Stephen J. Wenner

Tezla LLC

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Professional Summary

Embedded electronics engineer with 35 years of experience in wireless, analog, power and high-speed hardware and firmware design. Deep expertise in IoT sensing networks with full product lifecycle delivery across military, automotive, industrial, and commercial applications that included 5 patented innovations and $15 M+ revenue impact. Founder and principal engineer at Tezla LLC, delivering production-ready embedded solutions for U.S.-based clients.

Skills

Hardware: Wireless System Design (BLE, WiFi, LoRaWAN, proprietary 2.4GHz/ISM); Analog/Digital/Power Design; PCB/Schematic Capture; Motor Control (BLDC/FOC/PMSM/sensor less)
Firmware/Software: Embedded C/C++; MQTT Communication; Linux Development
Tools: Altium Designer; LTSpice; Visual Studio Code; Eclipse
Platforms: ST Micro STM32; Espressif ESP32; TI MSP; Nordic nRF; Microchip PIC; Raspberry Pi

Work History

Tezla LLC, Warriors Mark, PA
Owner / Engineer **Mar 2018 – Current**

- Developed Interface Circuit Board with Ethernet, CAN, SDRAM, RGB888, USB, SD card for ozone gas analyzer system.
- Designed quad ESP32-H2 BLE motor application for zoned window blinds.
- Designed 500W power distribution and battery management boards for Stratosphere application.
- Designed STM32/ESP32-based IoT systems, including BLE and WiFi home and industrial applications.
- Developed STM32 BLE and LoRaWAN solutions for various valve, actuator, and sensor control projects.
- Built RTLS medical tracking systems using WiFi/BLE tags for personnel monitoring in clinical environments.
- Designed cellular environmental sensing and monitoring systems (soil CO_2, water contamination) for commercial and developing regions.
- Created multiple industrial motor and control drivers (800 W AC-DC compressor, stepper controllers, NEMA24 systems).
- Engineered A/V and vision systems, including FPGA-based amblyopia scanners and RPi5/HiFiBerry DolbyIO streaming platforms.
- Designed hardware for U.S. Army Blackhawk pneumatic flight controls.
- Engineered proprietary wireless sensing and control systems using TI MSP, Nordic, and LPRS devices for diverse IoT, veterinary, and industrial applications.
- Delivered production-ready hardware and firmware solutions for dozens of U.S. clients nationwide.

Pennsylvania State University, State College, PA

Engineering Designer, Applied Research Lab **Apr 2018 – Dec 2018**
Senior Research Associate, College of Engineering **May 2008 – Apr 2009**

- Designed and laid out PCBs in Altium for classified defense programs emphasizing reliability and performance.
- Developed embedded firmware and FPGA-based video processing systems using MATLAB and PIC microcontrollers.
- Contributed to real-time simulation and signal processing algorithms for advanced sensing and imaging applications.

KCF Technologies, State College, PA

Partner / Manager of Electrical / Firmware Engineering **Apr 2009 – Jan 2018**

- Directed all electrical and firmware engineering activities from concept through production.
- Pioneered proprietary wireless star network using Nordic nRF24L01/ISM 2.4GHz for industrial monitoring driving $15 M+ in revenue growth over tenure.

RTD Embedded / Paradise Datacom / Videon-Central / Krautkramer / Wintron 1995 – 2008

- Senior electrical engineering roles developing FPGA, DSP, analog/mixed-signal, and embedded systems.
- Key projects included VSAT terminal design, high-voltage power supplies, ultrasonic phased array systems, and inflight MPEG encoder/decoder hardware.
- Delivered solutions for military (Trident, cruise missile, Blackhawk), industrial, and commercial clients.

Patents

U.S. Patent #8793081 **Internal structural monitoring system**
U.S. Patent #9106160 **Monolithic energy harvesting system, apparatus and method**
U.S. Patent #9271170 **Channel adaptation in sensor networks**
U.S. Patent #9322692 **Flow sensor including a tube extending from a housing and static …**
U.S. Patent #9419331 **Flexible antenna with weatherproof protection system and method of weather**

Publications

COTS: The Journal of Military Electronics and Computing **Drifts and Calibration: Fine Tuning Data Acquisition**
MSEE Thesis: **High Frequency Propagation Model Prediction, Analysis and Validation as Correlated to an Auroral Circuit**

Education

MSEE Aug 94 – Jul 95 Pennsylvania State University
BSEE Aug 86 – Dec 90 Pennsylvania State University
ASET Aug 84 – May 86 Williamsport Area Community College

Links

Tezla LLC
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