

PM5462-KIT

PSX/PFX 48/32/24×G3 3-Slot Evaluation Kit

The PSX/PFX 48/32/24×G3, 3-Slot Evaluation Kit is used to evaluate and test device functionality and measure signal integrity. The kit comes with a PSX SDK.

The kit includes the PM8543 PSX 48×G3 and can be used to evaluate the following devices:

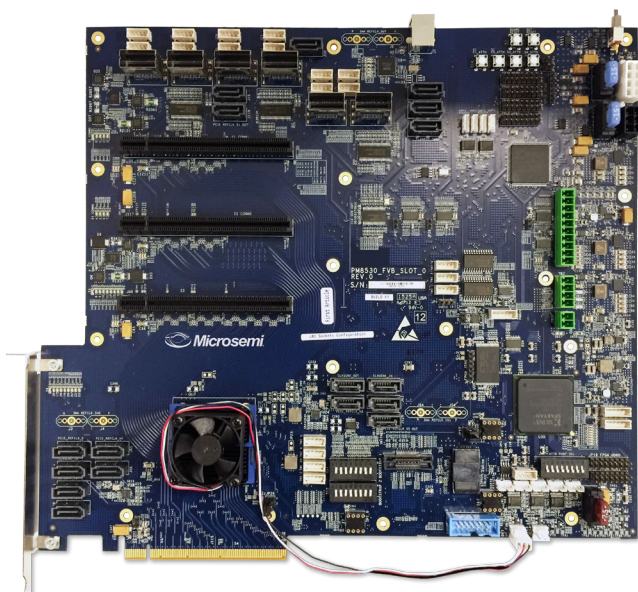
- PM8543 PSX 48×G3, 48-lane PCIe Gen3 Storage Switch
- PM8542 PSX 32×G3, 32-lane PCIe Gen3 Storage Switch
- PM8541 PSX 24×G3, 24-lane PCIe Gen3 Storage Switch
- PM8533 PFX 48×G3, 48-lane PCIe Gen3 Fanout Switch
- PM8532 PFX 32×G3, 32-lane PCIe Gen3 Fanout Switch
- PM8531 PFX 24×G3, 24-lane PCIe Gen3 Fanout Switch

The PSX and PFX families of devices are configurable and managed through external interfaces. Both use an embedded processor running turnkey firmware stored in flash memory. Enhancements can be provided by Microsemi through firmware updates. The PSX firmware is customizable using the PSX Software Development Kit (SDK) available for download from Microsemi.

The kit contains an evaluation card, cables, turnkey firmware, and ChipLink Diagnostic Tools software. ChipLink is a convenient and easy-to-use Windows/Mac/Linux-based GUI that provides access to all hardware functions and status information.

The kit operates with a PCIe host and supports the connection of multiple host entities to multiple endpoint devices.

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Highlights

PCIe Interfaces

- 1 ×16 edge connector for connection to a host
- 3 ×16 PCIe slot connectors (1 ×16 and 2 ×8 electrical) for expansion

PCIe Clock Interface

- Common reference clock with or without spread spectrum clocking (SSC)
- Separate reference clock no SSC (SRNS)
- Separate reference clock with Independent SSC (SRIS)

Serial Peripheral Interfaces (SPI)

- 2 quad SPI buses
- 128 Mbit of on-board SPI flash for bootup and initialization

Peripheral I/O Interfaces

- 8 two-wire (TWI)/SMBus interfaces
- 128-Kbit EEPROM for storage and PCIe switch configuration
- TWI bus access and connectivity to the temperature sensor, fan controller, voltage monitor, GPIO and TWI expanders, PCIe connectors, iPass sideband, and FPGA
- 84 GPIOs that are multiplexed to provide TWI, SPI, SGPIO, and UART interfaces
- UART access using USB Type B and 3-pin connector header for debug
- 14-pin EJTAG connector header for Green Hills Software probe connectivity (PSX only)

FPGA and CPLD Functionality

- Drive board status LEDs
- Monitor interrupts from I/O expanders, PCIe SFF cables
- Provide adaptive voltage scaling (AVS) control signal to device and regulators
- Control and monitor power regulator output
- Manage board and switch reset

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Local Bus Interface (LBI) – PSX Only

- 4 chip selects mapping to a unique 16 MB memory interface
- 128 Mbit of on-board NOR flash memory for storage of firmware image
- 16 Mbit of on-board SRAM for extended command and data RAM

Power Supply

- 0.925 V and 1.8 V power rails supplied by on-board regulators
- PCIe switch sense points for monitoring and measuring power rail voltages
- 12 V power provided through 8-pin CPU power connector, 6-pin PCIe connector or PCIe edge connector (add-in card)

PSX Software Development Kit

- The PSX Software Development Kit allows development and test of custom PCIe switch functionality
- The PSX SDK relies on the Green Hills MULTI® development environment available directly from Green Hills Software
- The EJTAG debugger supports test and debug of custom PSX firmware

ChipLink Diagnostic Tools

The ChipLink Diagnostic Tools software provides:

- Access to registers in the PSX/PFX device
- Configuration of high-speed analog settings for signal integrity evaluation
- Monitoring of status and mode indicators

Ordering Information

Part Number	Device	Ports	PCIe Connector Interface				Max. USB NTB	Max. DSP
			PCIe Edge x16	PCIe Slot Logical		PCIe HD x4		
				x16	x8 (x16 Physical Connector)			
PM5461-KIT	96-Lane	48	1	1	0	16	48	47
PM5462-KIT	48-Lane	24	1	1	2	0	24	23

Kit Contents

Included with the PM5462-KIT:

- PSX/PFX 48/32/24 XG3 3-Slot Evaluation Board
- SFF-8644 (x4) external to SFF-8639 multi-link 1m cable
- SFF-8643 (x4) internal to SFF-8639 multi-link 1m cable
- SFF-8644 (x4) external to SFF-8644 (x4) external 1m cable
- SFF-8643 (x4) internal to SFF-8644 (x4) external 1m cable
- iPass internal-to-internal 1m cable
- SATA-to-SATA cable
- 3-wire to serial 1m UART cable
- Evaluation kit software installation files and user's guide

Kit Requirements

Required for operation of the kit and must be supplied separately:

- Personal computer running Windows, Linux, and/or Mac OS
- ATX 750 W power supply, 1x6-pin PCIe connect and one 8-pin CPU power connector (Microsemi recommends a Corsair CX750M ATX power supply)

Optional and must be supplied separately:

- NVMe/PCIe SSD
- High-speed oscilloscope for performing eye-diagram measurements
- Jitter analyzer for analyzing jitter components
- For PSX only: Green Hills MULTI development environment and EJTAG debugger for firmware development

Optional Evaluation Kit Adapter Cards

NOT included with the kit but available as separate purchases:

- ADP_1x16EDGE_4x4HD: PCIe Gen3 1x16 edge to 4x4 HD
- ADP_1X16SLOT_4x4HD: PCIe Gen3 1x16 slot to 4x4 HD



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