MINDSPEED™
A CONEXANT BUSINESS

Hardware Programming Interface Software

CX28296

ATM OC–3 and OC–12 Service SAR Hardware Programming Interface

Mindspeed Technologies™ complements our ATM OC-3 and OC-12 Segmentation and Reassembly (SAR) devices with the Hardware Programming Interface (HPI) software family. These HPI products make it easier to program our SAR devices, and enhance runtime data and call setup performance, without sacrificing the programmability of the SAR devices.

SAR HPI Overview

The SAR HPI consists of several components: the HPI, Device Driver Programming Interface (DDPI), Service Categories (ServCat) Manager, OS-specific extensions, and sample applications.

Hardware Programming Interface

The HPI component provides a standardized interface to the OC-3 and OC-12 SAR product family via a set of software primitives. This set allows developers to focus on system development instead of learning all the details of each SAR device. The HPI implements write-only architecture to reduce PCI bus latency and occupancy, improving overall system performance. The HPI supports the ATM TM 4.1 service categories: ABR, CBR, GFR, UBR, VBR-rt, and VBR-nrt.

KEY FEATURES

- Hardware Programming Interface
- Device Driver Programming Interface
- Service Categories manager for ATM TM-4.1 connections
- Performance enhancement
- Write-only architecture
- Portable ANSI-C source code

Device Driver Programming Interface

The DDPI provides an abstraction layer from the HPI, focusing on system-specific functionality. The interface has a set of primitives, including several HPI primitives, which can be used as building blocks for device driver development The DDPI provides a scalable solution with multiple-peer implementation, taking advantage of the SAR devices' peer-to-peer architecture.

Service Categories Manager

The ServCat component provides and maintains information needed for ATM Service Categories connections with the SAR devices. ServCat's traffic parameter conversion makes it easier to program SAR devices, and its integer-only calculation enhances call setup performance.

OS–Specific Extensions

The SAR HPI is a portable C source code conforming to ANSI-C standards for portability to various real-time OSes, with VxWorks® as a sample port. OS-specific functionality is abstracted into a common area for ease-of-porting.
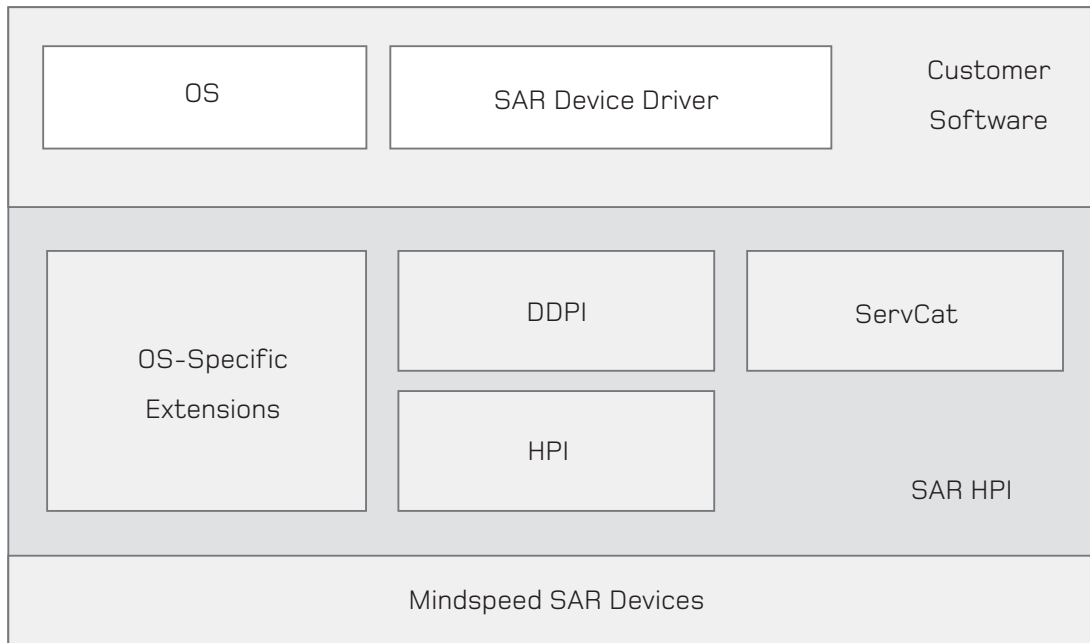
Sample Applications

The SAR HPI includes sample applications as a framework from which OEMs can develop prototypes for system validation.

Ordering Information

OC-3 SAR HPI ordering part number: BT50-J012-001
OC-12 SAR HPI ordering part number: BT50-J015-001

CX28296 functional block diagram

Product Highlights

Features

- **Modular design for optimum performance**
  - **Hardware Programming Interface**
  - **Device Driver Programming Interface**
  - **Service Categories Manager**

- **PCI write–only architecture**
- **ATM TM–4.1 support for ABR, CBR, GFR, UBR,VBR–rt, and VBR–nrt**
- **Multiple client support with peer–to–peer implementation**
- **Multiple PHY support**

- **Portability**
  - **ANSI–C source code**
  - **Extensible to other embedded kernel**
  - **VxWorks® sample port**

MINDSPEED™
A CONEXANT BUSINESS