



The AMBE-3000™ Vocoder Chip offers the affordability, channel efficiency and low power consumption required by virtually all mobile communication devices.

High Quality Performance

- DVSI's latest generation AMBE+2™ Vocoder Technology
- Excellent voice quality - even at low data rates and in harsh background noise environments
- Reliable channel communications with Noise Suppression, Improved Error Mitigation, and Soft Decision FEC Decoding

Design Flexibility/Low Cost Integration

- Complete integrated vocoder in one chip
- Maximizes channel bandwidth efficiency supports data rates from 2.0 kbps to 9.6 kbps
- Works with most low-cost A/D-D/A codecs
- Selectable Serial or Parallel interfaces
- Order as needed - no licensing fees or royalties
- Off-the-shelf availability for quick delivery

Optimized for Digital Mobile Radio Systems

- Excellent performance at low data rates and harsh environments
- Robustness to acoustic background noise and channel bit errors
- Small compact package design (128 pin LQFP or BGA)
- Compatible with DMR Program (ETSI TS102)



AMBE-3000™ Vocoder Chips

Digital Voice System's AMBE-3000™ Vocoder Chip is an extremely flexible, voice compression solution that sets a new standard for quality, high-performance speech compression hardware. The AMBE-3000™ Vocoder Chip is a DSP based vocoder that provides exceptional voice quality at rates as low as 2000 bps. The AMBE-3000™ Vocoder Chip offers the affordability and mobility and required by virtually all full or half-duplex mobile communication devices. Its superior performance and flexible design configurations makes it an ideal choice for commercial, consumer and military communication applications.

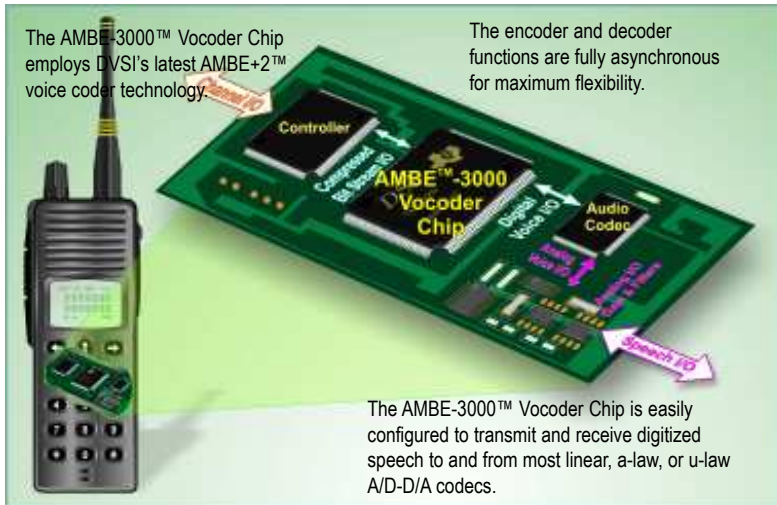
The AMBE-3000™ Vocoder Chip implements DVSI's patented AMBE+2™ Voice Compression Algorithm. The AMBE-3000™ Vocoder Chip can operate at virtually any data rate from 2.0 to 9.6 kbps. This allows designers to optimize speech and/or FEC rates within their system requirements to provide excellent voice quality with superior robustness to bit errors and acoustic background noise. The success of this vocoder technology has resulted in it being chosen by many mobile radio manufacturers including APCO Project 25 in North America and DMR in Europe. In addition, satellite systems prefer this unique technology because of its superior voice quality at low bit rates.

By incorporating this advanced vocoder technology, into proven DSP technology the AMBE-3000™ vocoder chip achieves a level of performance and reliability typically associated only with customized ASICs but without the associated risks and high development costs. With small quantity, off-the-shelf availability and no licensing fees or royalties, engineers and original equipment manufacturers are able to efficiently design and affordably produce high performance, narrowband, communication equipment.

To allow for easy integration, basic communication to/from the AMBE-3000™ Vocoder chip is designed to be as flexible as possible. The AMBE-3000™ offers users four separate physical interfaces: SPI (speech data samples interface only), McBSP serial port, UART, and a parallel port. Selecting the interface that best fits system requirements is made easy with only two operating modes.

*Interoperable
with DVSI's
AMBE-2000™
Vocoder
chips.*





In Codec mode the AMBE-3000™ Vocoder Chip is configured to transmit and receive digitized speech to and from most linear, a-law, or u-law A/D-D/A codecs through either its SPI or McBSP serial port and the compressed channel data uses one of the remaining interfaces. Alternatively, the AMBE-3000™ Vocoder chip can be set-up to operate in packet mode, where both the speech and compressed channel data are on the same interface. Packet mode also allows for vocoder configuration, vocoder status information, as well as, the transferring of speech and compressed data bits to/from the chip's internal encoder and decoder.

The AMBE-3000™ chip boasts numerous advanced design features such as automatic Voice/Silence Detection (VAD), noise suppression, adaptive comfort noise insertion (CNI), DTMF and Call Progress Tone detection/regeneration, echo cancellation, low power modes and frame-by-frame "on-the-fly" rate switching. Additionally, the chip includes variable rate Forward Error Correction (FEC). The built-in FEC combines block and convolution codes with up to four bits of Viterbi soft decision decoding. The quality of this FEC provides exceptional robustness to background noise and intelligible speech in degraded channel conditions, even with bit errors (BER) of up to 20%. This level of performance can lead to the successful development and deployment of wireless communication systems in the most demanding environments.

These features, combined with the chip's small form factor (128 pin LQFP of BGA package), make the an ideal solution for bandwidth is at a premium voice-quality is imperative. DVSI's family of voice AMBE-3000™ has provide a seamless already using DVSI's AMBE-2000™ and AMBE-1000™ Vocoder Chips.

**Available in
128 pin LQFP
and BGA
Packages!**

AMBE-3000™ Vocoder Chip wireless applications where and low-data-rate, high-As the latest addition to compression products, the interoperable modes that migration path from systems

The value of DVSI's AMBE® Voice Compression Technology goes beyond low bit rate and voice quality. It has been thoroughly evaluated and tested by international manufacturers under various conditions using a variety of languages. This assures the user is getting the best vocoder available and makes the DVSI vocoder the logical choice without the need for additional comparison tests. Plus the fact, that DVSI's Voice Compression technology has been implemented worldwide for more than 19 years, delivers the added security of a field proven technology that can play a key role in making any communication system an overall success.

Contact DVSI

Digital Voice Systems, Inc. specializes in the development of low-bit-rate, high quality voice compression products incorporating the patented IMBE™, AMBE® AMBE+™ and AMBE+2™ Voice Compression Technologies. DVSI software and hardware voice compression solutions are successfully implemented in both private and standards-based digital communication systems worldwide. DVSI's Speech Compression technology is the core component that enables original equipment manufacturers to produce innovative designs with an array of advanced features. Additional company information and product details can be found online at www.dvsinc.com.

Specifications

Electrical

Supply: 3.3 Volts
Core: 1.8 Volts

Physical

Package: 128 pin LQFP (industrial grade)
Temperature Range:
-40° C to 85° C (Operation)
-55° C to 150° C (Storage)

Speech Interfaces

SPI, McBSP
8 bit ulaw or alaw @ 8 kHz.
16 bit linear* @ 8 kHz.
(*recommended for optimum performance)

Channel Interfaces

McBSP, UART, Parallel
Packet formatted data

(Specifications subject to change without notice.)



234 Littleton Road
Westford, MA 01886
Tel: (978) 392-0002
Fax: (978) 392-8866
email: info@dvsinc.com