

IPVP6446 IP Video Phone

Visual Connection



Reference Design Features

- DM6446™ powered multi-way IP video phone: H.263 / MPEG4 / H.264
- Wide range of speech codecs: narrowband / wideband
- High performance telephony with fine tuned AEC
- Supports 3rd party SIP stacks
- Easily integrates into IP-STBs

Solution Benefits

- Ready design reduces time to market
- Adapts bit-rate and frame-rate to network conditions
- Improves error resilience and error concealment through spatial and temporal methods, H.264 slice based encoding and FMO
- Improves low delay performance through H.264 ASO

Product Suite

- Custom PCB, BSP for Linux 2.6 / WinCE 6.0
- IP Video Phone Media Engine with packet handling, telephony functionality and AV media processing
- Application (optionally with call control)

IPVP6446

Board, BSP and multimedia system software for high performance IP video telephony

Overview

Ittiam's IP video phone (IPVP) reference design offers high quality full-duplex voice and video communication over broadband networks for 2 or more participants. It is targeted at video phones and conferencing applications that require either a stand alone solution or one integrated into a larger system e.g. IP set-top-boxes / home gateways.

IPVP6446, based on Texas Instruments TMS320DM6446™ is designed to simplify product development by offering a collection of hardware and software elements – form factor board, BSP and standards compatible video phone software media engine that can help OEMs/ODMs quickly bring high performance appliances to the emerging video telephony market.

Target Applications

- Desktop video phones – wired / wireless
- Video intercom for multi-dwelling units, Video door phone
- Video phone integrated into IP-STB
- Video conferencing and Tele-medicine



● 2004 ● 2005
DSP Professionals Survey by Forward Concepts

Ittiam

Technical Specifications

Processor, Memory and Operating System

- Texas Instruments TMS320DM6446™ DSP based media processor
- 256 MB DDR RAM and 32 MB Flash
- MontaVista Linux 2.6.10 / Windows CE 6.0

Support for Video Codecs

- H.264 BP (ASO, FMO, slice encoding) up to VGA resolution at 30 fps
- H.263 up to D1 resolution at 30 fps
- MPEG-4 up to D1 resolution at 30 fps

Support for Speech Codecs

- Narrow Band: G.711, G.723.1A, G.729AB, GSM AMR NB, iLBC
- Wideband: G.722.1, G.722.2, AAC-LC

Multi-way Conferencing

- Audio-video bridging (MCU function) for up to 6 way conferencing
- Priority conferencing enabling broadcast and selective participation

Telephony Functions

- Acoustic Echo Canceller (AEC) with configurable echo tail lengths, rapid convergence and robust double talk detection for hands-free speaker phone
- DTMF tone generator and detector
- Call Progress Tones generator and detector
- Voice Activity detection, Comfort Noise generation (VAD/CNG)
- Time Scale Modification
- Caller Identification

Call control functions

- Based on SIP. Compatible to 3rd party SIP stacks. Supports WinCE 6.0 SIP
- User Agent provided with session management, negotiation support for codecs, conferencing and handling of multiple calls
- Compliant to related RFCs. NAT and STUN supported (except with WCE SIP)

Networking Support

- Adaptive Jitter Buffers for Audio and Video
- RTP/RTCP
- TCP and UDP over IP, FTP and DHCP
- 10/100 Base-T Ethernet
- VLYNQ interface

Video Peripherals

- 640 x 480 TFT LCD display
- CCD Camera
- Composite video output / input

Audio Peripherals

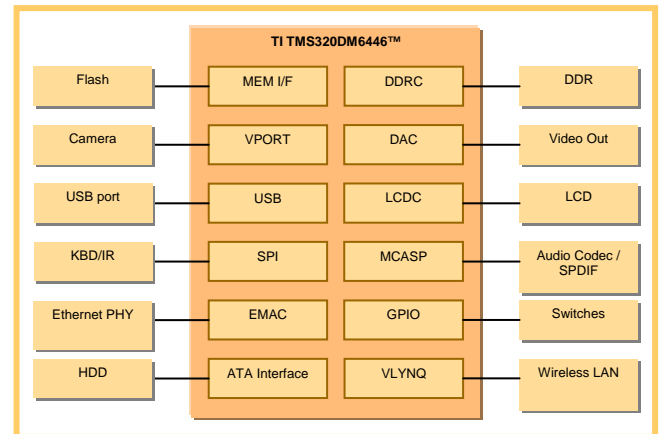
- Built in speaker and microphone, Line and Speaker Out, Microphone In

Storage / Other Peripherals

- HDD/SD/MMC
- USB 2.0 High Speed master and slave

For further information please contact Ittiam Marketing at mkt@ittiam.com

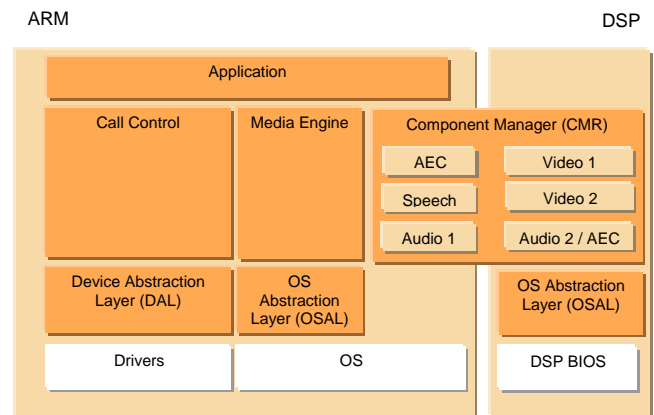
Hardware System Architecture



Device Support and Roadmap

- Supports Ittiam DM6446 board and TI DM6446 DVEVM,
- Supports a complete range of DaVinci devices targeted at low / high end video phone, conferencing and machine vision applications

Software System Architecture



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About Ittiam Systems

Ittiam Systems Private Limited, headquartered in Bangalore, is a technology product company singularly focused on digital signal processing systems in media and communication. The company operates through its network of offices and representatives around the world. Ittiam's customers include Fortune 100 companies and are distributed across U.S., Europe, Japan and Asia. The company has been rated as the 'World's Most Preferred DSP IP Supplier' in a survey conducted by Forward Concepts Incorporated, two years in a row - 2004 and 2005. In 2005 Ittiam has also been selected by Red Herring into the top 100 private companies in Asia. For more details, visit www.ittiam.com

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