QuickPCI ESP Family

Embedded PCI Controllers for High Performance and Short Development Times

QuickPCI Family Highlights

- **High Performance** – Up to 600MB/s PCI bus performance with 0 wait states, independent "back-end" clock speeds of up to 160MHz

- **Short Development Times** – Guaranteed performance, timing and functionality

- **Complete Solutions** – Reference Development Kits with boards, devices, and software drivers available

- **Flexible -** Wide range of devices available to support master and target functions for 32-bit and 64-bit PCI buses at speeds of 33MHz, 66MHz, and 75MHz

- **High Density** – Up to 122K gates of programmable logic with up to 25.3K bits of embedded dual-port RAM

The QuickPCI™ family of Embedded Standard Products (ESPs) combines high-performance embedded PCI controllers with high-speed programmable logic to create a unique system-level solution for design engineers. QuickPCI devices match the integration and performance levels of standard products with the flexibility of programmable logic. This approach eliminates the uncertainty associated with evaluating and implementing soft IP for FPGAs, while providing greater flexibility than standard-product PCI devices.

The QuickPCI family features five devices, the QL5030, QL5130, QL5032, QL5232 and QL5064. Together these devices span a wide range of PCI functions, bus widths and bus speeds. For example, the QL5030 and QL5130 are 32-bit, 33MHz target-only devices, while the QL5032 and QL5232 are 32-bit, 33MHz master/target controllers, and the QL5064 supports master/target controller 32-bit and 64-bit operation at 33MHz, 66MHz, and 75MHz. Both 3.3 volt and 5.0 volt PCI buses are
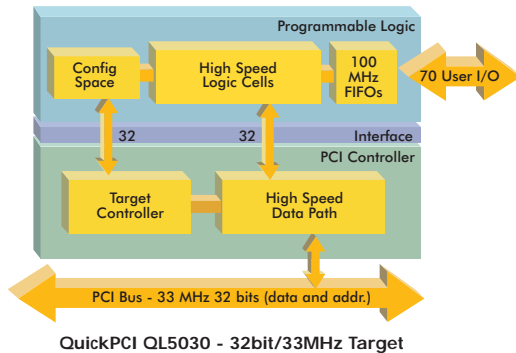
QuickPCI ESP Family

Device	PCI Function	PCI Speed	PCI Width	RAM Bits	System Gates	Packages
QL5030	Target	33MHz	32-bits	9.2K	24K	144-TQFP
QL5130	Target	33MHz	32-bits	13.8K	57K	144-TQFP 208-PQFP 256-PBGA
QL5032	Master/Target	33MHz	32-bits	16.1K	37K	208-PQFP 256-PBGA
QL5232	Master/Target	33MHz	32-bits	25.3K	122K	208-PQFP 456-PBGA
QL5064	Master/Target	33,66, 75MHz	32- or 64-bits	12.7K	74K	456-PBGA 484-PBGA

QuickLogic ®

Embedded Standard Products . . . a generation ahead

The five QuickPCI devices offer the user a broad selection of logic cell and RAM bit counts, as well as speed grade and package options. Therefore nearly any application which requires a PCI interface and a user-customized "back-end" can be quickly and easily implemented in one of QuickLogic's QuickPCI devices.
In addition, Reference Development Kits including boards, devices and software drivers are available to speed your development cycle.
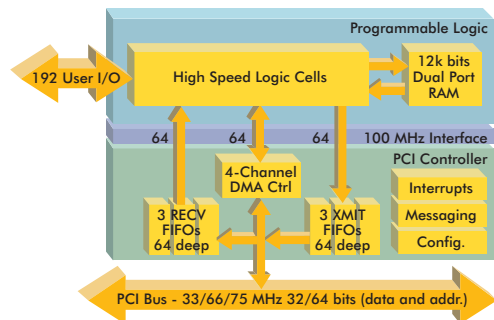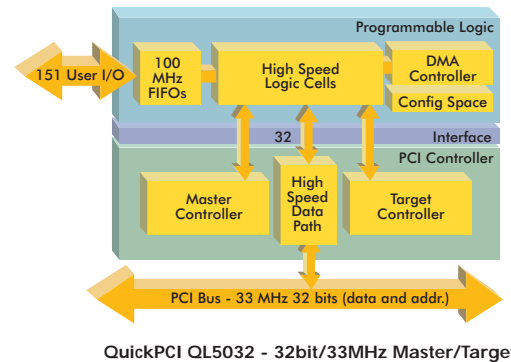
QuickPCI QL5030 - 32bit/33MHz Target

The QL5030 and QL5130 feature:

- 32-bit / 33MHz Target PCI Controller
- Programmable back-end interface to optional local processor
- Independent PCI bus (33MHz) and local bus (up to160MHz) clocks
- Fully customizable DMA and PCI configuration space
- Configurable FIFOs with depths up to 128 words

The QL5032 and QL5232 feature:

- 32-bit / 33MHz Master/Target PCI Controller
- Zero-wait state PCI Master provides 132MB/s transfer rates
- Programmable back-end interface to optional local processor
- Independent PCI bus (33MHz) and local bus (up to 160MHz) clocks
- Fully customizable DMA and PCI configuration space
- Configurable Master/Target mode FIFOs with depths from 64 to 256
- Reference design with driver code (Win 95/98/NT4.0) available

QuickPCI QL5032 - 32bit/33MHz Master/Target

QuickPCI QL5064 - 32, 64 bit/33, 66, 75MHz Master/Target

The QL5064 features:

- 64-bit / 66MHz Master/Target PCI controller
- 75MHz PCI Interface supported for embedded systems
- Compliant to PCI specification v2.1 & v2.2
- Programmable back-end interface with three 100MHz, 64-bit buses
- Provides full 528MB/s PCI data transfer rates (600MB/s at 75MHz)
- DMA chaining mode for queued DMA transactions
- Four-channel DMA mastering plus other advanced features

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