value ranging from 000 to 100:

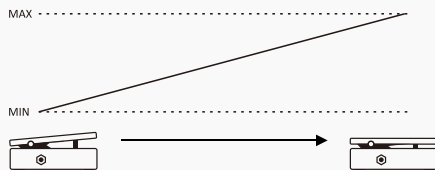


4 times (min value)



5 times (max value)

Parameter value



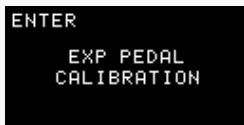
Note: 1. The minimum value cannot be set higher than the maximum value.

2. This is a global setting (it won't change your patches) and changes will be automatically saved.

Expression Pedal Range and Calibration

The expression pedal can be calibrated if necessary. If there does not seem to be much effect even when you press the pedal, or effects change greatly when the pedal only moves slightly, use the following procedure to readjust it.

In the main display, press the GLOBAL button six times:



Press + button to activate calibration and then screen displays "HEEL POSITION":



Press the pedal all the way back towards the heel and press + button, and then it displays "TOE POSITION":



Expression Pedal Range and Calibration

Press the pedal all the way forward towards the toe and press + button.

After finishing the adjustment, "CALIBRATION COMPLETE" will appear and it will go back to the main display.



If "PLEASE TRY AGAIN" appears, do the calibration from "HEEL POSITION" again:



Effect Models List*

No.	Name	Description	MIX	A	B	F.BACK	TIME	Tap Target
01	Dream Eko (DRM EKO)	Based on legendary BBD analog delay with repeat rate control	E.LEVEL	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
02	80 EKO	Based on Maxon AD80	MIX	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
03	MEMO EKO	Based on Electro-Harmonix Stereo Memory Man	E.LEVEL	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
04	900 EKO	Based on Maxon AD900	E.LEVEL	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
05	999 EKO	Based on Maxon AD999	E.LEVEL	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
06	PURE EKO	Producing pure delay effect	MIX	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
07	WARM EKO	Producing delay with warm, analog-feel feedback	MIX	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
08	TAPE EKO	Simulates vintage tape echo machine	MIX	Low cut (LO CUT)	High cut (HI CUT)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
09	TUBE EKO	Simulates tube driven echo machine	MIX	Low cut (LO CUT)	High cut (HI CUT)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
10	Vintage Rack (VINT RACK)	Simulates 1980's rack digital delay sound with slightly downsampled feedback	MIX	MOD	TONE	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
11	DUAL EKO	Producing dual delay effect with pure feedback	MIX	Feedback A (FB A)	Time A: 20ms-1000ms/2000ms/3000ms/4000ms	Feedback B (FB B)	Time B : 20ms-1000ms/2000ms/3000ms/4000ms	Time B
12	PING PONG	Producing delay effect that bounces back and forth between left and right channels	MIX	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
13	Sweep Eko (SWP EKO)	Producing delay effect with sweeping filter	MIX	Sweep filter Q (Q)	Sweep rate (S. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
14	Tremolo Eko (TRM EKO)	Producing delay effect with tremolo modulation	MIX	Tremolo depth (T. DEPTH)	Tremolo rate (T. RATE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
15	LOFI EKO	Producing delay effect with sample reduced feedback	MIX	Low cut (LO CUT)	High cut (HI CUT)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
16	RING EKO	Producing delay effect with ring modulated feedback	MIX	Ring mod frequency (FREQ)	Ring mod tone (TONE)	F.BACK	20ms-1000ms/2000ms/3000ms/4000ms	TIME
17	SLAP BACK	Simulates vintage slap back echo sound	MIX	Mod depth (M. DEPTH)	Mod rate (M. RATE)	F.BACK	10ms-200ms fixed	TIME

*The Manufacturers and product names mentioned above are trademarks or registered trademarks of their respective owners. The trademarks were used merely to identify the sound character of the products.

Specifications

Numbers of Effects: 17

Numbers of Patches: 10 (2 banks x 5 patches)

Max. Delay Time: 4000ms

Digital Processing: 24-bit A/D/A conversion, 44.1 kHz sample rate

Frequency Response: 20 Hz-20 kHz

S/N Ratio: Up to 110dB

Input Impedance: 1M Ohms

Output Impedance: 100 Ohms

Power Requirement: DC 9V, center negative

Current Consumption: 200mA minimum

Dimensions: 121mm (D) x 72mm (W) x 47mm (H)

Weight: 340g

The contents of this manual are subject to change without notice.