FLI2300

Digital Video Format Converter

Product Brief

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The FLI2300 is a highly integrated digital video format converter for DTV and DVD applications using patented deinterlacing and post processing algorithms from Faroudja®, coupled with highly flexible scaling, a wide variety of aspect ratio conversions, and other special video enhancing features to produce the highest quality image.

INPUTS –

- Input all industry standard and non-standard video resolutions, including 480i (NTSC), 576i (PAL/SECAM), 480p, 720p, 1080i, and VGA to SXGA
- Digital input, 8-bit Y/Cr/Cb (ITU-R BT656), 8-bit Y/Pr/Pb, 16-bit Y Cr/Cb (ITU-R BT601), 24-bit RGB, YCrCb, YPrPb
- Input pixel rate up to 75 MHz maximum

OUTPUTS –

- Output resolutions include 480p, 576i, 576p, 720p, 1080i, 1080p, and VGA to SXGA
- Interlaced or Progressive output
- Output can be either analog YUV/RGB (through the integrated 10-bit DAC), or digital 24-bit RGB, YCrCb, YPrPb (4:4:4), or digital 16/20-bit Y Cr/Cb (4:2:2)
- Output pixel rate up to 150 MHz maximum

FRONT END PROCESSING –

- Motion Adaptive Noise Reduction - Improves picture quality for off-air material.
- Cross Color Suppressor (CCS) - Removes cross color artifacts in composite video signals due to poor Y/C separation in standard 2D video decoders, eliminating the need for expensive 3D video decoders.

FORMATS –

- Input color manipulation matrix supports all color spaces: RGB, YPrPb, 4:4:4 YCrCb, 4:2:2 YCr/Cb, ITU-R BT656, ITU-R BT601
- Output supports analog RGB, YPrPb, YCrCb, and digital RGB, YPrPb, 4:4:4 YCrCb, 4:2:2 YCr/Cb

DEINTERLACING –

- Per-pixel Motion Adaptive Deinterlacing
- Patented FilmMode Processing - Used for proper de-interlacing of 3:2 and 2:2 pulldown material.
- Edit Correction - Film content is continuously monitored for any break in sequence caused by “bad edits” and quickly compensates for the most effective reduction in artifacts.
- DCDi™ by Faroudja - Video is analyzed on a single pixel granularity to detect presence or absence of angled lines and edges, which are then processed to produce a smooth & natural looking image without visible artifacts or “jaggies”.

SCALING –

- High Quality Fully Programmable Two Dimensional Scaler
- Aspect Ratio Conversion for “Anamorphic” or “Panoramic” (non-linear)
- Display 4:3 images on 16:9 displays and vice versa, including Letterbox to Fullscreen, Pillarbox, and Subtitle Display Modes

FRC –

- Tearless Frame Rate Conversion, 50/60/72/75/100/120 Hz.

MEMORY –

- 32-bit wide SDRAM (i.e. one 2Mx32bit, or two 1Mx16bit), up to 166 MHz operation

SPECIFICATIONS –

- 2-Wire control interface
- 0.18u technology, 1.8V/3.3V operation
- 208 pin PQFP package
- 525P Macrovision output option (FLI2301 part)

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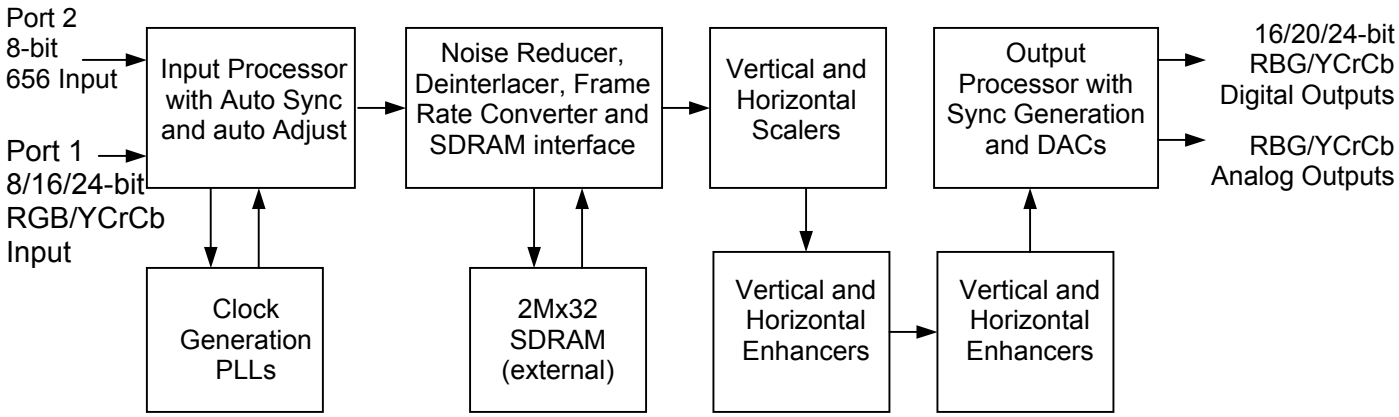
TrueLife™ ENHANCER –

Two dimensional, non-linear, luma & chroma video enhancer brings out details in the picture, producing a more life-like image

Applications

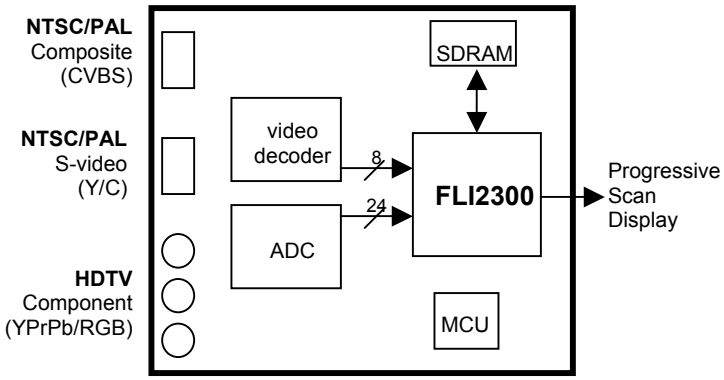
- Progressive Scan TV
- HD Ready TV / HDTV
- DVD Players
- LCD TV

Chip Block Diagram



System Block Diagram

Digital TV Application



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