Lantiq™ SDFE - 4 / 2 / 1 V2

Symmetric DSL Front End, 4 / 2 / 1 Port

Loop Interface

- Line probing according ITU-T G.991.2 (2004)
- Flexible setting of PSD shaping
- Highly sophisticated TC-PAM line coding
- Programmable framer
- Supported TDM clocks: 1.544 MHz, 2.048 MHz, 2.312 MHz, 4.096 MHz, 8.192 MHz, 16.384 MHz

EOC

- 4/2/1 integrated HDLC controllers for EOC handling (one per channel)
- 128-byte FIFO for transmit and receive direction per channel

Customer Interface

- Universal TDM interface
- Bit-serial interface

Modes

- Line termination unit LTU (STU-C)
- Network termination unit NTU (STU-R)
- Regenerator unit COT/RT (SRU-C/R)

Physical Characteristics

- Only two power supplies: 3.3 V, 1.5 V
- Power consumption approximately 500 mW per channel
- Temperature range -40°C to +85°C
- Package P-LBGA-324 (19 mm x 19 mm)
- SDFE-4/2/1 V2 are pin and software compatible

The SDFE-4/2/1 V2 are the members of Lantiq's 3rd generation SOCRATES™ family of SHDSL transceivers designed for TDM applications.
The SDFE-4/2/1 V2 features full compliance with the ETSI TS 101524 and the ITU G.991.2 (G.SHDSL/G.SHDSL.bis) standards. Advanced system functionality and cost saving features continue to provide significant low BOM advantages in the SOCRATES™ tradition. These features, in combination with an unprecedented power consumption of approximately 500 mW per channel, and a very small footprint, make the SDFE-4/2/1 V2 excellent solutions for remote powered repeater designs.

Applications

- ISDN primary rate access replacement
- SHDSL repeater/regenerator
- Digital Loop Carrier (DLC) Systems
- Extended range full and fractional E1/T1
- RITL and WLL systems
- Wireless infrastructure
- SDH and SONET termination
- TU-12 transport
- Leased line services
- PBX trunk lines

Features

- Fully integrated 4/2/1 channel transceiver solution, including DSP, microcontroller, analog front end (AFE), line driver and memory, in a single integrated chip
- Support of payload data rates from 144 kbit/s up to 15.352 kbit/s with 8 kbit/s granularity (exceeding G.SHDSL.bis)
- M-pair functionality integrated
- Tunable hybrid for optimal loop adaptation and reach
- Only a few external passive components required
- Prepared for Near End Self-Cross Talk Cancellation with separate FW

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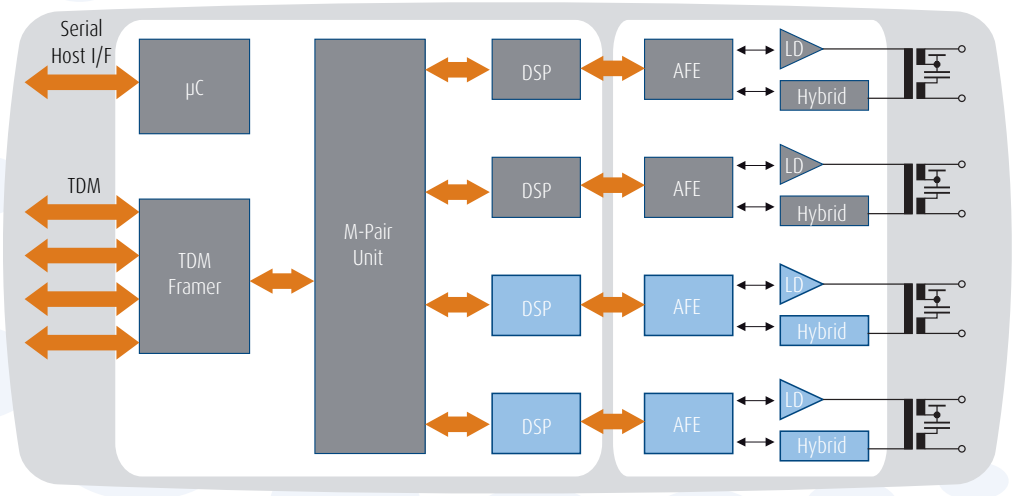
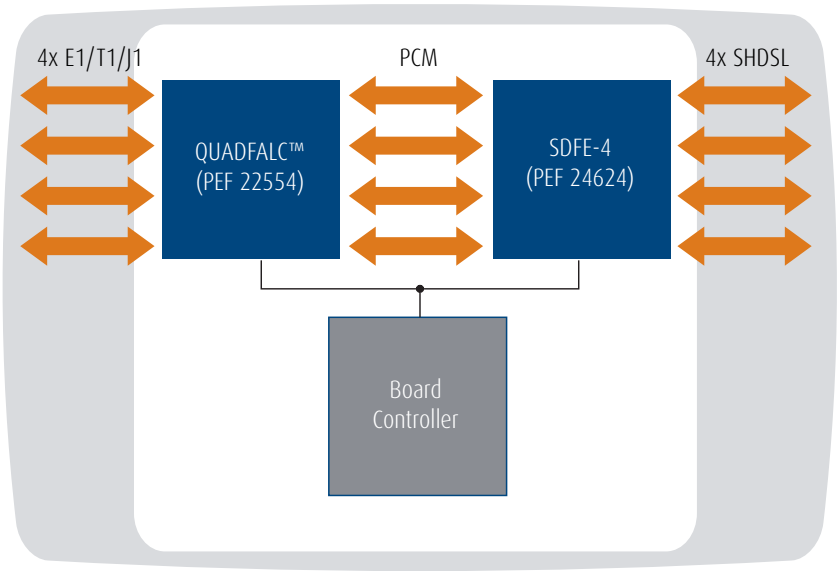
SDFE 4/2/1 V2 PHY Block Diagram



E 1 / T 1 Replacement Application Example



Product Summary

Product	Sales Code	Application	Package
SDFE-4	PEF24624E	4-Channel Symmetric DSL Front End	P-LBGA-324
SDFE-2	PEF22624E	2-Channel Symmetric DSL Front End	P-LBGA-324
SDFE-1	PEF21624E	1-Channel Symmetric DSL Front End	P-LBGA-324

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