A Product Line of Diodes Incorporated

Product Brief

Product: **PCIe2 6-Port/6-Lane Packet Switch, GreenPacket Family**

Part Numbers: **PI7C9X2G606PR**

Product Description

The PI7C9X2G606PR is a 6-lane PCI Express Gen 2 Switch with 6 PCI Express ports specifically designed to meet high performance and the latest GREEN low-power, lead (Pb)-free system requirements, such as Network, Embedded, Storage and other platforms. The name of the family, GreenPacket™, refers to Pericom proprietary power saving technology.
The PI7C9X2G606PR provides one upstream port supporting x1, and 5 downstream ports that support x1 operation. The flexible upstream port provides users the flexibility to expand or fan-out from a wide range of x86, ARM, MIPS, PowerPC SoC/ Chipset, and it is a suitable solution for wired/ wireless Networking, Switch router, Embedded, Storage, HBA, Surveillance, Combo card and other applications.

Industry Specifications Compliance

- PCI Express® Base Specification, Revision 2.1
- PCI Express CEM Specification, Revision 2.0
- PCI-to-PCI Bridge Architecture Spec., Rev 1.2
- Advanced Configuration Power Interface (ACPI) Specification
- SMBus interface support

Features

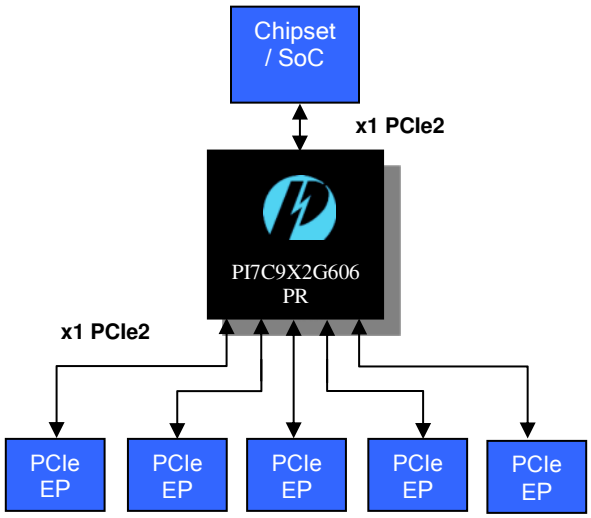
- PCISIG PCI Express 2.1 certificated
- Reliability, Availability and Serviceability
  - Supports Data Poisoning and End-to-End CRC
  - Advanced Error Reporting and Logging
- Device State Power Management
  - Supports D0, $D3_{Hot}$ and $D3_{Cold}$ device power states
- Advanced Power Savings
  - Empty downstream ports are set to idle
- Programmable driver current and de-emphasis level at each individual port
- Port Arbitration: Round Robin (RR), Weighted RR and Time-based Weighted RR
- Extended Virtual Channel capability
  - Two Virtual Channels (VC) and Eight Traffic Class (TC) support
  - Independent TC/VC mapping for each port
- Supports Isochronous Traffic
  - Isochronous traffic class mapped to VC1 only
- Supports "Cut-through"(Default) as well as "Store and Forward" mode for switching packets
- Strapped pins configurable with optional EEPROM or SMBus
- Peer-to-peer switching between any two downstream ports
- Supports up to 512-byte maximum payload size
- Power Dissipation: 0.6 W typical in L0 normal mode
- Industrial Temperature Range: -40° to 85°C
- MTBF: 50,927,360 hours
- Package: 196-pin LBGA 15mm x 15mm
  - Pb free and 100% Green

Enhanced Features

- 150ns typical latency for packet running through switch without blocking
- Link Power Management
  - Supports L0, L0s, L1, L2, $L2/L3_{Ready}$ and L3 link power states
  - Active state power management for L0s and L1 states
  - Supports PCI-PM and ASPM of L1.1 PM Sub-state
- Supports Device Specific PME Turn-Off Message for each downstream port
- Support Access Control Service (ACS) for peer-to-peer traffic
- Support Address Translation (AT) packet for SR-IOV application
- Support OBFF and LTR
- Support Serial Hot Plug Controller

Application

- Wireless AP/ Switch Router
- Wired/ Wireless Tele/ data communication
- Embedded system
- IPC/ Industrial control
- Automotive
- NAS/ Storage
- Server
- Printer/ MFP/ Peripheral
- Surveillance/ Security
- HBA / Combo cards
- Set-top box and consumer devices
- NB/ PC Motherboard PCIe slot expansion



Order Information

PART NUMBER	PACKAGE	PB-FREE & GREEN	TEMPERATURE
PI7C9X2G606PRDNJAEX†	196 LBGA	YES	-40°C TO 85°C
PI7C9X2G606PRDEVB	Board	Evaluation kit for PI7C9X2G606PRD	

† Note: Adding an X suffix =Tape/Reel

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