

# CLIFFORD B. GERHARD, P.E.

PO Box 73846 San Clemente, CA 92673

E-Mail [cliff@cliffgerhard.com](mailto:cliff@cliffgerhard.com)

PH (949) 412-7566

## Professional Summary

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A seasoned and successful Engineer with broad base of technical experience. Energetic as well as analytical and organized, with a firm grasp of engineering fundamentals. Strong in Analog Circuit design and simulation.

Experience gained working over 20 years as a full-time consultant provided exposure to all aspects of product development. Constantly working with new people, and organizations, new and unfamiliar technologies (sometimes out of your comfort zone), all provide a great foundation on which to build and expertise to share with others.

Specialties include – Product Design and Development, Electronic Systems, Analog and Digital Circuit Design, DC/DC Converters, Batteries and Chargers, Data Acquisition, Microcontroller Hardware (Assembly Language Programming), Medical Devices, Designs for Space, Thermal Management, Printed Circuit and Flex Design.

Prior designs included electronics for medical instruments, military, spacecraft, aircraft, automobiles, motorcycles, emergency vehicles, computer products, test equipment, telephony, communications, industrial control, theme park attractions, consumer products, and toys.

Currently R&D Electrical Engineer at Swift Engineering working on a large UAV project. The SULE (Swift Ultra Long Endurance) Aircraft is a state-of-the-art platform using Li-S Battery technology and solar cells. The target mission profile is to maintain high altitude flight (up to 65,000 ft) for up to 30 days. Responsibilities include all of the electronics on the aircraft (batteries, solar, custom PCBs, third party modules, and sensors) and also the support of ground and flight tests. The aircraft has had three successful (low altitude) test flights at Space Port, New Mexico.

Recent experience as Principal Hardware Engineer at RED Digital Cinema (10+ years) included design responsibility for power system architecture and board level design for the camera systems and their accessories (Weapon, Scarlet, DSMC, DSMC2, Panavision DXL, and Komodo). Designs were cutting edge with extreme data rates and miniaturization creating very challenging mechanical design and thermal environment. PCBs and flex circuit designed for very high density, up to 24 layers with multiple controlled impedance requirements.

Responsible Engineer on all in-house designed Li-ion Battery packs and Chargers. In-house technical contact for OEMs that manufactured other RED branded Battery packs and chargers. Products - REDbrick, REDvolt, REDVolt-XL, REDVolt-V, REDbrick Charger (dual), REDvolt Charger (dual / quad), Travel Charger.

Responsible engineer on the Crimson laser projector project in charge of the safety interlock architecture / design. The design of a Thermo Electric Cooler (TEC) controller circuit for laser diodes was included.

Responsible engineer on for the power delivery system and safety / interlocks on Manifold (Facebook VR camera with x16 8K camera sensors). The camera head is powered from 400VDC supplied down a 100-meter cable. The interlock involved a system check at low voltage prior to stepping up to high voltage. A challenging design to get through the required agency approvals (with no earth connection at the camera head).

Known to be a workaholic and focused on results. Gets along well with everyone. Enjoys being mentor for less experienced Engineers. Comfortable leading as well as being a team member. Has developed good relationships with manufacturers' local reps and FAEs.

## Education

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WEST COAST UNIVERSITY, Los Angeles, CA.

Completed requirements at night while working full time. Graduated with honors obtaining the following ABET accredited degree:

Bachelor of Science in Engineering - Option in Electrical Engineering (magna cum laude)

## Professional Certifications

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Passed the California Engineer in Training (E.I.T.) exam on first attempt. Petitioned to sit early for the P.E. exam, again passing on his first attempt. In this exam, 28% of those who took the test received a passing score.

View full CV here: [http://www.gen3eng.com/images/CV\\_Cliff\\_Gerhard\\_2021.pdf](http://www.gen3eng.com/images/CV_Cliff_Gerhard_2021.pdf)