Next Generation IP Phone

Our IP Phone silicon solution consists of three components. Together, these components address all the requirements for the development of an IP Phone.

MT92101/MT92102 IP Phone processor
- a system on a chip comprising a RISC CPU, DSP and full Ethernet 802.1p bridge
- hosts the signaling stack, performs voice streaming and manages the prioritization of voice packets over data packets in the network

MT92303 IP Phone CODEC
- a highly integrated dual CODEC
- minimizes external circuitry required to provide the phone-user interface
- includes drivers for handset, headset, speakerphone and line

NWK933 3.3v 10/100 Ethernet PHY
- a full 10/100 Ethernet Physical layer device
- connects to the MT92101/MT92102 processor via a Media-Independent Interface

Our IP Phone solution also comes with the following evaluation kit:

MEB92101/92102 Evaluation Kit
- equips customers with maximum flexibility and provides the resources and information needed to develop applications quickly and easily:
- includes 2 x boards
- includes CD ROM containing drivers, phone application, online documentation, PC software for board configuration, signaling stack H323, SIP and MEGACO binary, reference source code, promotional material for ARM and PRECISE development environments, board support package for PRECISE/MQX
- user schematics

$21 / 100k
with PHY, A/D

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Mitel Semiconductor's comprehensive IP Phone chipset enables traditional telecom vendors and enterprise datacom vendors to break into the competitive IP telephony market. Based on a history of leadership in telephony and extensive expertise in Ethernet, our silicon gives customers a complete solution for addressing the challenges of developing IP Phones, including echo cancellation, quality of service, encryption and power consumption.

Echo Cancellation

Our solution for IP Phones provides unrivalled, world-class echo cancellation technologies, including our own "TruePlex™" Full Duplex Hands Free acoustic echo cancellation for speakerphones and acoustic echo suppression for the handset. Echo suppression is programmable to allow customers to tune parameters that optimize noise suppression in their own handset.

Quality of Service

Our hardware incorporates an 802.1p Ethernet bridge that supports Differential Services for enhanced Quality of Service (QoS). Differential Services is a method of prioritizing packets in a data network to avoid the degradation in QoS that could result if bursty data traffic from the PC collides with voice traffic from a phone on the same cable. Differential Services enables nodes in a network to recognize voice packets by a field in the packet header and prioritize them before data packets to avoid collisions and ensure consistent QoS.

Encryption

Our hardware-assisted DES encryption offers a 100x performance improvement over pure software solutions. Triple DES (3-DES) is also supported, providing ultimate peace of mind for high security applications, such as banking.

Power Consumption

All components in our solution are optimized for low power consumption and have been developed with a view to acquiring their power from the network as standards mature. The Ethernet PHY supports a deep sleep mode, and the IP Phone Processor supports flexible sleep modes within its CPU and DSP subsystems. To further conserve power, individual functions may be disabled by software when not required.

In addition to these key benefits for the IP Phone development community, our solution also provides the following advantages:
- highly integrated analog front end/CODEC
- high end features that allow the same platform to be used for multiple products
- a second TDM port for flexible connectivity to multiple communications interfaces
- USB port
- conferencing support

Hardware Features
- ARM7TDMI CPU
- OAKDSPCore™
- 802.1p Ethernet bridge
- Dual MII Ethernet port
- Dual programmable PCM/TDM port
- USB port
- UART (will support IRDA)

Firmware Features
- G.729A compression
- G.723.1 compression
- G168 line echo cancellation
- VAD/CNG
- Adaptive playout
- Signal classifier
- Lost packet compensation
- Programmable AES
- DTMF/call progress tone detection and generation
- Sidetone and loopback
- Executive/RTOS

CPU Software Features
- H.323, SIP and MGCP/MEGACO
- RTP/RTCP transport layer
- Interface API to the DSP subsystem
- Reference phone application including basic MMI
- BSP and hardware drivers associated with all of the above
- Standard RTOS support

Packaging
- MT92101: PBGA 288 ball, 23 x 23mm body, 1.56mm thick, 1.0mm ball pitch or 208 pin TQFP 208
- MT92303: 44 pin TQFP