

# John Whitcraft, pe, cld, leed ap

## **Electrical Engineer**

*Solutions-oriented and analytical with history of success contributing to reliable / best-in-class electrical designs / robust production test systems / detailed documents/procedures*

<b>Design</b>	Digital, Mixed-signal, Serial data, Schematics, Design for test, LabVIEW Software, Voltage drop, KAIC calculations, Load calculations, LEED expert
<b>Documentation</b>	Electrical layers, 1-line drawings, Construction Documents, Source Control Drawings, Presentations, Procedures, Requirements, Statements of Work, Statements of Compliance, Test Guidelines, Written Reports, Record Drawings, Specifications
<b>Standards</b>	JTAG IEEE 1149.1, IEEE 488, NEC, CA Title 24
<b>Methods</b>	Design for Test, Engineering Fundamentals, Probability, Project management, Statistics, Stacked Equipment Tuning Trials
<b>Tools</b>	AutoCAD, LabVIEW, DipTrace, Linux, C++, perl, python, R, MatLab, Visual Studio, Teststand, NI-MAX, cDAQ-9174, PXIe-1065, DSA90804A, USB 6218, U2000
<b>Deployment</b>	Design Validation, Process Improvement, Fabrication, Commissioning, User Orientation, Diagnostics, Training

## **PROFESSIONAL EXPERIENCE**

**Whitcraft Engineering Solutions, Inc.,** San Diego, CA

2012—Present

### **Electrical Design Engineer, Professional Engineer**

-Designed/ Published/ Sealed Construction Documents for the following

- ï Scripps Hospitals (5 hospitals) – complete HCAI / OSHPD PIN 70 upstream breaker coordination studies which are required on electrical power plans.
- ï Coyotes\_Band\_Metal\_shop\_Electrical – electrify existing metal shop at Los Coyotes Reservation, Palomar-Julian, CA (off San Ignacio Road)
- ï Add Cell DAS Antenna Power at Scripps Encinitas Penthouse Level -- complete load studies per OSHPD/HCAI and CEC requirements, design electrical conductors & panels for antenna system, including HCAI pin 70 & CEC 517.31(G) breaker coordination sheet.
- ï Strategic Operations, Inc. 4705 Ruffin Rd, San Diego, CA -- separating one property from another and giving them their own meter. The SDG&E Service is located at 4705 Ruffin Rd, San Diego and feeds both 4705 and 4701 Ruffin Rd. Designed in a new 400 amp 277/480 service by doing a line side tap in the SDG&E section.
- ï KOI Creek Apartments 1150 Pedro St, San Jose, CA – Bring existing ½ H.P. parking gates up to CEC code, including new joint trench & power panel for existing miscellaneous circuits on building “D” house junction box.
- ï Kawakami House 529 N. Fifth St, San Jose, CA – Part of the Japanese American Museum, the historic building is to have upgraded display lighting, 200 amp electrical, kitchen, new 20 amp dumb waiter and new solar panel system.
- ï 1555 Callecita, San Jose, CA – Repair fire-damaged home with new lighting, 250 amp electrical and solar panel system.
- ï Cardiff by the Sea Lodge 142 Chesterfield Dr, Cardiff, CA – Remodel including new electrical dead-front switchboard section to properly use the 400 amp 3-phase star service. This included new 3-phase switchboards, new internet service, and new egress lighting on each floor. Also new air

- conditioner, new lighting, new multi-circuit outlets, new fire & CO<sub>2</sub> detectors in each room.
- Elevator power upgrade electrical design documents for three-story Chuck E Cheese in San Jose, CA
- Generator addition design/analysis for complex residential solar/battery system in Point Loma, CA
- Design which allows isolation of solar/battery system from utility using an ATS in San Diego, CA
- Home generator plan drawings for plan check approval for two homes in Alpine, CA
- Home electric vehicle service equipment single line drawing for plan check approval in Gilroy, CA
- Electrical plans including 1-line drawings for 1200 A electrical upgrade in Willow Glen, CA
- Complete electrical design of lighting/ power for restaurant tenant improvement in Chula Vista, CA
- Electrical load studies and electrical power design for hidden cellular antennas at Legoland, CA
- Electrical 1-line drawings for inspector approval for cellular antenna system at SeaWorld, CA
- Electrical power/ lighting design of Netly Solana Beach fiber center, including luminaire selection and 1-line diagram for computer network hub and optional article 702 standby system
- Wastewater electrical power design, including 1-line diagram, vandal proof lighting and emergency egress lighting Main St, San Diego, CA
- Electrical Engineer of Record -- Los Angeles Regional Internal Communication System with 50+ cellular broadband communication sites inside fire stations, police stations, lifeguard towers, secure centers and hospitals

**BAE Systems/ Fairchild Imaging Division, San Jose – 07/2016—Present**

**Electrical Test Engineer**

-Developed and deployed controls software:

- Software system stacks designer's ideas for tune/settings and evaluates all for designer/operator to select the optimal setting/idea with soft front panel controls

*ACHIEVEMENT: Analyzed device performance/coordinated with customer to revise specifications*

**Northrop Grumman, San Diego – 07/2015—05/2016**

**Electrical Test Engineer**

-Developed and deployed controls software:

- Parallel programming station utilizing National Instruments PXIe-1065, Pickering 2-bank 2-pole multiplexer / PXIe-410 JTAG controllers for Northrop Grumman JSF Communication Modules

**Tesla Motors, Fremont – 12/2014—04/2015**

**Electrical Test Engineer**

-Developed and deployed controls software:

- Electric Vehicle Service Equipment Test System utilizing cDAQ-9174, Class III electrical relays for Tesla drive train

**Maxwell Technologies, San Diego – 2012—2014**

**Electrical Test Engineer**

-Developed and deployed controls software:

- Test system for Engine Start Module
- Test system to evaluate customer returns of Engine Start Modules, presenting simple standard one-page report of device condition / performance

**Mitchell J Architects, San Diego – 2012—2014**

**Electrical Design Engineer**

-Developed and deployed controls software:

- Electrical power designs for cellular phone sites, including load calculations, KAIC calculations, voltage drop calculations, and CEC compliance
- Power, lighting and fire alarm design for multi-purpose assembly building CEC and CA Title 24 requirements

*ACHIEVEMENTS: Sealed Construction Documents as the Electrical Engineer of Record*

*Created detailed AutoCAD electrical designs and drawings to AIA, ANSI, and LEED standards*

**Cubic**, San Diego, CA

2010—2012

**Production Test Engineer**

-Analyzed / developed tests of equipment containing Ethernet, photo detectors, VHF, C, Ku, L, S-band radio frequency transceivers, rs232 serial data signals, switching power supplies, ZigBee radio, infrared signals, global positioning system receiver, 802.11g radio, and solar cell power supplies

-Analyzed system schematics: developed production systems to electrically test lower-level assemblies

-Developed and deployed:

- Testers with LabVIEW and Teststand on laser tag training equipment for military
- Tester of vehicle-mounted laser tag training equipment
- Tester of Ethernet over RF equipment reporting bit error rate—several attenuation levels/frequencies
- LabVIEW, ActiveX, and C# test programs with Teststand test development software
- Small circuit test box for high power operational amplifiers with DipTrace capture/layout software

*ACHIEVEMENTS: Deployed domestic remote test systems, including installation/training/setup/software support/diagnostics*

*Deployed international (Mexico) test equipment (NI Teststand deployment)*

*Reviewed and analyzed Altium schematics and designs for testability*

*Utilized AutoCAD to design test system: IEEE-488/LabVIEW/LabWindows CVI/Teststand*

**San Diego Electrical Training Center**, San Diego, CA

2009—2010

**Instructor**

- Developed/Instructed IP network addressing seminar for 20 apprentices
- Created lab project: laptop computer/terminal port Cisco 2900 Series Integrated Services Router
- Created lab experiments for apprentices/journeymen: illustrate semiconductor devices/LEDs
- Instructed journeymen/apprentices: AutoCAD, DraftSight, Electronics, Computer Equipment Operation, Variable Speed Synchronous Motor Drive, Heating, Ventilating and Air-conditioning Equipment, Chemical Safety, Operation of Transistors, Transformers and Operational Amplifiers

**Qualcomm**, San Diego, CA

1996—2009

**Product and Test Engineer**

Analyzed measurements with Dataconductor, Datapower, Excel, Minitab, R, RS1, and SPSS

-Developed and deployed:

- Cell phone ASIC Wafer Sort, FT, and QA tests on Agilent test equipment
- BSDL/VHDL code for in-circuit test of modules containing Qualcomm ASICs
- Automatic wire-bonding diagram software using AutoCAD AutoLISP
- C++ test methods for high-speed SERDES cellular ASIC
- ASIC bench test: DSA90804A, 10 GHz generators, J BERT, logic analyzer, programmable power supplies, Thermostream, LabVIEW, and C++
- ASIC characterization program with Advantest V93000
- ASIC test interface with Visual Studio C++ through PC parallel printer port
- LabVIEW code to control instruments and gather measured data

*ACHIEVEMENTS: Completed source control drawings, product development plans, and wire bonding diagrams*

*Coordinated team of six junior engineers to develop cell phone ASIC test program*

*Evaluated first silicon cell phone ASIC with Advantest V93000 test equipment*

*Generated/deployed production test program sets for cell phone ASIC test in Taiwan*

-Instructed

- Engineers to use LabVIEW
- Engineers to use AutoCAD script and AutoLISP features

-Managed

- ASIC overseas foundry production test program release

ï New ASIC product introduction meeting sample deadlines

*ACHIEVEMENTS: Measured jitter and other performance characteristics of SERDES test chip  
Monitored yield and test time / proposed and implemented improvements  
Presented results via DataPower and Excel/AnalystSoft Statistics Toolpak*

**Guam Community College**, Guam, US Territory

1991—1995

**Instructor**

- Created a computer lab: file server, plotter, 16 CAD workstations, Novell Netware / MS Windows
- Installed/commissioned video editing system: 10base2 Ethernet/Grass Valley/Ampex equipment
- Instructed / Authored Curricula in following areas:  
AutoCAD for documentation of construction plans, two-year AutoCAD certification, Intro to Mechanical Engineering: Statics and Strength of Materials

**CERTIFICATION / LICENSE / ACCREDITATION**

- CLD – Certified LabVIEW Developer – National Instruments
- PE - Professional Electrical Engineering License – CA BPELSG, 2012
- LEED AP BD+C – USGBC, 2013

**MEMBERSHIPS**

- American Institute of Architects, Allied Member
- National Instruments Partner Program
- National Society of Professional Engineers
- Illuminating Engineering Society of North America
- American Society of Civil Engineers
- San Diego Green Building Council

**EDUCATION**

- BSEE - Lehigh University, an ABET accredited program

**PERSONAL INTERESTS**

- Sailing / Swimming