

INTRODUCTION

EP2450 is a standalone board that allows operation and interoperability testing through the AT2450 interfaces. This data sheet provides an overview of the capabilities and features of the EP2450. Evaluation and testing can be controlled via a 10/100BT Ethernet port connected to either a PC or a LAN. A standard RS-232 debugging port is also provided.

FEATURES

The EP2450 is an evaluation and demonstration platform for the AT2450 and its surrounding devices. It can be used to evaluate the performance of the AT2450 using on-board test capabilities or external SONET/SDH, Next-Gen SONET/SDH, PDH test equipment. The EP2450 can also be used to interface to an existing product or network for interoperability testing. The EP2450 can be used simply using pre-configured or dynamically variable channel allocation demonstrations of the capability of the AT2450.

The features of the EP2450 include the following listed ones:

- ❑ Quad Optical OC-12/3 or STM-4/1 independently programmable channelized network interfaces with integrated SerDes w/CDR, full TOH processing and flexible SONET/SDH multiplexing to the nxDS0 level.
- ❑ Sixteen DS1/E1 and Six DS3/E3 interfaces are provided that can be configured across the total capacities of 672 and 24 streams of these PDH services.
- ❑ An SPI-3 interface for connection to any SPI-3 test device or emulating and testing multiple protocol data over the AT2450 next-gen SONET/SDH capabilities.
- ❑ Flexible master clock options via configuration for using of internal line clock, on-board clock device, or an external clock source.
- ❑ Optional stratum-3 quality of SONET/SDH network clock is provided by the board.
- ❑ The EP2450 implements the Arrive Operating System based on Linux running on the DIMM-PC/520-IE Computer-On-Module.
- ❑ Management station software with point-and-click GUI to configure and monitor the entire board and application service connections.

DESCRIPTION

The EP2450 provides standard interfaces for connections to external PDH, SONET/SDH, packet switching/routing and Ethernet test equipment. It is also an evaluation environment that allows for complete test coverage of the AT2450, including such features as PRBS generation and BER detection.

- ❑ On the SONET/SDH interface, the EP2450 provides four STS-12 optical SFP connectors. Under software control, any port in this interface can be configured as either STS-12 port or STS-3 port.
- ❑ On the PDH interface, the EP2450 provides six standard DS3/E3 connections through six sets of 50Ω SMA connectors. It also supports 16 standard DS1/E1 connections through 16 sets of 50Ω RJ-45 connectors.

OPTICAL INTERFACES

- ❑ Quad individually configurable OC-12/STM-4 or OC-3/STM-1 ports

Note: All multi-rate optical transceivers are small form-factor pluggable optical module. By using SFP optical module, it is flexible for optical wavelengths, different distances, optical fiber modes, as well as optical connector type selection.

ELECTRICAL INTERFACES

- ❑ Six T3/E3 ports - 50Ω connector SMA type
- ❑ Sixteen T1/E1 ports - 50Ω RJ-45 connector type
- ❑ Single input reference clock – 50Ω SMA connector type
- ❑ Single output reference clock – 50Ω SMA connector type

AUXILIARY PORTS

- ❑ SPI-3 0.6 mm connector
- ❑ PDH MUX 0.6 mm connector
- ❑ TOH/POH Drop/Insert 0.6 mm connector
- ❑ External DS0 Interface 0.6 mm connector
- ❑ Telecom Bus 0.6 mm connector
- ❑ Clock Synthesizer 2.54 mm connector
- ❑ JTAG 2.54 mm connector

CONTROL COMPONENTS

- ❑ Based on the AMD® Elan™ SC520 Processor @ 133 MHz, DIMM-PC/520-IE Computer On Module supports up to 32 MB of DRAM and up to 32 MB Flash on board. The DIMM-PC/520-IE is equipped with one 10/100Mbit Ethernet port, and one serial port
- ❑ Optional on-board Stratum-3 Oscillator, Clock Buffer devices, and clock Management Device.
- ❑ Thermal Supervisor
- ❑ 48V isolated DC/DC Power Converter and DC/DC Step-Down Power Supplies

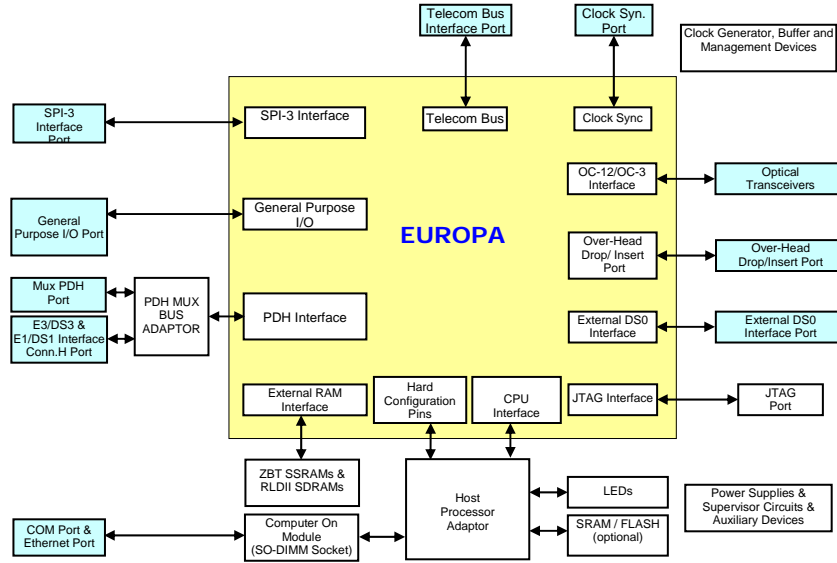


Figure 1: Block Diagram of the EP2450

POWER REQUIREMENTS

- ❑ Power Inputs Options: -48VDC@1.5A (Typical)

EVALUATION PLATFORM OPTIONS

- ❑ Configured by software and customer selections

SOFTWARE SUPPORT

The EP2450 includes a complete set of applications, which are used to demonstrate the management of all interfaces in compliance with ITU, Telcordia standardized functions, including

- ❑ Provisioning and Configuration
- ❑ Fault Management
- ❑ Performance Monitoring

The EP2450 Software is comprised of two parts:

- ❑ The first part is the EP2450 Management Station that runs on a standard PC with Windows NT/2000/XP operating system. This management station utilizes Graphical User Interface (GUI) based software that allows full control and monitoring of the EP2450.
- ❑ The second part is the EP2450 embedded software, which is stored in the flash disk of the Computer-On-Module called DIMM-PC/520-IE It includes two layers:
 - Application layer implements the tasks to support operations including configuration, fault monitoring, performance monitoring. It communicates with EP2450 Management Station through the Ethernet management port.
 - Device driver is a set of high level and low level APIs, which are CPU and OS independent.

EP2450 embedded software runs on Arrive Technologies – Embedded Linux operating system with the real-time feature of Real-Time Application Interface (RTAI-3.1), and it can be ported to other operating systems through the Operating System Abstraction Layer (OSAL).

EVALUATION PLATFORM CONTENTS

- ❑ CD-ROM with Documentation and Software (1)
- ❑ EP2450 Application Board Description hard copy (1)
- ❑ EP2450 System Installation Guide hard copy printout (1)
- ❑ EP2450 Box (1)
- ❑ Power cord for power supply (1)
- ❑ DIMM-PC/520-IE Computer-On-Module (1)

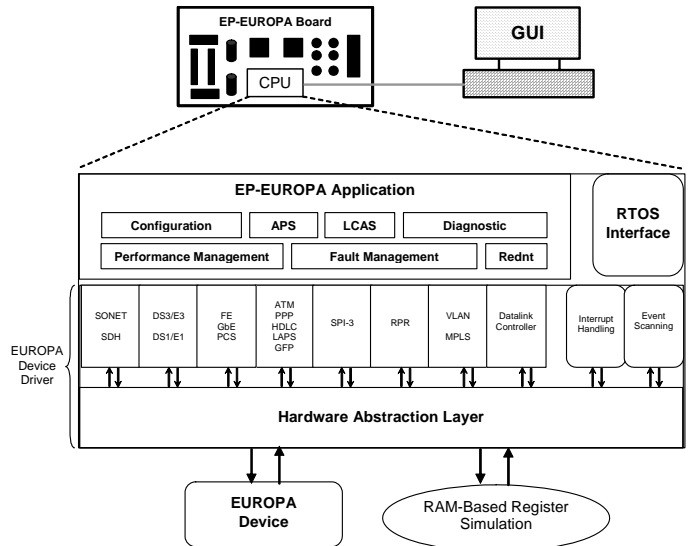


Figure 2: EP2450 Embedded Software Architecture