H3000 Midi Clock and BPM/Tap Tempo sync functions

The H3000 can lock to Midi Clock. There are presets showing this:

-694 Midi 3 on 2: familiar "shuffle" pattern
-696 Midiplex: delay equals 1/4note

Basically you need to patch any algorithm delay parameter, when available, to MIDI Clock Period. This is done under FUNCTION (key) > Patch:

[Parmtr] selects the delay parameter to be patched to Midi Clock Period

[Source] selects the modulator; choose Midi Clock Period

[Range] sets scaling Use the following values:

Scale	Note Value
306	1/32 note
612	1/16 note
1024	1/8 note
2048	1/4 note
4096	1/2 note
8192	whole note (one bar)

To set up **dotted values**, add 50% of the relative normal value, e.g., dot 1/4 = 2048+1024 (50% of 2048)= 3060

To set up **triplets**, multiply the relative normal value by 0.6666, e.g., 1/8 triplet = 1024 (1/8 normal value) : 0.666 = 682.5984, round it up to 683

The H3000 also offers **BPM** and Tap **Tempo sync**, via front panel key and midi CC messages, for algorithms MOD FACTORY 1 and 2 *ONLY*.

Delays and LFOs can be synced.

The BPM control works in conjunction with the BPM controls of delay 1 and 2 and LFO 1 and 2. Essentially, this parameter determines the time value of a beat (quarter note). If the BPM value is set to 60, one quarter note will equal one second. This feature is extremely useful when delays must be in time to a particular tempo. In addition to using the knob or keypad to enter the desired tempo, the beats per minute may by set by "tapping" the BPM key.

To "tap in" the tempo, rhythmically press the BPM key 4 times. The time between taps will be taken as the new tempo. Also, a MIDI controller may be used to "tap" in the tempo. By default, the MIDI Damper Pedal (CC # 64) is patched to the BPM tap control. To set the tempo, simply tap the damper pedal three times. To use a different MIDI controller, go to the MIDI patching menu under the "FUNCTION" key on the front panel. If you have difficulty making this feature work, check to see that the MIDI out of your control1er is connected to the MIDI in of the H3000 and that the two devices are using the same MIDI channel.

Delays

The two delay modules in these algorithms have a variable amount of delay, depending on the hardware configuration of the H3000. With a standard H3000, each delay line has up to 700 milliseconds of delay. With an Eventide HS322 board, the maximum delay is 11000 milliseconds (11 seconds) per delay module. When an Eventide HS395 board is installed, up to 32000 milliseconds (32 seconds) of delay is available per module.

Each delay module has a modulation input which allows smooth modulation of the delay, allowing for effects such as manual flanging and dynamic or triggered delay sweeps.

Delay l : 0 to 700, 11000, or 32000 msec
Delay 2: 0 to 700, 11000, or 32000 msec

Use this to control the amount of delay in the delay modules. This parameter works in conjunction with the Delay BPM setting to determine the final delay. When strict beat per minute control of delays is desired, this should be set to zero.

Delay 1: BPM 0/24 to 96/24 beats
Delay 2: BPM 0/24 to 96/24 beats

The Delay BPM control determines how the master BPM tempo control affects the delay. When this is set to zero, the tempo setting has no effect on the delay time. To get a BPM setting of delay, set the normal delay parameter to zero, and set Delay BPM to the number of beats to which the delay should correspond. The settings are in 1/24 subdivisions of a quarter note. To get a quarter-note delay, the delay BPM should be set to 24/24. To get an eighth note delay, set this parameter to 12/24. A setting of 8/24 will give quarter note triplets.

Low Frequency Oscillators

The low frequency oscillators are the modules to use when creating sweep and triggered sweep effects. These oscillators work in a different way from the H3000 Function Generator, allowing much smoother modulation of delays, filters, and gain. The waveshape of the LFO can be selected from a variety of continuous or audio-triggered waveforms. In addition, the LFOs have frequency modulation inputs that open up new dynamic sweeping effects.

LFO 1: Frequency 0.00 to 300.0 Hertz
LFO 2: Frequency 0.00 to 300.0 Hertz

These parameters control the frequency of LFO 1 and 2 and work in conjunction with the LFO Beat per Minute control. When tempo tracking of the LFOs is desired, set this parameter to zero.

LFO 1: BPM 0/24 to 96/24 beats
LFO 2: BPM 0/24 to 96/24 beats

This parameter allows the master BPM tempo to control the frequency of the LFOs