

HD Deinterlacer



- MDIN-150 is a highly integrated single chip implementation of deinterlacing and format conversion for processing HDTV signal as well as existing analog TV signal.
- MDIN-150 provides two digital input ports and one digital output port, and it handles both progressive and interlaced scan video.
- MDIN-150 receives any format of input video and performs deinterlacing and format conversion to produce any desired format of progressive or interlaced scan video with excellent signal quality preservation.
- MDIN-150 provides high quality edge preserving deinterlacing with up-to-date motion adaptive 3-D deinterlacing algorithm and it performs auto detection and proper processing for fast motion and film mode video sources.
- MDIN-150's high quality deinterlacing and video processing capability is suitable for high-end scan conversion systems or progressive display devices such as LCD TV, PDP TV and so on.

Main Features

- Two digital video input ports for interlaced or progressive scan video
- One digital video output port for progressive or interlaced scan video
- Motion adaptive 3-D deinterlacing with pixel-by-pixel motion adaptive interpolation
- Advanced multi-directional edge preserving deinterlacing
- Deinterlacing with fast motion, slow motion and still image detection and processing
- Deinterlacing with film mode, bad edit and caption region detection and processing
- Independent horizontal and vertical scaling
- Horizontal and vertical anti-aliasing filters for graceful down conversion
- Advanced signal enhancement and color enhancement processing for crisper picture quality
- Seamless interface to 8MB or 16MB SDRAM widely available in the market
- Serial I2C bus interface
- Pin-to-pin compatible with MDIN-100

Specifications

Input Format

Two input ports : 16-bit and 24-bit digital video 24-bit input port is shared with SDRAM data bus.

Maximum pixel rate : 135Mpixel/sec

Scan type : interlaced or progressive scan video up to 1920x1080i @60Hz, 1280x1024p @75Hz

Video format : RGB, YCbCr(4:4:4), YCbCr(4:2:2), 8/16-bit digital format including SMPTE274M

Output Format

One digital output port : 30-bit single or 60-bit dual mode

Maximum pixel rate : 150Mpixel/sec

Scan type : progressive or interlaced scan video up to 1920x1080p @60Hz

Video format : RGB, YCbCr(4:4:4), YCbCr(4:2:2), 16-bit digital format including SMPTE274M

Deinterlacing

Deinterlacing for any interlaced input video up to 1080i

Motion adaptive 3-D deinterlacing on a per-pixel basis

Programmable motion detection and adaptation control

Adaptive motion-weighted interpolation for eliminating non-motion artifacts

Advanced multi-directional edge preserving deinterlacing

Fast motion, slow motion and still image detection

Inter-field noise reduction

High frequency area detection

Film mode support for 3:2 and 2:2 pull-down mode

Bad-edit film and caption region detection

Format Conversion

Independent horizontal and vertical scaling

Format conversion from one format to another format with an arbitrary scaling ratio

Horizontal and vertical anti-aliasing filters for graceful down conversion

Scaling ratio : x1/15 ~ unlimited

Programmable size & position zoom in/out

Frame Rate Conversion

Frame rate conversion from 3-250Hz to 3-250Hz

Conversion ratio : x1/31 ~ x31

Signal Enhancement

High order horizontal peaking filter

Non-linear 2-D filter

Independent horizontal & vertical gain control

High order filter for enhancing color component

Display Functions

CSC & LUT for brightness, contrast, hue, saturation and gamma control

Programmable output sync generation

Lock-to-input sync mode or free-run mode

Frame Buffer Memory

8MB or 16MB external SDRAM

32-bit or 64-bit data width interface

Seamless interface to widely available x16 or x32-bit SDRAM

Host Processor Interface

I2C serial bus interface

Miscellaneous

Auto detection of input video/sync

Input noise reduction capability

Internal programmable PLLs

Built-in test pattern generation logic

Electrical and Mechanical Characteristics

2.5V & 3.3V supply voltage, 5V tolerant I/O

256-pin QFP package

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