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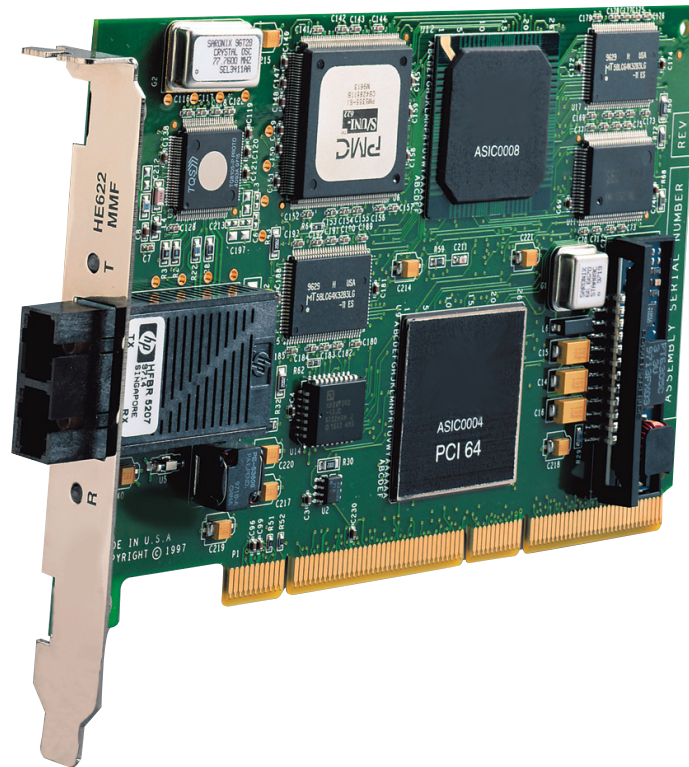
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# FORERUNNER™ HE 155 AND 622 ATM NETWORK INTERFACE CARDS

Unleash the Power of Servers



ForeRunnerHE Asynchronous Transfer Mode (ATM) network interface cards (NICs) are designed for high-performance networking, delivering a robust feature set and field-proven ForeThought® software support. Targeted for servers and high-performance workstations, ForeRunnerHE NICs set the standard for network connectivity.

Servers are the nerve centers of any computing-based enterprise. But a server is only useful if it allows for efficient access. The explosion of Internet and intranet installations, along with increasing processor speeds, have taxed server resources. As computing demands escalate, so does the need for high-performance network connectivity. ForeRunnerHE NICs deliver 155 Mbps or 622 Mbps of full-duplex connectivity, as well as software support for multiple cards in a system.

## Key benefits

- The ability to keep pace with client demands on servers
- Support for reliable, standards-based ATM software, which is licensed to more than 40 partners, including Microsoft, Hewlett-Packard, and Silicon Graphics, Inc. (SGI)
- Universal Peripheral Component Interconnect (PCI) support for investment protection
- Superior server connectivity
- Solutions for all types of computers deployed in the user environment



## **Superior architecture, superior performance**

Utilizing 33/66 MHz PCI bus speeds and 32- or 64-bit data transfer options, ForeRunnerHE NICs ensure the maximum standardized performance. These NICs support up to 4,000 active virtual circuits (VCs) — with any mix of constant bit rate (CBR), emulated variable bit rate (VBR), and unspecified bit rate (UBR).

Delivering 155 Mbps or 622 Mbps of full-duplex bandwidth to connect servers directly to ATM backbones, the PCI-based ForeRunnerHE NICs are perfectly designed to manage the bandwidth demands of data while ensuring the Quality of Service (QoS) needed for voice and video. They are the ideal choice for high-performance server networking.

## **Leveraging the strengths of ATM**

ForeRunnerHE NICs eliminate intermediate hops and translation devices between the server and network backbone to measurably increase both LAN and WAN client performance. With 622 Mbps bandwidth, users can aggregate client traffic to relieve network congestion at the server. A ForeRunnerHE connection provides the bandwidth required to support hundreds or even thousands of clients — without impacting overall network performance. For redundancy, users can load-balance traffic and have failover capabilities at either 155 Mbps or 622 Mbps.

The ForeRunnerHE NICs are a perfect representation

of the Ericsson ATM legacy. These NICs optimize networking efficiency and maximize client/server potential with features such as the following:

- 33/66 MHz PCI support
- 32- or 64-bit data transfer (depending on PCI slot)
- Transmission Control Protocol (TCP) checksum calculation
- Dynamic direct memory access (DMA) in bursts

The heart of the ForeRunnerHE NIC is the application-specific integrated circuit (ASIC). With hardware support for VBR (emulated), CBR, and UBR, this ATM ASIC can carry voice, video, and data simultaneously via high-performance systems. And because the NICs are in their fifth generation, operators can rest assured that these cards will deliver on their promises.

## **Key features**

- ForeThought software support
- Microsoft® Windows® Hardware Quality Labs (WHQL) certification for:
  - Windows 2000: Professional, Server, Advanced Server
  - Windows XP: Home, Professional
  - Windows Server® 2003: Standard Edition, Enterprise Edition, Web Edition
- Advanced ATM ASIC
- 33/66 MHz, 32-/64-bit PCI (66 MHz PCI is available with the ForeRunnerHE 622 Mbps NIC)
- Support for 4,000 VCs
- Support for a wide range of operating systems
- UBR, VBR (emulated), and CBR support
- 155 Mbps and 622 Mbps speeds

## Data summary

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### Hardware

ATM support	NetPro ASIC supports UBR and CBR; OC-3c (155 Mbps) and OC-12c (622.08 Mbps) full-duplex capabilities
Connectors and cabling	
Multimode fiber	Duplex 62.5 $\mu$ m/125 $\mu$ m; 2,000 m ( 6,561 ft) maximum; 10 dB loss; SC connectors
UTP (155 Mbps NIC only)	2-pair, 100-ohm Category 5 UTP or Category 5 Screened UTP cable; 100 m (328 ft) maximum; RJ-45 connector
DMA support	384 bytes (write); 768 bytes for 155 Mbps NIC (read), maximum burst size; 1,536 bytes for 622 Mbps NIC
Electrical power requirements	15 W @ 5 V
Emissions and electrical compliance	
EMC	EN50082-1, EN50022
EMI	FCC Part 15, Class A; EN55022 Class A;VCCI, Class 1; TS016
Safety	UL 1950/CSA 950, EN60950, EN60825, IEC 825.1, IEC825.2
Environmental	
Operating temperature	41° F to 113° F (5° C to 45° C), up to 10,000 ft (3,048 m)
Operating humidity	20% to 80% relative humidity, non-condensing
Storage temperature	-40° F to +158° F (-40° C to +70° C), up to 30,000 ft (9,144 m)
Host interface	Full bus mastering, dynamic burst sizing, multiple programmable interrupts, receive queue prioritization, TCP checksum calculation
Memory	2 MB of synchronous DRAM for buffering; support for 4,000 VCs
Optical signal requirements	-14 to -20 dBm transmit power (155 Mbps and 622 Mbps NICs); -14 to -30 dBm receiver sensitivity (155 Mbps NIC); -14 to -26 dBm receiver sensitivity (622 Mbps NIC)
PCI bus	Designed to Universal PCI 2.1/2.2 specification PC or server PCI 2.1, 33/66 MHz (66 MHz available only on the 622 Mbps NIC), 32-bit addressing, 32- or 64-bit data; 3.3 V or 5 V; Universal PCI short form factor; cache-line-aware design for efficient bus utilization
Platform support	Intel® Pentium®, Intel Pentium Pro, and Intel Pentium II/III/4; Sun® UltraSPARC®; SGI® Origin®, Silicon Graphics® Onyx2™

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### Software

ATM support	ForeThought software, including Multiprotocol over ATM (MPOA), LAN Emulation (LANE) 1.0, and Classical IP (CLIP; RFC 1577); ATM Adaptation Layer Type 5 (AAL-5), AAL-0, and AAL-1 support (via AAL-0); User-Network Interface (UNI) 3.0/3.1/4.0
Industry-standard application program interfaces (APIs)	XTI and Winsock2 for native ATM programming
Value-added software	Load-balancing/failover software supports multiple IP interfaces in a single system; Lapp QoS for legacy application service guarantees

*Note: ForeThought software is not available for Microsoft Windows 2000, Windows XP, and Windows 2003. Microsoft supplies the device drivers for these operating systems.*

## Compatibility matrix

ForeRunnerHE 155 Mbps and 622 Mbps NICs support the following machine types and operating systems:

Machine type(s)	Operating system(s)	Driver software
Systems based on Intel Pentium, Intel Pentium Pro, and Intel Pentium II/III/4	Windows NT® 4.0	ForeThought
	Windows 2000, Windows XP, and Windows 2003	Microsoft driver
SGI	IRIX 6.5	Driver available from SGI
Sun UltraSPARC	Solaris™ 2.5, 2.6, 2.7, 2.8, 2.9	ForeThought
Sun Fire™ V210, V240, and V440	Solaris 10	ForeThought

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