

Product Brief

Zoran Corporation
1390 Kifer Road
Sunnyvale, CA 94086-5305

Tel 408.523.6500
Fax 408.523.6501
www.zoran.com



Benefits Overview

Zoran's CVD1 Video Decoder is a silicon efficient, cost effective, high video quality Intellectual Property Core for IC designs requiring video input. The CVD2 decodes NTSC/PAL/SECAM composite video or S-video and converts it into YUV 4:2:2, 16-bit digital video. Employing adaptive 2D comb filter technology, the CVD1 is able to provide high quality Y/C separation while maintaining excellent frequency response.

The result is sharp, high detail video that eliminates unwanted dot crawl and false color effects. A fully digital design, the CVD1 requires the addition of only an A/D (two for S-Video support), a DC restore circuit and line buffers for implementation.

CVD1 is based on Zoran's extensive experience delivering high quality, high volume video ICs to major OEMs worldwide. Proven in silicon, the CVD1 Video Decoder greatly reduces the risk and time involved when integrating the video decoding function into an IC.

Deliverables

- RTL (Verilog) source code
- Bit accurate C++ model
- Synopsis synthesis scripts
- Test input files
- Documentation
- FPGA evaluation board available

Features

- Decodes NTSC, PAL or SECAM composite video or S-Video into the YUV 4:2:2 format
- Component video inputs supported
- Decodes all variations of the NTSC standard
- Decodes all variations of PAL standard
 - (I, B, G, H, D, N, M, combination N)
- Excellent quality Y/C separation
 - minimizes cross luma and cross color effects
- Superior frequency response preserves fine detail
- Accepts up to 11-bit inputs from A/D converter
- Digital automatic gain control (AGC) supported
- Adaptive 2D Comb Filter provides high quality video:
 - 3-line 2D Comb Filter for NTSC & PAL
 - 5-line 2D Comb Filter for PAL (optional)
- Auto-detects video standard (NTSC, PAL or SECAM)
- Auto-detects and locks to VCR trick modes
- Decodes weak and noisy off-air signals
- Auto-detects and decodes Macrovision copy protection
- VBI decoding supported
- Silicon efficient design of approximately 130k gates
- Requires only a single clock input ranging from 20 to 30 MHz
- Process technology independent, fully synchronous design

2D Comb Filter NTSC/PAL/SECAM
Video Decoder

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Figure 1. Block Diagram of the CVD1 Intellectual Property Core

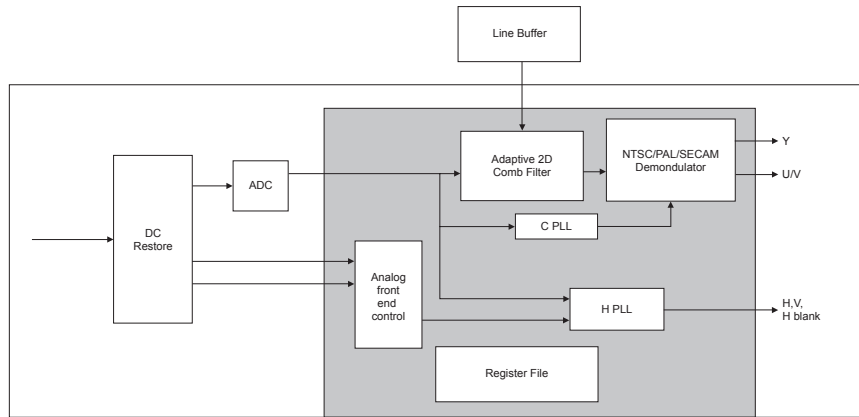
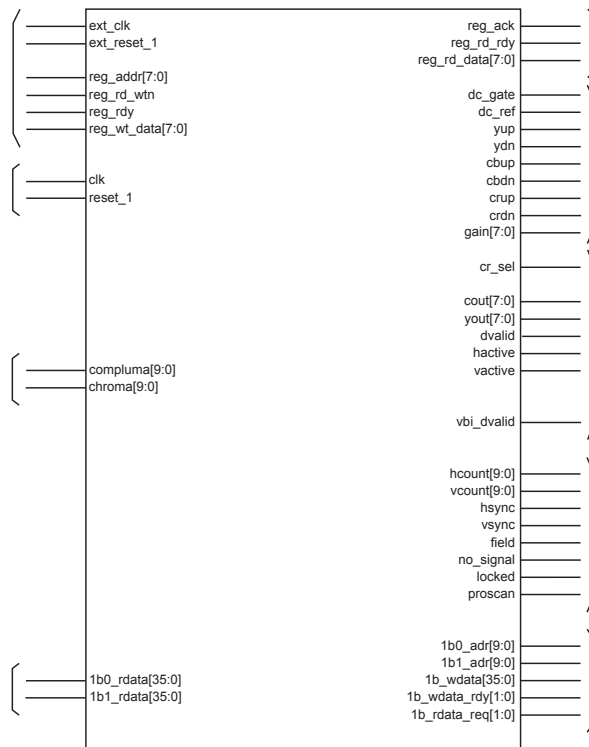


Figure 2. CVD1 Logical Pinout



For more information, contact Zoran's Sunnyvale office or the office nearest you:

Canada	China	Hong Kong	Israel	Japan	Korea	Taiwan
Zoran Toronto Lab Tel: (416) 690-3356 Fax: (416) 690-3363	Zoran China Office Tel: 86-755-83993777 Fax: 86-755-83220889	Zoran Asia Pacific Ltd. Tel: +852-2-620-5838 Fax: +852-2-620-5238	Zoran Microelectronics Ltd. Tel: +972-4-8545-777 Fax: +972-4-8551-551	Zoran Japan Office Tel: +81-03-5475-1051 Fax: +81-03-5475-1053	Zoran Korea Office Tel: +82-2-761-7471 Fax: +82-2-761-7472	Zoran Taiwan Office Tel: +886-2-2659-9797 Fax: +886-2-2659-9595