

Velocity™ Gigabit Ethernet Controllers

Velocity VT6120/VT6121/VT6122

Single chip Gigabit Ethernet Controller solutions for the next generation of high speed networks, satisfying even the most intense data transfer requirements.

The VIA Networking Velocity™ series of Gigabit Ethernet controllers enable leading-edge performance in a highly integrated package, making them ideal for a diverse range of PC client or server LAN on Motherboard (LOM), and Network Interface Card (NIC) applications. Integrating a feature laden MAC and Cicada's patented SimpliPHY™ transceiver, the Velocity Controllers are optimized for space constrained systems with a low power, low profile design. With full management support, the VT6120 and VT6122 enable Gigabit Ethernet on the PC with their 32-bit PCI architecture, while the VT6121 caters to the enterprise market with 64-bit PCI compatibility.

Supporting 10/100/1000 Mbps triple-speed and full/half-duplex capability at all speeds, the integrated Cicada PHY is fully compliant with IEEE 802.3 (10BASE-T), 802.3u (100BASE-TX), and 802.3ab (1000BASE-T) standards. With Cicada's proven SimpliPHY™ transceiver technology, VIA Networking's Velocity controllers feature best-in-class narrow band noise tolerance that delivers superior performance in real world applications.

To minimize host-side CPU utilization, VIA Networking Velocity Gigabit Ethernet Controllers feature an adaptive interrupt scheme to reduce interrupts made to the processor, and maximize the use of packet bursts for efficient PCI bandwidth usage. The Velocity controllers can further offload tasks from the host CPU to improve the overall system performance with TCP/UDP/IP checksum, and TCP segmentation offloading.

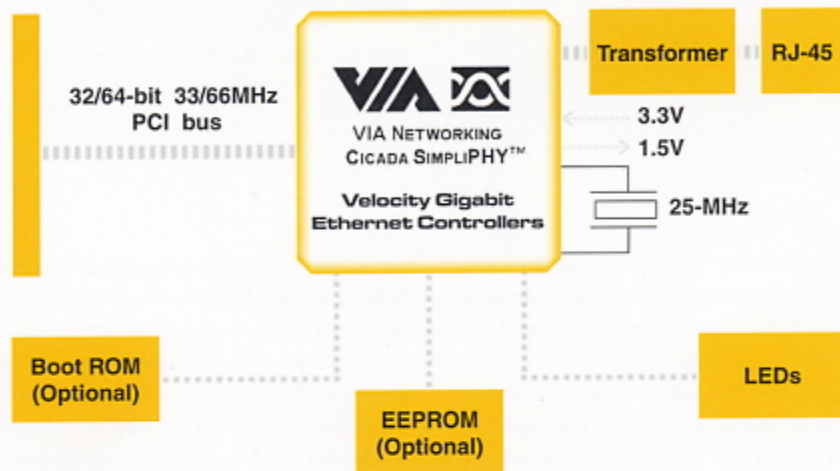
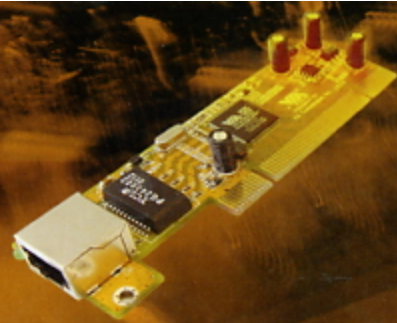
To maximize network manageability, the VIA Networking Velocity Series of Gigabit Ethernet controllers include the sophisticated GigaCheck™ link management software integrating Cicada's powerful VeriPHY™ cable diagnostics suite that makes available comprehensive cable diagnostics, operating analysis, and status information, greatly simplifying network management and troubleshooting.

To reduce system complexity and cost, the VIA Networking Velocity Gigabit Ethernet controllers utilize a single 3.3V power supply, and also support advanced power management features.



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Benefits

Highly Integrated Solution

10/100/1000 single chip solution that includes checksum offloading, jumbo frame support, a deep on-chip Tx/Rx packet buffer, and a full suite of management features including compliance with IEEE 802.3ab, 802.3x, 802.p, 802.1Q standards.

Integrated SimpliPHY™ Technology

Cicada's integrated SimpliPHY technology ensures outstanding noise tolerance on cabling, delivering superior performance in real world applications. For example, when operating over a 100m worst case Category-5 cable, SimpliPHY transceivers provide from five to ten times better narrow band noise tolerance than competitive PHYs.

Low Power

With a 0.15Micron design requiring only a single 3.3V power supply, VIA Networking's Velocity Gigabit Ethernet controllers fully support the latest ACPI, WoL, and PCI Power Management standards. The controllers will also automatically switch from 1000Mbps to 100 or 10Mbps in standby mode, further reducing power consumption.

GigaCheck™ Software Interface

A full software suite enables comprehensive cable diagnostics, operating analysis, and status information. The software also can provide information regarding connection speed, link quality, cable analysis, and VLAN management- all in an easy to use attractive interface.

Features

- Gigabit Ethernet MAC and PHY supporting full and half duplex 10/100/1000 triple-speed operation
- Leading DSP-based Cicada PHY technology: 10BASE-T, 100BASE-TX, and 1000BASE-T compliant
- Support for PCI v2.3
 - VT6120 & VT6122: 32-bit 33/66MHz
 - VT6121: 64-bit 33/66MHz
- Flow control support (IEEE802.3x)
- Priority Queuing support (IEEE 802.1p)
- Virtual LAN (VLAN) Support (IEEE802.1Q)
- Management Features
 - MIB counters, SNMP/RMON monitoring
 - Wake on LAN (WoL) support
- IPv4 TCP, IP, and UDP checksum off-loading
- IPv4 TCP segmentation off-loading capability over Tx
- Power Management
 - PCI Power Management v1.1, ACPI 2.0
 - Wake-up from PRE-ACPI and abnormal shut-down
 - Automatic link switch from 1000 to 10 or 100 in standby
- PXE 2.1 remote boot support
- IEEE 1149.1 JTAG built-in
- EEPROM not required
- Complete driver support
 - Windows 95, 98(SE), ME, 2000, NT, XP, Server 2003
 - Linux, Novell, Unix, DOS, Boot ROM, Macintosh
- 3.3V I/Os (5V tolerant)
 - Integrated 3.3V to 1.5V regulator circuit



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