Votrax®

ML-I MULTI-LINGUAL VOICE SYSTEM

- **Multi-Lingual Capability**

The VOTRAX Model ML-I is a unique solid-state device which produces high-quality electronically synthesized speech. This unique system combines low unit cost, unlimited vocabulary, operational simplicity, low data requirements and multi-lingual capability to provide the ultimate in flexibility and cost effectiveness. In addition to excellent English, the ML-I can speak fluent German. Other languages, including Spanish, French, Japanese and Parsi (Persian), are presently under consideration for development as optional languages.

- **Unlimited Vocabulary**

The ML-I is programmed to speak based on phonetic coding principles. Each 12-bit command word selects one of 122 phonemes (sounds), one of eight levels of inflection (pitch) and one of four phoneme rates (duration). Optionally, the command word may be used to alter entire utterances with regard to amplitude (volume) and/or rate. When used in this latter fashion, the command word is referred to as a "Flag" command. Utterances are "spelled" phonetically to produce all combinations of words and phrases required by the application. Since words and phrases are stored in the form of digital information on some storage medium, such as magnetic disc or solid-state memory, there is virtually no limitation as to the amount of vocabulary the ML-I can produce. One well-known computer services company reports a vocabulary in excess of 300,000 words. The value of unlimited vocabulary is that the same VOTRAX unit can be used for any and all applications.

- **Low Data Requirements**

The unique VOTRAX technology permits the production of speech at uniquely low data rates. At twelve data bits per phoneme command, the ML-I can achieve continuous speech from input at less than 300 bps. The result is maximum utilization of communications channels.

- **Operational Simplicity**

The VOTRAX ML-I is designed to be as simple as possible to install and operate. All VOTRAX interfaces are compatible with most conventional computer and communications equipment (EIA Serial and TTL Parallel). In the case of the EIA unit, the interface controls are comparable to the Bell 103 and 202-type modems. Consequently, an asynchronous communications adapter that is compatible with the Bell 103 or 202 will attach to VOTRAX without modification. Since this system operates in the same way as an asynchronous data terminal, any standard ASCII terminal driver software will provide device support for VOTRAX. Data formats are either Serial ASCII or 12-bit Parallel. The user needs to do little more than prepare his application program to start effectively using the ML-I. Consequently, the VOTRAX system becomes productive quickly, easily and with a minimum of expense.

- **Flexibility**

The VOTRAX ML-I was developed to fit into a wide variety of applications and physical environments. A complete range of interface types and options makes VOTRAX compatible with virtually all computers, from the largest business mainframes to the smallest microprocessors. The small amount of data and limited controls required to drive VOTRAX permit installation at almost any point in a communications network: host computer, communications concentrator, communications multiplexor, or computer terminal. Data rates of 110 to 9600 bps also allow the ML-I to fit into existing systems with little or no change. Operating temperature and humidity specifications are such that specially conditioned environments are not required. Applications include: Computer Timesharing, Education, Handicapped Aids, Instrumentation, Manufacturing, Military and Training Simulators.

SPECIFICATIONS

Electrical

Input Power Requirements . . . . . 115 VAC ±10%, 47-420 Hz, 0.38 Amps
Input Power Fuse . . . . . .3AG - 1/2 Amp, 125 Volts
Audio Output. . . . . 100-5000 Hz, 6 Volts Peak, Nominal
Audio Output Drive Capability . . . . . 0.5 Watts into an 8 Ohm load

Physical

Stand-Alone Cabinet . . . . . 11-7/8" W x 11-1/4" D x 6-1/4" H, 20 Lbs.
19" Horizontal Rack . . . . . .19" W x 10-1/4" D x 7" H, 20 Lbs.
Phonetic Keyboard . . . . . 16-3/16" W x 11-3/4" D x 4-3/8" H, 13 Lbs.
Speaker . . . . . .15-1/8" W x 6-3/4" D x 8-1/8" H, 10 Lbs.

Environmental

Operating Temperature. . . . . 0° C. to 50° C.
Storage Temperature . . . . . –20° C. to 70° C.
Operating Humidity. . . . . .0 to 95% with no condensation

Data Rates (bps)

110, 150, 300, 600, 1200, 2400, 4800, 9600

Interface Types

EIA Serial (RS232C) 403/407-Type Dataset Compatible
Dataswitch (Connects to Asynchronous ASCII Terminal)
FIFO Buffered Parallel (TTL)
FIFO Buffered Vocabulary ROM (TTL)
Keyboard (Connects to Phonetic Keyboard)

Command Word

7-bits: 128 selections available, includes phonemes, pauses and control functions
3-bits: 8 levels of inflection available
2-bits: 4 rate (duration) selections available

Options

Dataset, 403-Type
Touch Tone* Pad, Acoustically Coupled
Phonetic Keyboard
Vocabulary Development Service
External Amplifier with Tone Control
Customized Interfaces

* Registered Trade Mark of the Bell System

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VOCAL INTERFACE

A Division of Federal Screw Works

The Communications People