

## CRISPIN K. METZLER

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### QUALIFICATIONS

Over 20 years of experience in analog/mixed signal engineering.

- Design, test and troubleshoot all manner of analog, RF and mixed signal circuit applications.
- Extensive transistor level design experience.
- Quickly analyze and diagnose complex equipment and process problems, utilizing a system level orientation to efficiently evaluate and implement creative solutions.
- Understand the whole picture including theory and history of technology which allows focus on essentials in developing appropriate solutions.
- Apply a direct, [no nonsense but good humored approach](#) to problem solving resulting in higher yields, improved quality, at lower costs.
- Coach, mentor and collaborator to many successful designers and innovators over the years.

### PROFESSIONAL EXPERIENCE

**MIXED MODE SOLUTIONS, INC, Farmington MN**  
**Contract Analog Design Engineer**

**July 2012 – Jun 2013**

- Some new product development work at Toshiba America, Bloomington MN regaining my Cadence skills while researching some of my high current monolithic power IC concepts.

**POLAR SEMICONDUCTOR, INC, Bloomington, MN**  
**Senior Applications Engineer**

**October 2009- Sep 2011**

- Applications / Systems engineer for design center launching innovative products into the Power Supply and LED driver markets. I was tasked with finding market opportunities for us to pursue.
- Assisted customers with application problems and listened for profitable product ideas.
- Wrote data sheets, [white papers](#), [app notes](#), [design tools](#) and marketing materials as needed to extend and promote the product line.

**ANALOG DEVICES INC, Wilmington, MA**  
**Senior Applications Engineer**

**July 2004- Jan 2009**

- Started in applications support for ADI [high speed comparator](#) and [ATE products](#), I provided circuit ideas, [practical advice](#) on making high speed layouts that work and troubleshooting help.
- Analyzed the market, then wrote specs for a new family of comparators ([ADCMP60x](#)) targeting a maximum number of sockets with a minimum number of device types using only package and metal variants. Added devices especially suited for Medical / Scientific applications. Was technical lead and mentor to the design and test team from concept to release and beyond..
- Moved from unofficial advisor into applications support of a family of clock buffers. The [ADCLK905/907/925](#) and [other products](#) have been released to production.
- Moved from there to applications engineer in the high speed DAC product line; supported [AD9717](#), [AD9739](#), [AD9789](#), [ADCLK914](#) and others. .

**ATMEL STORAGE PRODUCTS, Burnsville, MN**  
**Applications Engineer**

**July 2001- Jan 2004**

- Provided lab support for a small group designing a DVD +/- R,RW, RAM, CDR/RW capable channel chip intended to work with many different deck designs. Maintained the data sheets.
- Designed and constructed the test fixtures, captured waveforms for simulations, architected chip changes for novel deck and format requirements, trained controller IC people in channel operation.

- Assisted with UNIX network administration, programmed phone system, learned Cadence Virtuoso XL and did IC layout work such as layout of blocks, and repairing DRC and LVS errors, modifying layout and/or schematic as required.

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**AGERE SYSTEMS (formerly VTC Inc.), Minneapolis, MN**

**1987- May 2001**

**Applications Engineer, 1993-2001**

- Provided detailed, highly competent technical advice, mentoring, and troubleshooting for internal and external customers.
- Applied the industry's first impedance matching to disk drive preamplifier outputs.
- Created, and developed the "matched writer" concept that led to the current generation of writer circuits.
- Identified sources of any customer complaints relating to unwanted oscillations, and developed and implemented appropriate technological solutions.
- Internal consultant for all complex signal integrity issues.
- An industry [resource](#) for better broadband RF design practices.

**Test/Product Engineer,**

**1987-1993**

- Led product development process from IC design release to production release and ongoing support and maintenance.
- Project management responsibilities included scheduling, reporting, test hardware design, software design, and documentation.
- First to test high speed comparators for all op-amp specifications.
- Designed the company's first (and only) successful fuse trimming methods along with a robust detector circuit for the IC designs.
- Created custom hardware and software enhancements to existing ATE systems providing unique reliable solutions for testing high speed mixed digital/linear ICs.
- Pioneered numerous AC testing techniques and wafer/package test commonality.
- Developed six dollar offset test circuit, replacing \$6,000 worth of equipment, 5X better throughput.

**PSE, INC., Minneapolis, MN**

**1977-2007**

**Designer and Consultant (part time)**

- Designed the [Studio III FM Tuner](#) which employed a unique [micro strip front end, dual conversion, PIN diode AGC, and digital detector](#). Product was marketed and sold for 12 years and is still considered a [performance benchmark](#) [Pg2, Col 1]. We designed a silent cuing system in use on the Minnesota Public Radio network until retired in favor of MP3 adoption. Consultant and sounding board for many preamplifier and power amplifier projects.

United States Air Force, Biloxi MS: Accelerated Electronics program ("Little Red Schoolhouse"), ECM.

**PATENTS AND PUBLICATIONS**

Published article on broadband flex circuit design methods in the journal, "IDEMA Insight".  
 Created and promulgated "Metzler's Laws of Signals" in the VTC Data Book and on the Internet.

6005733 Preamplifier bias circuit for use in an AC coupled magnetoresistive read head amplifier  
 7504841 High-impedance attenuator  
 7535279 Versatile control pin electronics  
 7728610 Test instrument probe with MEMS attenuator circuit  
 2011/0115,407 Simplified control of color temperature for general purpose lighting  
 US11/29725 Series Switch Bridgeless Power Supply

Awarded in-lieu-of-patent awards for test hardware designs, some still in use today.