



T8537/T8538 Quad Programmable Codec

Features

- +3.3 V operation
- Per-channel programmable gains, equalization, termination impedance, and hybrid balance
- Programmable μ -law, linear, or A-law modes
- Two programmable PCM ports with single and double clocking modes
 - Up to 256 time slots per frame
 - Supports PCM data rates of 512 kbits/s to 16.384 Mbits/s
 - Double clock mode timing compatible with standard ISDN interfaces
- Fully programmable time-slot assignment with bit offset
- Analog and digital loopback test modes
- Serial microprocessor interface
 - Normal and byte-by-byte control modes
 - Fast scan mode
- Six bidirectional control leads per channel, for SLIC and line card function control
- Differential analog output
 - Mates directly to SLICs, eliminating external components
- Sigma-delta converters with dither noise reduction
- Quad design to minimize package count on dense line card applications

Description

The device consists of four independent channels of codec and digital signal processing functions on one chip. In addition to the classic A-to-D and D-to-A conversion, each channel provides termination impedance synthesis and a hybrid balance network.

The device is controlled by a serial microprocessor interface, and a series of bidirectional I/O leads are provided so that this control mechanism can be utilized to operate the battery feed device, ringing voltage switches, etc. Common data and clock paths can be shared over any number of devices. All the filter coefficients, signal processing, SLIC, and test features are accessible through this interface. This serial interface can be operated at speeds up to 4.096 Mbits/s.

The choice of a PCM bus is also programmable, with any channel capable of being assigned to any time slot. The PCM bus can be operated at speeds up to 16.384 Mbits/s, allowing for a maximum of 256 time slots. Separate transmit and receive interfaces are available for 4-wire bus designs, or they can be strapped together for a 2-wire PCM bus.

The device is available in three packages.

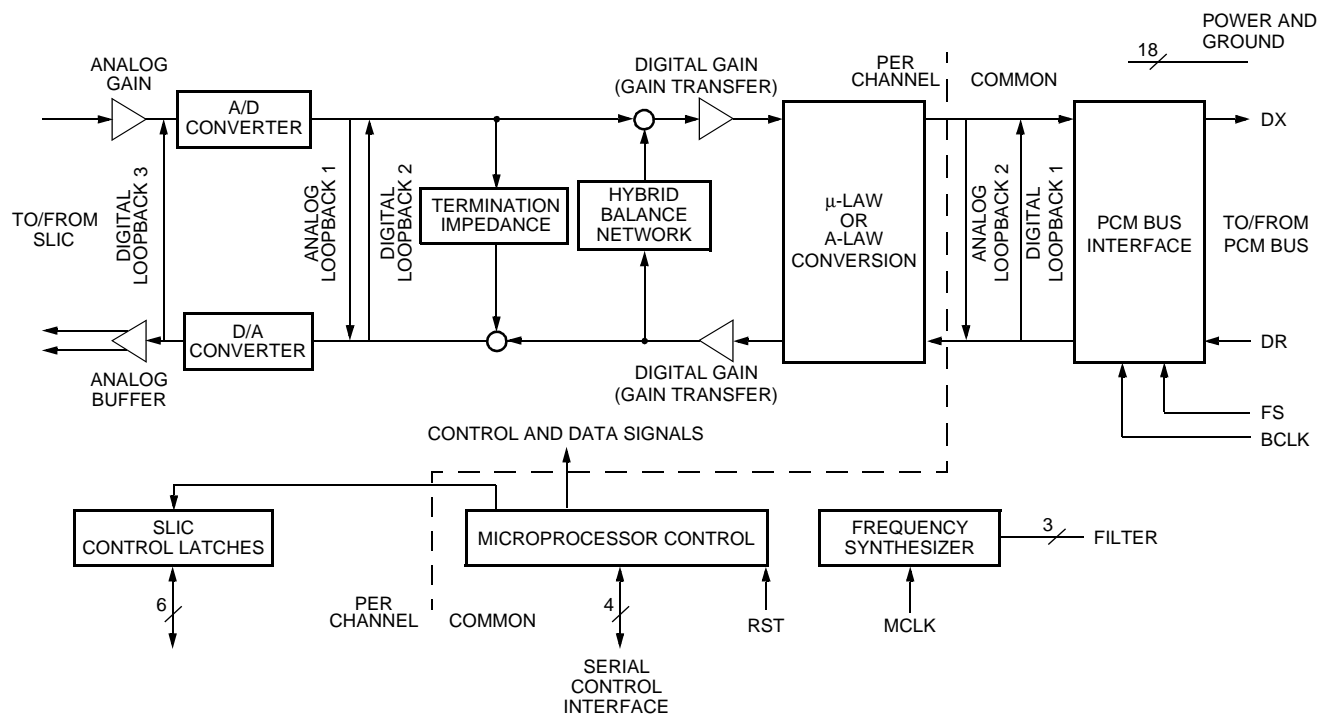
The T8538 64-pin TQFP features five data latches per channel and has two PCM ports.

The T8538 68-pin PLCC features six data latches per channel and has one PCM port.

The T8537 44-pin PLCC has the same features as the 68-pin PLCC but has no data latches.

The PLCC package options are pin compatible with the T8533/T8534 Quad Programmable Line Card Signal Processor with Echo Cancellation.

Block Diagram



5-7172F

For additional information, contact your Microelectronics Group Account Manager or the following:

INTERNET: <http://www.lucent.com/micro>

E-MAIL: docmaster@micro.lucent.com

N. AMERICA: Microelectronics Group, Lucent Technologies Inc., 555 Union Boulevard, Room 30L-15P-BA, Allentown, PA 18103

1-800-372-2447, FAX 610-712-4106 (In CANADA: **1-800-553-2448**, FAX 610-712-4106)

ASIA PACIFIC: Microelectronics Group, Lucent Technologies Singapore Pte. Ltd., 77 Science Park Drive, #03-18 Cintech III, Singapore 118256

Tel. (65) 778 8833, FAX (65) 777 7495

CHINA: Microelectronics Group, Lucent Technologies (China) Co., Ltd., A-F2, 23/F, Zao Fong Universe Building, 1800 Zhong Shan Xi Road, Shanghai 200233 P. R. China **Tel. (86) 21 6440 0468, ext. 316**, FAX (86) 21 6440 0652

JAPAN: Microelectronics Group, Lucent Technologies Japan Ltd., 7-18, Higashi-Gotanda 2-chome, Shinagawa-ku, Tokyo 141, Japan

Tel. (81) 3 5421 1600, FAX (81) 3 5421 1700

EUROPE: Data Requests: MICROELECTRONICS GROUP DATALINE: **Tel. (44) 1189 324 299**, FAX (44) 1189 328 148

Technical Inquiries: GERMANY: **(49) 89 95086 0** (Munich), UNITED KINGDOM: **(44) 1344 865 900** (Ascot),

FRANCE: **(33) 1 40 83 68 00** (Paris), SWEDEN: **(46) 8 594 607 00** (Stockholm), FINLAND: **(358) 9 4354 2800** (Helsinki),

ITALY: **(39) 02 6608131** (Milan), SPAIN: **(34) 1 807 1441** (Madrid)

Lucent Technologies Inc. reserves the right to make changes to the product(s) or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

