

Switchtec™ PFX/PSX Gen 6 Fanout PCIe® Switch Family

PM60160 PM60144



Summary

The Switchtec PFX Gen 6 Fanout PCIe Switch Family comprises high-reliability PCIe switches supporting up to 160 lanes, 20 ports, and 10 stacks, hot- and surprise-plug controllers for each port, advanced error containment and comprehensive diagnostics and debug capabilities, a wide breadth of I/O interfaces and an integrated MIPS processor. Bufferization at x8 and x16.

Typical applications for the PFX family include AI accelerators in data center equipment, industrial servers, high performance computing, test equipment, video broadcasting equipment, cellular infrastructure, access networks, metro networks and core networking.

Features

High-Performance Non-Blocking Gen 6 Switches

- 160-lanes
- Up to 20 ports
- Logical non-transparent (NT) interconnect allows for larger topologies
- Supports 1+1 and N+1 failover mechanisms
- NT address translation using direct windows and multiple sub-windows per BAR

Flexible Clocking Architecture

- Input and output reference clocks are based on PCIe stack
- Four input clocks for each stack

Error Containment

- Advanced Error Reporting (AER) on all ports
- Downstream Port Containment (DPC) on all downstream ports
- Completion Timeout Synthesis (CTS) to prevent an error state in an upstream host due to incomplete non-posted transactions
- Hot- and surprise-plug controllers per port
- GPIOs configurable for different cable/connector standards

PCIe Interfaces

- Passive, managed and optical cables
- SFF-8644, SFF-8643, SFF-8639, OCUlink and other connectors
- SHPC-enabled slot and edge connectors

Highlights

- High-reliability PCIe: robust error containment, hot- and surprise-plug controllers per port, end-to-end data integrity protection, ECC protection on RAMs, high-quality, low-power SERDES
- Comprehensive diagnostics and debugging
- Secure system solution with boot image authentication

Peripheral I/O Interfaces

- I3C, Two-Wire Interfaces (TWIs) with SMBus support
- SFF-8485-compliant SGPIO ports
- Parallel GPIO pins
- UARTs
- 100/GE MAC ports (RMII/GMII)
- JTAG and EJTAG interface

High-Speed I/O

- PCIe Gen 6 64 GT/s
- Supports PCIe-compliant link training and manual PHY configuration

Power Management

- Active State Power Management (ASPM)
- Software-controlled power management

ChipLink Diagnostic Tools

- Extensive debug, diagnostics, configuration and analysis tools with an intuitive GUI
- Access to configuration data, management capabilities and signal integrity analysis tools (such as real-time eye capture)
- Connects to device over in-band PCIe or sideband signals (UART, TWI and EJTAG)

Ordering Information

Product	Part Numbers	Lanes
PFX 160xG6 Gen 6 Fanout PCIe® Switch	PM60160A-FEIP	160
PFX 144xG6 Gen 6 F Fanout PCIe Switch	PM60144A-FEIP	144
PSX 160xG6 Gen 6 Fanout PCIe Switch	PM61160A-FEIP	160
PSX 144xG6 Gen 6 Fanout PCIe Switch	PM61144A-FEIP	144

Evaluation Kit

The PM61160-KIT Switchtec Gen 6 PCIe Switch Evaluation Kit is a device evaluation environment that supports multiple interfaces.

Example Application

