Henry (Hank) Schraeder

SYSTEMS ELECTRICAL ENGINEER

Palestine, TX
-Email me on Indeed: http://www.indeed.com/r/Henry-%28Hank%29-Schraeder/632ecb0f5f9c961e

RF systems engineer with extensive education, skills, and experience gained over a 30+ year career in radar, avionics, sensors, software, and developmental test and evaluation of RF systems.

MS Computer Science, Texas A&M
MBA, National University
BS Electrical Engineering, Oklahoma State

Authorized to work in the US for any employer

Work Experience

MICROCONTROLLER SYSTEMS ENGINEER

PCD Works - Palestine, TX
January 2018 to Present

Design, develop, and test Bluetooth, 900 MHz, cellular Cat-M, and a variety of other embedded microcontroller electronic devices. Write test plans and build test chambers to monitor and record data. Use C/C++ to program a variety of microcontrollers including TI MSP430, CC1352P, Nordic nRF52840, Nordic nRF9160, and a variety of Arduino based platforms. This is a contract job with sporadic work during the Covid slowdown.

ELECTROMAGNETICS ENGINEER

Texzon Technologies LLC - Waxahatchie, TX
January 2017 to January 2018

Designed, developed, and tested RF wireless power transmission and reception systems. Built and tested high power microwave transmitters and antennas for Zenneck surface wave propagation. Conducted experiments at test sites to increase antenna efficiency and RF to DC power conversion. Performed RF system link margin studies for comparison of Zenneck, Hertzian, and Norton surface wave power transmission methods. Troubleshot and repaired a variety of electronic equipment including high power RF transmitters, receivers, impedance matching networks, computer networks, and generators.

GRAD STUDENT

A&M - Commerce, TX
January 2013 to January 2016

After retirement from L-3 Communications I elected to pursue a master’s degree in computer science at Texas A&M with emphasis in the areas of micro-computer instrumentation / controls and computer networks. My curriculum included all hardware related courses in networks, routers / switches, microprocessor instrumentation / controls and LabView programmed electronics.

SENIOR, PRINCIPAL ENGINEER / MANAGER III

L-3 Communications - Greenville, TX
January 1997 to January 2012

Responsible for the daily management and technical leadership of a 0.1 – 40 GHz commercial electronic warfare and microwave calibration flight test range. Determined technical requirements and systems design for million-dollar calibration system upgrades. Managed manpower forecast, scheduling, overhead, and performance of the group. Directly interfaced with my customers to learn their avionics equipment characteristics and efficiently mate with our test range capabilities to best develop, test, calibrate, and certify their systems. Directed the creation of advanced digitized calibration and cellular phone simulation waveforms using arbitrary waveform generator and GPS timing technology, greatly enhancing airborne platform calibration efficiency. Supervised the networking of all transmission and measurement systems on the test range allowing control from a central mission support center. Interfaced with government labs for development of receiver control software used on several airborne platforms. Performed microwave radiation hazard analysis for all facility emitters to establish personnel safety zones. Supervised the efforts of fifteen engineers to support the development, calibration, and operational crew training of numerous airborne platforms. Performed field service on systems I designed and built at three customer sites. Designed high dynamic range / low noise figure RF receiver fronts ends and distribution systems. Engineered the first installation of cryogenically cooled amplifier / filter bank technology on RC-135 aircraft for operational deployment. Designed a new test range aircraft tracking system based on an existing APX-114 IFF interrogator, resulting in greatly increased business and test range utilization.

SENIOR ELECTRICAL ENGINEER

Hughes Technical Services - Las Vegas, NV
January 1994 to January 1997

Designed and programmed radar simulators for flight test. Modified microwave architecture of existing systems to provide coherent pulse-Doppler simulation capabilities.

Program Manager

USAF - Albuquerque, NM
January 1993 to January 1994

C-17 logistics analysis and planning for the projected lifecycle of the aircraft.

FLIGHT TEST ELECTRICAL ENGINEER

USAF - Las Vegas, NV
January 1984 to January 1993

Technical manager responsible for planning, conducting, analyzing, and reporting flight test activities associated with a $3.3B cruise missile program. Supervised nine junior officer electrical engineers and a maintenance team developing and operating air vehicle tracking and control systems. Responsible for the management of research, development, and operational testing of SR-71, U-2, TR-1, and other air vehicle ECM, ECCM, and ESM projects. Wrote data analysis software and analyzed microwave signals data from joint operational collection missions. Designed, developed, and tested several ECM techniques, flight termination systems, and telemetry collection / processing systems. Designed / installed / operated UHF flight termination and telemetry repeater rack for King Air and C-130 aircraft. Performed as the government engineering safety representative for all tests requiring an explosive flight termination system for unmanned air vehicle testing. Certified contractor safety equipment digital logic.

ELECTRONICS ENGINEER

USAF - Mountain Home, ID
January 1981 to January 1984

Planned, conducted, and reported test results of EF-111A jamming against a variety of microwave radar systems. Modeled standoff jamming performance against selected radar systems and verified with flight test. Authored several sections of the EF-111A jamming tactics manual. Identified system failures and recommended improvements to Grumman contractors. Designed, installed, and operated the first data processing and analysis system at the unit. Wrote radar detection range prediction software.

AVIONICS FLIGHT TEST ENGINEER

USAF - Edwards AFB, CA
January 1979 to January 1981

Performed as lead USAF engineer and airborne test conductor for the 120 flight F-15 APG-63 DT&E radar program. Engineered Class II modifications of F-4 and F-15 aircraft to carry DLQ-3B microwave radar countermeasures pods. Performed power loads and EMI analysis. Programmed and operated the jamming systems during flight tests with F-15 and B-1 radar test aircraft and worked with the contractor engineers to improve ECCM effectiveness. Started the first electronic countermeasures maintenance shop at Edwards and trained the technicians to troubleshoot and repair electronic equipment. Investigated system malfunctions and worked with contractor personnel to install software fixes. Acted as project engineer for F-15 AIM-7 missile live fire tests against advanced cruise missiles. Supervised instrumentation systems installation on F-15 aircraft at the McDonnell-Douglas plant.

ELECTRONICS TECHNICIAN/STUDENT/MECHANIC

USAF - Sacramento, CA
February 1973 to January 1979

After enlistment I was assigned to perform airborne radar maintenance which included 8 months of analog and digital electronics school. I pursued an associate’s degree in physical science / mathematics when off duty. After two years I was selected for full scholarship in a BSEE program at Oklahoma State University and officer commissioning. During college I worked as a certified Honda and Kawasaki motorcycle mechanic at Coopers Cycle Center in Stillwater and Woods Honda Fun Center in Dallas.

Education

Masters in Computer Science

Texas A&M - Texas
2013 to 2016

MBA

National University
1990

Bachelor's degree in Electrical Engineering

Oklahoma State University - Stillwater, OK
January 1975 to August 1979

Skills

- Flight Test (10+ years)
- RF (10+ years)
- Labview (4 years)

- Electronics (10+ years)
- Software Development (10+ years)
- Electrical Engineering
- 4G/LTE
- Software Testing
- Programmable Logic Controllers
- 3G
- Project Engineering
- C/C++
- Sensors

Military Service

Branch: USAF
Service Country: United States
Rank: Major
February 1973 to February 1994

Certifications and Licenses

Amateur Extra FCC License
May 2017 to Present

Additional Information

SKILLS Decades of experience with electronics, electrical engineering, RF systems, mechanics, flight test, computer networks, motion controllers, C++, LabView, Python, MS Word / Excel / PowerPoint, cascade amplifier design, multiplexer specification, low noise / high dynamic range RF distribution system design, PCM/FM telemetry transmitters and receivers, Wifi, GSM, LTE, multimeters, oscilloscopes, power meters, digital logic analyzers, network and spectrum analyzers, RF signal generators, antennas, pin diode RF switches, waveguide, magnetrons, klystrons, duplexers.