# MADHATTER

**Digital Noise Source**
**ADM07**

Mad Hatter is a comprehensive solution to the difficulty of patching cymbal and snare sounds in a modular synthesizer environment. With a "shift register" style noise generator (like those found in many vintage drum machines) and a six-oscillator square wave stack like the one found in the venerable TR606, Mad Hatter is a simple and convenient solution to the spiderweb of patching normally required to get good cymbal and hi-hat sounds. With the addition of the audio input, it can also be used for simple snare patching, thus eliminating the need for a mixer. Or you can just use it as a noise source. The possibilities are endless.

## CONTROL VOLTAGE JACKS

Control voltages present at the jacks are added to the values set with the knobs.

Positive voltages at the **COLOR** jack are added to the value of the knob. Negative voltages are subtracted from the value.

Positive voltages at the **HPF FREQ** jack are added to the value of the knob. Negative voltages are subtracted from the value.

Positive voltages at the **CROSS-FADE** jack are added to the value of the knob. Negative voltages are subtracted from the value.


## KNOBS

The **COLOR** knob controls the shift register noise generator's clock speed. (At full clockwise, it produces white noise.) It also controls the pitch of two of the oscillators, over a 5-semitone range.

The **HPF FREQ** knob controls the corner frequency of the final high-pass filter. The most convincing cymbal sounds are found near the top of the range.

The **CROSSFADE** knob fades from 100% audio input at full anti-clockwise, to 100% digital noise at 12 o'clock, to 100% oscillator stack at full clockwise.

## AUDIO INPUT JACK

The audio input signal goes in here. The hardware will be happiest if the signal level is within ±7V.

## AUDIO OUTPUT JACK

The processed audio comes out here.

• The signal flow is oscillator stack > a pair of bandpass filters > crossfade mixer with digital noise > High-pass filter > crossfade mixer with audio in.
• For convincing 606-style hi-hats, we suggest COLOR at 100%, HPF FREQ at around 90%, and CROSSFADE at about 80%.For the 606 cymbal sound, just back off the HPF Filter a bit.

• Like most synthesized drum sounds, you'll get the best results when using an envelope generator with an exponential decay.
• For a simple snare sound, put COLOR to around 75%, HPF to around 50%, and CROSSFADE to about 20%. Run a triangle wave in to AUDIO IN, and give it the same envelope you use to drive your VCA.

AUDIODAMAGE

Assembled in USA from US and foreign components.
Revision 1.0

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