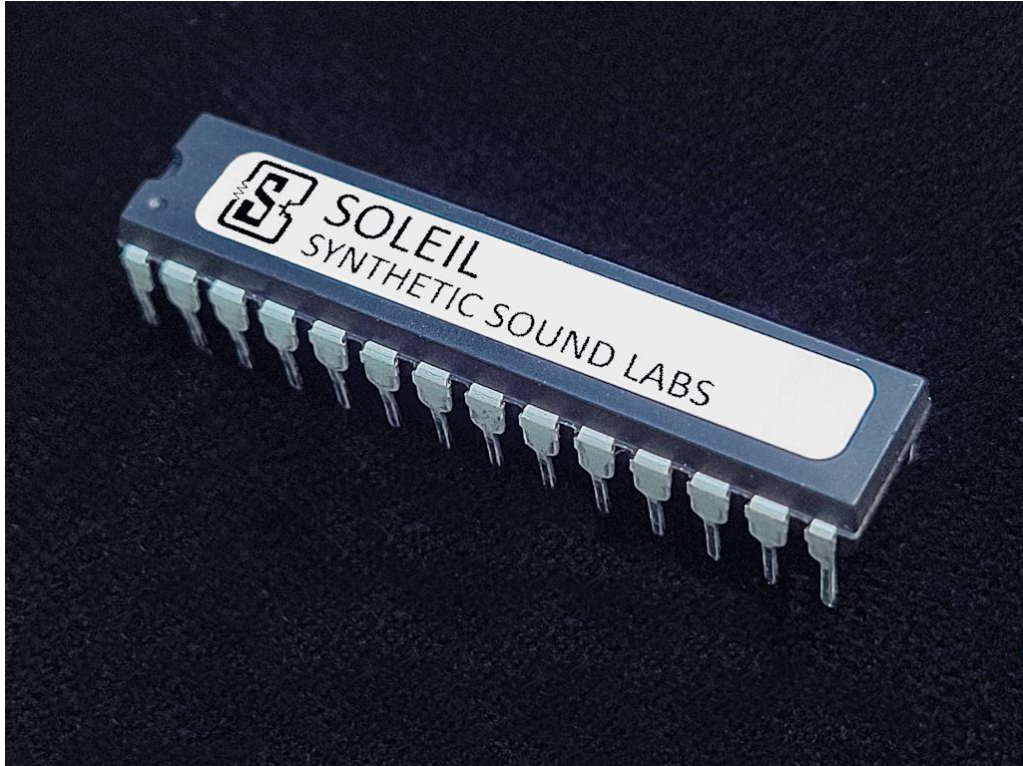


# Soleil

## Lo-Fi String Synth Chip



### App Note 003



## Soleil Lo-Fi MIDI String Synth Chip

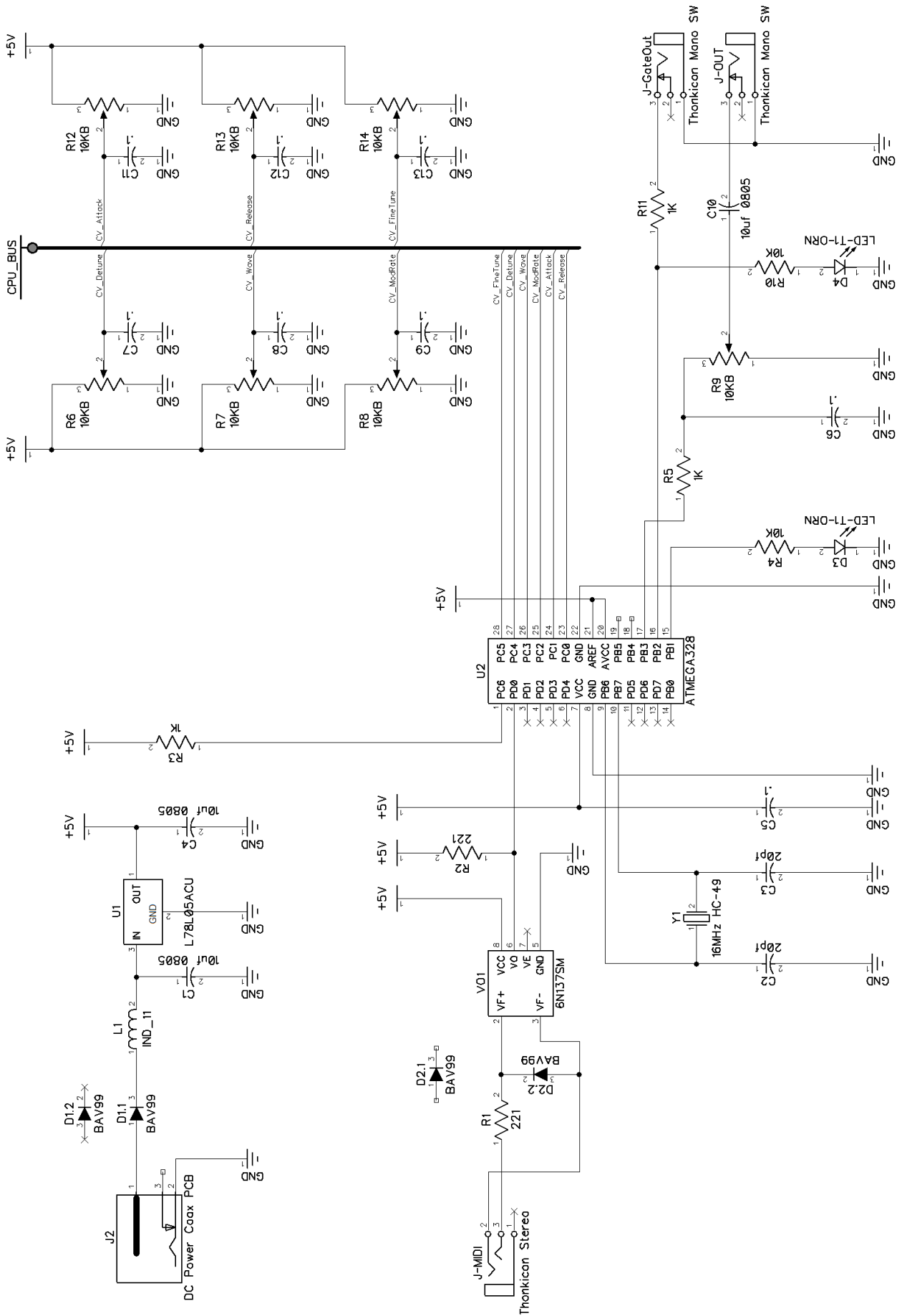
The **Soleil** is a Lo-Fi MIDI String Synth chip 28-pin DIP package, capable of playing 4 paraphonic notes with 2 oscillator ranks per note. The second rank can be detuned. Waveforms are continuously variable from sawtooth thru variable pulse widths. All sounds share a single A/R envelope.

**Soleil** responds to MIDI Pitch Bend and Modulation, and has a built-in modulation / vibrato oscillator, the depth of which responds to the MIDI Mod Wheel. The audio outputs are PWM DACs (filtering required) and the chip runs standalone from a 5 volt power source.

A 0 to 5v gate output is also provided for interfacing to external synthesizers.

### Example application circuit

This is a typical application circuit for the chip. Output voltage levels are allowed between Gnd and +5 V. Outside that range will permanently damage the chip. The audio output is Pulse Width Modulated (PWM) and swings between Gnd and +5 which typically requires low-pass filtering for audio use. Capacitive coupling of the audio outputs is highly recommended.



## Technical Specifications

DSP platform	ATmega
Audio output	PWM DAC, 1 channel mono audio
Gate Output	0 to +5 V
Fine Tune Range	Approx. +/- 1 semitone
Pitch Bend Range	Approx. +/- 1 semitone
Modulation Range	Approx. +/- 1 semitone
Detune Range	Unison to about 1 semitone
MIDI	Note On, Note Off, Running Status Mod Wheel: 176 (B0 hex) Pitch Bend: 224 (E0 hex)
Supply power	5 VDC
Supply current	~5mA

## Contact & Support

For technical support and questions please use these contact addresses:

Website: <http://www.steamsynth.com>

Email: [support@steamsynth.com](mailto:support@steamsynth.com)