

Dean Raby

Summary

Marketing savvy digital design engineer, with the proven ability to provide innovative engineering solutions for a variety of customer requirements. Extensive technical expertise in video and audio processing combined with practical marketing knowledge and the business skills required to develop highly competitive products for the professional and consumer marketplace.

- Individual Contributor and Team Leadership Roles.
- Led global engineering teams, located in the US, China, and India.
- Expert in video and audio processing, with eight patents granted and one patent pending.
- Extensive experience in Product Definition and Project Planning.
- IC Architecture, C-Modeling, DSP, RTL Design and Verification.
- Involved in the Architecture, Design, Validation and Support of many successful semiconductor and board level products used in professional video, PCs, set-top boxes, and digital televisions.

Professional Experience

Engineering Consultant

To Date

Hymed Medical Systems (Ireland)

Involved in the definition and the research and development of new medical hygiene devices. This work includes designing hardware prototypes, developing image processing algorithms, and writing Java based applications.

IQ-Analog.(San Diego, CA)

Assisted with product definition and RTL development of mixed signal ICs.

Developed a Java based GUI to configure IQ-Analog mixed signal ICs and their demonstration platforms.

Broadcom Corporation, San Diego, CA **2007 – July 2009**

Senior Principle Engineer in DVT Systems Architecture

Involved in the development and verification of DSP algorithms for the Digital TV market, and the generation of C-models for various image processing functions.

- Developed a C-model algorithm to detect and reduce comb filter artifacts on external analog and digital video inputs.
- Developed a unique method of YC separation for the cost sensitive Digital TV market. The C-model environment included a video input file reader, input signal conditioning, CVBS encoder, CVBS decoder including the YC separator, noise reduction, scaling of the output image, and the output display interface.

Conexant, San Diego, CA **2004–2007**

-Senior Design Manager for Video Algorithms and IP development

Functional manager for team of 4 engineers who were responsible for the RTL design and unit level verification of video output display IP for set-top boxes; which includes the video de-interlacer, image compositor, SD/ED/HD DENC and HDMI 1.3a Tx blocks. This work included design specification, customer bug tracking, and design scheduling.

-Senior Design Manager for DTV VLSI Engineering

Technical lead and functional manager for the DTV Products Group.

- Worked with marketing and customers to help define the product requirements for Conexant first venture into the digital TV market.
- Led the collaborative effort to define the digital TV chip architecture based upon IP available within Conexant, licensed IP, and new IP developed by the DTV team; and provided detailed task assignments and design goals for multidisciplinary teams.
- Hiring manager for a team of 45 systems engineers and IC designers based in San Diego(CA), Portland (OR), China, and India.

-Distinguished Design Engineer

Senior member of the technical staff for the Convergence Video Group.

- Led a 10 engineer team in designing the CX25845 analog A/V decoder with 3D comb filter chip.
- Developed an emulation strategy, designed daughter boards, and implemented a daughter board registry for the Broadcast Media Products group based on the HAPS FPGA platform.
- Wrote detailed test plans and introduced a new validation strategy for the A/V decoder that reduced the packaged parts to customer samples from 6 months to 3 months.

LSI LOGIC CORPORATION, San Diego, CA
(formerly C-Cube Microsystems)

1999–2004

VLSI Design Manager

Technical lead on the detailed architectural definition, the RTL design and verification, and the silicon validation of the L2170 analog A/V decoder for PC and set-top box applications.

- Line Locked PLL, PAL, NTSC, SECAM composite video decoder, with Adaptive 3D and 2D comb filter technology.
- AM/FM monaural SIF signal demodulation; and BTSC and A2 stereo SIF signal demodulation and decoding.
- IF to Baseband, demodulation of the VSB television signal.
- Generated detailed project schedules, task assignments, and set design goals for the team of 8 VLSI design engineers.
- Designed and/or modeled the majority of the video and audio processing algorithms. This work included the generation of C-models, functional stimulus files, writing and debugging the RTL designs, code linting, and running preliminary synthesis scripts.
- Developed a design methodology that combined architectural C-models, RTL design and simulations, with design emulation (FPGA platform) to validate performance with standard and non-standard source material.
- Worked closely with technical publications, marketing, and applications to help ensure a successful product launch.

Managed the RTL verification for all the digital modules within the CL2151 cable modem product. The team consisted of 5 VLSI engineers and 6 contractors.

FAIRCHILD SEMICONDUCTOR, San Diego, CA

1991–1999

(acquired from Raytheon Semiconductor & formerly TRW LSI products)

Video Products Manager

- Involved in all aspects of business development and product definition. Managed and trained the applications team for Fairchild video products. This work included the planning of three successful trade shows at NAB.
- Introduced a new product development using C-models, FPGA platforms, and reusable macro design cells to reduce design cycles and improve reliability.

Principle Staff Systems Engineer

- Provided detailed architectural design and strategic marketing of all Fairchild composite video decoder products.
- Involved in the architectural design of all the video DSP algorithms used in Fairchild video products.
- Developed a system for simulating complex video architectures, to allow non-real time simulations to be played back in real time; enabling static and motion artifacts to be investigated.

Additional Experience

Technical lead on a broadcast digital (4-layer) video mixer. Personally designed numerous digital processing boards; the list includes a color corrector, 2D zoom, a wipe pattern generator, luma and chroma key generators.

Professional Awards**Raytheon Company.**

Excellence in Technology – Meritorious Achievement Award

LSI Logic.

Broadband Gateway Products - Inventor of the Year Award

Education

Reading University

Reading, UK

B.Sc. (Hons) in Cybernetics and Control Engineering

Patents

- 5,424,784 Method and apparatus for cross fading between combed and simple filtered signals
- 5,526,060 Luma/Chroma decoder with modulated control signals
- 5,663,771 Adaptive video comb filter with legalized output signals
- 5,805,238 Adaptive notch filter for removing residual subcarrier from component video.
- 6,999,132 RF/IF Digital Demodulation of Video and/or Audio
- 7,085,334 Automatic gain control with analog and digital gain
- 7,199,843 Spectral Translation For VSB Compensation
- 7,421,043 Method and/or Apparatus For Stabilizing The Frequency of Digitally Synthesized Waveforms
- Pending Apparatus and/or Method For Variable Data Rate Conversion

Languages

Verilog, Perl, C, and Java

Design Tools

Synopsys VCS, Cadence NCSIM, Verdi(Debussy), and Matlab

Personal

Enjoy coaching and watching my children play soccer, football, lacrosse and rugby.