

Wireless Streaming Video Reference Design

www.streaming-networks.com

OEM-ready system for advanced MPEG-4, 802.11b streaming video applications



Realtime

Realtime encoding and transmission

Broadcast/Multicast

Media Stream can be broadcast or multicast to any any client

High Quality

State of the art MPEG4 and AAC deliver crisp picture and sharp sound

OVERVIEW

Streaming Networks wireless video streaming reference design is a complete, OEM-ready system that provides end-to-end functionality for advanced MPEG-4 wireless streaming video applications in a cost-effective format.

APPLICATIONS

Built around the Philips PNX1302 Nexperia™ media processor (with TriMedia VLIW processor core), the reference design speeds time-to-market for video-on-demand systems, home media gateways, video surveillance systems, and other wireless streaming video applications. With minor modifications (adding sensing devices and scaling up to full-duplex operation), the reference design can also be used as the starting point for a wireless video phone.

INTERFACES SUPPORTED

To stream high-quality video and audio from the server to the client, simply connect a video source and a display device to the reference design. The video source can be a DVD player, a TV tuner, a camcorder, a CVBS/S-Video video camera, or a digital camera. The display device can be a standard PAL/NTSC monitor or an LCD unit.

STANDARDS COMPLIANT

The reference design contains two PNX1302 processors, one each for the video server and the video client. The MPEG-4 codec is fully ISO-compliant, supporting Simple and Main Visual Profiles with bit rates from 64 Kbps to 3 Mbps. It offers up to 30 fps HD1 and up to 30 fps CIF. The ISO-compliant audio codec is AAC-LC (low-complexity profile), supporting mono and stereo on 5.1 channels. It operates at between 16 and 128 Kbps per channel.

The reference design uses UDP packet transmission and the 802.11b standard for wireless communication. It is interoperable with other 802.11b applications.

CLIENT SERVER FUNCTIONALITY

The ISMA-compliant streaming software stack provides server and client functionality. It performs all the video and audio compression and decompression, implements the RTP/RTCP/RTSP protocol and the TCP/IP stack, provides adaptive buffering for jitter control, and performs system control functions.

Operation of the video streaming system can be controlled from the server, using IR remote control, or from the client, using RTSP protocol to send the play, pause, and record commands.

PRE & POST FILTERS FOR AUDIO / VIDEO

There is an enhancement module that goes beyond industry standards to deliver superior video and longevity. The modular architecture makes it possible to add features, replace the standard library modules

KEY FEATURES

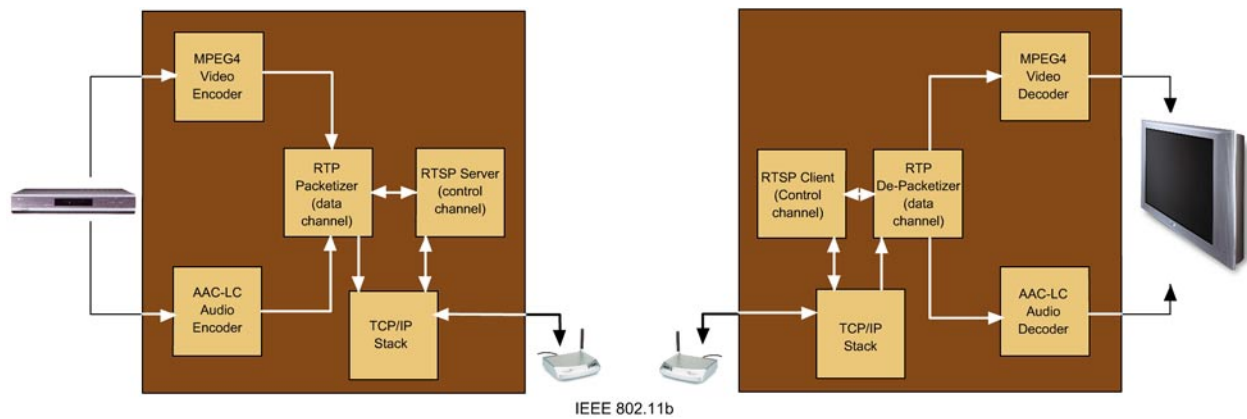
- Fully functioning wireless streaming video design for advanced applications
 - Philips PNX1302 Nexperia media processors (with TriMedia VLIW processor cores)
 - ISO-compliant MPEG-4 video codec
 - ISO-compliant AAC-LC audio codec
- Complete end-to-end operation
 - PNX1302-based video server
 - PNX1302-based video client
- 802.11b wireless connectivity
- Simple set-up with flexible configurations
 - Video source: DVD player, TV tuner, camcorder, CVBS/S-Video video camera, digital camera, etc.
 - Display device: standard PAL/NTSC monitor, LCD unit, etc.
- ISMA-compliant streaming software stack
 - TCP/IP stack
 - RTSP control protocol
 - RTP/RTCP for data channel

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- Enhancement module for superior audio/video performance
 - Overlay for OSD
 - Pre- and post-processing filters for video quality
 - Jitter control buffers
- Modular software architecture

BLOCK DIAGRAM



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Enabling the Digital Media Revolution