

μPD61153/4 Features

MPEG Video Encoding

- High-quality real-time encoding (I, B, and P frames)
- MPEG-2 (MP@ML, SP@ML) and MPEG-1 support
 - 525/60 (NTSC) up to 720×480 at 30 fps
 - 625/50 (PAL) up to 720×576 at 25 fps
- Variable and constant bit rate up to 15 Mb/s
- Programmable GOP lengths
- Motion estimation
 - B frame: ± 64 (H) \times ± 48 (V)
 - P frame: ± 128 (H) \times ± 48 (V)
- 4:2:2 to 4:2:0 conversion
- 4:2:0 TBC
- Noise reduction
- Inverse telecine (3:2 pulldown)
- Scene change detection
- Adaptive quantization
- Support DVD - VR, DVD-video, MPEG2-PS, MPEG2-TS, and elementary streams
- VBI detection and slice functions

Audio Encoding

- Dolby® Digital ®(AC-3) two-channel (μPD61154 only)
- MPEG-1 Layer II
- Sampling rates of 32 kHz, 44.1 kHz, and 48 kHz
- Compressed bit rates up to 448 KB/s

Video Decoding

- Three-dimensional Y/C separation when NTSC-M signals are input
- Decoding of video signals for NTSC, PAL, and SECAM with a single chip
- Two-channel, 10-bit A/D converter supporting composite, Y/C separation, and component signal input
- Two composite or Y signal input lines selectable by internal input selector
- Supports 8-bit ITU-R BT.656 digital output.
- Burst locked clock generator for NTSC/PAL and horizontal sync locked clock generator
- Digital chrome decode function (NTSC/PAL/SECAM)
- Clock rate conversion function that converts burst locked clock into horizontal sync clock
- Definition correction functions adjusting sub-contrast/sub-color, LTI/CTI, and sharpness

- Functions for drawing pictures, such as APL detection, DC transfer rate correction, white peak, black extension, and ACL
- VBI detection and slice functions

Dual TBC

- 4:2:0 TBC for MPEG video encoding
- 4:2:2 TBC for video monitoring or video RAW capture

Interfaces

- External video input: ITU-R BT-656 and BT-601 (max. 2 channels)
 - Audio input: I2S, left- and right-justified (max. 4 channels)
 - Video output with 4:2:2 TBC: ITU-R BT-656 and BT-601
 - Audio output: I2S, left- and right-justified
 - MPEG input and output that supports one of the following
 - PCI DMA master (output only)
 - 8-bit parallel program data
 - 8-bit parallel transport data
 - 1-bit serial transport data
 - PCI DMA master supports four of the following
 - Internal encoding stream capture
 - External HDTV MPEG and DV capture
 - BT-656 video RAW data capture
 - PCM audio RAW data capture
 - VBI RAW data capture
 - SDRAM read
 - SDRAM write
 - One 128/256 Mbit DDR-SDRAM
 - Host interface that supports one of the following:
 - 32-bit, 33 MHz PCI
 - 8-/16-bit parallel interface
 - 4-bit serial interface
- General-purpose input/output with 13 programmable pins

Power supply voltages

- Internal: 1.5V
- SDRAM: 2.5V
- I/O: 3.3 V

Package

- 272-pin plastic ball grid array (PBGA); body size = 21mm × 21mm)