DIGITAL VOICE SYSTEMS, INC.
The Speech Compression Specialists

VC-20™ Vocoder Board

The Digital Voice Systems, Inc. (DVSI) VC-20™ vocoder board is the ideal platform for testing, evaluating and implementing DVSI's voice compression technology. The VC-20™ Vocoder Board is a full-duplex real-time voice compression solution that is perfect for low risk prototype development and small volume manufacturing. The VC-20™'s single board design also reduces system integration time.

The VC-20™ can be equipped with one of DVSI's standard-setting voice compression implementations. These patented software algorithms have been proven in numerous evaluations to out perform CELP and other competitive technologies. DVSI's voice compression software is used in applications throughout the world, including satellite applications and the next generation of digital mobile communication systems.

The VC-20™ vocoder board uses an on-board A/D converter to digitize the analog speech input. The digitized speech is then encoded by the DVSI voice compression algorithm and converted into a serial data bit stream. This digital data is then available for output to a modem or similar device.

Simultaneously, the VC-20™ vocoder board receives a data bit stream from the modem or similar device. The data received is processed by the decoder, reconstructed into digitized speech and then converted into an analog signal using an on-board D/A converter. The encoder and decoder are fully asynchronous.

Connecting two boards together allows for simulation, testing and operation across various channel conditions. The VC-20™ vocoder board can also be used in a stand-alone loop-back mode by providing its own channel clock and framing signals. This is an effective method to evaluate voice quality without connecting to a channel interface.

The VC-20™ offers a number of advanced features, including automatic Voice/Silence detection (VAD), adaptive comfort noise generation, DTMF detection and signaling, and echo cancellation. These features are designed into the entire line of VC-20™ boards, insuring that each vocoder board delivers superior voice quality at a low data rate. With outstanding robustness to both acoustic background noise and limited channel errors, the VC-20™ delivers optimum voice comprehension even under extreme conditions.

DVSI's dedicated staff combine years of experience in vocoder technology, with expertise in Digital Signal Processing, computer software generation and hardware development. For more information regarding our high-quality low-data-rate voice compression, contact DVSI today.

Technical Specifications

Analog Input/Output:	
Type	Single-ended
Input Impedance	600 ohm
Output Impedance	low, drives 600 ohm load
Sensitivity	0 dBm0 = 0 dBm
Sinusoidal Overload	+3.17 dBm0
Nominal Level	-23 dBm0
Dynamic Range	+/- 10 dB
Noise Level	-72 dBm0
Bandwidth (Output)	20 – 3700 Hz.
Digital Interface:	TTL compatible
Power Requirements:	2.0 W @ 5V digital 0.2 W @ +/- 5V analog
Physical Size:	4.75" x 4.0" (3U height)
Male Connector:	DIN 41612 (96-pin)

Specifications subject to change.

The VC-20™ family of vocoder boards offer a variety of software algorithms. The VC-20™ can be configured to inter-operate with one of the following international communication systems.

- Imarsat M
- Imarsat Mini-M
- OPTUS
- APCO Project 25
- FAA NexCom

Each VC-20™ Vocoder board delivers excellent voice quality that is robust to bit errors and background noise. The low power, compact board design also features:

- Real-Time, Full-Duplex Voice processing
- Analog and Digital Interface
- DTMF Tone Processing
- Echo Cancellation
- Self-Test Loop-Back Mode
- Voice Activation/Comfort Noise Insertion
- Soft-Decision Decoding

Digital Voice Systems, Inc.
Tel: (978) 392-0002
234 Littleton Road
Fax: (978) 392-8866
Westford, MA 01886
Web site: www.dvsinc.com