

fxbox User Manual

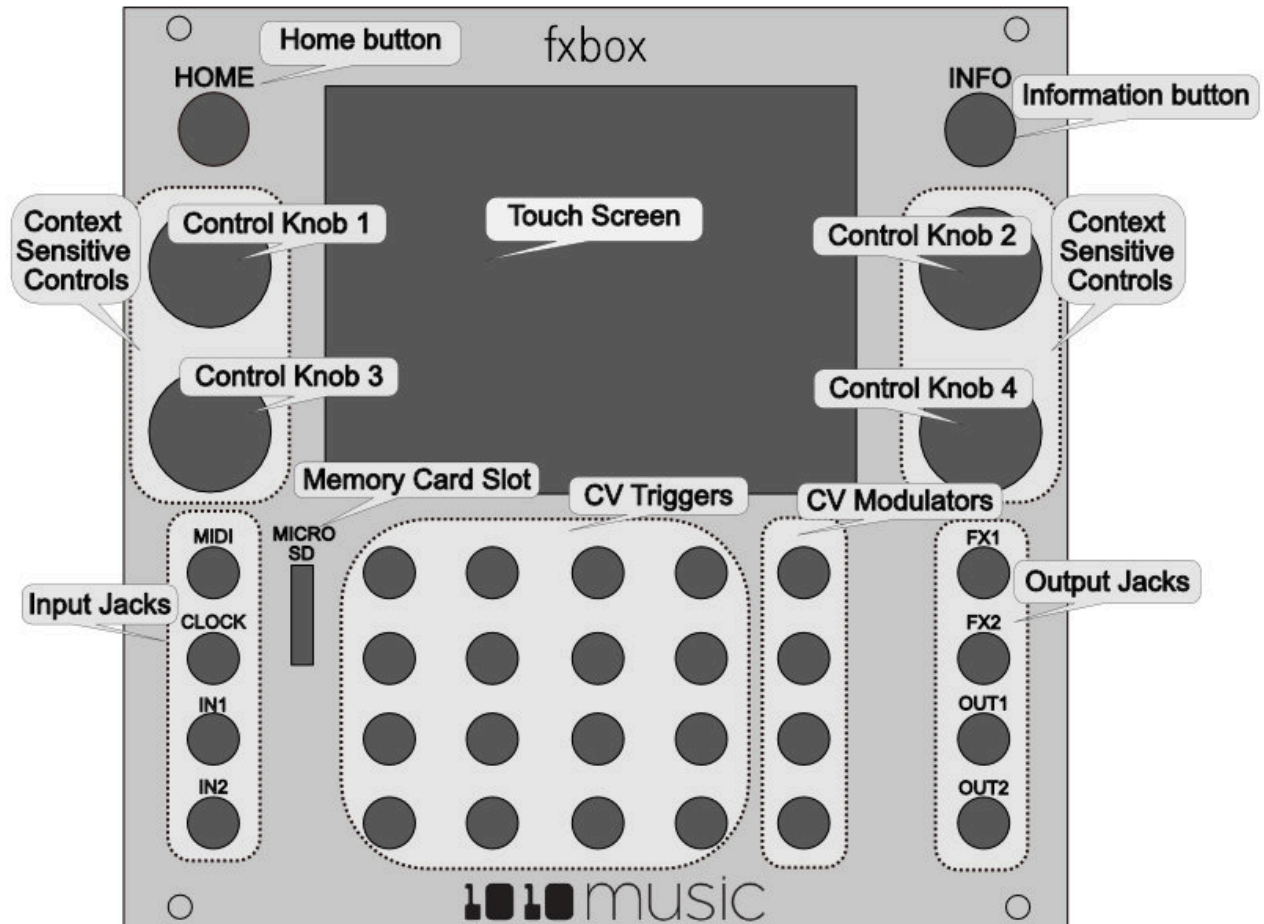


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Overview

Fxbox provides 16 performance effects with XY control and a built in step sequencer. Fxbox is available as a dedicated module. Also, you can reprogram your bitbox to become an fxbox.

The diagram below identifies the various components of the fxbox module.



Fxbox is equipped with a touchscreen. You can touch cells in the grid on the screen to select them, and touch on-screen buttons to take an action. You can also drag your finger across the screen to use XY positioning to control effects.

The **INFO** and **HOME** buttons at the top of the front panel of fxbox are used to navigate the screens. Press **INFO** to view the information screen for the current selection. In some cases, you can press **INFO** more than once to get to deeper information. The **HOME** button generally takes you back a screen. If you get lost, you can press **HOME** until you get back to the **Main** screen.

The **Control Knobs** are used to cycle through options on the screen. When there are several parameters on the screen, use the **Control Knob** closest to a parameter to set its value.

The microSD Card

Fxbox uses a microSD card to store settings. A microSD card must be inserted into the **MICROSD** slot on the front panel of the fxbox during operation of the module. A microSD card loaded with 50 presets is included with fxbox. Insert the microSD card with the notched edge down.

Working with Effects

Fxbox takes audio input from **IN1** and **IN2**, processes the configured effects, and sends the result to **OUT1** and **OUT2**.

When fxbox starts up, the **Touch Screen** displays the **Main** screen with the grid of 16 effects. The available effects are listed in the table below:

13:4				
-	02BadTapeEcho			+
PIT	DIST	BTCR	FILT	MOD
CHR	PHAS	FLNG	RING	MOD
FRZE	LOOP	RVRS	VNYL	MOD
GATE	PAN	DLY	RVB	PLAY
Main Screen				

Label	Effect
PIT	Pitch Shifter
DIST	Distortion
BTCR	Bit reduction and sample rate reduction
FILT	Low Pass Filter
CHR	Chorus
PHAS	Phaser
FLNG	Flanger
RING	Ring modulator
FRZE	Granulator based freeze effect
LOOP	Automated looping, with quantized start and length
RVRS	Reverse
VNYL	Turntable and similar effects including scratching, tape stop, and backspin
GATE	Clock based gating
PAN	Automated panning
DLY	Delay
RVB	Reverb

The effects are applied by the signal processing chain in the order listed in the table above, from top to bottom.

Effects can be momentarily enabled using the touch screen, triggered via control voltage (CV) inputs or set always on by configuring the parameters for the effect.

Momentarily Apply an Effect

If you want to apply an effect manually, you can do so by touching and holding the cell for that effect on the **Touch Screen**. The effect is applied while you are touching the cell, and stops when you remove your finger.

Trigger an Effect via Control Voltage Signal

You can use an external signal to control when an effect is applied using independent signals for each effect. To do this, plug a control voltage gate signal into the **CV Trigger** jack that maps to the effect in the grid. The effect will be applied when the CV signal goes high, and be turned off when the CV signal goes low.

Trigger an Effect via MIDI Input

You can trigger an effect by plugging a MIDI controller source into the **MIDI** input jack. The **MIDI** input uses a TRS connection compatible with the Arturia BeatStep Pro. Be sure to use a TRS cable. Fxbox

responds to **MIDI** inputs on MIDI Channel 10, which is the default channel for the drum part on the BeatStep Pro. **MIDI** inputs for notes 36 to 51 are mapped to the effects in the grid as shown in the diagram to the right. The **Play** button is mapped to note 52 and will toggle play mode.

48	49	50	51	
44	45	46	47	
40	41	42	43	
36	37	38	39	52

Set an Effect to be Always On

Many effects can be configured to always stay on by setting the **Trigger** parameter for the effect to **ON**. The steps to edit effect parameters are outlined below. Please note that not all effects have a **Trigger** parameter.

Edit the Parameters of an Effect

Each effect in the grid has a set of parameters that control how and when the effect is applied to the input signal. Follow these steps to edit the parameters for an effect:

1. Touch the cell of the effect in the grid on the **Main** screen to select it.
2. Push the **Info** button in the top right corner of the fxbox. You will see parameters specific to that effect, such as **Trigger**, **Decay** and **Grain Size**. Here are a few examples:

15:2

RVB

Decay: 33.0% Predelay: 0.0%

Amount: 100.0% Trigger: Gate

Reverb Parameters

22:3

FRZE

Speed: 0.0% Grain Size: 8192

Spread: 2496 Grain Count: 7

Freeze Parameters

18:4

FLNG

Rate: 32.1%

Feedback: 0.0% Trigger: Gate

Flanger Parameters

3. Adjust a parameter by turning the **Control Knob** next to it. Turn the **Control Knob** clockwise to increase the impact of the effect.
4. Alternatively, touch and drag in the middle of the **Touch Screen** to control the two parameters on the left side of the screen using X/Y control. Move your finger left and right to control the top parameter, up and down to control the bottom parameter. Move right and up to increase the intensity of the effect.

Bypass Effects

Fxbox allows you to temporarily bypass or disable individual effects by following these steps:

1. While on the **Main** screen, push the **Home** button to enter bypass mode. The grid cells will be green.
2. Touch a cell to bypass that effect. The cell will turn red. Touch it again to enable the effect, which will make it green.
3. Push the **Home** button to leave bypass mode. A red bar appears over the names of bypassed or disabled effects.

39:2

- 01DirtyGloop +

PIT DIST BTCR FILT MOD

CHR PHAS FLNG RING MOD

FRZE LOOP RVRS UNYL MOD

GATE PAN DLY RVB PLAY

Bypass Mode - All effects enabled

35:3

- 02BadTapeEcho +

PIT DIST BTCR FILT MOD

CHR PHAS FLNG RING MOD

FRZE LOOP RVRS UNYL MOD

GATE PAN DLY RVB PLAY

Bypass Mode - Three effects disabled

50:1

- 02BadTapeEcho +

PIT DIST BTCR FILT MOD

CHR PHAS FLNG RING MOD

FRZE LOOP RVRS UNYL MOD

GATE PAN DLY RVB PLAY

Main Screen - Three effects disabled

Effect Parameters

The table below describes the parameters for each of the effects.







Label	Effect	Parameter	Settings
PIT	Pitch Shifter	Pitch	-24 semitones to +24 semitones
		Wet/Dry	Determines how much of the original signal (dry) and processed signal (wet) are heard. 0 % is fully dry. 50% is an equal mixture of both. 100% only contains the wet signal.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
DIST	Distortion	Distortion	0 to 100% Amount of distortion.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
BTCR	Bit reduction and sample rate reduction	Frequency	0 to 100% Determines sampling frequency from 187Hz to 48kHz.
		Resolution	0 to 100% Determines output resolution from 1 bit to 24 bits.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
FILT	Low Pass Filter	Cutoff	0 to 100% Determines the filter cutoff from 20Hz to 22kHz
		Res	0 to 100% Determines the filter resonance.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
CHR	Chorus	Amount	0 to 100% Controls the intensity of the effect.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
PHAS	Phaser	Rate	0 to 100% Controls the rate at which the effect sweeps through the full range from 0.1Hz to 10Hz.
		Feedback	0 to 100% Determines the amount of feedback or intensity of the effect.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
FLNG	Flanger	Rate	0 to 100% Controls the rate at which the effect sweeps through the full range from 0.1Hz to 10Hz.
		Feedback	0 to 100% Determines the amount of

Label	Effect	Parameter	Settings
			feedback or intensity of the effect.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
RING	Ring modulator	Carrier	0 to 100% Determines the pitch of the carrier signal.
		Amount	0 to 100% Determines the intensity of the modulation.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
FRZE	Granulator based freeze effect	Speed	-100% to 100% Determines the scanning of the read position once the effect is held. -100% is reverse at original speed. 0% is held in place. 100% is scanning forward at the original speed.
		Spread	128 to 8192 Determines the width or range of the random area that the grains pull from. Small numbers are better for short events like drum hits. Big numbers are better for more steady sounds, like drones.
		Grain Size	1024, 2048, 4096, 8192 Determines the length of the individual grains. Small numbers are better for short events like drum hits. Big numbers are better for tones and more steady sounds.
		Grain Count	2 to 8 Determines the number of layers or complexity of the sound.
LOOP	Automated looping, with quantized start and length	Length	Determines the duration of the loop specified in musical length. The incoming clock or MIDI clock sets the tempo for this setting. 2 bars, 1 bar, ½, ½ T, ¼, ¼ T, 1/8, 1/8 T, 1/16, 1/16 T, 1/32, 1/32 T, 1/64
		Quant Size	Determines when the effect will be engaged or disengaged as specified in musical length. The incoming clock or MIDI clock sets the tempo for this setting. 2 bars, 1 bar, ½, ½ T, ¼, ¼ T, 1/8, 1/8 T, 1/16, 1/16 T, 1/32, 1/32 T, 1/64
RVRS	Reverse	(no parameters)	
VNYL	Turntable and similar effects including scratching, tape stop, and backspin	Mode	Tape Stop: a quick ramp down of pitch Scratch: back and forth scrubbing of the sound Powerdown: a gradual reduction in speed, eventually leading to no audio Backspin: reverse playback with slowdown of the pitch

Label	Effect	Parameter	Settings
GATE	Clock based gating	Length	Determines the overall interval for the gate specified in musical length. The incoming clock or MIDI clock sets the tempo for this setting. 2 bars, 1 bar, ½, ½ T, ¼, ¼ T, 1/8, 1/8 T, 1/16, 1/16 T, 1/32, 1/32 T, 1/64
		Duty Cycle	0 to 100% Determines how much of the audio in the interval is passed through.
		Quant Size	Determines when the effect will be engaged or disengaged as specified in musical length. The incoming clock or MIDI clock sets the tempo for this setting. 2 bars, 1 bar, ½, ½ T, ¼, ¼ T, 1/8, 1/8 T, 1/16, 1/16 T, 1/32, 1/32 T, 1/64
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
PAN	Automated panning	Rate	0 to 100% Controls the rate at which the effect sweeps through the full range from 0.1Hz to 10Hz
		Amount	0 to 100% Determines how wide the panning will be.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
DLY	Delay	Delay	Determines the delay length specified in musical intervals. The incoming clock or MIDI clock sets the tempo for this setting. 1/64, 1/32, 1/16, 1/8 T, 1/16D, 1/8, 1/4T, 1/8D, 1/4, 1/2T, 1/2, 1 bar
		Amount	0 to 100% Determines how much of the delayed signal is heard in the output.
		Feedback	0 to 100% Determines the amount of regeneration or echo in the delayed signal.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.
RVB	Reverb	Decay	0 to 100% How long the reverberation will ring out.
		Amount	0 to 100% Determines how much of the reverberation is heard in the output.
		Predelay	0 to 100% Determines the amount of delay in the signal before it reaches the reverberation. In real life, this is related to how close the source is to the walls.
		Trigger	ON: the effect is constantly applied. Gate: effect is triggered via CV input, momentary touch, MIDI input, or the step sequencer.

Visually Monitor the Effects

The fxbox changes the display of the grid to show the state of the effects. The table below describes what the icons and color changes indicate:

User Interface Example	Description	What it means
	Cell highlighted pink	The effect is selected. Pressing the INFO button will show the details for this particular effect.
	Red bar across the top of the cell	The effect is bypassed and will not be heard
	Unfilled blue bar across the bottom of the cell	The Trigger for the effect is set to On.
	Filled blue bar across the bottom of the cell	The effect has been triggered by a CV signal, the Step Sequencer, or touching it.
	Cell highlighted Red or Green	Fxbox is in bypass mode. Red cells are bypassed. Press the Home button to exit bypass mode.
	Blue bar with a line moving across it at the bottom of a MOD grid cell	A bar graph appears along the bottom of the MOD grid cell that represents the value of the corresponding CV input.

Working with Presets

Presets are sets of configuration parameters for effects that are designed to work together to achieve an overall effect. Fxbox comes with 50 preconfigured presets and allows you to create your own. All changes you make to a preset are automatically remembered and written to the preset. There is no option to “Discard Changes” or “Save Preset”.

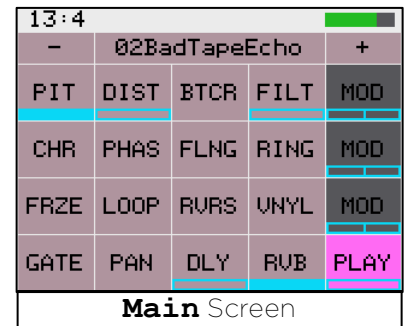
Select a Preset

There are two ways to select a preset. From the **Main** screen, you can cycle through the list of presets by touching the **-** and **+** buttons on either side of the preset name (**02BadTapeEcho** in the **Main** Screen example shown on the right).

Alternatively, on the **Main** screen, touch the preset name at the top of the grid (or the space above it) to display the **Presets** screen. Select a **Preset** by scrolling through the list with any of the **Control Knobs**, and then touch the **Load** button in the top right corner of the **Touch Screen**.

Note:

- All changes you make to a preset’s settings are automatically remembered and written to the preset. There is no option to “Discard Changes” or “Save Preset”.



If you want to restore the factory presets, follow the steps in Monitoring the Wet Reverb Signal

The wet signal for the Reverb effect is played out on **FX1** and **FX2**.

- Updating and Swapping Firmware below

Create a New Preset

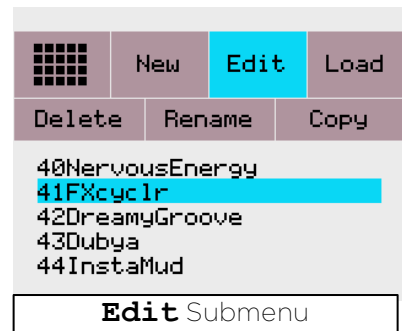
You can create new presets to store your own combinations of effects parameters by following these steps:

1. Push the **HOME** button to return to the **Main** screen if needed.
2. Touch the preset name at the top of the grid (or the space above it) to display the **Presets** screen.
3. Touch the **New** button at the top of the screen. Fxbox adds a new preset to the bottom of the list with the name **New Preset X**, where X is an incremental number.
4. Turn a **Control Knob** to select the newly created preset and then touch the **Load** button in the top right corner of the **Touch Screen**.

Copy a Preset

If you prefer not to start with a blank slate, you can copy an existing preset.

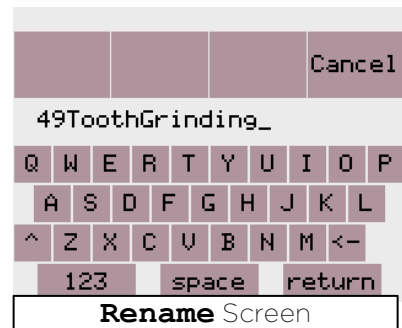
1. From the **Main** screen, touch the preset name at the top of the grid to display the **Presets** screen.
2. Touch the **Edit** button at the top of the **Touch Screen** to display the **Edit** submenu.
3. Use a **Control Knob** to select the preset you want to copy, and then touch the **Copy** button. Fxbox creates a copy of the preset that appears above the source preset. The name of the copy is the name of the source preset with " 2" appended to the end.



Rename a Preset

Here's how to give a preset a new name:

1. From the **Presets** screen, touch the **Edit** button at the top of the **Touch Screen** to display the **Edit** submenu.
2. Use a **Control Knob** to select the preset you want to rename, and then touch the **Rename** button. The fxbox displays a touch screen keyboard you can use to enter a new name. Touch the **return** button to save the changes and go back to the **Presets** screen.



Delete a Preset

Follow these steps to delete a preset. Warning: there is no undo, and no prompt to ask "are you sure?" So make sure you are on the correct preset before you use this. If you do accidentally delete a preset, you can reload it from the factory image using the steps outlined in Reset fxbox Presets to Factory Settings below.

1. Touch the **Edit** button at the top of the **Presets** screen to display the **Edit** submenu.
2. Use a **Control Knob** to select the preset you want to delete, and then touch the **Delete** button. The preset is immediately deleted.

Modify a Preset

You will use the procedures described above to edit a preset:

1. Select a Preset as described above.
2. Use the steps outlined in Working with Effects above to modify the effects for the preset. Fxbox automatically saves the changes as you work.

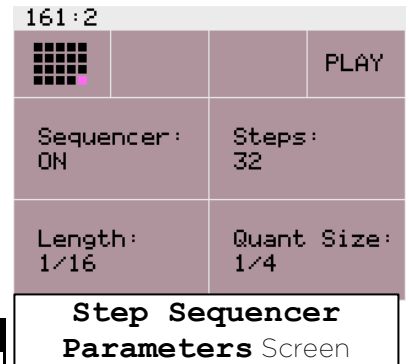
Working with the Step Sequencer

The Step Sequencer creates a recurring pattern that controls when effects are applied. You can have a different pattern for each effect.

Start and Configure the Step Sequencer

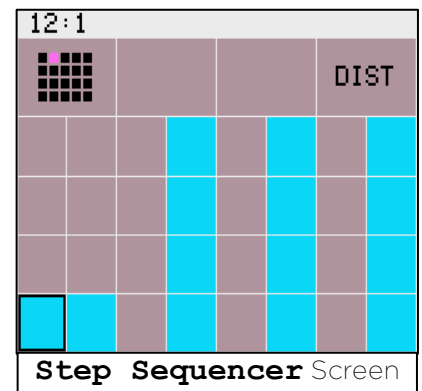
1. On the **Main** screen, touch the **Play** button in the lower right corner to start the Step Sequencer if needed.
2. With the **Play** button selected, push the **Info** button to see the **Step Sequencer Parameters** screen.
3. Use the **Control Knobs** to adjust the following parameters:

Parameter	Settings
Sequencer	ON: The Step Sequencer will run constantly OFF: The Step Sequencer will run in Toggle mode. Start and stop the Step Sequencer by pressing the Play button on the Main screen or sending a CV signal to the bottom CV Modulator jack. Each high signal on the CV input toggles between Play and Stop mode. An unfilled blue bar appears at the bottom of the Play cell when the Step Sequencer is playing.
Length	The length of each step in the sequence. Values: 2 bars, 1 bar, 1/2, 1/2 T, 1/4, 1/4 T, 1/8, 1/8 T, 1/16, 1/16 T, 1/32, 1/32 T, 1/64
Steps	The number of steps in the sequence. Values: 2 through 32
Quant Size	Determines when the sequencer will be engaged or disengaged as specified in musical length. The incoming clock or MIDI clock sets the tempo for this setting. Values: 2 bars, 1 bar, 1/2, 1/2 T, 1/4, 1/4 T, 1/8, 1/8 T, 1/16, 1/16 T, 1/32, 1/32 T, 1/64



Sequence an Effect

1. From the **Main** screen, select an effect to sequence by touching the grid cell.
2. Push the **INFO** button twice to display the **Step Sequencer** screen. A box outline moves across the grid to represent the currently playing step of the sequencer. The number of boxes the sequencer moves through is controlled by the **Steps** parameter. The time spent in each box is controlled by the **Length** parameter. The sequencer starts in the lower left corner, moves across to the right, and then moves up to the next row.
3. Touch the grid boxes on the **Touch Screen** to enable and disable the gate for the effect on each step. The effect is enabled for the step when the grid box is highlighted blue.



- Repeat steps 1 through 3 for other effects as desired.

On the **Main** screen, you can see the Step Sequencer in action by watching the blue bars that appear below the effects grid cells when the sequencer enables the effect. You can have a different step sequence for each preset.

Synchronizing Effects with External Signals

The effects generated by fxbox can be controlled by external signals to align the effects with other modules. Clock signals and MIDI signals can be used to synchronize the timing of the effects. CV Signals can be used to trigger effects or to modulate effect parameters.

Synchronize the Effects to an External Timing Input

Fxbox allows you to synchronize effects to an external clock. For example, any effect with the **Trigger** parameter set to **Gate** can be triggered by a clock input. Connect *one* of the following timing signals to fxbox to synchronize to that source:

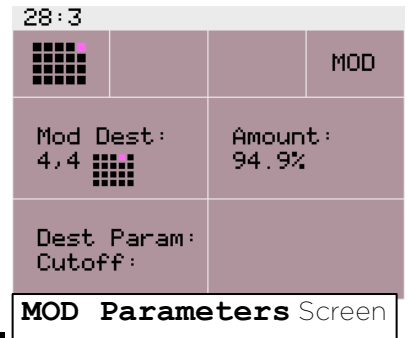
- Connect an external clock to the **Clock** input jack. Fxbox works from a 4 PPQ signal.
- - OR - Connect a TRS MIDI cable to the **MIDI** input jack.

To restart the clock, stop the external clock source for at least 2 seconds, and then restart the external clock source. Fxbox will interpret this break in the clock as the start of a new sequence. The clock timing is shown in the upper left of the Touch Screen as **Bars:Beats**.

Modulate Effect Parameters

External signals may also be used to modulate effects. There are three CV Modulator jacks that can be used for this.

1. Plug an external CV signal into one of the three **CV Modulator** jacks (the top three jacks in the right column of the array). A bar graph appears along the bottom of the **MOD** grid cell that represents the value of the corresponding CV input.
2. To control the modulation parameters for a CV input, touch the **MOD** button on screen that corresponds to the **CV Input** jack, and then push the **INFO** button to display the **MOD Parameters** screen.
3. Use the **Control Knobs** to adjust the following parameters:



MOD Dest	The destination effect you want the CV input to control. The highlight on the mini grid next to the knob shows the effect being controlled. You can choose any effect in the grid.
Dest Param	The parameter of the destination effect to control with the CV Voltage. For example, choose the FILT effect for the MOD Dest parameter and choose Cutoff for the Dest Parameter to use the CV voltage to adjust the cutoff value of the FILT effect.
Amount	Adjusts how much impact the CV signal will have on the effect.

Note:

- The destination effect must be active to hear the impact of the modulator changes.

Trigger Effects with a CV Signal

See [Trigger an Effect via Control Voltage Signal](#) above.

Monitoring the Wet Reverb Signal

The wet signal for the Reverb effect is played out on **FX1** and **FX2**.

Updating and Swapping Firmware, Audio Files and Presets

Bitbox and fxbox owners can update the module's firmware to get the latest features and other updates. This process can also be used to run bitbox firmware on fxbox hardware and vice versa. The firmware can be updated with the factory image, which includes the original presets, or just the firmware itself. You can also choose individual presets to copy over to your microSD Card.

Install New Firmware

Here are the steps required:

1. Download the desired firmware onto your computer. You can choose to download either fxbox or bitbox firmware, but only one set of firmware can run at a time. You can find the latest firmware images on 1010music.com under **Support**.
2. Unpack the zip file. Some browsers do this automatically for you.
3. If you want to replace the Presets with the factory image, copy the full contents of the zip file onto a microSD card. If you do not want to overwrite your presets, copy only the **MATRIX.BIN** file to the microSD card.
4. Place the microSD card in your bitbox or fxbox
5. While powering up the unit, hold the **Home** and **Info** buttons. When you see the message about upgrading the firmware, you can let go.
6. When the upgrade finishes in about 15 seconds, the unit will restart with the new software.

Reset fxbox Presets to Factory Settings

If you want to reset one or more of the fxbox Presets to the original factory settings, you can copy individual preset files onto your microSD card.

1. Download the fxbox firmware onto your computer. You can find the latest firmware images on 1010music.com under **Support**.
2. Unpack the zip file. Some browsers do this automatically for you.
3. Find the .fxb file in the unpacked folder that has the same name as the preset you want to restore, for example O2BadTapeEcho.fxb. Copy the .fxb file onto the microSD card to replace the file on the card.
4. Insert the microSD card into the fxbox.
5. Push the **HOME** button to return to the **Main** screen if needed.
6. Touch the preset name at the top of the grid (or the space above it) to display the **Presets** screen.
7. Select any preset and touch the **Load** button to get fxbox to load the updated presets.

Learn More

Find how-to videos and more information on our website at <http://1010music.com/fxbox-support>. Stay in touch with the latest information about fxbox and other 1010music products by joining our mailing list at <http://1010music.com/subscribe>.