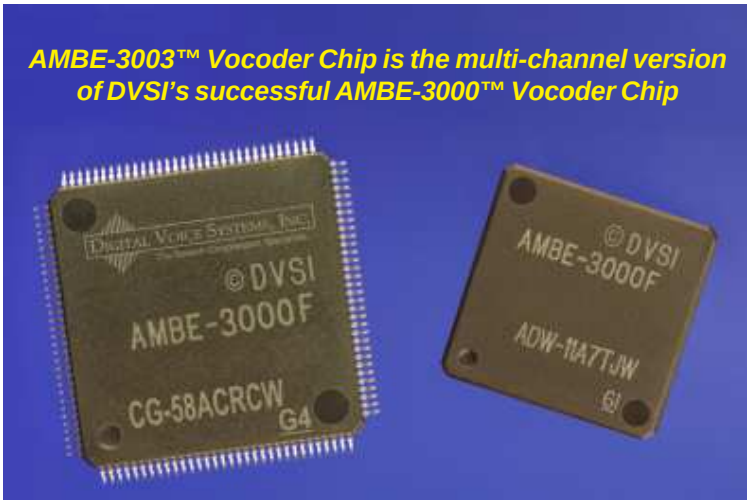
DIGITAL VOICE SYSTEMS, INC.
The Speech Compression Specialists

AMBE-3003™ Vocoder Chip

The AMBE-3003™ Vocoder Chip offers three independent full-duplex voice channels of high quality low-data-rate speech compression technology.

AMBE-3003™ Vocoder Chip is the multi-channel version of DVSI's successful AMBE-3000™ Vocoder Chip



The AMBE-3003™ Vocoder Chip is the multi-channel version of Digital Voice Systems, Inc. (DVSI)'s successful AMBE-3000™ vocoder chip. The AMBE-3003™ Vocoder Chip offers three separate encoder/decoder operations to provide the capability of up to three full duplex channels. The voice coding rate and the FEC rate for each of the three channels can be specified independently for integration into a variety of design configurations.

The AMBE-3003™ Vocoder Chip implements DVSI's most advanced high-performance AMBE+2™ vocoder technology into a single DSP chip to achieve unmatched voice quality, with robustness to background noise and channel bit errors. DVSI's AMBE+2™ vocoder technology has been proven to outperform G.729 and G.726 at half the data rate and less. The success of this vocoder technology has resulted in it being the preferred choice for many mobile radio programs including APCO Project 25 in North America, DMR and dPMR in Europe, and others. In addition, virtually every current and planned satellite phone system uses DVSI's AMBE+2™ vocoder technology because of its superior voice quality at low bit rates.

Interoperable with DVSI's AMBE-3000™ Vocoder chips.

The AMBE-3003™ is a multi-channel vocoder chip that enables systems engineers and Original Equipment Manufacturers (OEM's) to efficiently design and quickly produce high performance wireless communication systems for commercial, consumer and military applications. With 62 built-in voice/FEC rates the AMBE-3003™ Vocoder Chip can easily be configured to meet most communication systems requirements while providing optimum voice quality and robustness to bit errors and background noise.

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.

High Quality Performance

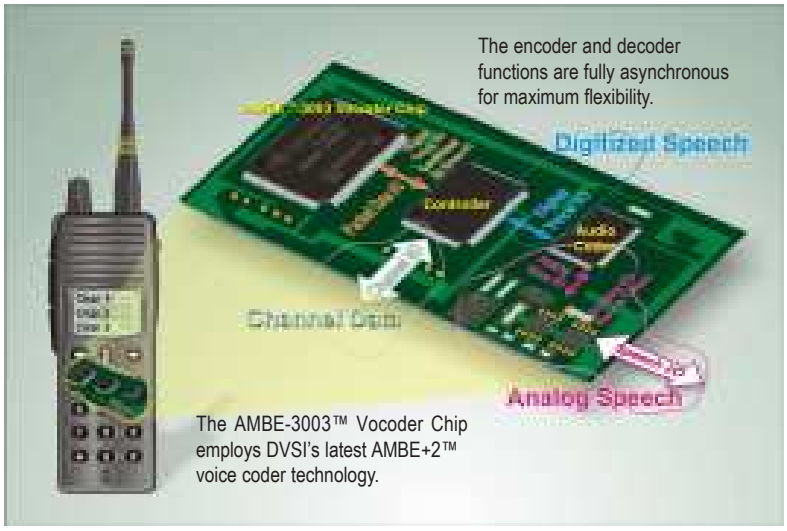
- DVSI's latest generation AMBE+2™ Vocoder Technology
- Excellent voice quality - even at low data rates
- Reliable channel communications with Improved Error Mitigation, and Soft Decision FEC Decoding

Design Flexibility/Low Cost Integration

- 3 Complete vocoders integrated in one chip
- Maximizes channel bandwidth efficiency supports data-rates from 2.0 kbps to 9.6 kbps
- 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 in harsh environments with built-in Noise Suppression
- Robustness to channel bit errors
- Small compact package design (128 pin LQFP or BGA)
- Compatible with DMR Program (ETSI TS102) and dPMR in Europe



If custom rates are desired, a configuration control packet can be used to set virtually any voice and FEC data rate from 2.0 to 9.6 kbps in 50 bps increments. This makes the AMBE-3003™ Vocoder Chip an ideal solution for applications where bandwidth is at a premium and voice intelligibility is imperative.

The AMBE-3003™ Vocoder chip operates in a 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.

For added integration flexibility the AMBE-3003™ Vocoder Chip provides multiple interfaces and advanced features such as: automatic Voice/Silence Detection (VAD), adaptive comfort noise insertion (CNI) and DTMF Call Progress Tone detection/regeneration. As the latest addition to DVSI's family of voice compression products, the AMBE-3003™ has interoperable modes that provide a seamless migration path from systems already using DVSI's AMBE-3000™, AMBE-2000™ and AMBE-1000™ Vocoder Chips.

The AMBE-3003™ Vocoder Chip is available in two different packaging configurations: 128 pin low-profile quad flatpack (LQFP) and 179 pin ball grid array (BGA) packages. The AMBE-3003™ Vocoder Chip uses proven DSP technology to achieve a level of performance and reliability typically associated with customized ASICs, but without the associated risks and high development costs. Plus, with small quantity, off-the-shelf availability and no licensing fees or royalties, the AMBE-3003™ Vocoder Chip is affordable and cost effective.

Available in 128 pin LQFP and BGA Packages!

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 20 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:	1.9 Volts

Physical

Package:	128 pin LQFP
	179 pin BGA

Temperature Range:

-40°C to 85°C *(Operation)*
-55°C to 150°C *(Storage)*

Packet Interfaces
McBSP, UART, 8-bit Parallel

(Specifications subject to change without notice.)

DIGITAL VOICE SYSTEMS, INC.
The Speech Compression Specialists
234 Littleton Road
Westford, MA 01886
Tel: (978) 392-0002
Fax: (978) 392-8866
email: info@dvsinc.com