

Product Brief

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Benefits Overview

Zoran's Scaler-1 is a silicon efficient, cost effective intellectual property core for IC designs requiring the video scaling function. The Scaler-1 Video Scaler IP Core is a programmable up/down scaler designed to scale between various TV and display resolutions.

Scale-1 has two modes, upscale mode and downscale mode. In either mode the horizontal and vertical scaling ratios can be programmed independently.

Features

• Downscaling

- Input image filtered by programmable anti-alias filter
- Able to downscale from 1080i or 720p input to 480p, 720p, 640x480 or other custom input and output format sizes
- Downscaling ratios of 1x to 8x or more
- Able to scale images of maximum input size 4096 x 2048

- Text and activity detectors allow for precise scaling of feature details while preserving text sharpness

- Eight (8) 1920 byte external line buffers required

- Approximately 170,000 NAND gate equivalents

• Upscaling

- 2-D luma input image gradient used interpolate along edges and slopes
- Able to scale from 480p input to 720p, 1080i, 800x600, 1024x768 or other custom input and output format sizes
- Anamorphic scaling mode provides smart upscaling from 4:3 aspect ratio to 16:9 aspect ratio
- Programmable scaling ratio of 1x to 4x or greater
- Maximum image output size of 2048x2048

Integrated Circuit Applications

- LCD Display Processors
- Digital TVs
- Set-top boxes

- DVD recorders
- A/V Receivers
- Any IC requiring the video scaling function

Deliverables

- Synthesizable RTL code (Verilog)
- Bit accurate C model
- Synopsis synthesis scripts
- Test bench with suite of test cases

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