Richard Karlquist

PO Box 5130
Galt, CA 95632
richard@karlquist.com
408-561-0487

Employment:

1979-2017: Hewlett Packard/Agilent Technologies/Keysight Technologies
Expert Research Engineer

Currently doing R&D on RF sections of mass spectrometers.

Designed quartz sensor, oscillator and oven for a novel measurement system.

Designed 26 Gb/s PRBS pattern generator, measurement bridge, time base and frequency synthesizer for new family of ultra high speed network analyzers. (several patents)

Designed O/E, 15 GHz RF sampler, postprocessing electronics, and timebase for 900 GHz optical sampling oscilloscope using photonic crystal nonlinear fiber and mode locked laser.

Designed 40 Gb/s phase detector IC and system (patented) for measurement of pattern jitter below 1 ps and clock recovery (Agilent model 83496B).

Designed 16:1 multiplexer hardware for 40 Gb/s bit error rate tester. (2 patents)

Designed oscillator circuit (patented) and oven architecture (patented) for HP E1938A oven quartz oscillator. Temperature stability of 1 part in 10^11 over -50 to +85 degrees C. Oven thermal gain of over 1 million.

Designed most of the RF/microwave hardware in the HP 5071A cesium primary frequency standard, including output amplifier and frequency multiplier/synthesizer.

Project manager and EE for the HP 5334B frequency counter.

Project manager and EE for the HP 5183 waveform recorder (digital scope). Designed DRAM memory (patented) and architected backplane.

Designed RF/microwave hardware in the HP 10816 miniature rubidium frequency standard

1976-1979: Zeta Laboratories
Designed custom frequency sources/synthesizers/mulitpliers, phase locked crystal oscillators

1975-1976: Konel
Designed VHF marine 2-way radios

1972-1975: Boeing electronic products
Designed land mobile and portable radio hardware

Free lance consulting work (highlights):

Novasolar: designed kW level matching networks for 40.68 MHz RF sputtering system to make solar panels.

Optisolar: designed kW level matching networks for 40.68 MHz RF sputtering system to make solar panels.

Spectoccular: designed electronics for laser projection display system, including laser driver, mirror driver and raster generator.

Coherent laser group: designed matching networks up to the 15kW level for 81.36 MHz drive to CO2 lasers.

Northup Grumman: designed custom made real time network analyzer to measure impedance of RF excited laser vs time

Also provided RF consulting to many small RF laser manufacturers regarding RF matching networks and RF power amplifier

Lam Research: designed high speed matching network for 13.56 MHz RF plasma etch system

Triimble Navigation: designed image reject 2nd harmonic mixer for GPS front end

Pagesat: designed satellite receivers for data

Data Broadcasting Corporation: designed transmitters and receivers for sending data over SCA channel of FM broadcast signal.

Education:

1982 Stanford University MSEE
1972 Iowa State University BSEE, "with distinction".
BSEE completed in only 3 years.

Patents:

20 patents.

Hobby:

Amateur Radio, licensed 52 years. See: www.n6rk.com.