DATABOOK

1992 DEVICES

Systems Logic

Imaging

Storage

WESTERN DIGITAL

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Data Sheet and Device Status Definitions

Status in Data Sheet Footer	Device Status	Definition
ADVANCED INFORMATION AND DATE	Initial Production	This data sheet contains information prior to device characterization. Western Digital Corporation reserves the right to change specifications at any time without notice in order to improve overall design and operation.
DATE	Full Production	This data sheet contains final specifications. The information has been updated and published as of the date indicated. Western Digital Corporation reserves the right to change specifications at any time without notice in order to improve overall design and operation.

Western Digital's Quality

From its manufacturing, assembly and test facilities throughout the world, Western Digital is committed to producing the highest quality semiconductor, board-level and intelligent disk drive products available.

The company's goal is to continually improve the reliability of our products through a variety of quality programs, using the most advanced evaluation and analysis tools, and a vast set of qualification and testing procedures. Accordingly, Western Digital ensures that the quality and reliability of its designs are translated into products of exceptional quality for its OEM and end user customers.

The company implements its "Continuous Process Improvement" program for every chip, board and drive product, constantly working to reduce cycle time, while striving for superior customer service and technical support.

As one of the industry's most vertically-integrated manufacturers, Western Digital controls the entire manufacturing process, from design to final test. Ultimately, this ability allows us to yield a higher quality, more reliable product with greater functionality.

This vertical integration, our Interarchitecture™ approach and our unique set of worldwide resources – including a state-of-the-art, submicron wafer fabrication facility and a fully-robotic drive assembly plant – greatly contribute to our ability to design and build quality into our products.

Western Digital's Interarchitecture

Western Digital designs and manufactures a full range of VLSI products that control the fundamental functions of computing: storage, video, data communications, and systems logic. The coordinated design and manufacturing of our products is a process we term Interarchitecture.

As a business approach, Interarchitecture means we consistently communicate with our customers about trends, technology and market requirements, then design our products and services to meet their needs.

We develop our Interarchitecture products together; the designer of the core logic works with the designer of the video and the intelligent disk drive. By co-designing across all our product lines, we provide full functionality in fewer chips and increase overall product quality, reliability and compatibility.

In practice, Western Digital's Interarchitecture process gets customers to market faster, more cost-effectively with a higher-performance product.

Western Digital's Low Voltage Solutions

Western Digital recognizes the importance of power conservation in todays new battery operated computers. Our laptop core logic chip sets offer extensive power management features. In addition, Western Digital offers devices that require only 3.3 volts for operation rather than the typical 5.0 volts. LVCMOS offers a greater operating range than the current 5V logic, thereby reducing power consumption and extending battery life.

The wide operating range will make it possible to eliminate the power regulator and directly connect a notebook system to a battery, thus increasing power efficiency and reducing component requirements. The combination of power management, lower operating voltage, and the elimination of the power supply regulator can mean a 35 to 40 percent savings in system power.

Interarchitecture Solutions For Desktop Systems

WD7600A System Chip Set for 80286 or 80386SX desktop systems
WD7700 System Chip Set for 80386SX desktop systems
WD7900 System Chip Set for 80386SX desktop systems

Components:

WD76C10A single-chip core logic

- memory control, CPU control, DMA interrupts, buffers, AT-bus control
- system speed up to 25 MHz
- .9 micron CMOS design
- 80C286 or 80386SX interface

OR:

WD7710 single-chip core logic

- memory control, CPU control, DMA interrupts, buffers, AT-bus control
- system speed up to 25 MHz
- .9 micron CMOS design
- integrated 8K cache data and TAG RAM
- 80386SX interface

OR:

WD7910 single-chip core logic

- memory control, CPU control, DMA interrupts, buffers, AT-bus control
- system speed up to 25 MHz
- .9 micron CMOS design
- integrated 8K cache data and TAG RAM
- 80386SX interface
- VLBI support

WD76C20 single-chip storage

- floppy control, IDE control, real-time clock, CMOS RAM, chip select decodes
- 1.25 micron CMOS design
- data transfer in DMA or non-DMA modes
- chip select logic generation

WD76C30 single-chip data communications

- serial/parallel I/O control, programmable coprocessor clock, floppy frequency generator, keyboard clock, baud rate generator, AT-bus clock, interrupt multiplexor
- 1.25 micron CMOS design
- FIFO port operation

WD90C30 single chip video

- fully integrated VGA video control
- optional video RAMDAC and video clock
- .9 micron CMOS design

ICS90C61A -- video graphics array clock

Western Digital Interachitecture Intelligent Drives

Caviar™ Drives:

- one-inch, 42, 62, 85, and 125 Mbyte formatted capacities, sub-17 milliseconds
- CacheFlow™, adaptive segmented cache
- Automatic head parking, advanced defect management and embedded sector servo control

Piranha™ Drives:

- 3.5-inch, 106- and 212-Mbyte formatted capacities, sub-15 milliseconds
- CacheFlow, adaptive segmented cache
- Automatic head parking, advanced defect management and embedded sector servo control

Interarchitecture Solutions For Portable Systems

WD7600ALP System Chip Set for 80286 or 80386SX portable systems
WD7700LP System Chip Set for 80386SX portable systems
WD7900LP System Chip Set for 80386SX portable systems

Components:

WD76C10ALP single-chip core logic

- memory control, CPU control, DMA interrupts, buffers, AT-bus control
- extensive set of power management features, CPU sleep and auto speed switch modes
- system speed up to 25 MHz
- 80C286 or 80386SX interface
- .9 micron CMOS design

OR:

WD7710LP single-chip core logic

- memory control, CPU control, DMA interrupts, buffers, AT-bus control
- extensive set of power management features, CPU sleep and auto speed switch modes
- system speed up to 25 MHz
- 80386SX interface
- .9 micron CMOS design
- integrated 8K data cache

OR:

WD7910LP single-chip core logic

- memory control, CPU control, DMA interrupts, buffers, AT-bus control
- extensive set of power management features, CPU sleep and auto speed switch modes
- system speed up to 25 MHz
- 80386SX interface
- SMI and VLBI support
- .9 micron CMOS design
- integrated 8K data cache

WD76C20 single-chip storage

- floppy control, IDE control, real-time clock, CMOS RAM, chip select decodes
- 1.25 micron CMOS design
- data transfer in DMA or non-DMA
- chip select logic generation

WD76C30 single-chip data communications

- serial/parallel I/O control, programmable coprocessor clock, floppy frequency generator, keyboard clock, baud rate generator, AT-bus clock, interrupt multiplexor
- 1.25 micron CMOS design
- FIFO port operation

WD90C20A/WD90C22 single-chip video

- full VGA video support with laptop RAMDAC
- optional video clock
- supports 32-color, gray-scale palette (64-color grey-scale with WD90C22)
- .9 micron CMOS design

ICS90C64 -- video graphics array clock

Western Digital Interarchitecture Intelligent Drives*

AH260 Tidbit™ Drive:

- 2.5-inch, 0.75 inches high
- 63.2 Mbyte formatted capacity
- Sub-16 milliseconds average seek time
- CacheFlow multi-segmented, adaptive cache
- 6 power-management modes

AH280 Tidbit™ Drive:

- 2.5-inch, 0.75 inches high
- 85.5 Mbyte formatted capacity
- Sub-16 milliseconds average seek time
- CacheFlow multi-segmented, adaptive cache
- 6 power-management modes

Low Voltage (3.3 Volt) Interarchitecture Solutions

WD7600ALV System Chip Set for 80286 or 80386SX portable systems
WD7900LV System Chip Set for 80386SX portable systems

Components:

WD76C10ALV single-chip core logic

- memory control, CPU control, DMA interrupts, buffers, AT-bus control
- extensive set of power management features, CPU sleep and auto speed switch modes
- 3.3 volt operation
- 80C286 or 80386SX interface
- .9 micron CMOS design

OR:

WD7910LV single-chip core logic

- memory control, CPU control, DMA interrupts, buffers, AT-bus control
- extensive set of power management features, CPU sleep and auto speed switch modes
- 3.3 volt operation
- 80386SX interface
- VLBI support
- .9 micron CMOS design
- integrated 8K data cache

WD76C20LV single-chip storage

- floppy control, IDE control, real-time clock, CMOS RAM, chip select decodes
- 3.3 volt operation
- 1.25 micron CMOS design
- data transfer in DMA or non-DMA
- chip select logic generation

WD76C30DLV single-chip data communications

- serial/parallel I/O control, programmable coprocessor clock, floppy frequency generator, keyboard clock, baud rate generator, AT-bus clock, interrupt multiplexor
- 3.3 volt operation
- 1.25 micron CMOS design
- FIFO port operation

WD90C26 single-chip LCD video

- full VGA video support with laptop RAMDAC
- 3.3 volt operation
- optional video clock
- supports 64 TrueShade™, gray shades
- .9 micron CMOS design

ICS90C64 -- video graphics array clock

Western Digital Interarchitecture Intelligent Drives*

AH260 Tidbit™ Drive:

- 2.5-inch, 0.75 inches high
- 63.2 Mbyte formatted capacity
- Sub-16 milliseconds average seek time
- CacheFlow multi-segmented, adaptive cache
- 6 power-management modes

AH280 Tidbit™ Drive:

- 2.5-inch, 0.75 inches high
- 85.5 Mbyte formatted capacity
- Sub-16 milliseconds average seek time
- CacheFlow multi-segmented, adaptive cache
- 6 power-management modes

* For more information on Western Digital's intelligent drives, call 1.714.932.4900.