

TimeFactor Algorithms

Digital Delay - [DIGDLY]

Twin 3 second delays with independent delay time and feedback controls.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A and Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. Dly Mix's mixing behavior depends on whether you're using mono or stereo outputs. For Mono Out, with [DLYMIX] = A10+B0, output 1 will have only Delay A's contribution. With [DLYMIX] = A10+B10, Output 1 has an equal amount of Delay A and Delay B. With [DLYMIX] = A0+B10, Output 1 will have only Delay B's contribution. For Stereo output, with [DLYMIX] = A10+B0, BOTH outputs will have only Delay A's contribution. With [DLYMIX] = A10+B10, Delay A goes to Output 1 only and Delay B goes to Output 2 only. With [DLYMIX] = A0+B10, BOTH outputs will have only Delay B's contribution.
Delay A	[DLY-A]	Sets delay time for Delay A output B from 0 to 3000 ms (milliseconds). With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Same as A.
Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats.
Feedback B	[FBK-B]	Same as A.
Crossfade	[XFADE]	When delays change, performs a crossfade function to prevent abrupt changes that could result in glitching or clicking. [XFADE] sets the speed of the crossfade. Small values result in fast crossfades, larger values more gradual crossfades. Crossfade rates vary from 2 ms to 200 ms.

Modulation Depth	[DEPTH]	Selects the amount of delay modulation (0=OFF, 10=MAX).
Modulation Speed	[SPEED]	Sets the delay modulation rate (0-5Hz).
Filter	[FILTER]	A low pass/high cut filter variable from 0 (no filtering) to 100 (extreme hi cut) to change the tone of your delay repeats.

Vintage Delay - [VNTAGE]

Simulates the sound of analog and digital delays from days gone by. To simulate a range of delay devices from the past, a 'BITS' parameter simulates the effect of primitive analog-to-digital converters. Anyone remember when it was a 10 bit world? The delays can be modulated to achieve chorusing or more extreme effects. A filter parameter controls the tone of the delayed signals.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A and Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. Dly Mix's mixing behavior depends on whether you're using mono or stereo outputs. For Mono Out, with [DLYMIX] = 0, output 1 will have only Delay A's contribution. With [DLYMIX] = 50%, Output 1 has an equal amount of Delay A and Delay B. With [DLYMIX] =100, Output 1 will have only Delay B's contribution. For Stereo output, with [DLYMIX] = 0, BOTH outputs will have only Delay A's contribution. With [DLYMIX] = 50, Delay A goes to Output 1 only and Delay B goes to Output 2 only. With [DLYMIX] = 100%, BOTH outputs will have only Delay B's contribution.
Delay A	[DLY-A]	Sets delay time for Delay A output B from 0 to 3000 ms (milliseconds). With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Same as A.

Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats.
Feedback B	[FBK-B]	Same as A.
Bits	[BITS]	Selects the number of bits of resolution. Early digital delays used analog to digital converters with limited resolution. Theory predicts that each bit equals 6 dB of resolution; so that an 8 bit converter would deliver, at best, a mere 48 dB of dynamic range. VintageDelay simulates the effects of limited resolution - the sound of nasty digital noise from years gone by.
Modulation Depth	[DEPTH]	Selects the amount of delay modulation (0=OFF, 10=MAX).
Modulation Speed	[SPEED]	Sets the delay modulation rate (0-5Hz).
Filter	[FILTER]	Controls the filter to simulate the tone of band-limited old school delays.

Tape Echo - [TAPE]

Simulates the hiss, wow and flutter of analog tape delay. The earliest delays were achieved using tape machines - record on one magnetic 'head' and playback a bit later on second magnetic head. Magnetic tape can be driven into its own unique kind of distortion. Tape Echo's saturation control allows you to adjust the amount. The Wow and Flutter control simulates the effect of the tape transport moving the tape in at a less than absolutely smooth, constant rate.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A and Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. Dly Mix's mixing behavior depends on whether you're using mono or stereo outputs. For Mono Out, with [DLYMIX] = 0, output 1 will have only Delay A's contribution. With [DLYMIX] = 50%, Output 1 has an equal amount of Delay A and Delay B. With [DLYMIX] = 100, Output 1 will have only Delay B's contribution. For Stereo output, with [DLYMIX] = 0, BOTH outputs will have only Delay A's contribution. With [DLYMIX] = 50, Delay A goes to Output

		1 only and Delay B goes to Output 2 only. With [DLYMIX] = 100%, BOTH outputs will have only Delay B's contribution.
Delay A	[DLY-A]	Sets delay time for Delay A output B from 0 to 3000 ms (milliseconds). With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Same as A.
Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats.
Feedback B	[FBK-B]	Same as A.
Saturation	[SATUR]	Simulates analog tape saturation. Ranges from '0' (none) to '10' (max) for the warm compression and distortion associated with overdriven tape.
Tape Wow	[WOW]	Simulates analog tape Wow. Wow is a term used to describe relatively slowly changing pitch and amplitude modulations caused by problems with the motor or tape transport that causes the tape's motion across the head to vary. A well maintained tape recorder should have no audible Wow. Ranges from '0' (none) to '10' (max).
Tape Flutter	[FLUTTR]	Simulates tape machine Flutter. Like Wow, Flutter is caused when the tape motion across the magnetic heads isn't constant. Flutter is a more rapidly changing variation than Wow. Ranges from 0 (no flutter) to 10 (max flutter).
Filter	[FILTER]	Controls the filter characteristics to simulate tape recorder frequency response. As you increase the filter value, you'll hear a more pronounced tape tone.

Mod Delay - [MODDLY]

Modulated delays – great for creating chorus effects and chorused delays.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A and Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. Dly Mix's mixing behavior depends on whether you're using mono or stereo outputs. For Mono Out, with [DLYMIX] = 0, output 1 will have only Delay A's contribution. With [DLYMIX] = 50%, Output 1 has an equal amount of Delay A and Delay B. With [DLYMIX] = 100, Output 1 will have only Delay B's contribution. For Stereo output, with [DLYMIX] = 0, BOTH outputs will have only Delay A's contribution. With [DLYMIX] = 50, Delay A goes to Output 1 only and Delay B goes to Output 2 only. With [DLYMIX] = 100%, BOTH outputs will have only Delay B's contribution.
Delay A	[DLY-A]	Sets delay time for Delay A output B from 0 to 3000 ms (milliseconds). With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Same as A.
Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats.
Feedback B	[FBK-B]	Same as A.
Modulation Wave Shape	[SHAPE]	Selects the modulation wave shape as displayed by the Billboard display. There are two choices for each wave shape. The single waveforms modulate the two delays in phase and the double waveforms modulate the two delays out of phase.
Modulation Depth	[DEPTH]	Selects the amount of delay modulation (0=OFF, 20=MAX).
Modulation Speed	[SPEED]	Sets the delay modulation rate (0-5Hz).
Filter	[FILTER]	A low pass/high cut filter variable from -100 (extreme low cut) to 0 (no filtering) to 100 (extreme high cut).

Ducked Delay - [DUCKER]

The delay levels are dynamically lowered while you're playing and restored to their normal levels when you stop playing.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A and Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. Dly Mix's mixing behavior depends on whether you're using mono or stereo outputs. For Mono Out, with [DLYMIX] = 0, output 1 will have only Delay A's contribution. With [DLYMIX] = 50%, Output 1 has an equal amount of Delay A and Delay B. With [DLYMIX] =100, Output 1 will have only Delay B's contribution. For Stereo output, with [DLYMIX] = 0, BOTH outputs will have only Delay A's contribution. With [DLYMIX] = 50, Delay A goes to Output 1 only and Delay B goes to Output 2 only. With [DLYMIX] = 100%, BOTH outputs will have only Delay B's contribution.
Delay A	[DLY-A]	Sets delay time for Delay A output from 0 to 3000 ms (milliseconds). With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Same as A.
Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats.
Feedback B	[FBK-B]	Same as A.
Ducking Ratio	[RATIO]	Sets the ducking ratio or the degree to which the delay is attenuated.
Threshold	[THRSHD]	Sets the ducking threshold - the audio amplitude - at which ducking kicks in (-36 dB to -66 dB).
Release Time	[RELEAS]	Sets the release time from 500 to 10 msec. With the release time set to short values, the delay will kick in quickly when you stop playing. With the release time set to longer values, the

		delay will stay ducked for a while. Longer release times are useful when you're playing a riff and don't want the delay to kick in between notes.
Filter	[FILTER]	A low pass/high cut filter variable from 0 (no filtering) to 100 (extreme hi cut).

Band Delay - [BNDDLY]

Delays are followed by user selectable modulated filters.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A and Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. Dly Mix's mixing behavior depends on whether you're using mono or stereo outputs. For Mono Out, with [DLYMIX] = A10+B0, output 1 will have only Delay A's contribution. With [DLYMIX] = A10+B10, Output 1 has an equal amount of Delay A and Delay B. With [DLYMIX] = A0+B10, Output 1 will have only Delay B's contribution. For Stereo output, with [DLYMIX] = A10+B0, BOTH outputs will have only Delay A's contribution. With [DLYMIX] = A10+B10, Delay A goes to Output 1 only and Delay B goes to Output 2 only. With [DLYMIX] = A0+B10, BOTH outputs will have only Delay B's contribution.
Delay A	[DLY-A]	Sets delay time for Delay A from 0 to 3000 ms (milliseconds). With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Same as A.
Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats.
Feedback B	[FBK-B]	Same as A.

Resonance	[RESNCE]	Sets the resonance or sharpness of the filter. Varies from 0 (subtle effects) to 10 (dramatic resonance effects).
Modulation Depth	[DEPTH]	Sets the amount that the filter cut-off or center frequencies are modulated-shifted.
Modulation Speed	[SPEED]	Sets the modulation rate for the filter center frequencies (0-5Hz).
Filter	[FILTER]	Select filter type – Low Pass, Band Pass or Hi Pass.

Filter Pong Delay - [FLTDLY]

The dual delays ping pong between the outputs with filter effects added for good measure.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A/Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. [DLYMIX]’s mixing behavior depends on whether you’re using mono or stereo outputs. For Mono Out, with [DLYMIX] = 0, Out 1 will have only Delay A’s contribution. With [DLYMIX] = 50%, Out 1 has an equal amount of Delay A and Delay B. With [DLYMIX] =100, Out 1 will have only Delay B’s contribution. For Stereo output, with [DLYMIX] = 0, BOTH outputs will have only Delay A’s contribution. With [DLYMIX] = 50, Delay A goes to Out 1 only and Delay B goes to Out 2 only. With [DLYMIX] = 100%, BOTH outputs will have only Delay B’s contribution.
Delay A	[DLY-A]	Sets delay time for Delay A output from 0 to 3000 mSec. With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync’d to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Same as A.

Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats. The FilterPong Effect is created by cross connecting the feedback paths of the twin delays. As a result, only a single feedback control is needed.
Diffusion (Slur)	[SLUR]	Controls the diffusion (SLUR) of the repeats. With low diffusion the repeats are discrete. Increasing diffusion slurs the repeats.
Modulation Wave Shape	[SHAPE]	Selects the 'shape' of the filter modulation.
Modulation Depth	[DEPTH]	Sets the filters' amount of frequency modulation.
Modulation Speed	[SPEED]	Speed multiplier for filter modulation.
Filter	[FILTER]	Controls the mix of dry/filtered signal input to ping-pong delay.

MultiTap - [MULTAP]

10 delay taps with controls for delay time, diffusion, tap levels and tap spacing.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A/Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. [DLYMIX]'s mixing behavior depends on whether you're using mono or stereo outputs. For Mono Out, with [DLYMIX] = 0, Out 1 will have only Delay A's contribution. With [DLYMIX] = 50%, Out 1 has an equal amount of Delay A and Delay B. With [DLYMIX] = 100, Out 1 will have only Delay B's contribution. For Stereo output, with [DLYMIX] = 0, BOTH outputs will have only Delay A's contribution. With [DLYMIX] = 50, Delay A goes to Out 1 only and Delay B goes to Out 2 only. With [DLYMIX] = 100%, BOTH outputs will have only Delay B's contribution.
Delay A	[DLY-A]	Sets delay time for Delay A output B from 0 to 3000 ms (milliseconds). With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat

		value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Same as A.
Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats.
Feedback B	[FBK-B]	Same as A.
Diffusion (Slur)	[SLUR]	Controls the diffusion (SLUR) of the repeats. With low diffusion the repeats are discrete. Increasing diffusion slurs the repeats.
Delay Tap Taper	[TAPER]	Sets the relative level (taper) of the taps. With TAPR = -10, the 1st tap is the quietest and the last tap loudest. With TAPR = 0, all taps are equally loud. With TAPR = 10, the 1st tap is loudest and the last tap quietest.
Delay Tap Spacing	[SPREAD]	Sets the spacing between taps from 0 (spacing increases with increasing delay) to 5 (taps are equally spaced) to 10 (spacing between taps decreases with increasing delay).
Filter	[FILTER]	A tone control filter that reduces high frequencies to darken the ambient sounds that you create.

Reverse - [REVERS]

Reverse audio effects. Audio is broken into segments, are played backwards and spliced. Crossfading at the splice points prevents nasties. XFADE controls the length of the crossfade. Small values result in fast crossfades adding an audible rhythm to the effect. Larger values result in long crossfades and a smoother reverse sound.

Mix	[MIX]	wet/dry mixer, 100% is all wet signal.
Delay Mix	[DLYMIX]	Controls the relative level of the twin delays, Delay A/Delay B. The H9 has circuitry that detects which input/output jacks are being used and adjusts the routing of signals through the Effects algorithm accordingly. [DLYMIX]'s mixing behavior depends on whether you're using mono or stereo outputs. For Mono Out, with [DLYMIX] = 0, Out 1 will have only Delay A's contribution. With [DLYMIX] = 50%, Out 1 has an equal amount of Delay A and Delay B. With [DLYMIX] =100, Out 1 will have

		only Delay B's contribution. For Stereo output, with [DLYMIX] = 0, BOTH outputs will have only Delay A's contribution. With [DLYMIX] = 50, Delay A goes to Out 1 only and Delay B goes to Out 2 only. With [DLYMIX] = 100%, BOTH outputs will have only Delay B's contribution.
Delay A	[DLY-A]	Sets delay time for Delay A output. With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Delay B	[DLY-B]	Sets delay time for Delay B output. With Tempo OFF, delay is displayed in mSec. With Tempo ON, delay can be sync'd to the tempo and is displayed as a rhythmic sub-division of the tempo beat value - changing this from 0 to a whole note in common note increments.
Feedback A	[FBK-A]	Controls level of Feedback A, the number of repeats.
Feedback B	[FBK-B]	Same as A.
Crossfade	[XFADE]	In Reverse, the audio segments are read backwards and must be spliced. Crossfades occur at the splice point to prevent abrupt changes that could result in glitching or clicking. [XFADE] sets the rate of the crossfade. Small values result in fast crossfades and a more audible rhythm for the reverse effect, larger values more gradual crossfades and a smoother reverse sound. Crossfade rate (XFADE) is variable from 2 ms to 200 ms.
Modulation Depth	[DEPTH]	Selects the amount of modulation (0=OFF, 10=MAX).
Modulation Speed	[SPEED]	Sets the delay modulation rate (0-5Hz).
Filter	[FILTER]	A low pass/high cut filter variable from 0 (no filtering) to 100 (extreme hi cut).

Looper - [LOOPER]

The Looper provides 12 seconds of mono recording at full audio quality and up to 48 seconds at reduced audio quality. Salient features are: loop recording in seconds or beats, variable speed

scrubbing during playback and dubbing (including reverse playback and dubbing), seamless dubbing, real-time adjustment of the loop starting point and loop length, and fullfeatured MIDICLK sync.

If your H9 is connected to a stereo source, the inputs are automatically summed and the sum is the Looper's input. The Looper's output drives both outputs identically.

Since the Looper runs on both TimeFactor and H9, and the H9 utilizes a Two-Footswitch UI as opposed to the Timefactor's Three-Footswitch UI, the Looper transport controls (Record ●, Play ▶ and Stop ■) have been adapted to run as seamlessly as possible on the H9. The original Timefactor functionality of the Three-Footswitch transport controls is still available via Aux Switch or MIDI CC. Footswitch operation is first discussed in the section 'H9 Looper FootSwitch Operation', followed by 'Looper Control Parameters', 'Tempo Mode and MIDI Clock Sync', and 'MIDI CC and Aux Switch Designations'.

H9 Looper Footswitch Operation

Loading a Looper Preset on H9 will always place the H9 directly into Looper Mode. Looper Mode specifically defines the action of the two Footswitches on the H9. With the Looper algorithm loaded on the H9 (i.e. running a Looper Preset), you can always toggle back to H9 Preset Mode (and vice-a-versa) by pressing and holding the Right Footswitch.

Looper presets can be loaded one of four ways:

- Via H9 Control app
- By toggling through presets with the Right footswitch with H9 in Preset Mode, and using the Left Footswitch to load a Looper Preset
- By hitting the PRESETS button on H9 and turning the Encoder to a Looper Preset for auto-loading
- By hitting the PRESETS button twice and turning the Encoder to auto-load the default Looper Algorithm Preset.

The Looper can be in one of the following states:

- Empty
- Recording
- Playing
- Dubbing
- Stopped

Note: After a Looper Preset is loaded, the H9 will be in Looper mode, and the Looper State will be Empty.

In the H9, the three standard transport controls, Record ●, Play ▶ and Stop ■, are mapped to the two Footswitches (as described below), the Left Footswitch (LFSW) and the Right Footswitch (RFSW). While in Looper Mode, the Footswitches, LEDs, and Display will have the following actions, listed for each Looper State:

Empty

When the Looper is first loaded, the loop is Empty, the Display shows [EMPTY], the Active LED is not lit, the Tap LED is off for Tempo Mode OFF or blinks at the BPM rate for Tempo Mode ON, and the Footswitches do the following:

- LFSW ● – Press to Start Recording. If autoplay mode is selected [AP:LOOP], loop playback will start when recording reaches the loop end.
- RFSW (no transport function) – Used to tap tempo if Tempo Mode is ON. While Tapping, the Display shows the current BPM, when tapping stops the display reverts to [EMPTY].

Recording

While recording, the Display shows the running record time [R>00.00] or beat count [R>(beats)], the Active LED is flashing, the Tap LED is not lit, and the Footswitches do the following:

- LFSW ▶ – Press to create Loop End and start Playing from Loop Start. The Play Mode setting determines if the Loop is played once or continuously.
- RFSW ■ – End recording and stop.

Playing

While Playing, the Display shows the running play time [P>00.00] or beat count [P>(beats)], the Active LED is lit, the Tap LED is not lit, and the Footswitches do the following:

- LFSW ● – Start Dubbing at the current Loop time. The Dub Mode setting determines if this switch latches to Dub [LATCH] or press/holds to Dub [PUNCH]. The Dub Mode setting also determines if the new audio is added to or replaces the previously recorded audio.
- RFSW ■ – Stop Playing.

Dubbing

While Dubbing, the Display shows the running time [D>00.00] or beat count [D>(beats)], the Active LED is flashing, the Tap LED is not lit, and the Footswitches do the following:

- LFSW ● – Stop Dubbing while Playing continues. The Dub Mode setting determines how the Loop is overdubbed. If Dub Mode is [PUNCH], press/hold is the only way to get to Dubbing, and releasing the LFSW transitions back to Playing.
- RFSW ■ – End Dubbing and Stop Playing.

Stopped

While Stopped, the Display shows [STOP], the Active LED is not lit, the Tap LED flashes at the BPM rate for Tempo Mode or is lit solid for Non-Tempo Mode, and the Footswitches do the following:

- LFSW ► – Start Playing from Loop Start. The Play Mode setting determines if the Loop is played once or continuously.
- RFSW (no transport function) – No action besides going to Preset Mode (press/hold) and Clearing the loop (double tap).

Emptying the Loop

Double tapping the Right Footswitch during the Stopped State will clear the loop, and transition Looper to the Empty State. This is the only way to record a new loop using the H9 Footswitch interface. Alternatives that let you record a new loop from the Stopped state are using H9 Control, or an Aux Switch or MIDI CC programmed for the Looper Record action. Note: Double Tapping to empty also applies to Stop on H9 Control or an Aux Switch assigned to the STP command (See 'MIDI CC and Aux Switch Designations' for more info on Aux Switches).

Preset Mode

Pressing and holding the Right Footswitch, toggles between Looper and Preset Mode. Preset Mode is for loading a new preset. When using the Looper, you should remain in Looper Mode. In Preset Mode, the Footswitches do not operate as Looper transport controls. (Note: normal Tap Mode Functionality of the Right Footswitch is disabled for Looper Presets).

Tuner Access

Pressing and holding both Footswitches puts the H9 in Tuner Mode and leaves Looper Mode. Tuner Mode is only accessible when the Looper state is Empty.

Mix	[MIX]	Mix control between the Dry audio input and Looper playback.
-----	-------	--

Loop Max-Length	[MAXLEN]	<p>When the Loop is Empty, sets the Maximum allowed Loop Length. Note that audio recording quality is degraded at slower recording speeds (1/2X and 1/4X). The maximum loop length is determined by the setting of the Speed parameter as follows:</p> <table border="1" data-bbox="564 375 1470 508"> <tr> <td>Speed</td><td>(+/-) 2X</td><td>(+/-) 1X</td><td>(+/-) 1/2X</td><td>(+/-) 1/4X</td></tr> <tr> <td>Max Loop Length</td><td>6 sec</td><td>12 sec</td><td>24 sec</td><td>48 sec</td></tr> </table> <p>The negative signs on the speeds above are for automatically starting playback in reverse after recording a new loop. When the Loop contains audio, the Max-Length parameter is disabled.</p>	Speed	(+/-) 2X	(+/-) 1X	(+/-) 1/2X	(+/-) 1/4X	Max Loop Length	6 sec	12 sec	24 sec	48 sec
Speed	(+/-) 2X	(+/-) 1X	(+/-) 1/2X	(+/-) 1/4X								
Max Loop Length	6 sec	12 sec	24 sec	48 sec								
Loop Play-Start Point	[START]	<p>When a Loop is in memory, this sets the Loop Start Point from 0 ms (or beat 1 for Tempo Mode ON) to Loop Length. The Loop Play-Start Point is automatically set to 0 (or beat 1 for Tempo Mode ON) at the beginning of a new loop. Note that Catchup is always enabled to prevent the Start point from changing abruptly. When the Loop is Empty, this parameter is disabled.</p>										
Loop Play-Length	[PLYLEN]	<p>When a Loop is in memory, this sets the Loop Play-Length for playback that begins at the Loop Start Point. In other words, if a 12 second Loop is recorded and the Loop Start Point is set to 2 seconds and the Loop Length is set to 4 seconds, the recorded Loop will play from 2 seconds to 6 seconds into the 12 second Loop. The PlayLength value is automatically reduced in cases where the Play-Start Point moves past the currently set Play-Length.</p> <p>The Loop Play-Length is automatically set to Loop Length at the beginning of new loop. Note that Catchup is always enabled to prevent the end point from changing abruptly. When the Loop is Empty this parameter is disabled.</p>										
Loop Decay Rate	[DECAY]	<p>When dubbing you may want the original saved audio to persist as you add new sounds. Of course, indefinitely adding new signals will eventually result in ‘mud’ (the “Crayola” effect). The Decay Rate control allows the saved audio to fade as you dub new material. The Decay Rate is adjustable from 0% [DCY: 0] to 100% [DCY:100]. When set to 0%, the loop never decays. When set to 100% the previously saved audio decays</p>										

		completely each time through the loop when dubbing. In other words, the looped audio is only played once. The Loop Decay Rate control has no effect on normal Playback, only dubbing.
Dubbing Mode	[DUB-MD]	<p>There are four choices that determine the type of dubbing (Add or Replace) and the action of the Footswitch control (Latch or Punch).</p> <p>To Dub, press the ● Footswitch while the loop is playing or recording. The action of the ● Footswitch when dubbing depends on the setting of the Dubbing Mode control.</p> <p>If you want to simply press and release the switch to turn dubbing on and off, set this control to one of the two Latching modes. Dubbing will continue until you press ● (or press record again to turn dubbing off).</p> <p>On the other hand, you may prefer to Dub only while you're pressing and holding the ● Footswitch. To do this, choose one of the two Punch modes.</p> <p>The Dubbing Mode choices are:</p> <ul style="list-style-type: none"> • [D:LATCH] – ● toggles Dubbing ON/OFF. Dubbed audio is added to the looped audio. • [D:PUNCH] – ● enables Dubbing while the footswitch is held. Dubbed audio is added to the looped audio. • [D:REPL-L] – ● toggles Dubbing ON/OFF. Dubbed audio replaces looped audio. • [D:REPL-P] – ● enables Dubbing while the footswitch is held. Dubbed audio replaces looped audio.
Playback Mode	[PLY-MD]	<p>Playback mode affects three actions of the Looper: the action when Recording reaches Max-Length, the action when Playing reaches the Play-Length, and the action of the ► switch (Note: for H9 this ► switch functionality is only available via H9 Control, Aux Switch, or MIDI).</p> <ul style="list-style-type: none"> • [P:ONCE] – Enters STOPPED state when recording reaches Max-Length. During Playback, the audio will Stop when it reaches Play-Length, and ► at any point initiates playing the loop just one time from the loop's start point • [P:LOOP] – Enters STOPPED state when recording reaches Max-Length. During Playback, the audio loops around to the loop's start point when it reaches

		<ul style="list-style-type: none"> PlayLength, and ► at any point initiates playing continuously from the loop's start point. [AP:LOOP] – When recording reaches the Max-Length, loop begins playing automatically and plays continuously. During Playback, the audio loops around to loop's start point when it reaches Play-Length, and ► at any point will initiates playing continuously from the loop's start point. [AP:RVDIR] – When recording reaches the Max-Length, loop begins playing automatically and plays continuously. During Playback, the audio loops around to loop's start point when it reaches Play-Length, and ► at any point can then be used to toggle the playback direction.
Varispeed Resolution	[SP-RES]	<p>When set to [SMOOTH], resolution is 1%. The other Depth control settings allow you to select the Play Speed in musical intervals as follows (a negative value corresponds to Reverse Play, and all resolutions have 0% in the middle for a full Pause):</p> <ul style="list-style-type: none"> [OCTAVES] - From three octaves down to one octave up – (+/-) 12.5%, 25%, 50%, 100%, 200% [OCT+5TH] - Octaves and fifths – (+/-) 12.5%, 25%, 37%, 50%, 75%, 100%, 150%, 200% [DOM7TH] - Dominant 7th Chord (root, M3rd, 5th, m7th, representing common key modulations) – (+/-) 12.5%, 25%, 32%, 37%, 45%, 50%, 63%, 75%, 89%, 100%, 126%, 150%, 178%, 200% [CHROMATIC] - Semi tones – (+/-) 12.5%, 25%, 26%, 28%, 30%, 32%, 33%, 35%, 37%, 40%, 42%, 45%, 47%, 50%, 53%, 56%, 59%, 63%, 67%, 71%, 75%, 79%, 84%, 89%, 94%, 100%, 106%, 112%, 119%, 126%, 133%, 140%, 150%, 159%, 168%, 178%, 189%, 200% <p>Note: During loop recording, Resolution will always return to OCTAVES. This guarantees that the immediate playback speed occurs at the recorded speed.</p>
Varispeed	[SPEED]	<p>When the Loop is Empty, the Speed control lets you select the record speed. A negative speed with Empty causes playback to automatically start in the Reverse direction after the loop is closed, either through a ► Play button press or the [AP:LOOP], [AP:RVDIR] settings on the Xnob / Playback Mode. The choices are:</p>

		<ul style="list-style-type: none"> • [SPD: +/- 2X] – Double speed. At this record speed, the maximum loop length is 6 seconds. • [SPD: +/- 1X] – Normal speed. At this record speed, the maximum loop length is 12 seconds. • [SPD: +/- 1/2] – Half speed. At this record speed, the maximum loop length is 24 seconds. • [SPD: +/-1/4] – Quarter speed. At this record speed, the maximum loop length is 48 seconds. <p>After a loop is recorded, Varispeed controls the speed of Loop playback AND dubbing over the full range of speeds allowing for continuous real-time scrubbing from one octave up in Reverse Play (-200%), to one octave up in Forward Play (200%), with a pause (0%) directly in the middle (knob set to 12 o'clock). Play Speed resolution is dependent on the setting of the Depth/Resolution control.</p>
Filter	[FILTER]	Controls the tone of the looped audio. Tone control filters are placed at both the input and output of the Looper. This allows you to control the tone of the audio that you're recording and then independently control the tone on playback. Turning to the left cuts low frequencies and turning to the right cuts high frequencies. For flat response, set the knob to 12 o'clock.

Tempo Mode and MIDICLK Sync

Tempo Mode allows beat-based recording and playback that stays in sync with your Eventide Stompbox's internal MIDICLK or as a slave to an external MIDICLK. On Timefactor, press the Encoder to toggle the Looper in and out of in and out of Tempo Mode. On H9, simultaneously press the Right Footswitch and the Presets Button to toggle the Looper in and out of Tempo Mode.

MIDICLK Slave mode

To slave off an external MIDICLK you'll need to turn MIDICLK IN to ON in your Eventide Stompbox's system menu under MIDI-> CLK IN-> ON or OFF, and you'll need to connect a viable MIDICLK master to your Eventide Stompbox, either over the MIDI DIN5 input or USB.

While in MIDICLK Slave Mode, the Looper will respond to MIDI Start and Stop commands. These commands are sent by many Drum Machines, Sequencers and DAWs when used as MIDICLK masters. However, you'll need to reference your own device or software manual for specific MIDICLK master mode and start/stop command setup guidance. Looper responds to MIDI Start and Stop commands as follows for each Looper State: