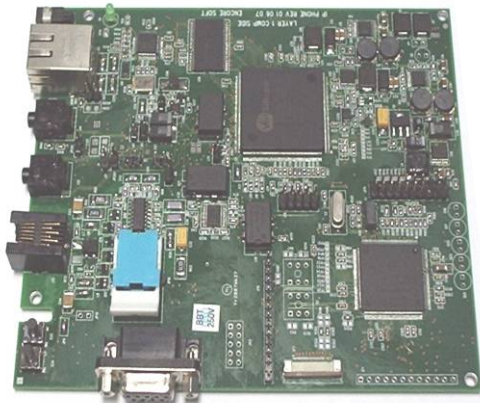


# VZ.VoiceHQ

## Industry First Complete and Customizable WideBand IP Phone Design

### Overview

As with other sectors in the VoIP Market, IP Phones have and will continue to quickly grow in the next few years. According to In-Stat, IP Phones will ramp from 10 million units in 2006 to 164 million units in 2010. Key success factors to solution providers in this segment will be to deliver a compelling value proposition with scalability to address future product needs. The VZ.VoiceHQ does this by providing a complete turnkey system that includes a reference design and comprehensive voice software, VZ.Voice, as well as other necessary application software to quickly develop a cost-effective wide range of IP Phones.



VeriSilicon Solution Partner:



### VZ.VoiceHQ

VeriSilicon, a market leader in the VoIP market with its ZSP400 architecture, has developed the VZ.VoiceHQ platform, combining an unprecedented number of features that uniquely addresses the product and cost requirements for the evolving IP Phone market. Developers may lower the system BOM, by selecting a single processor system, VSI403LP, without sacrificing functionality. The award winning ZSP400 is able to run all the necessary VoIP functions as well other application software such as SIP and RTP. Alternatively, developers can select a dual-processor option utilizing the ARM7-based NXP LPC2468 to handle non voice tasks and other feature customizations that could be required.

The VZ.VoiceHQ includes a full assortment of field-proven voice processing and call management software. By basing the VZ.VoiceHQ on the ZSP400 architecture, solution developers can include advanced voice technologies, e.g. AMR-WB, that dramatically improve quality without impacting BOM. Unlike other IP Phone designs that use low performance CPU processors, the VSI403LP architecture provides best-in-class DSP performance as well being well equipped to tackle traditional host and system processing. Some examples of the VZ.VoiceHQ software offerings include AMR-WB (G.722.2) as well as G.722.1 and G.722, Narrowband/Wideband Acoustic Echo Cancellation, and SIP authentication with static call forward to a specified PSTN number.



### Key Features

- ZSP with optional ARM wideband IP platform
- Comprehensive VoIP software offering
- Full suite of complementary protocol software
  - SIP, RTP, UDP/IP
  - Available on ZSP or ARM
- ZSP400 based VSI403LP for leading DSP performance
- Optional NXP LPC2468 for increased functionality with small cost
- Reference design with schematics for fast TTM
- VSI403LP silicon customizations possible via VeriSilicon Turnkey Services
- Traditional PSTN support

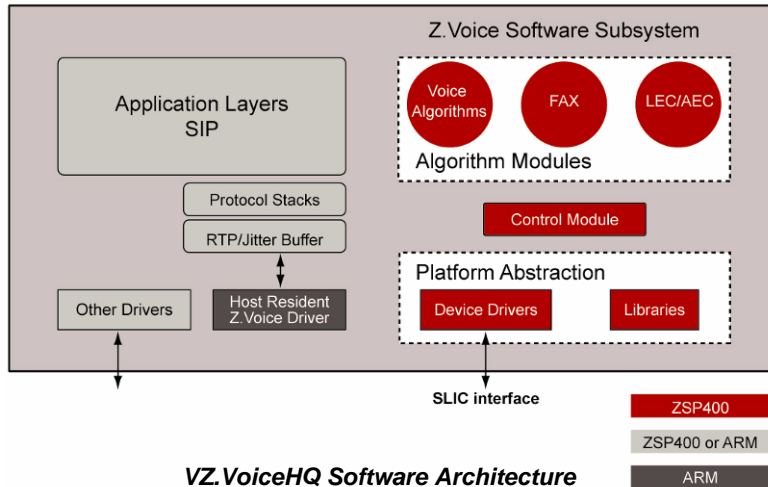
### Platform Benefits

- Industry-leading DSP architecture for cost-effective and scalable performance
- Multiple hardware and software options facilitating end-product differentiation
- Field-proven software technologies minimizing development risk



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VZ.VoiceHQ Software Architecture

### VZ.VoiceHQ PACKAGE

- G.711, G.729AB, G.723.1, G.726, G.722, G.722.1, G.722.2 Codecs
- G.168 Line Echo Canceller
- DTMF Detection / Generation
- Call Progress Tone Generation
- Call Progress Tone Detection
- Caller ID Generation
- Caller ID Detection
- Voice Activity Detection (VAD)
- RTP/Adaptive Jitter Buffer
- Wideband AEC/NR
- Comfort Noise Generation
- Packet Loss Concealment
- T.38 Fax Relay
- T30 / Group 3 Fax Support

### USER LEVEL FEATURES

- Originate / Terminate SIP voice calls
- Caller ID display
- Reject incoming voice call
- Call hold / retrieve, waiting, mute
- 3-party conference
- Send / receive DTMF
- Auto redial
- Send/receive Instant Messages
- Configuration via dedicated configuration application

### BOARD FEATURES

- VSI403LP with optional NXP LPC2378
- Dual USB to connect mass storage device or WIFI
- 10/100 Base-T uplink/downlink port
- Wolfson audio codec for high quality audio
- Full-duplex speaker phone
- FXO for PSTN connectivity
- Stereo headset output
- 16x2 pixel display

### Product Availability

Voice developers may choose from a number of solution options for the VZ.VoiceHQ platform. The reference design, software, and silicon is available from VeriSilicon, and respective development partners, enabling fast time-to-market. Alternatively, developers may also license the ZSP and voice software stand-alone or enlist VeriSilicon Turnkey Services for a customized VSI403LP offering.

### About VeriSilicon

VeriSilicon Holdings Co., Ltd ("VeriSilicon") is a fast growing silicon solutions company providing products and services that enable customers to meet their chip design objectives, accelerate development programs and deliver market proven silicon products - on time and at lower cost. VeriSilicon specializes in providing expert design services, market leading ZSP® licensable cores and platforms, industry standard semiconductor IP and scalable ASIC turnkey services across a broad range of application markets, including multimedia, voice and wireless communications. VeriSilicon has design, operation and sales and support offices in Santa Clara, California, Dallas, Texas, Shanghai and Beijing, China, Taipei, Taiwan, Tokyo, Japan, Nice, France and Seoul, Korea. For more information, visit [www.verisilicon.com](http://www.verisilicon.com).

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