Winbond
Electronics Corp.

VCD Decoder with MP3

GENERAL DESCRIPTION

The W9923QF is a high performance single-chip VCD decoder with MP3 playback feature. It performs real-time decompression of ISO/IEC-11172 MPEG (Moving Picture Experts Group) streams, including system layer, audio and video data. It incorporates an 8-bit host interface and a CD interface which make it easy to use. Also, its versatile features help to build high-quality and cost-effective standalone VCD and MP3 applications. W9923QF is pin-to-pin compatible to the well-known VCD decoder, the W9925QF.

FEATURES

Integration
- MPEG-1 system/audio/video decoding and synchronization
- CD-ROM decoding
- Glueless interface to 8051-series micro controllers
- Standard 4-Pin CD Interface
- Supports both Fast Page DRAM and EDO DRAM
- Provides programmable I/O pins for system control
- On Screen Display
- TV timing generation
- User-programmable power-saving mode

System Operations
- Fully supports MP3 in ISO9660 CD format, VCD2.0, VCD1.1, Karaoke CD, CD-I FMV, and CDDA titles
- Digest function, provides quick overviews of contents in one disc or among discs, with audio output
- Versatile playback commands, including slow-motion, scan, pause, single frame, video clipping, freeze, and stop
- Provides fast forward play incorporating with speed-up audio
- Enhanced error recovery algorithms to overcome disc scratches and CD-drive errors
- Write/read pictures via host, allows writing Logos on display or capturing pictures from titles

Video Processing
- High quality video output of still pictures (704x480 or 704x576) with only 4M DRAM
- Provides vertical scaling which allows full screen display of 240 (480)-line sources on PAL systems
- Provides filters to enhance image quality for SIF format data on full screen display
- User-programmable fade-in, fade-out effects and adjustable brightness
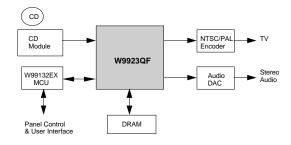- 8-bit YCbCr video output

Audio Processing
- Decodes MPEG1 (layer-1, 2, 3) stereo channel audio
- Provides voice cancellation mode for the purpose to remove the voice component in Karaoke titles
- Provides key control functions for Karaoke applications
- Supports 3D and surround sound processing
- Digital volume control and various channel selection modes both in MPEG and CDDA playback
- 16-bit Audio serial PCM output

Physical
- Low power consumption: 0.5W at full speed operation
- 3.3V power supply
- 100-pin plastic QFP

APPLICATIONS

Following figure shows a typical configuration of VCD player with MP3 application.