



# CL-MD1414ECT

Advance Product Bulletin

## FEATURES

- **Data modem modes**
  - CCITT: V.32 bis, V.32, V.23, V.22 bis, V.22, and V.21
  - Bell®: 212A and 103
  - Speeds: 14400, 12000, 9600, 7200, 4800, 2400, 1200, and 300 bps
  - Industry-standard 'AT' command set
- **Fax modem send and receive modes**
  - CCITT: V.17, V.29, V.27 ter, and V.21 ch2
  - Speeds: 14400, 12000, 9600, 7200, 4800, 2400, and 300 bps
  - Supports Group 3 fax
  - Data/Fax EIA/TIA-578 Class 1 'AT' command set
- **Voice mode**
  - Embedded voice mode 'AT' command set
  - Auto-recognition (data/fax/voice) answer mode
  - 3- and 4-bit ADPCM, and A-law compression
- **Telephone emulation**
- **Microphone interface**
- **V.42/MNP® protocols**
  - Error correction: V.42 and MNP® 2-4
  - Data compression: V.42 bis and MNP® 5
- **Two built-in DTE (data terminal) interfaces**
  - Parallel 16C550A/16C450 register-compatible UART
    - Enhances Windows compatibility
    - Built-in COM 1-4 address decoding
    - Direct connection to PC ISA bus
  - Serial RS-232 (V.24)
- **No external microprocessor required** (cont.)

## 14,400-bps Data/Fax/Voice Modem Device Set

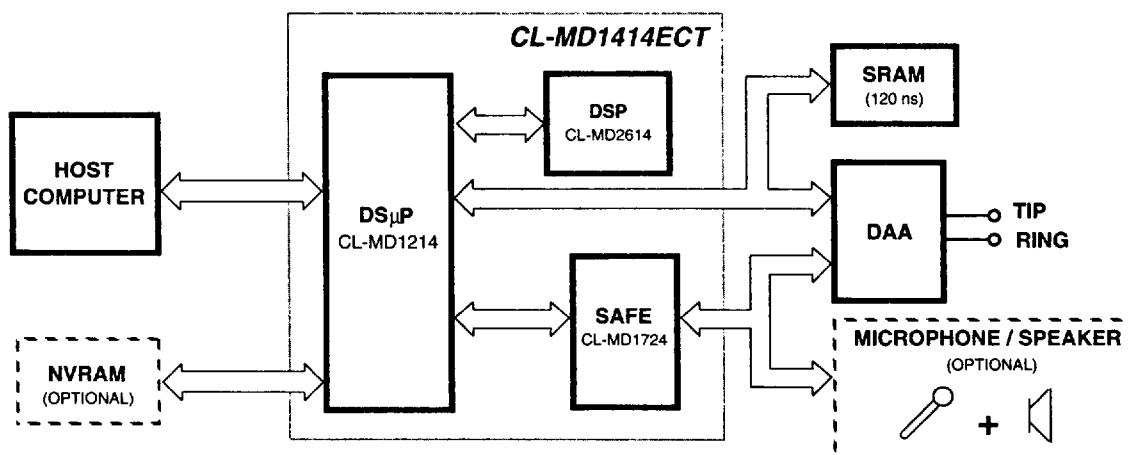
## OVERVIEW

The Cirrus Logic CL-MD1414ECT is a complete, intelligent, multi-mode modem combining data, fax, and voice features in only three devices, the DSμP, DSP, and SAFE.

The CL-MD1414ECT operates up to 14,400 bps (transmit and receive) as a fax modem, and up to 14,400 bps as a data modem. The device set provides a complete solution not requiring any additional firmware development. The CL-MD1414ECT is intended for both stand-alone and integral data/fax modem applications.

This device set provides a complete set of voice/audio functions that allow the host and modem to playback/record voice messages and emulate an answering machine. With the integrated microphone interface and supporting firmware, both dictaphone and telephone emulation are possible with a minimum of additional parts. Three voice-mode compression

(cont.)



CL-MD1414ECT Functional Block Diagram



## CL-MD1414ECT

### Intelligent Data/Fax/Voice Modem Device Sets

## FEATURES (cont.)

- **Low power requirement**
  - Automatic sleep (power-down) and wake-up
  - Operates from a single +5V power supply
  - Typical power requirements:
    - Operating power: 550 mW
    - Sleep mode: 15 mW
    - Stop mode: < 1 mW
- **Data, fax, and voice application software available through third party software vendors**
- **DTMF and tone generation/detection**
- **Analog, local, and remote digital loopback tests**
- **Automatic adaptive and fixed compromise equalizers**
- **Non-volatile RAM (NVRAM) interface**
- **Direct connection to a speaker**
- **Expansion bus**
- **Trellis code modulation**
- **Small package dimensions**
  - DSμP (CL-MD1214): 100-pin PQFP or 100-pin VQFP
  - DSP (CL-MD2614): 100-pin PQFP or 100-pin VQFP
  - SAFE (CL-MD1724): 44-pin VQFP

## OVERVIEW (cont.)

formats (A-Law, 3- and 4-bit ADPCM) provide flexibility for optimizing system quality and performance during playback and record modes.

An extended data and fax 'AT' command set interpreter is embedded in the device sets, allowing system designers to develop a Hayes®-compatible modem with a minimum of effort. The device set provides V.42/MNP® 2-4 error correction and V.42 bis/MNP® 5 data compression to ensure fast error-free data transfer during data modem connections.

The CL-MD1414ECT implements the EIA/TIA-578 Class 1 Standard fax 'AT' command set standards that allow any DTE to communicate with Group 3 fax machines. A voice mode 'AT' command set is also provided to allow a host computer and a CL-MD1414ECT modem to emulate a telephone answering machine.

Low power requirements and small package dimensions make the CL-MD1414ECT ideal for notebook computer, laptop computer, integral modem, box modem, and pocket modem applications.

## ADVANTAGES

### Unique Features

- **14400-bps full-duplex data mode**
- **14400-bps fax transmission and reception**
- **Voice mode**
- **Microphone interface**
- **Telephone-emulation mode**
- **16C550A register-compatible UART**
- **Small package sizes**
- **Sleep and stop mode**
- **Direct connection to PC ISA bus**
- **Requires a single +5V power supply**

### Benefits

- Reduces telephone connect time.
- Latest fax standard. Reduces telephone connect time.
- System can emulate an answering machine.
- Reduces hardware requirements for external microphone or handset.
- System can be used as a telephone.
- Supports enhanced communication software for improved data throughput.
- Minimizes board area.
- Substantially reduces power consumption by over 99 percent.
- Eliminates the need for bus drivers and address decoding logic.
- Simplifies board design.

**CL-MD1414ECT***Intelligent Data/Fax/Voice Modem Device Sets***Table 1. Cirrus Logic Modem Products**

Device Set	Features
CL-MD9624AT	Basic modem that provides a 2400-bps data mode, and 9600-bps fax and voice modes (with two built-in DTE interfaces — serial RS232 and parallel 16C450A/16C550-compatible interface registers that can be connected directly to an ISA bus).
CL-MD9624EC2	Same features as the CL-MD9624AT, plus error correction (V.42 and MNP 2-4) and data compression (V.42 bis and MNP 5).
CL-MD9624ECT	Same features as the CL-MD9624EC2, plus a microphone interface and phone-emulation mode.
CL-MD9624ECP	Same features as the CL-MD9624ECT, except built-in PCMCIA interface with 16C450-/16C550-compatible registers, (i.e., does not support parallel ISA bus and serial RS232 host interfaces).
CL-MD1414ECT	High-speed modem that provides 14,400-bps data, fax, and voice modes (with two built-in DTE interfaces — serial RS232 and parallel 16C450A/16C550-compatible interface registers that can be connected directly to an ISA bus). Error correction (V.42 and MNP 2-4), data compression (V.42 bis and MNP 5), a microphone interface, and phone-emulation mode are also provided.
CL-MD1414ECP	Same features as the CL-MD1414ECT, except built-in PCMCIA interface with 16C450/16C550-compatible registers, (i.e., does not support parallel ISA bus and serial RS232 host interfaces).