

# Resume of Charles C. Cox

chuck@synchro.com, 617-584-8078, linkedin.com/in/charles-cox

Embedded Systems Engineer with more than 3 decades of experience developing firmware, software and hardware. Experienced with a wide range of technologies, industries, disciplines, and environments. Uniquely qualified to work on multi-disciplinary projects.

## EXPERTISE

<i>Systems</i>	Embedded, Real-Time, Distributed, Wireless, Low Power, Reliable, Secure, Mobile
<i>Applications</i>	Consumer, Audio, Energy, Automotive, Communications, Medical, Aerospace
<i>Languages</i>	C, C++, Assembly, Java, Python, PHP, Javascript, SQL, UML
<i>Operating Systems</i>	FreeRTOS, RTX, Nucleus, CMX, Linux, PetaLinux, µClinux, VxWorks, Windows
<i>Microcontrollers</i>	ARM, Zynq, PSoC, PIC, MSP430, SHARC, BlackFin
<i>Microprocessors</i>	Core, Pentium, PowerPC, 80x86, SPARC, StrongArm
<i>Communications</i>	USB, I <sup>2</sup> C, SPI, SAI, Ethernet, IP, RS-232/422/485, 1553B, RF, SDLC, JSON
<i>Buses</i>	PXI, PC-104, VME, STD, ISA
<i>Libraries</i>	CryptoAPI, MIRACL, RSA, MFC, STL, Boost
<i>Software Tools</i>	Eclipse, Visual Studio, Wireshark, Git, SVN, MATLAB, Enterprise Architect, EAGLE
<i>Hardware Tools</i>	JTAG, Logic Analyzers, Protocol Analyzers, Oscilloscopes, Spectrum Analyzers
<i>Compliance</i>	FDA, FAA, NASA, NSA, FCC

## PROFESSIONAL HISTORY

1/84 - present	<b>Consulting Embedded Systems Engineer, President</b> <b>SynchroSystems</b> , Cambridge, MA Designed, implemented and tested embedded firmware, software and hardware. Helped more than 20 companies create over 40 products. Clients included individuals, major corporations and government agencies. Roles included team leader, team member and sole contributor. Worked with engineers and scientists from a variety of disciplines. Ran a small consulting firm.  <b>Major Projects:</b> (more details are available in <a href="http://synchro.com/ccc_cv.pdf">synchro.com/ccc_cv.pdf</a> ) Bose Corporation Multi-channel data acquisition system Draper Laboratory / US Air Force Stellar navigation system Draper Laboratory / US Air Force Inertial navigation system Draper Laboratory / SNC Space Systems Fault-tolerant spacecraft flight computer Draper Laboratory / US Navy Portable secure software defined radio Draper Laboratory / US Navy Encryption module for guided ordnance Draper Laboratory / US Air Force UAV encryption module Draper Laboratory / Shell Oil Backup oil well blowout preventer Acoustic Ideas / Clean Harbors Ultrasonic pipeline inspection system Bose Corporation Automotive iPod interface American Science & Engineering X-ray gantry hoop motor controller Bose Corporation Automotive multimedia concept system Design Continuum Portable gas detector Design Continuum / Insulet Wireless insulin delivery system David Porat / Theracycle Therapy exercise machine
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Bose Corporation	High-speed RF recorder
Bose Corporation	RDS radio receiver
David Porat	Disposable water clarity tester
Harvard Apparatus	Small animal ventilator
Harvard Clinical Technology	Syringe pump
Design Continuum	HVAC controller
Electronic Retail Systems International	Manufacturing test systems
Harvard Apparatus	Programmable syringe pump
Power Systems, Inc	Model railroad signal translator
Design Continuum	Intelligent brassiere measuring tape
AT/Comm / Maine Turnpike Authority	Electronic toll collection system
Power Systems, Inc	Model railroad controller
Millennium Information Technology	Teleradiology system
Summa Four	Phone switch cards
The Foxboro Company	pH sensor board
AllPro Products	Virtual reality headset
Bose Corporation	Sound system verifiers
Voicetek	Telephone management system
Groton Technology, Inc.	Peak purity & spectral library
Bose Corporation	2-way RF remote control
Bose Corporation	Distributed acoustic measurement system
Eaton Semiconductor Equipment	Ion implanter control system
Optimum Systems Corporation	Lighting and energy management system
Decision Software Company	Industrial Computer System
Warren E. Collins, Inc.	Respiratory testing and diagnostic system
DI/AN Controls	Movie ticket printer

9/82 - 1/84      **Control Systems Engineer**  
**WTG Energy Systems**, Norwood, MA  
 Developed firmware and hardware for wind turbine control systems.  
 Installed and tested control systems at customer sites.

3/81 - 9/82      **Assistant Engineer**  
**Global Information Systems Technology**, Champaign, IL  
 Developed hardware for a graphics terminal and EPROM programmer.

9/80 - 3/81      **Programmer**  
**C/U Business Computers**, Urbana, IL  
 Modified various business programs.

## EDUCATION

96 - present	<b>ALB Science</b> degree candidate	<b>Harvard University Extension School</b> , Cambridge, MA
78 - 81	<b>Electrical Engineering</b> major	<b>University of Illinois</b> , Champaign-Urbana, IL
77 - 78	<b>Engineering</b> major	<b>Joliet Junior College</b> , Joliet, IL