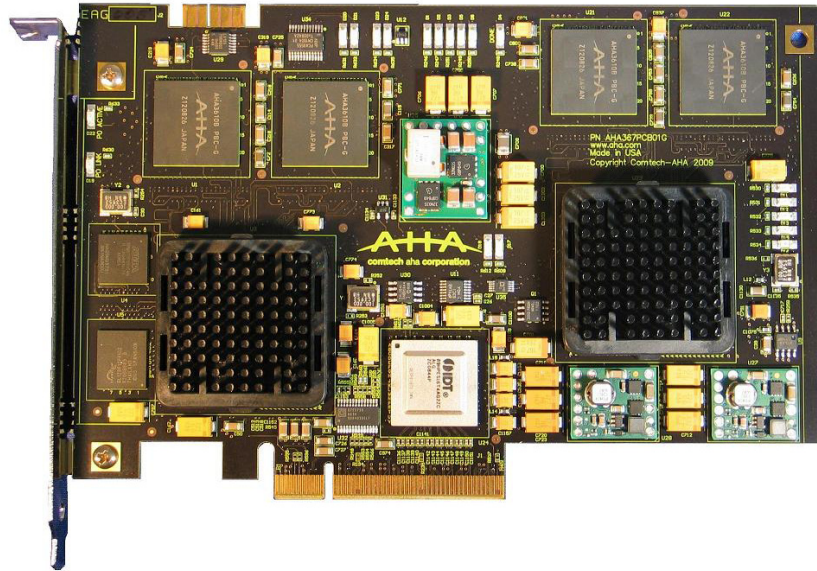


AHA367-PCle

10.0 GBITS/SEC GZIP COMPRESSION/DECOMPRESSION ACCELERATOR



INTRODUCTION

The AHA367-PCle is a PCI Express plug in card that adds GZIP compression and decompression acceleration to data networking streams. This card supports data rates of 10.0 Gigabits per second while achieving high compression ratios equivalent to high effort GZIP software. Communication and storage networks require high-speed compression solutions to reduce latency on communication links; reduce bandwidth on these links; and reduce media requirements when storing files to disk or tape.

The AHA367-PCle is more than ten times faster than software with a comparable configuration. Software compression solutions require dedicated CPU resources and do not achieve the high throughput required for many systems. The AHA367-PCle is ideal for SAN servers, Virtual Tape Emulation backup systems, application servers, point-to-point communication links, web servers and load balancers.

FEATURES

- Open standard algorithm
- PCI Express 2.0 x8 Interface (backward compatible with Gen. 1)
- Scatter Gather DMA
- Standard height, half length card
- Compatible with AHA363-PCle drivers for ease of integration
- High Compression Ratio
- Minimal expansion of uncompressable data
- Full duplex operation

Table 1: Compression Ratio Performance

Files	AHA367-PCle	LZS*	ALDC
Calgary Corpus	2.7:1	2.2:1	2.1:1
Canterbury Corpus	3.6:1	2.7:1	2.7:1
HTML	4.4:1	3.4:1	2.65:1

*LZS compression results are based on publicly available descriptions of the LZS algorithm



This product is covered under multiple patents held or pending by Comtech AHA.

SOFTWARE SUPPORT

- Linux, Windows, and Open Solaris reference drivers with source code
- Drivers and Plug-ins for Microsoft IIS and Apache web servers
- 32-bit and 64-bit OS support
- ZLIB Interface

FUNCTIONAL DESCRIPTION

The AHA367-PCIe card is an eight lane PCI Express plug-in card that incorporates the AHA3610 GZIP compression/decompression integrated circuit. The card compresses or decompresses any data at a sustained throughput of 10.0 Gbps¹. Compressed data from the card is compliant with the deflate and GZIP file formats. Any deflate block or GZIP compressed file can be decompressed and the original block or file restored by this board. Software drivers include C source code for both Linux and Microsoft Windows platforms and middleware Plug-ins for Apache Web Server, Microsoft IIS, and ZLIB.

Using efficient scatter/gather DMA operations, uncompressed data is retrieved by the card via the PCI-Express edge card interface, compressed, and the output transferred back to the host over the same PCI-Express interface. Decompression follows the same path as the compression, except the compressed data is decompressed.

APPLICATION SERVERS AND LOAD BALANCE APPLIANCES

E-commerce, financial and many other sites have complex applications and large databases that generate dynamic content for thousands of users simultaneously, resulting in large volumes of traffic. These servers are heavily loaded and do not have extra CPU bandwidth to perform GZIP compression or decompression.

This card will improve efficiency at these sites by compressing data transmitted between servers and the database, by compressing content transmitted to clients on the Internet, and by decompressing content from the clients faster and without loading the CPU.

STORAGE APPLIANCES

The amount of data that needs to be stored is increasing, as is the need to secure data. Government regulations are compounding these requirements. This results in an increase in back-up hardware and media. Vendors must optimize back-

up resources to control costs. Hard disk drives do not contain compression hardware because their random access nature makes this task difficult to manage.

These systems would benefit by reducing database size using compression. Additional CPU loading is minimized in the storage appliance since the compression and decompression tasks are off-loaded to the GZIP plug-in card.

APACHE WEB SERVER

Apache HTTP server software supports GZIP compression of web content data, but enabling GZIP compression in software typically swamps the heavily loaded servers. Installing a Comtech AHA GZIP board with the Apache plug-in software offloads the GZIP compression function to a hardware coprocessor and greatly reduces the time to serve web content. This shortens download times for the user and can increase the number of clients handled by the server using the same bandwidth.

POWER

Comtech AHA's board is much more power efficient than software based GZIP. Power consumption relative to the GZIP compression function is lower by at least 5X compared to a Quad Core CPU running GZIP in software.

ORDERING INFORMATION

Part Number	Description
AHA367-PCIe	10.0 Gbps GZIP compression/decompression accelerator

ABOUT AHA

Comtech AHA Corporation (AHA) develops and markets superior integrated circuits, boards, and intellectual property core technology for communications systems architects worldwide. AHA has been setting the standard in Forward Error Correction and Lossless Data Compression technology for many years and provides flexible, cost-effective solutions for today's growing bandwidth and reliability challenges. Comtech AHA Corporation is a wholly owned subsidiary of Comtech Telecommunications Corp. (NASDAQ: CMTL). For more information, visit www.aha.com.



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1. Full throughput available with 8 active lanes for PCIe Gen 1 or 4 or more active lanes for PCIe Gen 2.