### DC11 Controller Series Specifications and Comparisons

<table>
<thead>
<tr>
<th>Controller Designation</th>
<th>UDC11</th>
<th>UDC11X</th>
<th>RDC11</th>
<th>WDC11</th>
<th>SDC11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulations Supported</td>
<td>MSCP</td>
<td></td>
<td>RL01/RL02</td>
<td>RL01/RL02</td>
<td>RL01/RL02</td>
</tr>
<tr>
<td>Mix of Drives</td>
<td>Winchester/RK33/50 Floppy</td>
<td>Winchester and RK302 Floppy</td>
<td>Winchester</td>
<td>Winchester and RK302 Floppy</td>
<td>Winchester</td>
</tr>
<tr>
<td>DMA Transfer Mode</td>
<td>Block Mode</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive Interface</td>
<td>ST506</td>
<td>ST506</td>
<td>ST506</td>
<td>ST506</td>
<td>ST506</td>
</tr>
<tr>
<td>Peak Transfer Rate</td>
<td>625 Kbyte/sec.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Transfer Rate</td>
<td>276 Kbyte/sec</td>
<td>276 Kbyte/sec</td>
<td>276 Kbyte/sec</td>
<td>246 Kbyte/sec</td>
<td>246 Kbyte/sec</td>
</tr>
<tr>
<td>Sector Interleave</td>
<td>2:1</td>
<td>2:1</td>
<td>2:1</td>
<td>3:1</td>
<td>2:1</td>
</tr>
<tr>
<td>Track Capacity</td>
<td>18 Block/Track or Drive Dependent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partitioning</td>
<td>Vertical</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address Selection</td>
<td>Standard plus 2 alternate jumper selectable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sector Selection</td>
<td>Software selectable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrupt Priority</td>
<td>Level 4 standard</td>
<td>Levels 5 and 6 jumper selectable</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus Load</td>
<td>1 DC bus load</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>2.5 AMP @ 5 Volts</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board</td>
<td>Dual 23 cm X 13 cm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Size</td>
<td>8.8&quot; X 5.2&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

DEC, PDP-11/23, PDP-11/73, MICRO/VAX I & II Q bus, and MSCP are trademarks of Digital Equipment Corp.

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The Andromeda DC11 Series:

Four very fast, extremely versatile disk controllers for PDP-11/23, PDP-11/73 & MICRO/VAX I & II systems.
Feature by feature, the DC11 Series outperforms the competition.

The DC11 Series consists of four Q bus compatible disk controllers for Winchester, removable cartridge, and floppy disk drives. In addition to features shared by all four controllers, each individual controller has characteristics which give it superior system performance in specific applications. Please contact our Sales Department for assistance with your application.

Control any combination of up to four Winchester, cartridge, and floppy drives— with just one controller.

The four DC11 controllers can drive up to four Winchester, cartridge, and floppy drives in any combination. The DEC RQDX permits only one RX50 floppy drive and/or two RD51 or RD52 Winchester drives.

Executes commands 50 times faster than DEC RQDX3.

Through use of an advanced high speed processor, MSCP commands are executed in a mere 0.2 milliseconds versus over 10 milliseconds required by the DEC RQDX3.

Reduced seek time for faster data access.

By using “vertical partitioning” on multihead drives, the DC11 controller writes tracks in vertical rather than horizontal procession. This results in significantly reduced head movement.

Up to twice the Q bus throughput.

Each DC11 controller has Block Mode DMA capability. This feature provides 80 times the Q bus data throughput when used with a Block Mode DMA memory such as the Andromeda MM22. The DC11 controllers are fully compatible with non-Block Mode memories.

Designed for today's more compact systems.

Dual height form factor, on-board bootstrap and a low 2.5 Amp., +5 volt power requirement make the DC11's ideal for modern, compact designs.

User programmable for any capacity or manufacturer's ST506 compatible disk drive.

All DC11 controllers are equipped with a helpful feature called OCT or Online Configuration Tool. OCT allows the user to configure the controller to operate any ST506 compatible Winchester or cartridge drives and 5½" or 8½" floppy drives. OCT eliminates the need for factory supplied configuration PROMs. This simplifies both OEM stocking problems and end-user system upgrades.

There's a DC11 controller to meet every system's disk storage need.

UDC11. Winchester Floppy Disk Controller.

MSCP compatible for unsurpassed drive capacity and flexibility.

MSCP (Mass Storage Control Protocol) permits the use of disk drives of any type and capacity. It also allows for optimization to improve system throughput. These features are possible without modifying existing operating system software.

Transparent bad block replacement.

Disk media defects are mapped out, simulating fault-free media. This eliminates the complexities of bad block management.

Applications.

Permits system integrators to design MICRO/PDP-11 and MICRO/VAX II systems with RX50 or RX33 media. Allows the use of higher capacity and performance disk drives than is possible with the DEC RQDX.

RDC11. Removable Cartridge Disk Controller.

MSCP compatibility for operation of removable cartridge and Winchester disk drives.

The RDC11 is a high performance solution to the problem of Winchester disk backup. By interfacing both cartridge and Winchester drives, backup and main system disk storage are provided with one compact controller.

Applications.

The RDC11 is an ideal solution for systems requiring removable disk backup. It interfaces to a removable cartridge drive and a high capacity Winchester drive ST506 compatible removable disk drives from DMA, IOMEGA, Syquest, and other compatible manufacturer's.

WDC11. Winchester and Floppy Disk Controller.

RL01/RL02 and RX02 emulation on a single board.

One dual width board controls two 5¼" Winchester drives, emulating up to four RL02 units and two 8½" RX02 compatible floppy drives.

Applications.

The WDC11 is cost effective when configuring RL02/RX02 compatible systems. The dual function design eliminates the cost of separate controllers for Winchester and floppy drives, saves backplane space and reduces system power consumption.

SDC11. Winchester Only Disk Controller.

Lowest cost, RL02 compatible DC11 controller.

A low cost means of expanding hard disk capacity, while maintaining DEC compatibility.

Applications.

The SDC11 allows RL02 compatible systems to benefit from Block Mode DMA, and OCT for improved performance and ease of configuration.
The Andromeda DC11 Series:

Feature by feature, the DC11 Series outperforms the competition.

The DC11 Series consists of four Q bus compatible disk controllers for Winchester, removable cartridge, and floppy disk drives. In addition to features shared by all four controllers, each individual controller has characteristics which give it superior system performance in specific applications. Please contact our Sales Department for assistance with your application.

Control any combination of up to four Winchester, cartridge, and floppy drives— with or without one controller.

The four DC11 controllers can drive up to four Winchester, cartridge, and floppy drives in any combination. The DEC RQDX permits only one UX50 floppy drive and/or two RD51 or RD52 Winchester drives.

Executes commands 50 times faster than DEC IQDX3.

Through use of an advanced high speed processor, MSCP commands are executed in a mere 0.2 milliseconds versus over 10 milliseconds required by the DEC RQDX3.

Reduced seek time for faster data access.

By using "vertical partitioning" on multihard drives, the DC11 controller writes tracks in vertical rather than horizontal procession. This results in significantly reduced head movement.

Up to twice the Q bus throughput.

Each DC11 controller has Block Mode DMA capability. This feature provides up to twice the Q bus data throughput when used with a Block Mode DMA memory such as the Andromeda 4M22. The DC11 controllers are fully compatible with non-Block Mode memories.

Designed for today's more compact systems.

Dual height form factor, on-board bootstrap and low, 2.5 Amp, +5 volt power requirements make the DC11's ideal for modern, compact designs.

User programmable for any capacity or manufacturer's ST506 compatible disk drive.

All DC11 controllers are equipped with a helpful feature called OCT or Online Configuration Tool. OCT allows the user to configure the controller to operate any ST506 compatible Winchester or cartridge drives and 5¼" or 8" floppy drives. OCT eliminates the need for factory supplied configuration PROMs. This simplifies both OEM stocking problems and end-user system upgrades.

There's a DC11 controller to meet every system's disk storage need.

UDC11. Winchester/Floppy Disk Controller.

MSCP compatible for unsurpassed drive capacity and flexibility.

MSCP (Mass Storage Control Protocol) permits the use of disk drives of any type and capacity. It also allows seek optimization to improve system throughput. These features are possible without modifying operating system software.

Transparent bad block replacement.

Disk media defects are mapped out, simulating fault-free media. This eliminates the complexities of bad block management.

Applications.

Permits system integrators to design MICRO/VAX II and MICRO/VAX III systems with RX50 or RX33 media. Allows the use of higher capacity and performance disk drives than is possible with the DEC RQDX.

RDC11. Removable Cartridge Disk Controller.

MSCP compatibility for operation of removable cartridge and Winchester disk drives.

The RDC11 is a high performance solution to the problem of Winchester disk backup. By interfacing to both cartridge and Winchester drives, backup and main system disk storage are provided with one compact controller.

Applications.

The RDC11 is an ideal solution for systems requiring removable disk backup. It interfaces to a removable cartridge drive and a high capacity Winchester drive. ST506 compatible removable disk drives from DMA, IOMEGA, Syquest, and other compatible manufacturers are supported.

WDC11. Winchester and Floppy Disk Controller.

RL01/RL02 and RX02 emulation on a single board.

One dual width board controls two 5¼" Winchester drives, emulating up to four RL02 units and two 8" RX02 compatible floppy drives.

Applications.

The WDC11 is cost effective when configuring RL02/RX02 compatible systems. The dual function design eliminates the cost of separate controllers for Winchester and floppy drives, saves backplane space and reduces system power consumption.

SDC11. Winchester Only Disk Controller.

Lowest cost, RL02 compatible DC11 controller.

A low cost means of expanding hard disk capacity, while maintaining DEC compatibility.

Applications.

The SDC11 allows RL02 compatible systems to benefit from Block Mode DMA, and OCT for improved performance and ease of configuration.
<table>
<thead>
<tr>
<th>Controller Designation</th>
<th>UDCII</th>
<th>UDCIE</th>
<th>UDCII</th>
<th>RDCH</th>
<th>WCCH</th>
<th>BDCH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emulations Supported</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mix of Drives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>DMA Transfer Mode</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drive Interface</td>
<td>ST506</td>
<td>ST506</td>
<td>ST506</td>
<td>ST506</td>
<td>ST506</td>
<td>ST506</td>
</tr>
<tr>
<td>Block Mode</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peak Transfer Rate</td>
<td>276 Kbps/sec</td>
<td>276 Kbps/sec</td>
<td>276 Kbps/sec</td>
<td>246 Kbps/sec</td>
<td>246 Kbps/sec</td>
<td>246 Kbps/sec</td>
</tr>
<tr>
<td>Sector Interleave Track Capacity</td>
<td>2:1</td>
<td>2:1</td>
<td>2:1</td>
<td>3:1</td>
<td>2:1</td>
<td></td>
</tr>
<tr>
<td>Partitioning</td>
<td>Vertical</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address Selection</td>
<td>Standard plus 2 alternate jumper selectable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vector Selection</td>
<td>Software selectable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrupt Priority</td>
<td>Level 4 standard</td>
<td>Levels 5 and 6 jumper selectable</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus Load</td>
<td>2AC bus loads</td>
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<tr>
<td>Power</td>
<td>2.5 AMP ± ±5 Volts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board Size</td>
<td>Dual 22 cm x 13 cm</td>
<td>160 x 6.71</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

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