



# μPD61151, 61152

## MPEG2 AUDIO VIDEO ENCODER LSI

μPD61151 is a LSI of MPEG audio and video encoding, decoding and transcoding. μPD61151 has MPEG2 video encoder, MPEG audio encoding DSP, 32-bit RISC CPU, video input/output unit which contains a processing filter and a time base collector, and MPEG system layer which contains the multiplexer and de-multiplexer. It combines with 64M or 128 M bit SDRAM and it uses. μPD61152 has a Dolby Digital consumer encoder (DDCE) in addition to μPD61151.

μPD61151/2 is the optimal for portable consumer digital video recording replay equipment to process a MPEG.

### Features

- MPEG2 video      MP@ML, SP@ML standard, MPEG1 standard Video encoding  
Picture size: max size: 720 \* 480 pixel (NTSC), 720 \* 576 pixel (PAL)
- Single Pass Variable bit rate(VBR), Constant bit rate(CBR) Encoding
- 350 mW's Low Power Operation
- Support PCI bus interface which complies with PCI Local Bus Specification Rev.2.1
- MPEG1 audio layer 2 standard based encoding / decoding
- Dolby Digital standard based encoding (Only μPD61152)
- Multiplex: MPEG2-PS, MPEG2-TS and DVD-VR
- Partial TS generation
- Transcoding:      MPEG2 format conversion (MPEG2 TS ⇔ MPEG2-PS)  
bit rate conversion, VBR ⇔ CBR
- Pre analysis:      inverse cinema, scene changing, and motion estimation assist
- Time base collector, VBI data slicer

### Application

Camcorder, Note PC

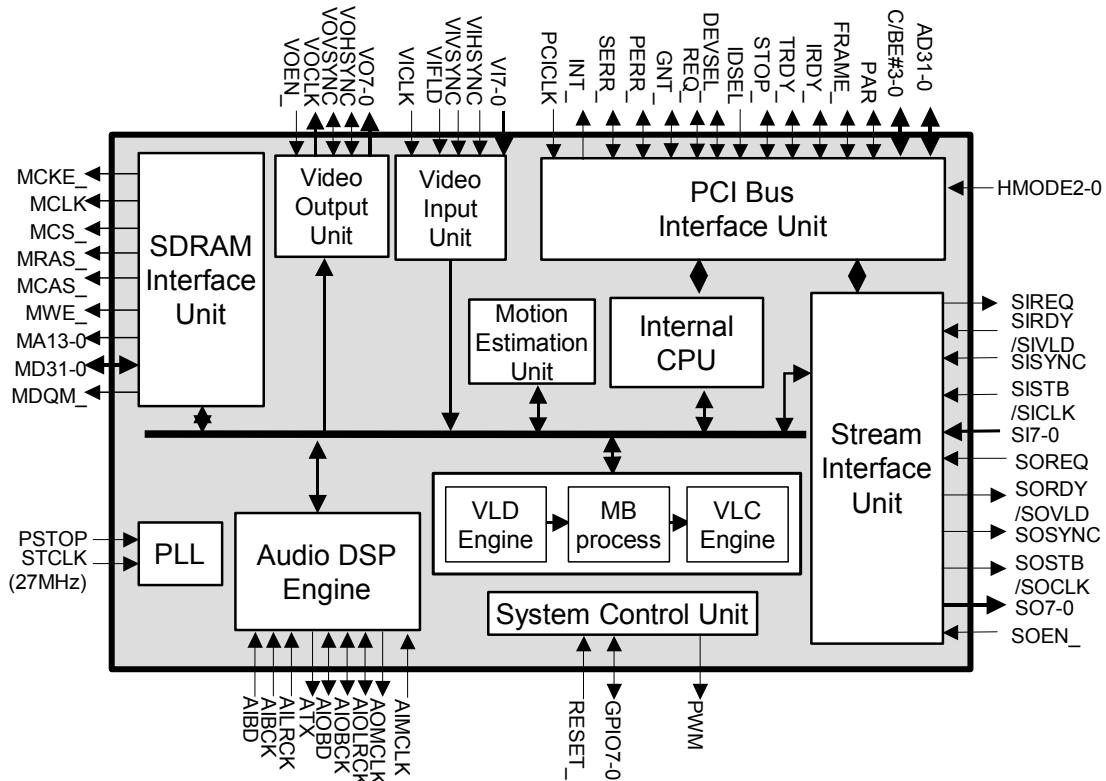
"Dolby" is a Trademark of Dolby Laboratories.

To use the "μPD61152", a license from Dolby Laboratories Licensing Corporation is necessary.

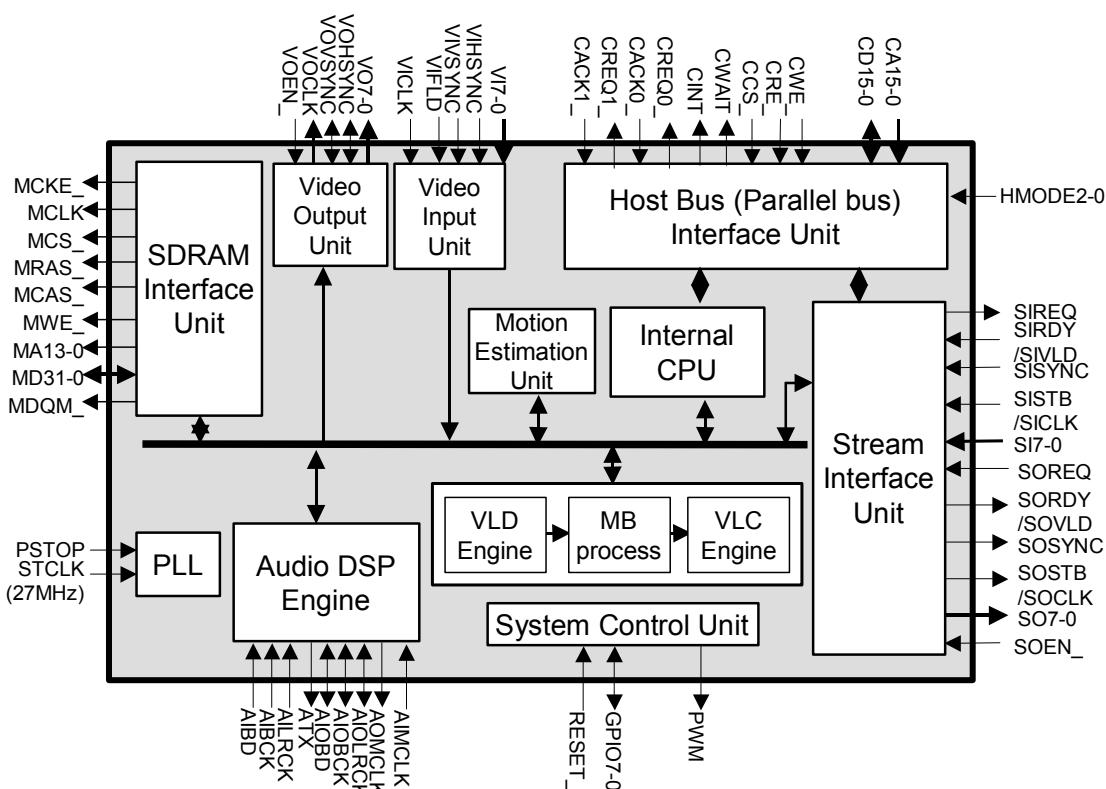
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## Block diagram

## PCI bus mode



## Using Address/Data separate parallel bus



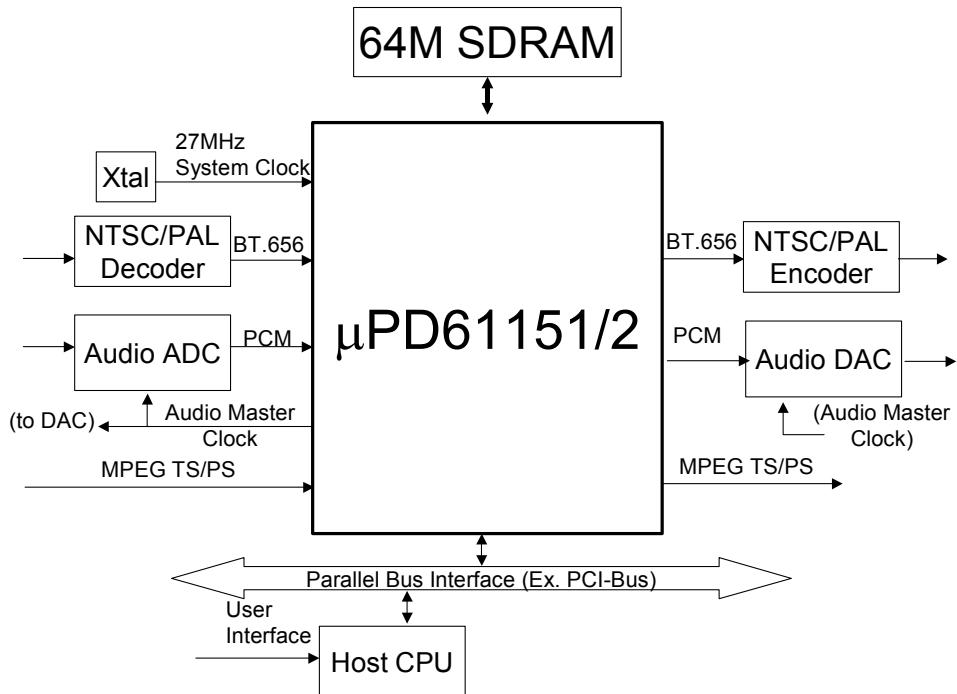
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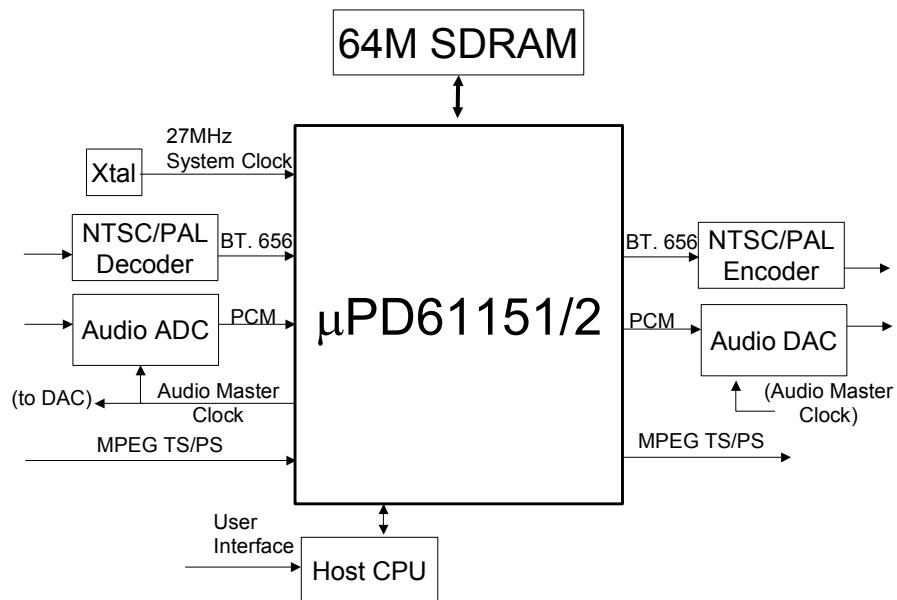
# Connections

## Host bus connections

### Parallel bus interface



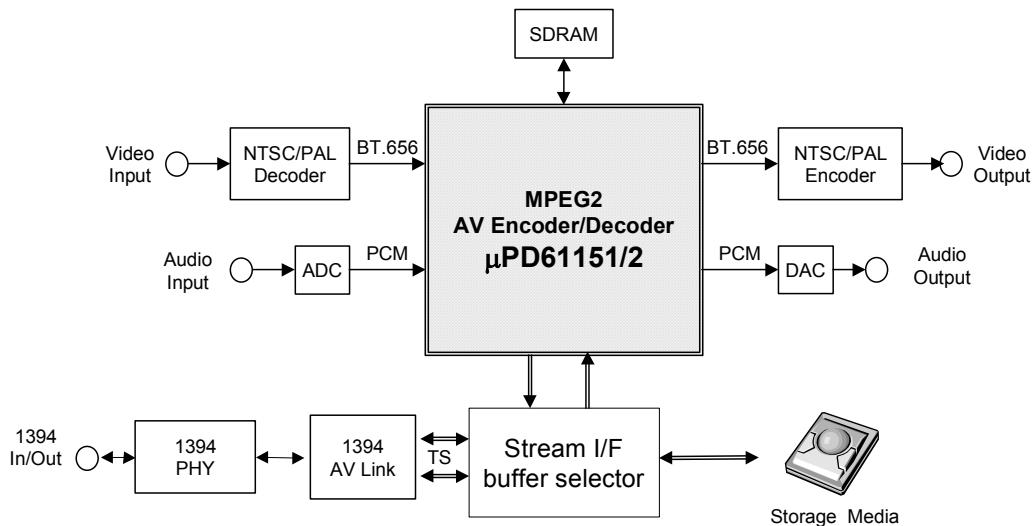
### Serial bus interface



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## Example for making MPEG Codec system



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### PRELIMINARY PRODUCT INFORMATION

## Specification Overview

- Video encoding/decoding
  - Format: MPEG2 video MP@ML, SP@ML standard , MPEG1 standard
  - Single Pass Variable bit rate(VBR), Constant bit rate(CBR) Encoding
  - Picture size: horizontal: 720,704,640,544,480,352,320 dots/line  
Vertical: 480,240,576,288 line/frame
  - Transcoding: bit rate conversion, VBR↔CBR
  - Video input/output
    - Format: 8 bits Y/Cb/Cr 4:2:2(ITU-R BT.656)  
8 bits Y/Cb/Cr 4:2:0
    - Pre analysis: inverse cinema, scene changing, and motion estimation assist
    - Time base collector, VBI data slicer
- Audio encoding / decoding
  - MPEG1 audio layer 2 standard based codec
  - Dolby Digital standard based codec (Only μPD61152)
  - Elementary stream and PCM audio input/output
  - MP3, WMA, AAC(2ch) decode with the extension of the audio firmware
  - PCM input/output format
    - Bit length: 16 bits, 20 bits , 24 bits
    - Sampling rate: 32 kHz, 44.1 kHz, 48 kHz
- Connected Memory 64/128Mb SDRAM (16bit bus) × 2  
64/128Mb SDRAM (32bit bus) × 1  
3.3/2.5V interface
- MEPG system processing
  - Multiplex: MPEG2-TS, MPEG2-PS , DVD -VR
  - De-multiplex: MPEG2-TS, MPEG2-PS
  - Partial TS generation
  - Transcoding
  - MPEG2 format conversion ( MEPG2 TS ↔ MPEG2-PS)

## Physical

- Power supply: 360 mW (TYP)
- Power supply voltage: 3.3±0.3 V, 1.5±0.15 V (internal circuit power)

## Package

- 273 pin FPBGA (15mm□ , 0.65mm pitch)

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- Ordering information
- Product release schedule
- Availability of related technical literature
- Development environment specifications (for example, specifications for third-party tools and components, host computers, power plugs, AC supply voltages, and so forth)
- Network requirements

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