Winbond Electronics Corp.

MPEG-1 Video Encoder

GENERAL DESCRIPTION

The W99200F is a high performance MPEG-1 Video Encoder which supports real-time video encoding. The W99200F provides a fast, high quality and cost-effective solution for use in consumer video systems, PC add-in cards, and PC external boxes. It enables a wide range of applications including video and audio capturing, encoding and authoring for web sites, VCD, TV, VCR and video e-mail.

FEATURES

Live Video Encoding

- Real time MPEG-1 video encoding in IBP syntax
- Programmable IBP frame sequence
- Programmable bit rate
- Supports NTSC and PAL frame rates
- Real time Motion JPEG encoding
- Supports SIF and QSIF resolutions
- Supports standard formats - CCIR601 NTSC, CCIR601 PAL and Square NTSC
- Automatic cropping and decimation
- Automatic inverse telecine (3:2 pull down)
- Automatic time code generation
- Automatic scene change detection

Live Video Pass Through

- Passes YCbCr video from live video input to host
- Supports SIF and QSIF formats
- Automatic cropping and decimation
- Programmable frame rate output to the host

Live Audio Pass Through

- Supports I^2S interface for passing audio to host
- Provides perfect A/V synchronization

Live Video Snap Shot

- Captures a single frame from live video input to host in YCbCr, JPEG or MPEG-1 I-frame format
- Supports frame resolutions of CCIR601 (4:2:0), SIF and QSIF
- Automatic cropping and decimation

Single Frame Encoding

- Provides video editing through host access
- Receives single frame video from the host, encodes in MPEG-1 I-frame or JPEG format, and sends it back to the host
- Supports frame sizes from 32 x 32 to 720 x 576

Standards Compliant

- Multi-Standard MPEG-1, M-JPEG, and JPEG
- ISO/IEC 11172-2 MPEG-1 Video
- ISO/IEC 10918-1:1994 JPEG Stills

Flexible Host Interface

- Allows host type selection through input pins
- Provides 32-bit PCI bus interface in both bus target and bus master modes
- Provides industrial standard EPP/ECP interface
- Provides generic 32-bit bus interface
- Provides a set of configuration registers
- Provides I^2C protocol management through the host (e.g.; to the digital video decoder)

DRAM Interface

- Direct 1M $\times$ 16 bits SDRAM interface
- Single 1M x 16 bits SDRAM required
- Host Read/Write modes allow the host to utilize the SDRAM for system storage

Video Decoder Interface

- Glueless interface to popular video decoders
- Programmable interface characteristics

MPEG Decoder Interface

- W99200F serves as a glueless PCI/PP bridge for SVCD decoder (W9926QF)
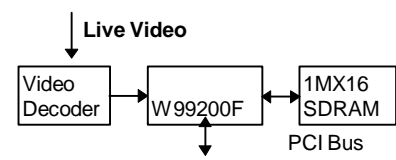- W99200F and SVCD decoder share the single 16M bit SDRAM

Operating Conditions

- 160-pin PQFP
- Volt supply with input pins 5 Volt tolerant
- Operating frequency 27 MHz

Applications

- Recordable Video-CD player
- Security Camera or Web Camera
- TV Tuner & Recorder card
- Desktop Video Editing System
- PCI MPEG-1 encoding & capture card
- External MPEG-1 Video Encoding box

APPLICATION EXAMPLE: