

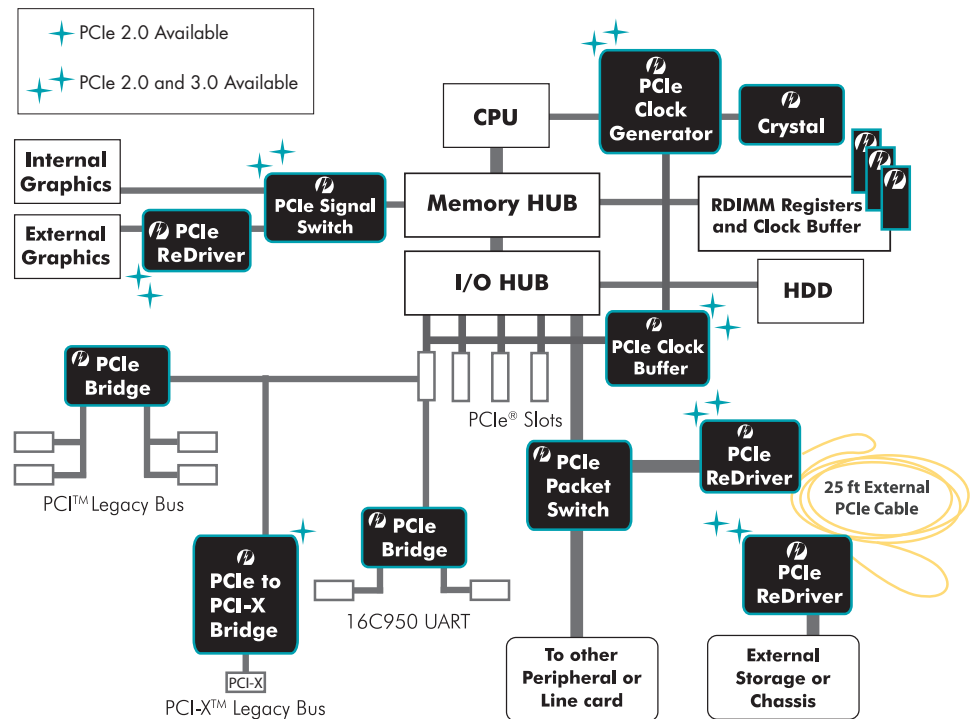
PCI EXPRESS®

Pericom's products for PCI Express® architecture enables signal quality, system performance, flexibility, reliability, system timing, EMI, express cable, and much more. Uniquely, we offer the industry's broadest portfolio of interface solutions for these high-performance protocols, including a growing portfolio supporting 5.0 Gbps PCI Express 2.0 architecture and beyond.

Why design with PCI Express?

- ▶ PCI Express technology provides a point-to-point serial differential low-voltage interconnect
- ▶ Consolidates application requirements for use by multiple market segments
- ▶ A highly flexible, scalable, reliable, and stable high-performance protocol
- ▶ Cost-effective general purpose I/O Architecture
- ▶ Allows for use of new topologies in system and communication design

Broadest PCIe® Solution in the Industry



PCIe Packet Switch, GreenPacket™ & SlimLine™ Families

- GreenPacket™ up to 5-port/8-lane
 - Isochronous data streaming: real-time/live video, 8 traffic classes, 2 virtual channels per port
 - Customer programmable PHY, switching and EEPROM configurable
- SlimLine™ QFP and QFN packages for volume applications
 - Smallest footprint, lowest power: PowerSave™ Technology with similar features of GreenPacket™

PCIe to USB 2.0 Swidge™

- PCIe to USB 2.0 Switch and Bridge in one.

PCIe to PCI-X™ Bridge

- Non-transparent mode and fully reversible – high throughput
- Customer programmable power management features
- PCIe & PCI-X bus Hot-plug support, supports 128, 256, and 512-byte payloads
- The only PCI-SIG 1.1 compliant PCIe to PCI-X bridge in the market

PCIe to PCI Family

- Reversible PCIe-to-PCI Bridge with dual priority modes
- Supports isochronous data streaming: real-time/live video
- Small packages: 12x12 LFBGA 160-pin (9x110) & 14x14 LQFP 128-pin (9x111 & 9x112)
- Reverse mode option – outstanding performance (9x110 & 9x111)
- High-output drivers – 8 PCI devices across connectors – industry unique (9x110 & 9x112)

PCIe to UART I/O Bridge

- Industry first one-chip PCIe to UART Solution, PCI-SIG 1.1 compliant
- 2, 4, or 8 high-performance 16C950 UART ports
- Perfect for POS, RSxxx applications, embedded industrial controls

PCIe 1.0, 2.0, and 3.0 Signal Switching

- 1.8V and 3.3V, 2 and 4-differential channel, 2:1 mux/demux signal switches.
- 3.3V PCIe 2.0/DisplayPort and PCIe 2.0/HDMI signal switches

PCIe 1.0, 2.0 and 3.0 ReDriver™

- 2.5 Gbps x1-lane and x2-lane serial PCI Express repeater/equalizers
- 5.0 Gbps x1-lane and x4-lane PCIe 2.0 Signal Conditioner - the only PCI-SIG certified ReDriver
- 8.0 Gbps x4-lane PCIe 3.0 Signal Conditioner

PCIe 2.0 and 3.0 Clock Generator

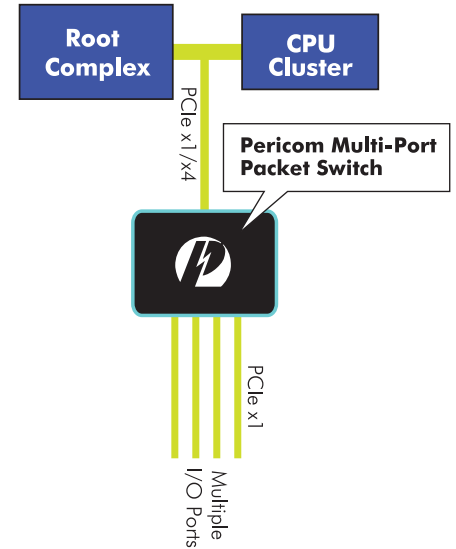
- 100-125MHz PCIe dual & quad output versions with spread-spectrum control.
- For wireless, set-top, MFP and networking applications.

PCIe 2.0 and 3.0 Clock Buffer

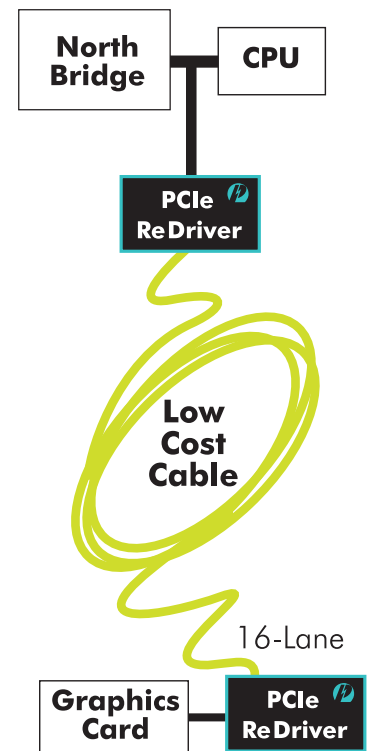
- 1:4, 1:8 PCIe 100MHz differential HCSL and 1:12 PCIe/FBDIMM 100-400MHz differential HCSL, available in PCIe 2.0 and 3.0.
- 1:12 PCIe/FBDIMM 100-400MHz in PCIe 1.0

PCIe 2.0 and 3.0 XO & PCIe Quartz Crystals

- SHPCIE100: PCIe 2.0/PCIe 3.0 Clock Oscillator, Ultra-low Jitter
- GC2500053 25MHz Crystals



TYPICAL PORT EXPANSION USING PERICOM MULTI-PORT PACKET SWITCH



PCI EXPRESS REDRIVER APPLICATION: PCIe ACROSS 25-FOOT CABLE

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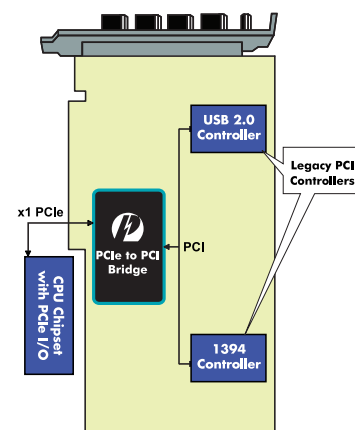
PCIe Signal Switch, Bridge, Packet Switch, Clock and ReDriver

PCI Express Signal Switch (1.0 and 2.0)

Volt.	Part No.	Description	Lanes	Data Rate Gbps	Configuration	Package
1.8V	PI2PCIE212	PCIe bi-directional signal switch	1	2.5	2:1 Mux/Demux, 2-Differential Channels	28-TQFN (ZH28)
1.8V	PI2PCIE2212	PCIe 2.0, bi-directional differential 2:1 with single control	1	5	Mux: 2-Differential Channel	28-TQFN (ZH28)
1.8V	PI2PCIE2214	PCIe 2.0, 1-lane bi-directional differential 4:1	1	5	Mux, 2-Differential Channel	42-TQFN (ZH42)
1.8V	PI2PCIE2412	PCIe 2.0, bi-directional with single enable	2	5	2:1 Mux/Demux, 4-Differential Channels	42-TQFN (ZH42)
1.8V	PI2PCIE2422	PCIe 2.0 bi-directional with single enable and bypass mode	2	5	2:1 Mux/Demux with bypass, 4-Differential Channels	42-TQFN (ZH42)
1.8V	PI2PCIE2442	PCIe 2.0, bi-directional differential 2:2 exchange, single control	2	5	Exchange, 4-Differential Channel	42-TQFN (ZH42)
1.8V	PI2PCIE412-D	PCIe, bi-directional with single enable and enhanced ESD	2	2.5	2:1 Mux/Demux, 4-Differential Channels	42-TQFN (ZH42)
1.8V	PI2DBS6212	PCIe 2.0/SAS2/SATA3/XUA1 2:1 Signal Switch			Mux/Demux 2-Differential Channels	28-TQFN (ZH28)
3.3V	PI3PCIE2215	PCIe 2.0, bi-directional differential 2:1, with single control	1	5	Mux: 2-Differential Channel	28-TQFN (ZH28)
3.3V	PI3PCIE2415	PCIe 2.0, dual graphics mux, single enable	2	5	Mux, 2:1: 4-Differential Channel	28-TQFN (ZH28)
3.3V	PI3PCIE2612-A	PCIe 2.0 / DisplayPort (6-channel), ATX pinout	-	5	Mux, 6-Differential Channels, ATX pinout	56-TQFN (ZF56)
3.3V	PI3PCIE2612-B	PCIe 2.0 / DisplayPort (6-channel), BTX pinout	-	5	Mux, 6-Differential Channels, BTX pinout	56-TQFN (ZF56)
3.3V	PI3PCIE2615	HDMI/PCIe 2.0/Level-shifting 1:2 display mux, inverted HPD	-	5	Mux, 6-Differential Channels	56-TQFN (ZF56)
3.3V	PI3PCIE2635	HDMI/PCIe 2.0 level-shifting 1:2 display mux, non-inverted HPD	-	5	Mux, 6-Differential Channels	56-TQFN (ZF56)
3.3V	PI3PCIE3415	PCIe 3.0, 2-lane, differential 2:1 mux/demux single enable, 3.3V	4	8	Mux, 2:1: 4-Differential Channel	TQFN (ZH42)
3.3V	PI3PCIE3412	PCIe 3.0, 2-lane, differential 2:1 mux/demux single enable, 3.3V	4	8	Mux, 2:1: 4-Differential Channel	TQFN (ZH42)

PCI Express Bridges (available in Pb-free & Green and Pb-ball option for PI7C9X110/PI7C9X130)

Part No.	Description	PCI Bus Masters	PCI Speed	PCI Bus Width	Ports	Lanes	Package
PI7C9X110	PCIe-to-PCI Reversible Bridge	8	66 MHz	32-bit	1 PCI	1	LFBGA (NB160)
PI7C9X111SL	PCIe-to-PCI Reversible Bridge with PowerSave™	4	66 MHz	32-bit	1 PCI	1	LQFP (FD128)
PI7C9X112SL	PCIe-to-PCI Reversible Bridge with PowerSave™	8	66 MHz	32-bit	1 PCI	1	LQFP (FD128)
PI7C9X130	PCIe-to-PCI-X Reversible Bridge	-	133 MHz	64-bit	1 PCI-X	4	PBGA (ND256)
PI7C9X7952	PCIe-to-Dual UART I/O Bridge	-	-	-	2 UART	1	LQFP (FD128)
PI7C9X7954	PCIe-to-Quad UART I/O Bridge	-	-	-	4 UART	1	LQFP (FD128)
PI7C9X7958	PCIe-to-Octal UART I/O Bridge	-	-	-	8 UART	1	LFBGA (NB160)
PI7C9X440	PCIe-to-USB Host Controller	-	-	-	4 USB	1	LQFP(FD128)
PI3C9X442SL	Swidge™ PCIe-to-USB 2.0/PCIe	-	-	-	4 USB/ 2 PCIe	1	LQFP(FD128)



INTERFACE LEGACY PCI CONTROLLERS TO PCIe-BASED SYSTEMS

PCI Express Packet Switches

Part No.	Description	Ports	Lanes	Package
PI7C9X20303SL	3-port, 3-lane, SlimLine™ PCIe Packet Switch with PowerSave™ Technology	3	3	LQFP (FD128)
PI7C9X20404SL	4-port, 4-lane, SlimLine™ PCIe Packet Switch with PowerSave™ Technology	4	4	LQFP (FD128)
PI7C9X20303UL	3-port, 3-lane, UltraLo™ PCIe Packet Switch with PowerSave™ Technology	3	3	TQFN (ZP132)
PI7C9X20505GP	5-port, 5-lane, PCIe Packet Switch with GreenPacket™ Technology	5	5	PBGA (ND256)
PI7C9X20508GP	5-port, 8-lane, PCIe Packet Switch with GreenPacket™ Technology	5	8	PBGA (ND256)

PCI Express Timing Generators and Clock Buffers

Part No.	Function	Jitter	Skew	Speed	I/O	Outputs	Package
PI6C20400A	Zero-Delay Buffer 2.0	50ps	50ps	100MHz	HCSL	4	SSOP (H28)
PI6C20400B	Zero-Delay Buffer 3.0	50ps	50ps	100MHz	HCSL	4	SSOP (H28)
PI6PCIEB24	Zero-Delay Buffer 2.0	50ps	50ps	100MHz	HCSL	4	TQFN(ZD20)
PI6C20800S	Zero-Delay Buffer 2.0	50ps	50ps	100MHz	HCSL	8	TSSOP (A48), SSOP (V48)
PI6C20800B	Zero-Delay Buffer 3.0	50ps	50ps	100MHz	HCSL	8	TSSOP (A48), SSOP (V48)
PI6C21200	Zero-Delay Buffer	50ps	50ps	400MHz	HCSL	12	TSSOP (A56), SSOP (V56)
PI6C410	Synthesizer, Generator	85ps	100ps	400MHz	Differential	2+7+1+7+1+1	SSOP (V56), TSSOP (A56)
PI6C410BS	Synthesizer, Generator	50ps	100ps	400MHz	CMOS/Differential	4+5+7+1+2	SSOP (V56), TSSOP (A56)
PI6C410M	Synthesizer, Generator	85ps	100ps	400MHz	Differential	2+8+1+6+1+1	SSOP (V56), TSSOP (A56)
PI6C557-03A	Synthesizer, Generator 2.0	3.1ps*	60ps	200MHz	CMOS/HCSL	2	TSSOP (L16)
PI6C557-03B	Synthesizer, Generator 3.0	1ps rms**	600ps	125MHz	CMOS/HCSL	2	TSSOP (L16)
PI6C557-05B	Synthesizer, Generator 3.0	1ps rms**	60ps	125MHz	CMOS/HCSL	2	TSSOP (L16)
PI6C557-05	Synthesizer, Generator 2.0	3.1 rms*	60ps	200MHz	HCSL	4	TSSOP (L20)
PI6C557-10	Synthesizer, Generator	86ps pk-pk	N/A	33, 100MHz	CMOS/HCSL	1+1	TSSOP (L16)

*rms jitter as defined by PCI-SIG® for PCIe 2.0; **rms jitter as defined by PCI-SIG® for PCIe 3.0

PCI Express 2.0 & 3.0 Crystal Oscillator

Part No.	Function	Jitter	Skew	Speed	I/O	Outputs	Package
SHPCIE100	Crystal Oscillator	HF = 2.5ps rms max*	N/A	100MHz	1	HCSL	7.0mm x 5.0mm

*rms jitter as defined by PCI-SIG® for PCIe 3.0

PCI Express ReDriver™

Part No.	Function	Protocol	Data Rate Gbps	Lanes	Input Equalization Options, dB	Output Level Options	Output Swing, mV Max	Output Emphasis, dB	Package
PI2EQX4401D	equalization and de-emphasis redriver	PCIe	2.5	1	0, 2.5, 4.5, 6.5	1.0x, 1.2x	1300	0, -3.5	36-TQFN (ZF36)
PI2EQX4402D	equalization and de-emphasis	PCIe	2.5	2	0, 1.5, 2.5, 3.5, 4.5, 5.5, 6.5, 7.5	0.8x, 1.0x, 1.2x, 1.4x	1600	0, -2.5, -3.5, -4.5	84-LFBGA (NB84)
PI2EQX4432D	equalizer with flow-through pinout	PCIe	2.5	2	2.5, 6.5	1.0x, 1.2x	1300	0, -3.5	48-TQFN (ZD48)
PI2EQX5804D	redriver	PCIe 2.0	5.0	4	1.2, 1.5, 2.6, 4.3, 5.8, 7.1, 9.0, 12.3	0.5, 0.7, 0.9, 1.0	1000	0, -2.5, -3.5, -4.5, -5.5, -6.5, -7.5, 8.5	100-LBGA (NJ100)
PI2EQX5864D	I2C control redriver	PCIe 2.0	5.0	4	1.2, 1.5, 2.6, 4.3, 5.8, 7.1, 9.0, 12.3	0.5, 0.7, 0.9, 1.0	1000	0, -2.5, -3.5, -4.5, -5.5, -6.5, -7.5, 8.5	56-TQFN (ZF56)
PI3EQX5701	equalization & emphasis	PCIe 2.0	5.0	1	5, 11	1.0x	1000	0, -3.5	20-TQFN (ZD20)
PI3EQX8804	equalization & emphasis	PCIe 3.0	8.0	4			Contact Pericom for more info		100-LBGA (NJ100)
PI3EQX8864	equalization & emphasis	PCIe 3.0	8.0	4			Contact Pericom for more info		72-TQFN (ZL72)