

AHA3410 StarLite* Compression Coprocessor

- Simultaneous Compression/Decompression
- Typical 4:1 Compression For Bitmap Images
- 25 Mbytes/Sec. Comp/Decomp Throughput
- 32-Bit Synchronous Data Port
- Burst DMA or PIO Mode Data Transfers
- 100 Mbytes/Sec. Burst Data Rate
- Synchronous 8-Bit Video In and Out Ports
- Error Checking in Decompression
- Software Emulation Program Available
- 120-pin Quad Flat Package

AHA3410 StarLite* is a single chip CMOS VLSI coprocessor device that implements a lossless compression and decompression algorithm. The algorithm exhibits a typical compression ratio of over 4 to 1 for bitmap image data. The device supports simultaneous compression and decompression operations at 25 Mbytes/sec. each.

StarLite interfaces directly to Intel's i960® processors. Compression and decompression data transfers occur over a high speed bidirectional 32-bit data bus capable of up to 100 Mbytes/sec. synchronous data rates. A flexible interface allows for data transfers via DMA or PIO. Two 8-bit synchronous video data ports provide ability to optionally interface to scanner and print engine respectively for multi-function laser printer and copier applications.

Software simulation and an analysis of the algorithm for printer and copier images of various complexity are also available for evaluation.

System Application

The device fits best into memory intensive raster image applications. These applications require the simultaneous compression and decompression capability of the device. Scanned data is fed

through the video in port while the decompression engine feeds the print engine in copier applications. A DMA controller or PIO typically controls data movement through the chip. In printer applications a band of image may require decompressing in order to update it while another band is being compressed. Alternatively, a band is compressed while the print engine is being fed rasterized data via the decompression engine.

The algorithm employed is finely tuned to compress single-bit per pel images at high speeds. The algorithm allows for a programmable scan length up to 2048 bytes, each bit specifying a pel. Thus it is capable of processing up to 1900 dpi of standard pages. The analysis performed on images of five levels of complexity reveal an overall compression of over 10:1.

PROCESSORS SUPPORTED:
i960 Processor Family

PRODUCT CODE:
Part Number AHA3410A-025 PQC

AVAILABILITY:
Now

CONTACT:
Mark Rounds
Advanced Hardware Architectures
2365 NE Hopkins Court
Pullman, WA 99163
Phone: (509) 334-1000
FAX: (509) 334-9000
e-mail: mrounds@aha.com
For international contacts see Appendix B.

