The K5/KL5 Additive Synthesizer Chip

Application Manual v1.0

The K5 Additive Synthesizer Chip

The K5 additive synthesizer is a chip that contains 5 Sine oscillators in a 8-pin DIP package.

It has a fundamental oscillator with a range of 8 – 261Hz with a CV input 1v/oct.

The 4 harmonic oscillators have a CV input for adjusting the harmonic level between 0 – 100%. Harmonics are the 1st, 2nd, 3rd and 4th overtone to the fundamental frequency.

This enables the synthesis of complex waveforms without using a filter.

The output is 66.9KHz 8-bit PWM and the chip runs standalone from a 2.7-5 volt power source.

The KL5 is the same chip but has a frequency range in the LFO spectrum for synthesis of complex LFO modulator waveforms.
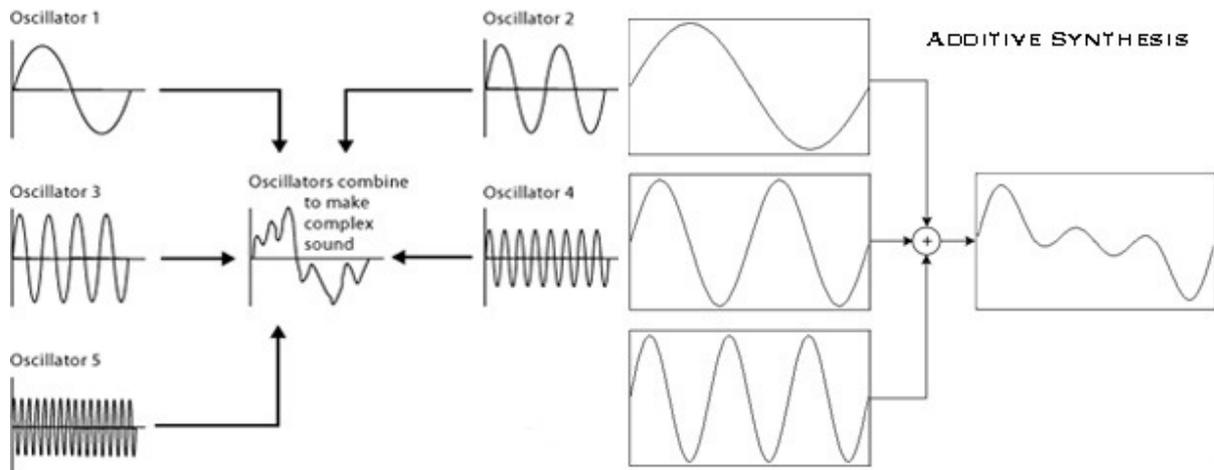
Example application circuit for the K5/KL5 chip

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.
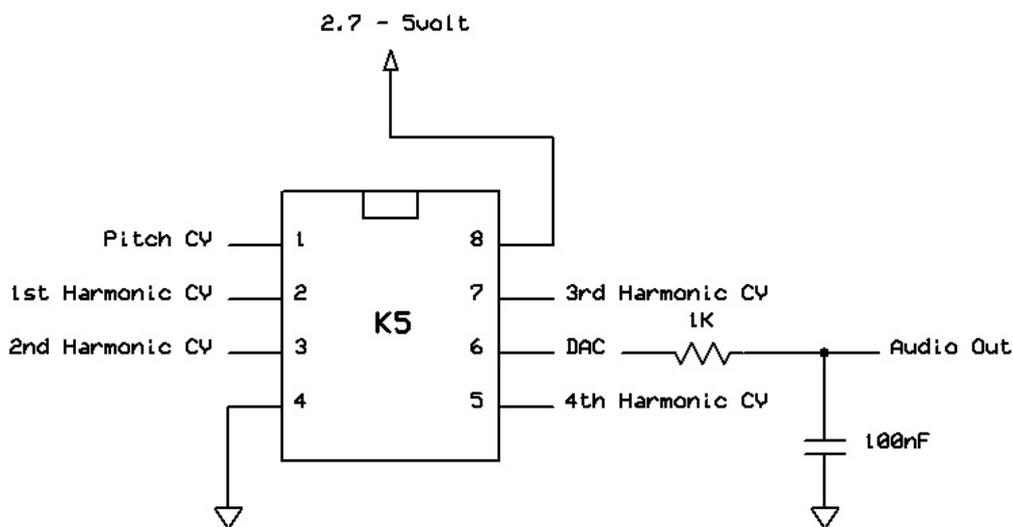
Technical Specifications

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	66.9 KHz 8-bit PWM DAC, 1 channel mono audio
Synthesis method	PCM Wavetable playback
Control method	1 Analog monophonic tune CV 1v/oct 4 Analog harmonic level CV inputs.

Contact & Support

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