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Work Experience:

IDEX Health & Science, LLC

March 2019 – July 2020

Sr. Manufacturing Test Engineer – Responsible for defining and developing test processes for new product introductions as per product requirements. Implementing and supporting optimum test strategies throughout each product's life cycle. Worked with the R&D and Advanced Engineering teams to implement product changes in order to enhance the design for testability. Developed test plans and procedures for the electro/mechanical systems. Created, reviewed, and approved test plans, test scripts, test fixtures, test station designs, and validation documents. Provided technical support to the production floor for manufacturing test-related issues. Created a data-driven failure analysis report for RMA units.

DELL EMC, Inc.

May 2017 – August 2018

Test Development Engineer - Responsible for developing diagnostic and utility tools to be used as part of the manufacturing test process. Tasked with supporting prototype evaluations, validation cycles, and delivering test software into production using a standardized test automation framework. Assigned to developing manufacturing test plans for functionality testing, monitoring test quality, and driving test improvements. Defined test objectives, development, and implementation for production system-level functional testing for Dell EMC server systems.

Keysight Technologies

December 2015 – May 2017

Test Engineer - Responsible for supporting and maintaining test measurement stations for the X-Series Agile Signal Generator (UXG) instruments. Tasked with supporting and setting the test line limits (TLL) for the Spectral and Pulse stations. Assigned to verify specifications for Harmonics, Subharmonics, and Spurious signals with a Spectrum Analyzer. Executed Pulse procedures by testing the UXG instruments for Pulse Amplitude Accuracy (Pulse power), Pulse Delay, Compression, Overshoot, and Video Feedthrough via a Digital Sampling Oscilloscope (DSO).

Keysight Technologies

July 2015 – November 2015

Contractor - Responsible for troubleshooting and resolving issues related to X-Series Agile Signal Generator (UXG) instruments. Utilized various measurement equipment such as: Spectrum Analyzer, Signal Source Analyzer, and Digital Sampling Oscilloscope to troubleshoot and resolve issues related to the instruments.

San Diego State University

August 2012 - May 2014

Teaching Associate - Instructor for Engineering Electronics Laboratory EE330 Lab.

Taught the fundamental concepts behind diode, operational amplifier (Op-Amp), bipolar junction transistor (BJT), and metal-oxide-semiconductor field-effect transistor (MOSFET). Conducted demonstrations for creating a linear triple output power supply by soldering rectifier diodes, filters, and voltage regulators into a Printed Circuit Board (PCB). Instructed students on how to use various instruments including: power supplies, function generators, digital multimeters (DMM), and oscilloscopes in order to generate and measure different types of signals.

San Diego State University

January 2012 - December 2012

Teaching Assistant - Graded projects and quizzes for Analysis and Design of Electronic Circuits.

San Diego State University

January 2012-May 2012

Teaching Assistant - Graded homework, projects, and exams for Electrical Materials & Devices.

Education:

Master of Science in Electrical Engineering, M.S.

San Diego State University

Thesis: "Synchronization Requirements for Downlink Coordinated Multi-Point Joint Transmission"

Graduated in August 2014

GPA: 3.76

Bachelor of Science in Electrical Engineering, B.S.

San Diego State University

Graduated in May 2009

GPA: 3.4

Projects:

Water Impedance Test Stand [IDEX Health & Science, LLC - Rohnert Park, CA]

Role: Test/Software Engineer

Skills/Tools Used: Visual Studio, C#, .NET Framework, Flow Meter, Pressure Transducer, Water Pump, Power Switch, COM Ports, Git Source Control, Minitab, Data Analysis

Assigned to develop an improved water impedance test stand in order to measure the pressure drop for the unit under test. The process consisted of finding the test equipment (such as: flow meter, pressure transducer, water pump, etc.) with required specifications. Assembled and tested the hardware as well as wrote a program in C# that automated the test station. The test stand was optimized in the software and the hardware resulting in more accurate and precise measurements. Created a user-friendly GUI for the test stand so that the technicians and operators could easily utilize the test stand. During the creation of the test stand, empirical data was collected and analyzed. The data analyses consisted of a correlational test (linear regression analysis in Minitab) and a repeatability test. The results rendered indicated that the new test stand had superior performance in hardware and software functionality.

Automation Test Development [DELL EMC, Inc. - Santa Clara, CA]

Role: Test Development Engineer

Skills/Tools Used: Visual Studio, C#, Python, .NET Framework, DELL Servers, Linux, Mercurial, Perforce, Putty, API, Cumulus Network

Tasked with developing automation diagnostic tools to test the DELL servers on a system level. The process consisted of writing the test in C# by converting some of the frameworks and libraries from Python. By developing the automation test in the C# environment, the test structure, reusability, efficiency, and reliability were improved. Maintained, updated/modified, and reviewed the automation test scripts written in Python to test the functionalities of the DELL server systems that were in production.

Low-Frequency Oscillation [Keysight Technologies - Santa Rosa, CA]

Role: Test Engineer

Skills/Tools Used: ADS, Spectrum Analyzer, Digital Multimeter, SCPI-Commands, C#, Signal Source Analyzer

Solved impedance mismatch of microwave components in the RF chain. The impedance mismatch resulted in low-frequency oscillation (LFO) signals that distorted the spectral purity of the desired signal. A systematic approach was used to identify the faulty component in the RF chain that was distorting the output signal. Discovered that the presenting issue was caused by the oscillation of the Limiting Amplifier. Resolved the issue by designing a PI-Pad in Advanced Design System (ADS) software and placed it between the output of the Limiting Amplifier and the input of the Balun. This technique reduced the effect of the spurious signals on the desired signal and in some frequency bands they were completely removed.

Delta Environmental [Keysight Technologies - Santa Rosa, CA]

Role: Test Engineer

Skills/Tools Used: Matlab, Statistical Tools (Normal Distribution, Standard Deviation, Mean, Range, Confidence and Proportion Interval, Normal Plot, Histogram)

Determined the Delta-Environmental (DE) value for the X-Series Agile Signal Generator instruments in order to set the test line limits for the production testing. The DE is defined as the instrument performance drift over temperature. The procedure consisted of comparing the empirical data collected on devices under test at room and temperature testing. To accurately characterize the measured data various statistical distribution systems were examined. Ultimately, the Gaussian distribution was used to represent the data.

Troubleshoot and Debugged PCBs [Keysight Technologies - Santa Rosa, CA]

Role: Contractor

Skills/Tools Used: Digital Multimeter, Power Meter, SCPI-Commands, PCB Microscope

Identified a missing pin, which was used to ground a surface-mounted multiplexer chip. The chip was used to read the voltages from the ABUS nodes in the RF chain for self-test purposes. The missing pin damaged the DC bias diode. Adding the proper pin to the ground mitigated this issue.

CoMP Joint Transmission in LTE-A Systems [San Diego State University - San Diego, CA]

Role: Researcher

Skills/Tools Used: MATLAB, LTE-Advanced, OFDMA, Algorithm, Digital Signal Processing, Wireless Digital Communication, Coordinate Multipoint Joint Transmission

Master's research thesis evaluated the synchronization requirements for downlink Coordinated Multi-Point Joint Transmission in LTE - Advanced systems. For MATLAB simulation the Zadoff Chu training sequence was used while the Automatic Gain Control, Schmidl and Cox algorithm, maximum likelihood detector, Arbitrary Interpolator, and decision direct channel estimation/equalization were used to maintain a constant output signal level, to initiate the frame detection process, to estimate the time offset, to estimate and correct any fractional time offset, and to conduct the channel estimation and equalization process.

Equalizer [San Diego State University - San Diego, CA]

Role: Student

Skills/Tools Used: MATLAB, Least-Mean-Square Algorithm, Digital Signal Processing, Adaptive Filtering

Designed an equalizer utilizing the Least-Mean-Square Algorithm technique in MATLAB for distorted signals in a communication channel.

Convolutional Encoder & Decoder [San Diego State University - San Diego, CA]

Role: Student

Skills/Tools Used: MATLAB, Digital Signal Processing, Channel Coding

Wrote an algorithm in MATLAB for Convolutional Encoder for a rate of 1/3 along with a Hard - Decision Viterbi Convolutional Decoder for a digital communication system which could correct errors up to 1% or less.

Channelizer [San Diego State University - San Diego, CA]

Role: Student

Skills/Tools Used: MATLAB, Digital Signal Processing, Multirate Signal Processing, Digital Filters

Designed a Channelizer in MATLAB which extracted a signal from a composite signal containing a group of narrow-band signals using 2-Path Hilbert Transform filters and M-Path low-pass filter for FIR filters.

OFDM Modem [San Diego State University - San Diego, CA]

Role: Student

Skills/Tools Used: MATLAB, Digital Signal Processing, OFDM, Cycle Prefix, Synchronization

Designed an OFDM modem in MATLAB as a 128-point transform with 54 occupied frequency bins. The symbol consisted of a long preamble for channel estimation and a short preamble for frame detection and frequency offset estimation.

Pool-Playing Robot [San Diego State University - San Diego, CA]

Role: Student

Skills/Tools Used: Oscilloscope, Schematic, Digital Multimeter, C, Signal Generator

Designed a pool-playing robot that would detect red or blue balls with the use of a programmable camera and then shoot the ball into a particular pocket based on information from the sensors. I constructed the boost-converter for the solenoid, the H-bridge for the clamp's motor, and the circuitry for the ultrasonic sensors. The project was ranked first amongst all the other competitors. The following link to my personal website provides more information about the project:

www.amirhejazi.net

Technical Skills:

Programming Languages: C#, MATLAB, C++, HTML, Python, CSS, Access Database, SQL

Software: ADS, PSpice, Microsoft Office, Excel, Minitab

Operating Systems: Windows, Red Hat, Mac OS, Ubuntu

Measurement Tools: Spectrum Analyzer, Digital Sampling Oscilloscope, Signal Source Analyzer, Power Meter, Digital Multimeter, ZeGage Optical Profiler

Others: Signal Generator, Soldering, Algorithms, Scpi-Commands, Data Analysis, Source Control, Team Foundation Server – VS, Gage R&R, Linear Regression Analysis, Data Analysis

Strengths:

Fast learner, Self-motivated, Great time management skills, Good oral, written, & presentation skills, Flexible, Solution Focus, Great team player, Creative, Enjoy challenges