





## Features and Benefits

### Video Encoding

- High-quality real-time encoding (I-, B-, and P-frames)
- Supports MPEG-2 (MP@ML, SP@ML) and MPEG-1
  - 525/60 (NTSC) up to 720x480 @ 30 fps
  - 625/50 (PAL) up to 720x576 @ 25 fps
- Variable and constant bit rate up to 15 Mb/sec
- Programmable group of pictures (GOP) lengths
- Adaptive field/frame (motion compensation type 8 discrete cosine transform [DCT])
- Field/frame motion estimation
  - B-frame:  $\pm 100$  horizontal x  $\pm 64$  vertical
  - P-frame:  $\pm 100$  horizontal x  $\pm 64$  vertical
  - Half-pel accuracy
- 4:2:2 to 4:2:0 conversion
- Time-based correction
- Speckle noise reduction
- Sharpness control
- Recursive noise reduction
- Inverse telecine (3:2 pulldown)
- Scene change detection
- Adaptive quantization
- Supports DVD-VR+Video, program, and transport streams
- AES, triple DES, and CPRM encryption
- Automatic VBI extraction

### Analog Video Decoding

- Worldwide video standards support
  - NTSC-M/J/4.43
  - PAL-BDGH/M/N/Nc/60
  - SECAM
- Flexible video input multiplexer supporting composite, S-video, and component inputs with integrated anti-alias filtering
- 3-D adaptive comb filtering with time-based correction
- Full 10-bit ADCs and data path
- Macrovision, detection
- Programmable VBI data slicer for services such as closed caption, wide screen signaling (WSS), teletext, and program guides

### Audio Encoding

- Dolby Digital (AC-3) 2-channel
- MPEG-1 layer II
- Sampling rates of 32 kHz, 44.1 kHz, and 48 kHz
- Compressed bit rates up to 384 kb/sec

### Broadcast Audio Decoding

- Worldwide broadcast stereo audio standards support:
  - BTSC with and without dBx
  - EIAJ
  - A2
  - NICAM
  - FM/AM Mono
- Auto-detection and configuration of broadcast standards
- Two stereo channels of 3-band EQ, volume, soft mute, auto volume control, and soft clipping
- Flexible sample rate conversion on all audio inputs and outputs

### Interfaces

- Video input:
    - Eight analog video inputs supporting composite, s-video, and YPbPr
    - Digital 8-bit 4:2:2 YCrCb ITU-R BT.656
  - Audio input:
    - Sound IF from tuners
    - Sony or Philips style serial audio
    - AC'97 Codec
    - S/PDIF
  - External MPEG transport stream capture interface
  - MPEG input and output supports one of the following:
  - PCI DMA master or PCI slave
    - 8-bit parallel program data
  - 1-bit serial peripheral interface (SPI) transport data
    - Optional advanced encryption standard (AES), triple-data encryption standard (DES) or CPRM encrypted output
  - 32-bit wide DDR SDRAM
  - Host interface supports one of the following
    - 32-bit, 33 MHz PCI, revision 2.3
    - 8-bit microcontroller
  - General-purpose input/output with 16 programmable pins
- ### Package
- Lead free 388-pin, 23 mm ball grid array (BGA)

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