

Net-2000™ Voice Codec Unit



The Net-2000™ Voice Codec Unit (VCU) combines AMBE® Vocoder Technology with Ethernet network connectivity!

Features

Stand-alone Design

- Network enabled voice codec unit interfaces AMBE® vocoders between Analog I/O and Ethernet networks.
- Real-time, full-duplex communications to other Net-2000™ units via UDP Ethernet or RS-422 interface.
- Both voice and channel data can be transmitted over the Ethernet interface at the same time.
- Encode/Decode files stored on a PC or networked attached storage.

Flexibility and Performance

- High performance line level audio using 16-bit linear codec.
- 4-wire and 2-wire analog input/outputs.
- Built-in web server to select audio I/O, gain settings and vocoder mode from any PC on the LAN.

Supports Variety of AMBE® Vocoder Modes

- Flexible bit-rates (2.0 – 9.6 kbps and 4 kbps toll quality) for optimum system performance.
- Built-in FEC delivers robust performance over channels degraded by bit errors and/or background noise.
- AMBE™ Vocoder Modes can also include DTMF capability, Voice Activity Detection, Comfort Noise Insertion, and Echo Cancellation.

Easy to Integrate and Operate

- The RS-232 serial port can be used as a console terminal for system setup and control.
- Easy network set-up with built-in DHCP to handle IP address information when available on LAN.
- The embedded operation software can be field upgradeable.
- Rack mountable aluminum chassis design.

The Net-2000™ voice codec unit (VCU) incorporates Digital Voice Systems, Inc. (DVSI) award winning AMBE® Vocoder technology to bridge analog speech I/O to an Ethernet network. This stand-alone device supports multiple AMBE® vocoder modes that makes it ideally suited for a variety of digital communication systems as well as volume OEM applications such as VoIP, and voice recording products.

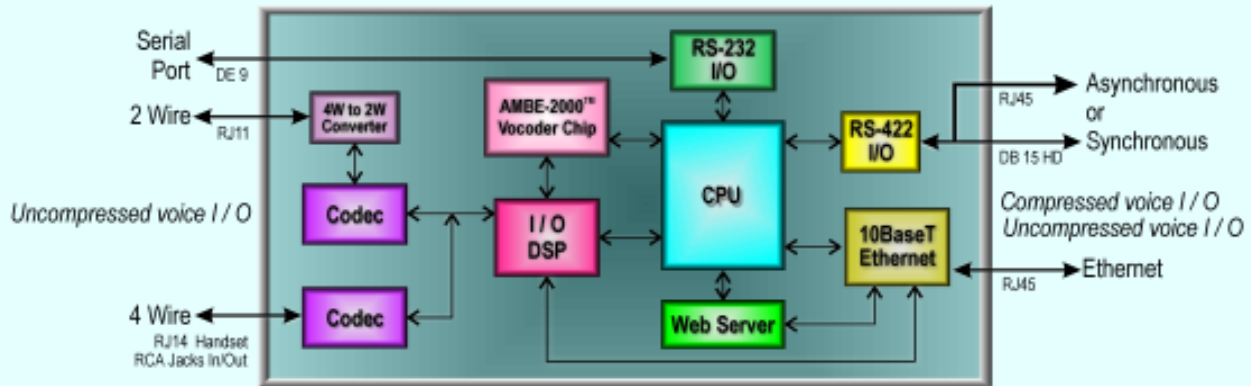
The flexibility of the Net-2000™ VCU's patented AMBE® Vocoder technology maximizes communications system resources and provides optimum voice comprehension even under extreme bit errors or acoustic background noise conditions. The Net-2000™ AMBE® Vocoder modes include bit rates between 2.0 - 9.6 kbps, built-in FEC, DTMF capability, Voice Activity Detection (VAD), Comfort Noise Insertion (CNI), and echo cancellation.

The Net-2000™ also incorporates the AMBE+2™ Vocoder that sets the standard for speech quality at the low data rate of 4.0 kbps. The superior performance characteristics of AMBE+2™ Vocoder have made it successful in voice communication applications where bandwidth is at a premium and high quality voice is imperative. In fact, the AMBE® vocoder has been proven by numerous independent evaluations, to out perform CELP and other competitive technologies at under half the data rate.

To meet a wide variety of communication system requirements the NET-2000™ Voice Codec Unit offers an array of speech and channel interfaces along with control features that make it easy to set-up and operate. The Net-2000™ includes 2-wire, 4-wire and handset analog interfaces for input and output of uncompressed speech, as well as, Ethernet and RS-422 as its channel data interface. A unique feature of the Net-2000™ is that both voice and channel data can be transmitted over the Ethernet interface at the same time.

The Net-2000™ implements the channel data interface using a protocol designed by DVSI. This allows real-time, full-duplex communications via the Ethernet or RS-422 interfaces to another Net-2000™ unit. Connecting two Net-2000™ units together is as easy as entering the IP address (or hostname) of the Net-2000™ units and selecting the desired voice interface and AMBE® vocoder mode.

NET-2000™ Block Diagram



Each Net-2000™ converts the input analog speech into digital speech samples, encodes the speech using the selected AMBE® Vocoder mode and then send the compressed bit stream out as UDP packets over the Ethernet interface. Simultaneously, the compressed bit stream of UDP packets from the other Net-2000™ is read in from the Ethernet interface and decoded back in to digital speech samples. The decoded samples are converted back into analog speech via the AIC-10 codec whose output is sent to both the handset and line-level output connections.

Alternatively, the Ethernet interface can connect directly to a Local Area Network (LAN). This configuration can be used to create a real-time Ethernet based vocoder communication system or to record / playback of files using a PC. Being able to encode/decode files stored on a PC makes the Net-2000™ ideal for compressed-voice storage applications or non-real-time testing and evaluation.

Initial set-up of the Net-2000™ is fast and straightforward thanks to its Ethernet network connection. It is equipped to handle IP address information from a DHCP

server when available on the LAN. Alternatively, the Net-2000™'s RS-232 serial port can be used via telnet as a console terminal to allow low-level network setup and selection among the various input and output audio interfaces.

The Net-2000™ is controlled via PC connected through the RS-232 or Ethernet interface. When connected on a LAN — any PC on the network can use a standard web browser to configure and control the unit without requiring custom PC software.

The user-friendly web pages built-into the Net-2000™ make it easy to select analog audio interfaces, configure the AMBE® vocoder mode and to establish real-time, full-duplex communication across the Ethernet or RS-422 connection. In addition to the control, the web pages display information about network settings, operating mode and system status. Since the Net-2000™ uses Ethernet, its web page can even be accessed over a wireless network through a wireless notebook or tablet PC.

Technology Team

The Net-2000™ is designed and manufactured with Digital Voice Systems, Inc.'s (DVS) in-depth knowledge of voice compression algorithms. DVS's dedicated engineering resources have years of experience in vocoder technology, specializing in Digital Signal Processing, software generation and hardware development. This has lead DVS to become the accepted industry leader in high performance, low-bit-rate, voice compression technology.

Contact Us

For more information on the NET-2000™ and how to achieve the best voice quality at the lowest data rate contact us today.



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Rear Panel Connections

Serial Port	DB9s
LAN	RJ-45
RS-422 Synchronous	DB-15HD
RS-422 Asynchronous	RJ-45
2 Wire I/O	RJ-11
Analog Line In	RCA Jack
Analog Line Out	RCA Jack
Handset	RJ-14
AC Line In	Pwr. Recp.



AC Power Requirements
V 100 - 240 V ~
FR 50 / 60 Hz.
28 W

Mechanical Specifications
Dimensions: 17.25 X 3.5 X 7.25 inch
Weight: 4.5 pounds

Specifications subject to change.