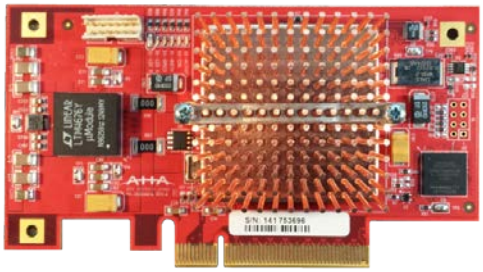
PRODUCT BRIEF

# AHA371 / AHA372

## PCI Express® Compression and Decompression Accelerator Card



## FEATURES

- Supports open standard algorithms GZIP and ZLIB
- Supports LZS algorithm
- Full duplex operation
- PCIe 2.0 x8 interface
- High compression ratio
- Minimal expansion of uncompressible data
- Supports streaming of large files or blocks
- Supports compression of intermixed blocks from different files
- Low Profile PCIe Form Factor

## APPLICATIONS

- WAN acceleration appliances
- Application servers
- Load balance appliances
- Storage appliances
- Web servers

**Table 1: AHA371 / AHA 372 Compression Ratios**

| Files | GZIP |
|---|---|
| Calgary Corpus | 2.85:1 |
| Canterbury Corpus | 3.63:1 |
| HTML Corpus | 6.25:1 |

## INTRODUCTION

The AHA371 and AHA372 products are PCI Express® plug-in cards that perform compression/decompression at either 10 Gbps or 20 Gbps throughput. Vendors who have traditionally implemented open source GZIP or zlib compression software now can free up CPU resources while achieving optimal compression ratio and throughput performance. In addition, those using LZS can support this legacy algorithm while having the higher compression ratios of GZIP and zlib available in their systems.

Software compression solutions require dedicated CPU resources and do not achieve the high throughput required for many systems. The AHA371 and AHA372 provide significantly higher throughput while reducing CPU load, and are ideal for SAN servers, Virtual Tape Emulation backup systems, application servers, point-to-point

communication links, web servers, and load balancers.

## FUNCTIONAL DESCRIPTION

The AHA371 and AHA372 cards are eight lane PCI Express® 2.0 plug-in cards that incorporate AHA's proprietary GZIP and zlib compression accelerator technology. The AHA371 contains a single AHA3641 IC that implements AHA's patented compression/decompression engines, while the AHA372 contains a single AHA3642 IC. Compressed data from the cards is compliant with the Deflate, GZIP, and ZLIB file formats. For systems requiring legacy support, the cards are also capable of operating as an LZS compression/decompression engine. The software driver, available as C source code for Linux and Solaris platforms, efficiently balances streams among the compression engines for maximum throughput. Middleware Plug-ins for the Apache Web Server and ZLIB are available.

Using efficient scatter/gather DMA operations, uncompressed data is retrieved by the cards via the PCI-Express edge card interface, compressed, and the output transferred back to the host over the same PCI-Express interface.

## SOFTWARE SUPPORT

- Linux and Solaris reference drivers with source code
- ZLIB interface
- Drivers and Plug-ins for Apache Web Servers

## APPLICATIONS

Most application servers, storage appliances, and web servers can benefit from compression. By compressing network or internet traffic before transmission, bandwidth can be saved and overall transmission times can be reduced. Compressing data before storage will increase the effective amount of storage available.

Many of these appliances can perform some form of software compression. However, software compression cannot maintain the data rates required by modern, high-performance systems. Additionally, software compression places a significant load on already taxed processor resources.

Utilizing the AHA371 and AHA372 compression accelerators allows systems to compress at high data rates while keeping the processor resources free for other tasks.

## POWER

The AHA cards are much more power efficient than software based GZIP.

| Part Number | Typical Power Draw at Full Throughput |
|---|---|
| AHA371 | 12W |
| AHA372 | 14W |

This is a significant power savings and a significant throughput increase compared to a dedicated server class processor.

## ORDERING INFORMATION

| Part Number | Description |
|---|---|
| AHA371B01 | 10.0 Gbps Low Profile PCIe GZIP compression accelerator |
| AHA372B01 | 20.0 Gbps Low Profile PCIe GZIP compression accelerator |

## ABOUT AHA

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

aha products group

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