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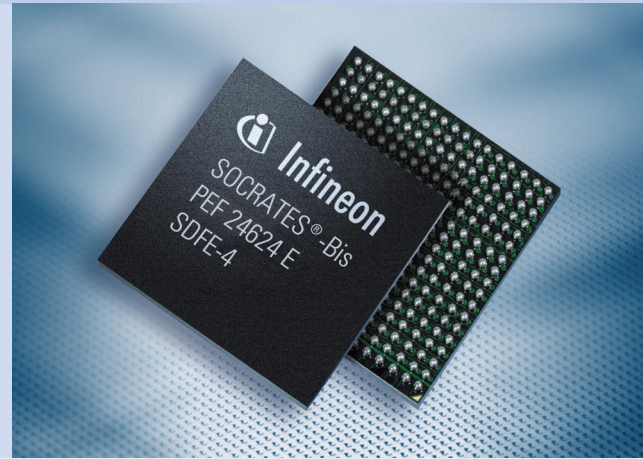
# SDFE-4/2/1

Symmetric DSL Front End, 4/2/1  
Channel

SDFE-4, PEF 24624 E

SDFE-2, PEF 22624 E

SDFE-1, PEF 21624 E



The SDFE-4/2/1 are the latest members of Infineon's 2<sup>nd</sup> generation SOCRATES® family of SHDSL transceivers designed for pure TDM applications.

The SDFE-4/2/1 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 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 6.392 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

## 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, 1.8 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 are pin and software compatible

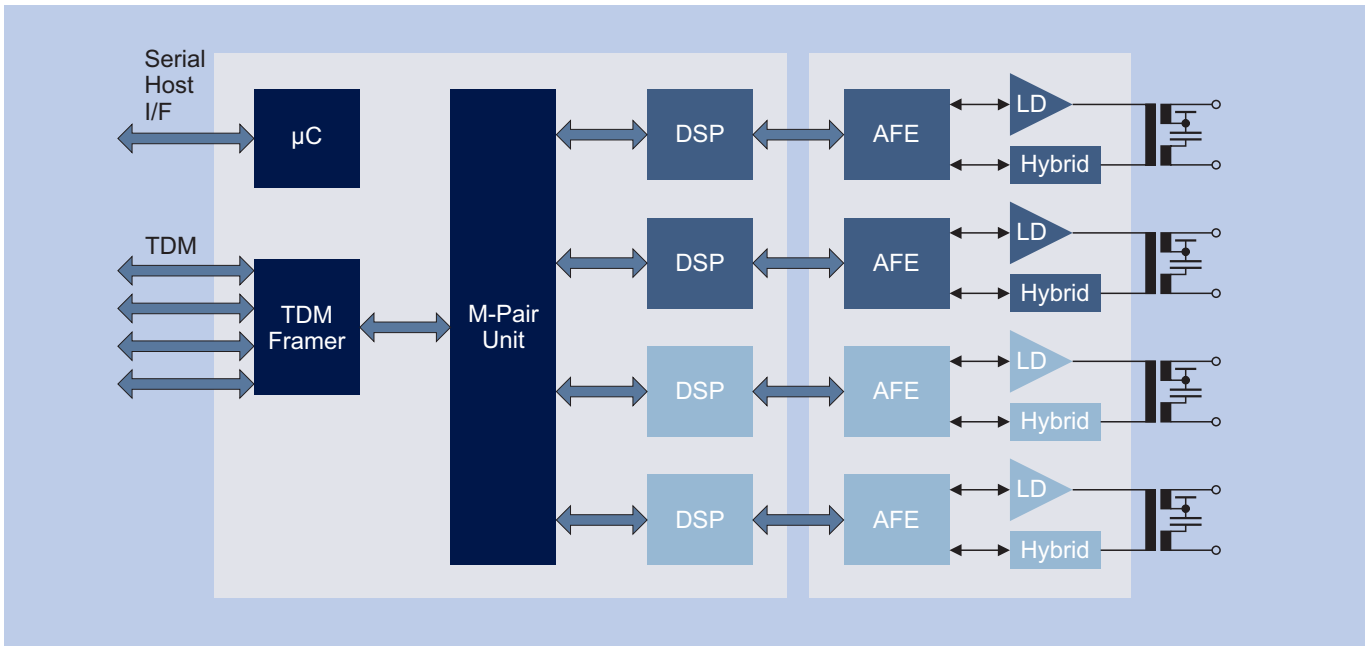
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# Wireline Communications



Never stop thinking.

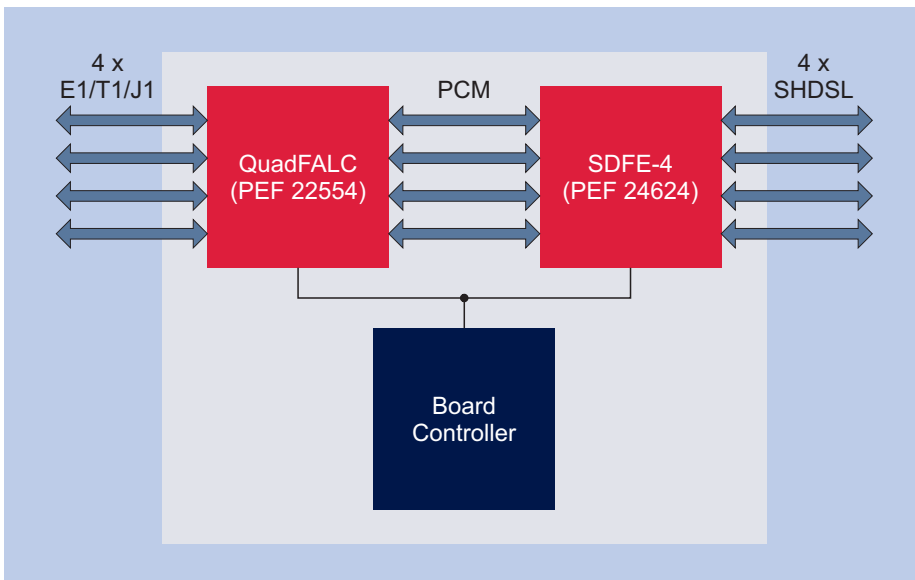
## SDFE 4/2/1 PHY Block Diagram



## Ordering Information

SDFE-4/2/1

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



## E1/T1 Replacement Application Example

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