

Consumer Video Conference Reference Design

www.streaming-networks.com

OEM-ready system for Consumer Video Conferencing Applications



OVERVIEW

This Streaming Networks reference design is a complete, OEM-ready implementation of a consumer-oriented video phone. The design includes a processor board, built around the Philips PNX1300 Nexperia media processor (with TriMedia VLIW processor core) and an enhanced ITU-H.324 software stack.

STANDARDS COMPLIANT

For wide interoperability and reliable performance, the video phone is based on ITU-H.324 standards. These standards establish video communication, with near toll-quality audio, on a regular telephone line. The video phone's H.324 stack does all the video and audio compression and decompression, video multiplexing and demultiplexing, audio and data channel, system control functions and modem functions.

The stack includes an ITU H.263 video codec, an ITU G.723.1 audio codec, an ITU H.223 multiplexer and demultiplexer, an ITU H.245 control protocol, and a 33.6-kbps ITU V.34 soft modem. The video codec supports up to 10 fps CIF and up to 15 fps QCIF, as well as PB, UMV, AC, and SAP options. The audio codec supports 5.3/6.3 kbps plus silence suppression and comfort noise generation.

SUPERIOR AUDIO & VIDEO QUALITY

The reference design also has an enhancement module that goes beyond the H.324 standard to deliver superior video and audio quality. There is an overlay for OSD as well as pre- and post-processing filters for improved video performance. The module also has an audio Acoustic Echo Canceller (AEC) that supports the echo-free, hands-free operation typically found only in high-end video conferencing systems.

STANDALONE & HOSTED CONFIGURATIONS

The reference design can be configured as a standalone system or a host-assisted system. The design can accept new sensing devices and offers hooks for added functionality such as web browsing or product personalization. Alternatively, the design can be scaled down to perform the functions of a more basic video phone.

SUPPORTED INTERFACES

An external A/V input jack supports connection to alternative A/V sources, such as a camcorder, a CVBS/S-Video camera, or a digital camera. An A/V output jack makes it possible to record or display the received video from the remote video phone on a standard PAL/NTSC monitor or TV set. The design also supports display on an LCD unit. An infrared (IR) device can be used for remote control of the system.

MODULAR DESIGN

For increased flexibility and added design longevity, the reference design is supported by a modular software architecture. Designers can add features, replace the standard library modules with customer-specific modules, or update the standard library to meet new standards.

User Friendly

Easy to plug in and use

High Quality Video

Never seen before video quality

Acoustic Echo Canceller

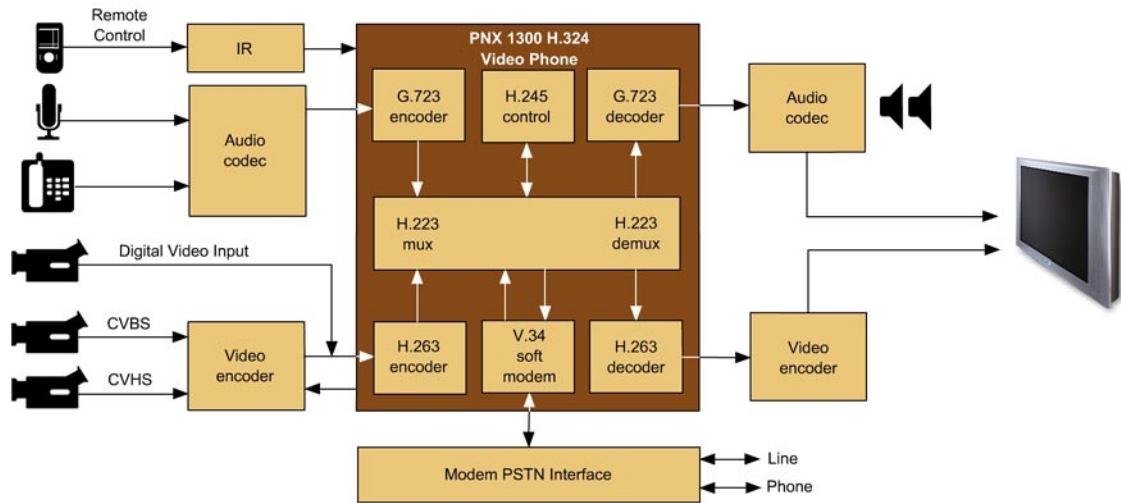
AEC enables echo free and hands free operation.

KEY FEATURES

- Fully functioning video phone with advanced audio/video performance
 - Philips PNX1300 Nexperia media processor (with TriMedia VLIW processor core)
 - Audio and video interfaces
 - Power supply
- External A/V input and output jacks
 - Use alternative A/V sources (camcorder, CVBS/S-video camera, digital camera)
 - Record or display received video on PAL/NTSC monitor, TV, or LCD display
- Supports use of infrared (IR) remote control
- Cost-effective H.324 stack implementation
 - Wide interoperability
 - Reliable performance
- Enhancement module for superior audio/video performance
 - Overlay for OSD
 - Pre- and post-processing filters for video quality
 - Acoustic Echo Cancellation (AEC) for hands-free speakerphone
- Modular software architecture



BLOCK DIAGRAM



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