MICHAEL BELLA

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TECHNICAL STRENGTHS

Programming Languages	Embedded C, LabView, Python, C/C++
Software Tools	Eclipse, git, SVN, Code Composer Studio, IAR, Spice, AWR Microwave Office, CADSoft Eagle, Matlab
Design Experience	Low Power Embedded Systems, RF Matching Networks & Amplifiers Analog Signal Processing, High Precision Analog Measurement, SMPS Design
Lab Skills	SMD Soldering, Wiring harness construction, PCA Bringup and Debug Prototyping, Build designs from print
Other Technical Experience	Proficient with Linux, Texas Instruments MSP430 Processor Family

WORK EXPERIENCE

KLA-Tencor December 2011 - Present
Electrical Engineer *Milpitas, CA*

· Design many different automated test and measurement applications in LabView.
· Write LabView software to acquire and process data from a wide range of lab equipment
  - Network and Impedance Analyzers
  - Spectrometers
  - Digital Multimeters
  - Agilent Oscilloscopes
· Write embedded C for the low power MSP430 processor family
  - Design embedded systems to serve as a platform for new sensor technologies
  - Adapt existing measurement system architectures for use with new sensor types

350°C Calibration System
· Integrated existing high temperature oven with a National Instruments Compact FieldPoint Controller.
· Developed a state chart for controlling the entire calibration system from the Compact FieldPoint.
· Tuned cascaded control loops to bring the calibration system up to each temperature set point with minimal overshoot.

High Temperature Wireless Wafer
· Wrote LabView which automatically tests all possible failure modes of a wafer substrate with thin-film aluminum traces.
· Wrote LabView application to use an Agilent 3490a as a curve tracer to manually diagnose faults in substrates.
· Designed a lump element model of the inductive wafer charging system in order to implement a simulated wafer communication system.
· Hand wired prototype of a nanoamp current measurement fixture.
· Hand wired interface board prototypes to enable the test and calibration of these wafer prototypes.

New Sensorised Wafer Project
· Modified existing embedded C wafer code base to work with new types of sensors.
  - Reduced project development time from 6 months to 1 month by using with an existing codebase and an existing electrical design.
  - Rewrote measurement subsystem to interface with the new sensor type.
  - Redesigned data-store format to support the new sensor.
  - Fully tested all code changes against existing low power specifications for the product family.
  - Rewrote portions of existing manufacturing software to support calibration.

· Wrote PC software in LabView to launch wafer missions, and to retrieve data from these new sensors.
· Designed custom data processing software in Python to support data driven development of new sensor platforms.
  - Applied calibration factors to the entire data set
  - Removed intrinsic sensor offset from the data automatically
  - Automatically identified each process condition using feature recognition on the data
  - Calculated the mean value at each process step for each sensor
  - Saved the calibrated results for each process step
  - This software reduced the time required to parse one data file from 1-2 hours down to 5 minutes

FOUP Improvments
· Designed a circuit to recover the wafer communication signal from the envelope detector with improved sensitivity over the existing design.
· Characterized the improved wafer communication system performance.

KLA-Tencor Internship June 2005 - December 2011
Electrical Engineer *Milpitas, CA*

· Developed LabView code for a wide range different projects
  - Automated capacitor tester
  - Wireless communication system tester
  - Synchronous serial link to a custom embedded sensor system
· Characterized the magnetically coupled wafer communication system
· Performed PCB diagnostic work, failure analysis, rework of SMD and through hole components.

EDUCATION

San Jose State University *December 2011*
B.S. in Electrical Engineering