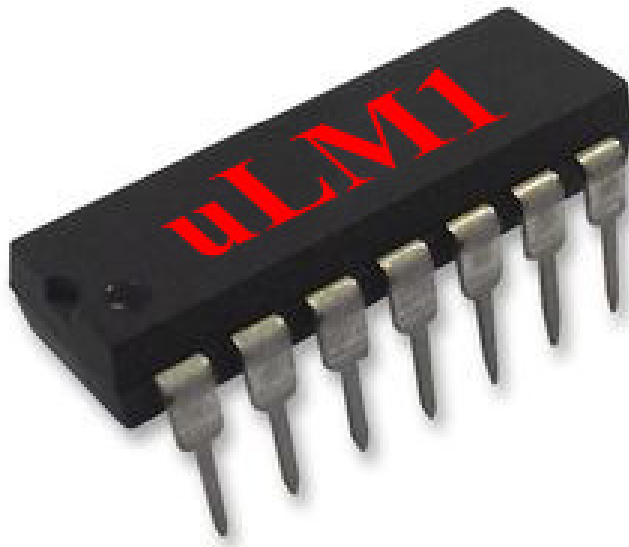# The uLM1
Drum Synthesizer Chip

PCM Classic Drums

Application Manual v1.0

The uLM1 Drum Synthesizer Chip

The uLM1 drum synthesizer is a chip that contains a classic LM1 drumkit from the 80's in a 14-pin DIP package.

The chip can be used as a voice chip for a drum machine or a drum module

The chip is 8-voice fully polyphonic with 8 separate trig inputs for each voice.
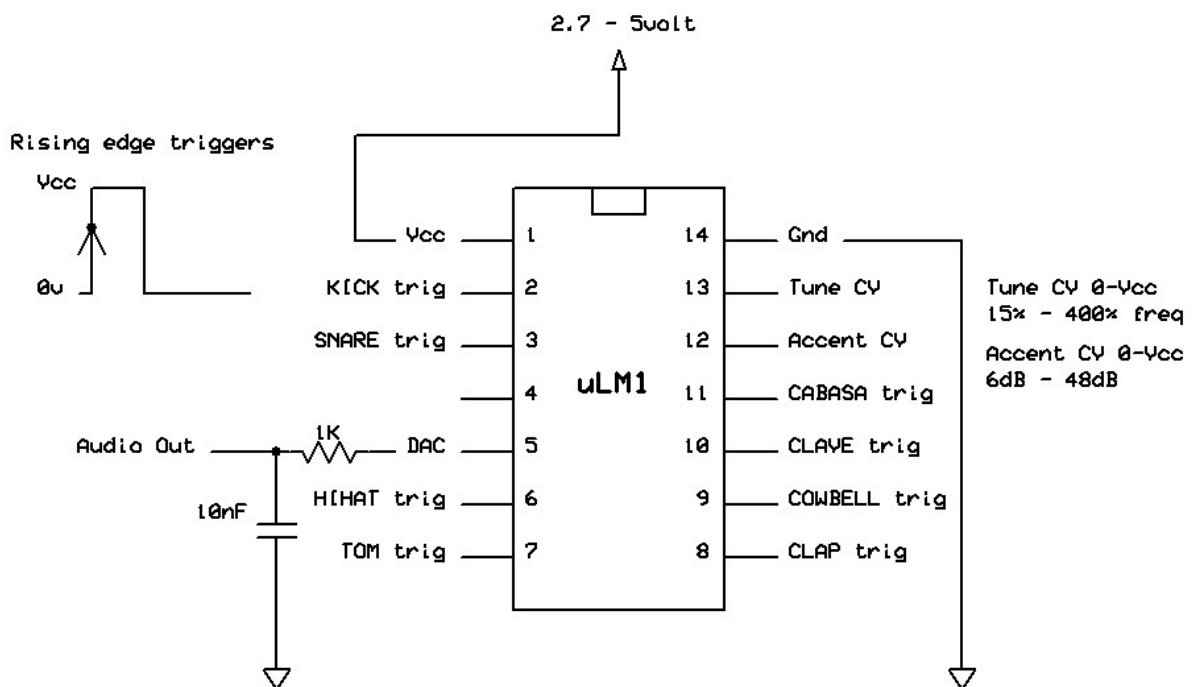
1 analog input CV sets the global volume or accent in the range of 6 – 48dB.

1 analog input sets the global tuning of the sound in the range 15 – 400%.

The output is 20KHz 10-bit Sigma-Delta PDM and the chip runs standalone from a 2.7-5 volt power source.

Example application circuit for the uLM1 chip

This is the minimum application circuit for the chip. Input levels are allowed between Gnd and Vcc. The output is analog and swings between Gnd and Vcc.

Technical Specifications

DSP platform	AVR ATmega 20 DMIPS
Supply power	2.7 – 5 volt
Supply current	~2.9mA
Input tolerance	2.7 – 5 volt depending on Vcc
Audio output	20 KHz 10-bit sigma-delta PDM, 1 channel mono audio
Synthesis method	PCM Playback
Control method	8 polyphonic trig inputs, 1 analog level, 1 analog tune

Contact & Support

For support and questions please use these contact addresses:
Website: http://www.dspsynth.eu
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