

from 1967..			
from 1986..	Chemical Analysis Research and development of gas and liquid chromatographs hardware circuit for analog/digital design. Firmware for microcomputer control.	Temperature Control Motor Control for Liquid chromatographs Detectors for gas chromatographs Liquid chromatographic Detectors	PID/Extended PID Micro Step controller, driver circuit, Transformer design FID (frame ion), TCD (thermal conduction) UV (ultraviolet permeation), RI
from 1996..	Hardware, software, middleware development Windows, PC-Linux baremetal, uITRON, T-Kernel Embedded-Linux, Windows-CE assembler, C/C++, C# Visualstudio, Qt, GCC VHDL XILINX-EDK, SCH-CAD, PCB-CAD opensource opencv, boost, eigen, vtk, tesseract	TV phone (and related equipment)	Analog modem circuit design NTSC/PAL compression extension circuit Diversion to development of remote monitoring device
		Virtual COM Port	WinCE Application, Windows Virtual COM Drivers Ether-Serial Conversion
		Drive Recorder	Firmware Development Viewer for Windows FPGA Design
		Bill, coin validation equipment	validation sensor
		ATM Inspection Equipment	T-Kernel driver, KernelBase application
		OS, middleware porting, customization	uITRON-based OS porting NORTi, TOPPERS/FI4, each chip vendor OS tcpip middleware tuning LANC, CF/PCMCIA driver MODBUS, FLNET, HSMS, SECS (1/2) stack PLC-PC communication
		I/F Converter for mass flow controller	mass flow control DeviceNet protocol Stack RS485-DeviceNet Conversion
		Printer for medical equipment	Printing, communication firmware Test program
		Mine detectors	UI
		Water Level Alarm System	Remote data collection and distribution system Data collection/Delivery
		Earthquake alarm System	Remote monitoring server-inter-device communication
		High-rise meteorological data processing	Receiving Data processing application DB/WCF Inter-application communication processing
		Dam Management System	U I/Data collection/Inter-device communication
		photolithography control	Interferometer Control
		ES Chip Evaluation	BITW(IPSec GigaEther) ES Chip Evaluation circuit design
		Power Bank Controller chip Factory automation system	USB (A, B, Type-c/PD) chip, Protocol control IoT Motion detection/tracking/judgment processing