

## Telecom Application Package PHY Software Products

### Physical Layer Device Interface Software

The Telecom Application Package (TAP) from Mindspeed Technologies™ is “must-have” software that simplifies development for physical layer (PHY) devices. TAP software products support many Mindspeed devices and feature a well-defined application programming interface (API) that allows easy integration with higher-level application software to shorten the development cycle.

TAP software products consist of the following: driver functionality to support configuration management of the device; interrupt and event management; telecom standards support for defect detection, failure monitoring and performance monitoring; and embedded debug monitor and hardware simulator programs to facilitate engineering activities. Direct device-register access is provided through the debug monitor. The software is easy to use with any operating system (OS) and processor platform, which enables quick system integration. T1 packages include Facility Data Link (FDL) functionality. Optional Automatic Protection Switching (APS) software is available for SONET/SDH devices.

### Configuration Management and Diagnostics

The Configuration subsystem sets the operating parameters of Mindspeed's PHY devices. A device's registers and control bits are translated into a set of logical variables, simplifying the configuration process. Default values are used to initialize the device's operating mode.

### KEY FEATURES

- Fully documented API
- Configuration and diagnostics
- Failure and Performance Monitoring
- Embedded debug monitor/hardware simulator
- Facility Data Link for T1
- Meets applicable ANSI, Bellcore, ATM Forum and ITU-T standards
- Optional Automatic Protection Switching software for SONET/SDH
- Family of products provides broad support and aids technology reuse

The Diagnostic subsystem performs control and testing functions on the PHY device. Test sequences verify the integrity of the device at initialization. Remote loopback via the bit oriented code (BOC) and in-band code (IBC) can be enabled by the user for further diagnostic testing.

### Failure and Performance Monitoring

The Failure Monitoring (FM) subsystem monitors the device for defects and events, with alarm integration being the primary role. The user controls which failure indicators are monitored and the length of both activation and deactivation times.

Performance Monitoring (PM) enables a network element to gather, store, threshold and report performance data associated with its monitored digital transmission equipment. Statistics are accumulated for the current



15-minute interval, current 24-hour interval, previous 15-minute interval, and previous 24-hour interval.

The FM and PM features are implemented by calling a periodic timer function. T1 TAP products have 96 "previous 15-minute" intervals implemented, in accordance with ANSI T1.403. Statistics are accumulated for both network and customer premises equipment.

## TAP Software Design

TAP software is written in well-structured and well-documented ANSI-C code. The API is characterized by a high degree of commonality across the TAP family for easy integration with customer application software. The software can function in a polled or interrupt environment to call user-defined event handlers. TAP software does not utilize any OS services and requires little processing power, making it OS- and processor-independent.

All packages in the telecom interface software family share a common set of core driver files that use an extensive table-driven

Product Name	Devices Supported	Software Detail
CX28398TAP	T1/E1 Framers CX28394 CX28395 CX28398	Includes Facility Data Link and CX28380 LIU support
CX28376TAP	T1/E1 Framers w/LIUs CX28370 CX28375 CX28376	Includes Facility Data Link
CX28348TAP	T3/E3 Framers CX28342 CX28343 CX28344 CX28346 CX28348	Full featured
CX28365TAP	T3/E3 ATM Framer CX28365	Full featured
CX29704TAP	OC-3 ATM/POS Framer CX29704	Optional APS software available
CX28228TAP	ATM Device CX28228	Full featured
CX28229TAP	ATM IMA Device CX28229	Required IMA software

## Product Highlights

### Features

**TAP features include:**

- API interface
- Device driver for configuration and diagnostics
- Failure monitoring
- Performance monitoring

- Embedded debug monitor
- Hardware simulator
- Facility Data Link
- Optional APS software
- Configuration and Diagnostics
  - Set operational parameters
  - Diagnostic testing

- Failure and Performance Monitoring
  - Monitor device failures
  - Performance statistics
- TAP Software Design
  - Documented ANSI-C source code
  - Common set of core driver files
  - Highly stable

- Standards compliant
- Common look and feel across TAP software
- Mindspeed PHY devices supported
  - T1/E1
  - T3/E3
  - SONET/SDH
  - ATM

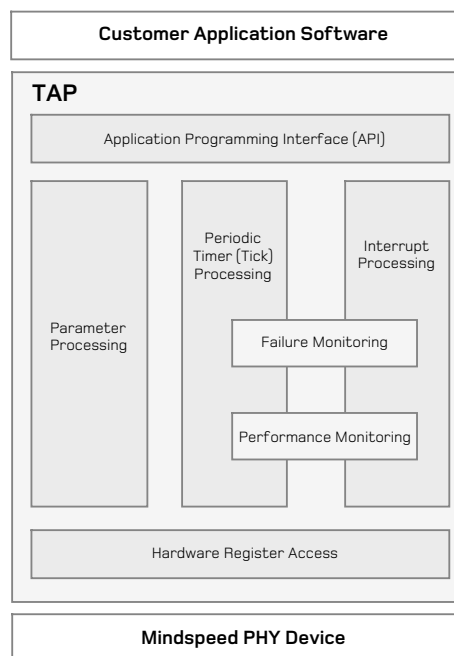
architecture. The highly stable base software cores have been in use for many years and in many different applications. Products using the software have successfully passed standards-compliance testing. TAP software is distributed as commented ANSI-C source code with a PDF user's manual.

## Mindspeed PHY Devices Supported

The telecom application family of software products supports Mindspeed's T1/E1, T3/E3, SONET/SDH, and ATM physical layer devices. These software products abstract the lower device layer and simplify software control of the device.

## Ordering/Licensing Information

Evaluation, single application, system platform, and corporate buyout licenses are available. The product table lists the devices supported and the associated software part number.



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