

**COURTNEY D. HERON**  
Naperville, Illinois 60540  
(630) 983-3874  
[cheron@alum.mit.edu](mailto:cheron@alum.mit.edu)

### **PROFESSIONAL PROFILE**

MIT & Stanford Educated Engineering Senior Manager leading product development teams in the Durable Consumer Goods, Automotive, Telecommunications, and Microelectronics industries. Effective leadership with a passion for product development, R&D, and intellectual property/technology transfer. Expertise in managing digital and analog circuit design, custom IC (ASIC) design, 3D equipment and 2D apparatus mechanical design (ProEngineer and SolidWorks CAD), EMC testing, thermal cycling, thermal shock, and certification for hazardous locations.

### **KEY CAREER ACCOMPLISHMENTS**

- [ Completed redesign of TouchSensor's flagship TS100, a full custom capacitive touch sensing ASIC deployed in the center stack of Ford's MyFord Touch™ System, in 15 months saving \$300,000 per year in going forward device cost.
- [ Drove design and manufacturing launch of ActiveMetal touch sensitive switches. Projected first year sales of \$300,000.
- [ Led complex Voice Over IP circuit development program that came in early (18 months vs. 30 months) and delivered compelling economics to customers.
- [ Saved \$1,000,000 to \$2,000,000 in sustaining engineering support costs for Trunk Interface telecommunications products in one year.
- [ Managed development and product launch of an RF components family that grew from \$600,000 to \$4,000,000 in two years.

### **PROFESSIONAL EXPERIENCE**

**2012 to** **The Morey Corporation, Woodridge, Illinois**

**2016** The world leader in ruggedized on-board telematics hardware design and manufacturing, serving the transportation, remote asset monitoring, and industrial markets.

**Technical Manager Telematics.** Responsible for new product development activities, product quality and customer satisfaction including OTA (over the air) performance testing and cellular network carrier certifications for Morey Telematics products.

- [ Quality Engineering; provided electrical engineering expertise to improve build and component quality and the return rates of Power Electronics Products manufactured for Caterpillar. Utilized 8D problem solving and owned APQP documentation.
- [ Led Cellular Network Carrier Certifications and associated OTA (over the air) performance testing for Morey Telematics products that enabled annual sales of \$6,000,000. Managed cross functional resources including Software, Circuit Design, Mechanical Design, and Marketing, to accomplish certification projects months ahead of schedule.
- [ Completed PTCRB, AT&T, Verizon, and Sprint cellular network carrier certifications, and Nonincendive certifications, for MC-3 and MC-1 products in 18 months. MC-3 and MC-1 are telematics devices capable of reporting asset position, diagnostics, and usage information.
- [ Analyzed MC-1 data retries and power consumption profile (cellular modem and GPS) to optimize life of the LiSOC12 primary battery pack across use cases.

**2007 to** **TOUCHSENSOR TECHNOLOGIES a division of Methode Electronics, Wheaton, Illinois**

**2012** The North American market leader in design and manufacture of capacitance based touch sensitive user interface panels and sensors for durable goods, with annual sales of \$40,000,000.

**Senior Director of Research and Development.** Responsible for all R&D activities including ASIC development, haptics based tactile feedback, managing the firms IP portfolio, and technical leadership of 6 Sigma teams.

- [ Completed successful redesign of TouchSensors flagship TS100 full custom mixed signal capacitive touch sensing ASIC into current CMOS process technology in 15 months on the first attempt. Achieved \$100,000 design cost savings and \$300,000 per year in future device cost savings. Led EMC Immunity testing for automotive application. The new ASIC is poised to replace the TS100 currently deployed in Ford's MyFord Touch™ System.

- [ Prototyped and characterized a projected capacitance touch panel based on an ultra low cost wire frame sensor array. Targets lower price higher volume appliance applications.
- [ Developed customer demonstration UIs with haptic tactile feedback which engage users sense of touch for greater realism, accuracy, and performance. Developed haptics output unit which outputs a haptic effect based on a sensed input level (for example water level).
- [ Developed an Intellectual Property (IP) Plan that addressed intimacy with the patent portfolio, countries of patent prosecution, and education of internal staff on handling IP issues. Managed execution of the IP plan in conjunction with TouchSensors General Manager.
- [ Provided technical leadership as both member and champion of 6 sigma team focused on reducing Touchcell sensitivity variance. Quantified contribution of touch sensing ASICs part to part sensitivity variance to overall product sensitivity variance at final test.

**2006 to 2007** **ITW ACTIVETOUCH, Buffalo Grove, Illinois**

A new division of Illinois Tool Works manufacturing touch sensitive switches and sensors.

**Engineering Manager.** Reporting to the General Manager. Responsible for all product development including firmware, circuit design, printed circuit board layout, and physical design of switches and sensors.

- [ Directed a team of electrical engineers (digital circuit designers and embedded firmware developers) and mechanical engineers in the development of touch sensitive switches and sensors based on trapped acoustic resonance.
- [ Drove design and manufacturing launch of ActiveMetal touch sensitive switches, the flag ship product. Projected first year sales of \$300,000.
- [ Managed design of Ice Thickness Detector and Water Level Detector for major OEM customer. Projected second year sales of \$350,000.
- [ Directed improved firmware that reduced power consumption of ActiveMetal switches by a factor of 100 (from 2mA to 20uA current drain).
- [ Hired key electrical engineers and lead mechanical engineer to grow the team from 8 to 11 engineers.

**2004 to 2005** **RICHARDSON ELECTRONICS, LaFox, Illinois**

An electronics distributor serving the RF and wireless communications, industrial power conversion, security, and display systems markets.

**Richardson Component Solutions Program Manager.** Reported to the Vice President of RF and Microwaves. Provided custom RF component solutions to customers using internal design resources, external design partners, and contract manufacturers.

- [ Developed and implemented a quality process for custom RF component realization that encompassed the activities of bid and proposal, design, development, and introduction into manufacture.
- [ Responsible for directing design, prototype, and cost analysis of passive RF Mixer component offering high linearity.
- [ Liaison with contract manufacturer and managed RF Lab equipment and technician.

**2000 to 2003** **LUCENT TECHNOLOGIES, SWITCHING, Naperville, Illinois**

**Manager, Trunk Interface Circuit Design.** Responsible for leading complex Voice Over IP circuit development program that came in early (18 vs. 30 mos.) and delivered compelling economics to customers.

- [ Managed the development of Voice over IP (VOIP) Trunk Circuit Packs in SONET Optical Interface Unit (OIU) that added VOIP capability to Lucent's 5ESS telephone switch.
  - Completed this development in 18 months vs. typical 30-month interval.
  - Under ran all hardware cost per trunk targets by 20%.
  - Received two Lucent Silver Awards in recognition of this work.
- [ Led multi disciplinary teams of over 20 hardware designers (circuit, DSP, diagnostic SW, and compliance) as Hardware Feature Manager to schedule, staff, design, verify, and certify VOIP OIU product.
- [ Managed team of circuit designers (FPGA, ASIC, and circuit pack developers) to complete development and manufacturing introduction of TDM Trunk Circuit Packs in OIU for the 5ESS telephone switch.

- [ OIUs 120,000 Trunk/Cabinet density lowered hardware cost per trunk to become the industry best in class and reduced need for footprint, space, and power.
  - This saved customers 25% in operational and transport costs versus the competition.
- [ Saved \$1,000,000 to \$2,000,000 in Sustaining Engineering support costs for mature Trunk Interface products through FPGA (programmable logic) redesigns that avoided hardware changes to installed product.

### ADDITIONAL EXPERIENCE

**LUCENT TECHNOLOGIES, SWITCHING, Naperville, Illinois:** Manager, Processor Platform Hardware Design. Responsible for directing a team of electrical and mechanical engineers supporting Sustaining Engineering and new design for the 3B21D high availability fault tolerant computer.

**AT&T NETWORK SYSTEMS, Holmdel, New Jersey:** Manager, SONET Market Management. Responsible for managing a team of market developers for transmission products to BellSouth, Bell Atlantic, NYNEX, SNET, Ameritech, & Cincinnati Bell. Single Customer Team point of contact for \$700 million sales. Developed and priced customer proposals. Coordinated R&D funding decisions as the interface between the customer teams, product management and product development.

**AT&T MICROELECTRONICS, AIM SBU, North Andover, Massachusetts:** Manager, Application Specific Standard Modules. Responsible for managing development and launch of new product family of Application Specific Standard Multichip Modules targeted at Cellular Base Station RF Components market. Directed product design, applications engineering and marketing communications. Developed Application Specific Modules Concept, and authored Business Plan to design and market product. Grew to \$4,000,000 sales.

### EDUCATION, TRAINING & AFFILIATIONS

- EDUCATION:** MBA, Stanford Graduate School of Business, Stanford, California  
 MS, Electrical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts  
 BS, Electrical Engineering, Massachusetts Institute of Technology, Cambridge, Massachusetts
- PROFESSIONAL TRAINING:** Atmel MaXTouch training in touch screen design, Whiteley, Fareham, UK, 2011  
 IEEE Chicago EMC Mini-Symposium participant, Itasca, Illinois, 2015  
 IEEE Chicago EMC Mini-Symposium participant, Itasca, Illinois, 2014  
 Six Sigma Green Belt Training, Chicago Deming Association – Six Sigma Masters Program, Naperville, Illinois, 2006  
 In Lining, ITW, Buffalo Grove, Illinois, 2007  
 MS Project 2003 Intermediate, CompUSA, Downers Grove, Illinois, 2006  
 PowerPoint 2003 Level 2, CompUSA, Downers Grove, Illinois, 2006  
 Excel 2003 Level 2, CompUSA, Downers Grove, Illinois, 2006  
 Theory of Constraints for R&D, Goldratt Institute, Naperville, Illinois, 1998
- COMPUTER SKILLS:** MS Word, Excel, PowerPoint, Project, VISIO
- PROFESSIONAL MEMBERSHIPS:** IEEE EMC (Electromagnetic Compliance) Society, current member  
 MIT Club of Chicago, current member
- RECOGNITION & AWARDS:** Silver Award, OIU – IP First Call Team, Lucent Technologies, 2003  
 Silver Award, OIU – IP FPGA Team, Lucent Technologies, 2003  
 Silver Award – DNUS Flash Team, Lucent Technologies, 2002
- PATENTS:** US 9,095,058 Electrode Structure with Spatial Interpolation for Capacitive Touch Panel. Issued 2015.
- PUBLICATIONS:** A 32-Band Sub-band/Transform Coder Incorporating Vector Quantization for Dynamic Bit Allocation, IEEE ICASSP Proceedings 83, 1983. C.D. Heron, R.E. Crochiere, R.V. Cox.