



Tim Williams

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Objective

Consultation and Contract work. Analog, digital or power electronics. Design, review, layout, electromagnetic compliance (EMC) testing, and more.

Experience and Talent

- Over a decade in circuit design, including analog, digital and power electronics (note: experience predates both work experience and formal education)
- Electromagnetic compatibility (EMC) diagnosis and treatment
- Quick learning, analytical problem solving, communication, teaching
- Sophisticated personal projects emphasize the understanding of control systems, power electronics, wideband and narrowband circuitry, and more.
- More information available on professional website:
<http://www.seventransistorlabs.com>

Projects

- Design, construction and sale of 1kW induction heating units; complete design of a 10kW unit (2008-2010)
- Theremin. Synth instrument, designed from scratch. (2013) Project page:
<http://seventransistorlabs.com/Theremin/index.html>
- Radio receiver, superhetrodyne, 20m shortwave band, AM and SSB demodulation, made with classic vacuum tubes. (2015) Project page:
http://seventransistorlabs.com/Radio_20m/index.html
- A wide variety of other projects, including analog, digital, embedded and power electronics projects. Amplifiers, power supplies, induction heaters and more.

Equipment and Capabilities

- Altium Designer® schematic capture, SPICE simulation, PCB design
- Tektronix TDS 460, DSO, four channels, 350MHz bandwidth, 15kPt memory
- Hewlett-Packard HP8590A Spectrum Analyzer, 1.5GHz, 80dB dynamic range, 1kHz-3MHz RBW, digital controls, sweep, averaging, peak, etc.
- Wavetek 193 20MHz Sweep/Modulation/Generator: 1mHz to 22MHz, 9 ranges; auxiliary 1Hz to 300kHz, four ranges; sine, triangle, square, adjustable duty cycle; FM, sweep, AM and DSB-SC; 15V output, 0-70dB attenuator
- EMC tools, 0.15-30MHz amplifiers, FCC Part 15 compliant LISN, CISPR 22 compliant ISN

Computer Skills

Programming Languages

- Java
- BASIC
- C

Assemblers

- x86 (MASM)
- AVR
- Z80

Schematic Capture and PCB Design

- Altium
- Multisim / Ultiboard

Documentation

- HTML / CSS
- L^AT_EX
- Doxygen
- JavaDoc
- Word, Excel

Education

- Bachelor of Science Electrical Engineering, Milwaukee School of Engineering, 2008-2011, GPA 3.59
- Bachelor of Art Physics, Beloit College, major in Physics, 2005-2008, GPA 3.2

Work History

- Seven Transistor Laboratories, LLC. Cudahy, WI. Founder, 2015 to present. Contract design services.
- Creation Technologies, Oak Creek, WI. Electrical Engineer, December 2013 to present (on contract). Various tasks, including schematic capture, PCB layout and EMC work.
- Radyne Corporation, Milwaukee, WI. Power Electronics Engineer, December

2010 to August 2013. Design of cutting-edge induction heating power supplies: power electronics, control systems, mixed signal interfaces, high speed data systems.

- Woodward Governor Company, Rockford, Ill. Summer internship, 2006 and 2007. Equipment Services: repair of electronic and electromechanical equipment.