

Total System Solution for Switchtec™ Gen 6 HLC PCIe® Switches

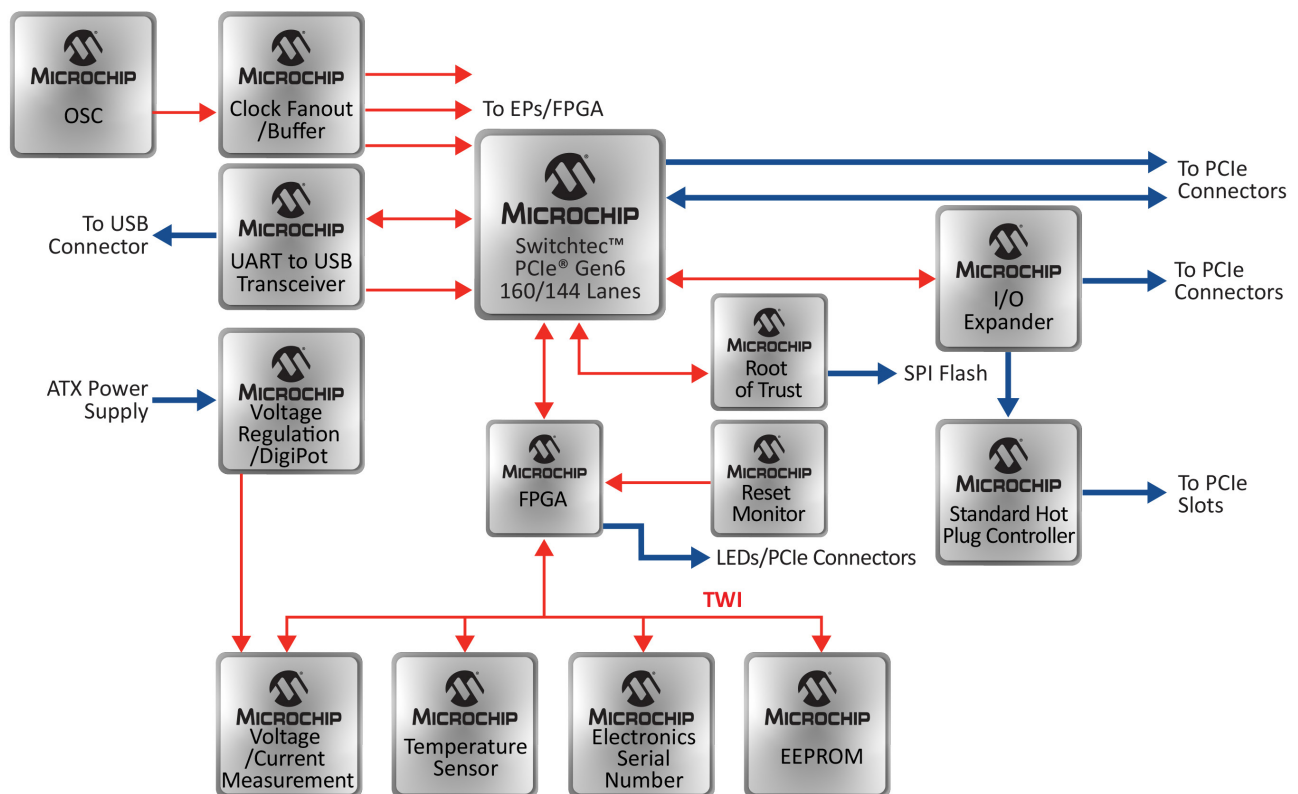
Proven, Validated, Ready Solution

Summary

The Switchtec™ Gen 6 PCIe Switch Family is comprised of high-reliability switches that support up to 160 lanes, hot- and surprise-plug controllers for each port, advanced error containment, comprehensive diagnostics and debug capabilities, a wide range of I/O interfaces and secure boot.

Applications of the Switchtec Gen 6 family of devices include AI/ML training and inference solutions, multi-host architectures, hardware virtualization, high-density servers, GPU arrays, pooled storage/compute, and applications that require customized high-reliability PCIe switching.

Switchtec™ Gen 6 PCIe® Switch Application Diagram



Switchtec Gen 6 Reference Design

- PM61160-KIT: Switchtec Gen 6 PCIe Switch Evaluation Board
- Includes Switchtec Gen 6 Evaluation board BOM and Schematics

Components Recommendations

All components in the following table are rated for Industrial Temperature operation.

Components	Recommended Part #	Description
Switchtec™ PCIe® Gen 6 Switch	PM6xxxx	PSX/PFX Programmable PCIe Switch
DUT Clock Source/AUX Clock Source	ZL30265	6 Any-Frequency, Any-Format Outputs Supports input frequencies from 9.72 MHz to 1.25 GHz and output frequencies from 1 Hz to 1045 MHz Output jitter from fractional dividers is typically < 1 ps RMS, many frequencies <0.5 ps RMS Each output is configurable as LVDS, LVPECL, HCSL, 2xCMOS or HSTL
Reference Crystal for Clock source	VXM7	Frequency range of 12 MHz to 60 MHz with high stability and accuracy
Clock Fanout	ZL40293	Low-Jitter, Low-Power, 20-Output PCIe Buffer Supports clock frequencies from 0 to 250 MHz
Serial EEPROM	24LC128	128 Kb 12C Compatible 2-Wire Serial EEPROM 100 kHz and 400 kHz Clock Compatibility Cascadable up to Eight Devices
Electronic Serial Number (Board)	24AA02UID	EEPROM 2K I2C EE Unique ID
Temperature Sensor	EMC1412	High accuracy, low cost, System Management Bus (SMBus) temperature sensor with $\pm 1^\circ$ measurement accuracy and Beta Compensation
FPGA/CPLD	A3PE3000L	ProASIC® 3L Low-Power Flash FPGA With Flash*Freeze Technology
Reset Monitor	MIC6315, MIC2790	Open-Drain Microprocessor Reset Circuit
Regulator	MIC21LV32, MIC26601, MIC45212-2	DC/DC Low-Voltage Power Modules (Input Voltage < 70V) Up to 93% power conversion efficiency Small QFN package reduces solution size Fully specified from -40°C to $+125^\circ\text{C}$
Power Monitor	PAC1934	Quad DC Power Monitor with Accumulation
Digital Potentiometer	MCP4561	Single Resistor Network 8-bit: 256 Resistors (257 Steps)
Voltage Reference	MCP1501/02	Initial Accuracy: 0.10% Line Regulation: 50 ppm/V maximum
GPIO Expanders	MCP23017/18	16-bit input/output port expander with interrupt output, Cascadable for up to 8 devices on one bus 25mA sink/source capability per I/O
USB to UART/I2C Transceiver	MCP2221A	USB 2.0 to I2C/UART Converter compliant with 64 Byte Transmit & Receive
Root of Trust Controller	CEC1736	Highly configurable, mixed-signal, advanced I/O controller with 32-bit 96 MHz Arm® Cortex®-M4F processor core .
Standard Hot Plug Controller	MIC2591B	Supports two independent PCI Express slot including 12V, 3.3V and 3.3 VAUX supplies.

For More Information

microchip.com/en-us/products/interface-and-connectivity/pcie-switches or contact your local Microchip sales representative.

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