

Personal Video Recorder (PVR) Reference Design

www.streaming-networks.com

OEM-ready system for hassle-free video recording



User Friendly GUI

PVR GUI is designed keeping your convenience in mind

Versatile

HDD, CD interface, TV tuner, CVBS and SVideo

Sharp Video Quality

Best video quality using state of the art MPEG1 Codec

OVERVIEW

The Streaming Networks personal video recorder (PVR) reference design is a complete, OEM-ready system that provides advanced functionality in a cost-effective format that can be used worldwide.

INTERFACES SUPPORTED

The IDE interface supports common storage devices such as CD drives and hard disk drives (HDDs), while the USB interface provides fast, easy development and debug in the embedded environment. There are also interfaces for UART and I²C. The TV tuner is replaceable, so the design is easy to configure for different regions.

STANDALONE AND HOSTED CONFIGURATIONS

Built around the Philips PNX1302 Nexperia media processor (with TriMedia VLIW processor core), the reference design is available in two configurations – standalone and hosted. The standalone configuration is equipped with Flash memory, a TV tuner, and a series of interfaces.

The hosted configuration includes a PCI board and TV tuner. The PCI bus is connected to a host PC for storage and playback, and governs audio/video capture, compression and decompression, and data transfer to and from the PC.

STANDARDS COMPLIANT

To achieve near-DVD-quality video while retaining ISO compliance, the reference design uses a variant of the MPEG-1 video compression/decompression technology. The video codec delivers a bit rate of 1.15 Mbps and supports CIF (352x288) and D1 (704x480) display sizes.

The design uses a 1-stereo/2-mono MPEG-1 Layer II audio codec, ensuring that CDs produced by the system will be compatible with commercially available VCD/DVD players and PCs. The design also uses an ISO-compliant MPEG program stream for mux and demux.

RECORDING TIME

Recording time on a hard disk ranges from 40 to 200 hours, depending on its capacity, and on a CD runs over 100 minutes. The design uses a real-time file system for the HDD and an ISO 9660 file system for the CD.

USER FRIENDLY INTERFACE

A user-friendly interface makes recording simple and easy. Users can list recorded programs, view thumbnails of recorded programs, or even do a time search within selected streams. For quick browsing, there are options for fast-forward and backward rates of 2x, 4x, 8x, and 16x.

KEY FEATURES

- Fully functioning, high-performance PVR
 - Philips PNX1302 Nexperia media processor (with TriMedia VLIW processor core)
 - Replaceable TV tuner for use worldwide
 - ISO-compliant MPEG-1 video codec for near-DVD-quality video
 - ISO-compliant MPEG-1 Layer II audio codec for wide interoperability
 - ISO-compliant MPEG program stream for mux/demux
- Standalone or hosted (PCI) configurations
- Extended recording times
 - Hard disk drive: 20-400 hours
 - CD: 100+ minutes
- User-friendly interface for easy recorder set-up
- Trick modes for added features

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RECORDING / PLAYBACK FEATURES

Trick modes support a variety of features. Users can watch TV or play videos while recording, pause a program to service an interruption, use slow motion and instant replay options, or skip commercials with a simple keystroke. Other features include time recording, PlayList, time search, A-B repeat, standby, NTSC playback on a PAL TV, real-time calendar/clock, and automatic video source detection. The design can scan and lock TV frequencies automatically or manually. The design can also record video from any of three inputs and can finalize the CD or HDD.



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Enabling the Digital Media Revolution