OAK TECHNOLOGY

OTI-912

IDE CD-ROM Controller

FEATURES

- ATAPI (SFF-8020) standard support
- Supports CD-ROM disk speeds of 40x
- Unlimited host transfers up to 40x
- Pin and firmware compatible with the OTI-911LP
- Supports x8 or x16 FPM or EDO DRAM
- PIO Native Mode 4 support
- DMA Multiword Mode 2 support
- Reduced power consumption and EMI
- Memory interface supports industry-standard DRAMs (256K x 4, 256K x 8, 128K x 8, 64K x16, 128K x 16, 256K x16)
- Real-time error correction of up to 138 P and Q byte errors per block
- Segmented memory support for sophisticated caching schemes
- 100-pin PQFP

DESCRIPTION

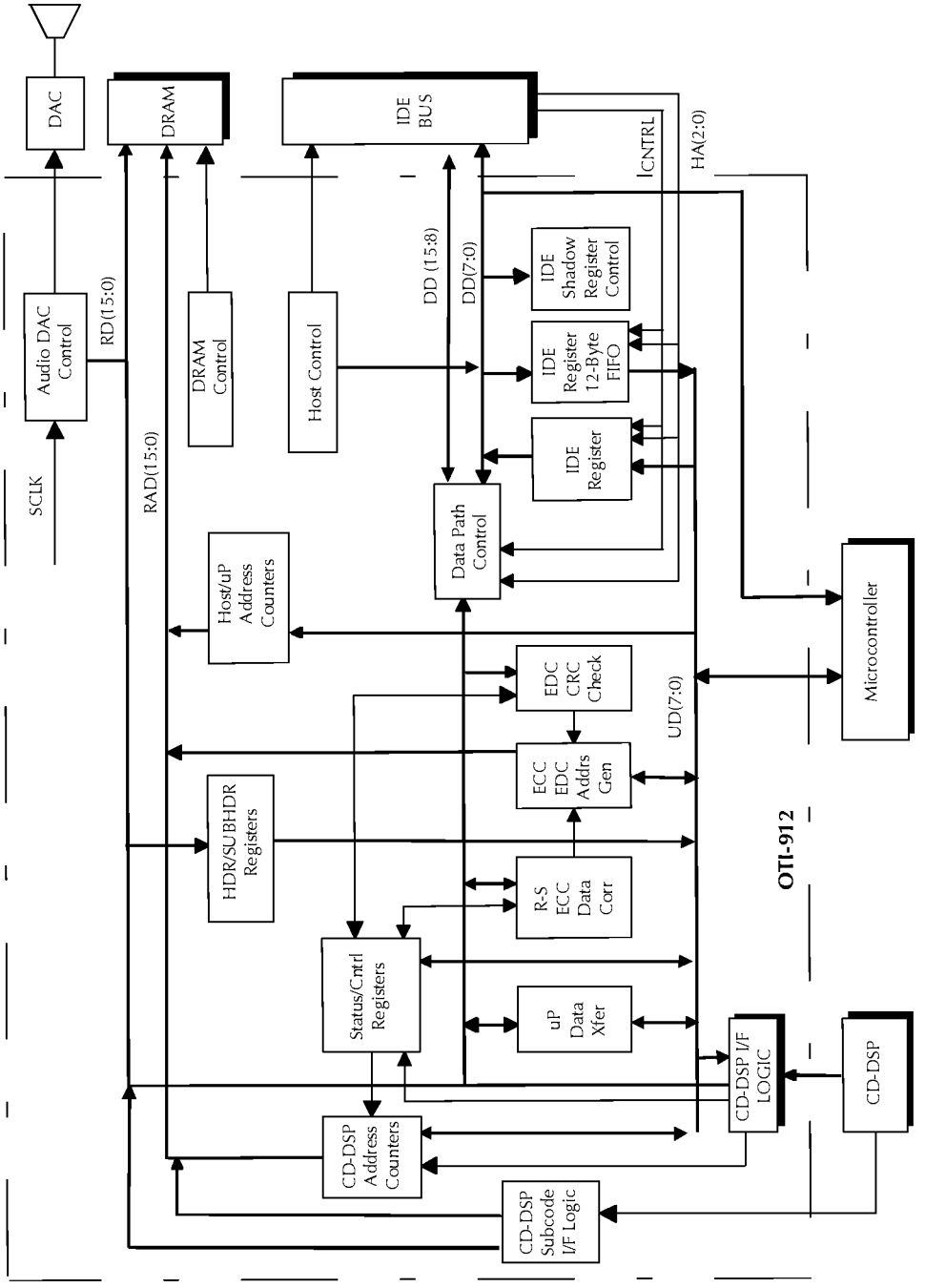
Oak Technology's OTI-912 CD-ROM controller contains new features and enhancements required by tomorrow's ATAPI CD-ROM drives. Peak data rates required by the drive interface controller have increased dramatically due to a recent shift towards CAV (constant angular velocity) drives. The flexible architecture and features of the OTI-912 allow it to be used at peak data rates of up to 40x. This speed can be achieved while supporting the PIO Mode 4 and DMA Mode 2 timing requirements of a 120ns cycle time for an entire 31 block transfer. Use of the OTI-912 in existing 8-bit designs can provide an increase of over 400% in host throughput at peak disk speeds while using the same clock and DRAM speed. Designs with firmware are available that ease the task of implementing an ATAPI interface capable of handling the high data rates of a CAV drive.

The OTI-912 has advanced power management and EMI (electromagnetic interference) reduction features. It also has a programmable DRAM refresh rate and programmable I/O drive buffers on all of its major interfaces. This, in conjunction with a more efficient internal architecture and the OTI-912's ability to use a lower clock with 16-bit DRAM, provides a reduction in both power consumption and EMI when compared to the OTI-911LP.

The OTI-912 performs simultaneous disk data buffering, real-time error correction, and 31 block transfers with 120ns cycle times to the host. This provides the fastest possible access to data because it is available from the DSP during transfers at peak disk speeds and after seeks. The ability to perform 31 block transfers with a 120ns cycle time provides ideal throughput over the IDE interface.

OTI-912 Product Brief

Block Diagram



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