HD81801 — Preliminary

ADPCM Speech Encoding/Decoding LSI

The HD81801 is a digital recording and playing LSI. It compresses and codes PCM (pulse Code Modulation) speech data into ADPCM (Adaptive Differential Pulse Code Modulation) speech data in digital recording, and decodes ADPCM data into PCM data in digital playing. The ADPCM speech data is compressed into less than half of the PCM speech data without being affected in the speech quality, which saves the speech memory capacity and the cost of communication channel.

Features
- Both high speech quality and high data compression rate realized by ADPCM coding/decoding.
- Two data compression rates : 32 Kbits/s for higher speech quality 24 Kbits/s for higher data compression rate
- Quick recovery from data transmission error
- Variable playing speed : normal synthesis, high-speed synthesis, double-speed synthesis
- Power output of recording speech
- Speech power detecting function provided to record the necessary speech utterance only.
- Easy construction of a system including A/D, D/A and filter by connecting a CODEC for telephone directly.
- Direct data output to telephone lines using A-law/μ-law PCM CODEC.
- Four types of CODEC available
- System bus compatible with 8/16 bit microprocessor

Specifications

Items	Contents
Coding process	ADPCM (Adaptive Differential Pulse Code Modulation)
Sampling frequency	8 kHz
Coding bit count	4/3 bits
Data rate	32/24 Kbits
Serial interface (CODEC interface)	• μ-law PCM CODEC (ex. HD44238C/HD44278P) • A-law PCM CODEC (ex. HD44237C/HD44277P) • Linear A/D, D/A converter (two's complement) • Linear A/D, D/A converter (offset binary)
Parallel interface (microcomputer interface)	• 8-bit microprocessor • 16-bit microprocessor
Supplementary functions	• Speech part detection • High-speed synthesis mode • Double-speed synthesis mode • Speech power output • Recovery from transmission error
Process	CMOS
Power dissipation	250 mW (Typ)
Power supply voltage	A single power supply of +5 V
Package	DILP-40

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