All Digital Answering Machine with Digital Speakerphone and FLEXISPEECH™
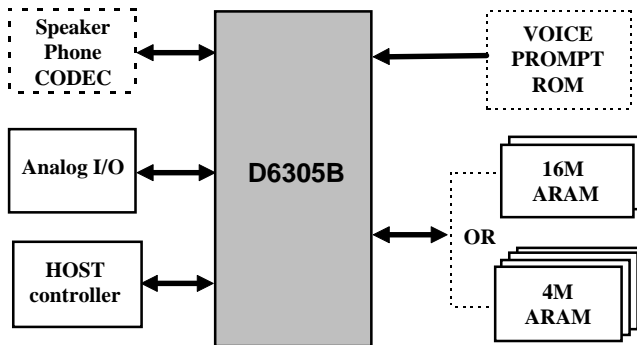

Figure 1. D6375A Block Diagram

The D6375A chip is a digital speech/signal processing subsystem that implements all of the functions of speech compression, telephone line signal processing, memory management, FLEXISPEECH and TRUESPEECH® natural sounding voice prompting for stand-alone or PC-based voice storage systems. The D6375A is fully controlled by the system host through a simple interface protocol. The host processor provides activation and control of all system functions such as speech recording and playback, DTMF and call progress tone detection and generation, and voice prompting.

The fully digital solution has no moving parts, yielding high reliability. The chip's programmability enables a full range of answering device features for the end user. The D6375A is a single-chip, digital signal processor that includes all of the necessary circuitry to interface with an external HOST, memory, and an analog front end.

FEATURES

- High-quality, variable low rate TRUESPEECH® digital speech compression allowing 15-17 minutes of recording time per each 4 MB ARAM (Audio grade DRAM)

- Flexible storage of incoming messages (ICM) and outgoing messages (OGM). Supports multiple OGMs and multiple mailboxes

- TRUESPEECH® natural-sound voice prompting, for Day/Time stamp and voice instructions

- DTMF generation and detection with near-end echo cancellation for superior performance

- FLEXISPEECH variable speed, natural sound playback (50% - 200%)

- True FULL Duplex SpeakerPhone™ with acoustical echo cancellation

- Low power consumption

- 8-bit HOST interface

- Storage of 32 telephone numbers for speed dialing

- Special commands for production line testing

D6375A Product Overview

CHIP CONFIGURATION

- D6375A-11 Digital Speech Processor (80-pin PQFP)
  - 1 each

ADDITIONAL SYSTEM COMPONENTS
(supplied by the customer according to DSP Group's specifications)

- D0000-29 Analog I/O Interface (16-pin DIP)
  - 1 each
- D0000-35C 4-Mbit ARAM Message Memory (SOJ)
  - Up to four devices per chipset

NOTES

For Voice Prompt storage, an external EPROM/ROM (access time of 300ns) is required. Each 16K x 8 block will support 19.5 seconds of voice prompt (up to 64K x 8).

TECHNICAL SPECIFICATIONS			
PARAMETERS	**MIN/TYP/MAX**	**DATA**	**COMMENTS**
Voice Bandwidth		300-3,400 Hz	
Voice Recording Time	typical	15 - 17 minutes	4 MB of ARAM storage
DTMF Detection			
Signal Level	minimum	-35dB	
Accept Duration	minimum	40 ms	
Reject Duration	maximum	23 ms	
VOX Detection Level	minimum	-43dB	
VCC Supply		5V±10%	
ICC Supply Current, Operating Mode	typical	68 mA	
Power Down Mode	typical	7.5 mA	D6375A-11 only
Operating Temperature Range		0° C to 70° C	
Crystal	typical	29.4912 MHz	
Package		80-pin PQFP	

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