

Date: Mon, 20 Dec 93 17:25:45 CST  
From: Phil Kemp <kemp@convex1.convex.com>  
To: all-field@convex1.convex.com  
Cc: Anthony Dimento <tonyd@convex1.convex.com>  
Subject: DKD-505 data sheet

Enclosed, please find an ascii version of the data sheet for the DKD-505 disk drives and the IDC.

I will submit this to our publishing folks for glossy versions asap.

A postscript/MACword version should be available in access in a day or two.

Good Selling  
PK

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CONVEX Integrated Disk Channel

The CONVEX Integrated disk channel (IDC) is a PBUS channel control unit (CCU) that directly couples individual disks through four intelligent peripheral interface (IPI) ports to the central processing unit of a Convex high-performance computer. Because the IDC provides cost-effective high performance, it is the ideal disk subsystem for data-intensive applications that require the highest possible bandwidth between processor and disk storage. It is also excellent for use with large disk arrays that depend on fast, cost-effective mass storage.

Improves disk performance.  
- eliminates traditional disk drive controllers thereby reducing latency  
- multiple disk drives may be striped on a single IDC for maximum throughput  
- provides the flexibility and performance to support disk drives with interface speeds greater than 10 megabytes per second.

Increases disk subsystem reliability.

- provides full error detection from the disk surface to the main physical memory  
- eliminates the need for four disk controller boards, dramatically cutting the amount of mechanical support hardware.  
- eliminates unnecessary down time by providing on-line formatting and media verification..

High capacity  
- each port supports up to 8 drives for a total of 32 drives per IDC  
- each Convex system supports from one to 31 IDC subsystems

DKD-505 High Performance Disk Drive

The DKD-505 is a variable speed, 5.25 inch form factor, high performance disk drive. Combining a 512 KB interface buffer and ZBR recording the DKD-505 transfers data at between 7.5 and 9 MB/s. Its formatted capacity is 2.8 gigabytes.

High performance.  
- industry standard IPI-2E high-performance disks  
- high sustained throughput  
- lowers access latency to user's data  
- transfer rates exceeding twelve megabytes per second over each IPI-2 port  
- simultaneous, independent transfers over all ports  
- synchronous seeking over all disks  
- 512 KB IPI-2E interface buffer

High capacity. Holds up to 3385 megabytes unformatted, 2804 formatted. Compact packaging. Up to 24 disks fit in each peripheral cabinet.

Subsystem Specifications

IDC disk controller IDC-001  
Bandwidth per CCU >40 MB/s peak transfer rate  
Bandwidth per port 16 MB/s peak transfer rate  
Number of ports 4  
Memory size 512 KB  
Buffer size 64 KB  
Data path width 64 bits

Disk Drive DKD-505  
Capacity  
Unformatted 3,385 MB  
Formatted 2,804 MB  
Performance  
Media peak transfer rate 7.5-9 MB/sec.  
Interface peak transfer rate 16 MB/s  
Rotation speed 5400 rpm  
Average latency 5.56 ms  
Average seek 11.5 ms  
Interface IPI-2E  
Configuration  
Number of disks 11  
Data surfaces 20 physical, 10 logical  
Bytes per track 97,998 to 145,589 unformatted  
86,016 to 126,976 formatted  
(including spares)  
Bytes per cylinder 979,980 to 1,455,980 unformatted  
829,440 to 1,239,040 formatted  
(not including spares)  
Cylinders 2738 (2734 for user data)  
Zones 18  
Physical  
Height 6.5in/16.51cm  
Width 4.25in/10.78cm  
Depth 26.0in/66.04cm  
Weight 19lb/8.62kg  
Power dissipation 0.046 kW

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Phil Kemp                   Voice:(214)-497-4671  
CONVEX Computer Corporation   Fax:(214)-497-4141  
Richardson, Texas            Internet:kemp@convex.com

Date: Mon, 20 Dec 93 14:09:30 CST  
From: Kelvyn Gipp <kgipp@sushi.convex.com>  
To: Jan van Kats <vankats@nlcvx.convex.nl>  
Cc: kgipp@convex.com, borgers@nlcvx.convex.nl, burgler@nlcvx.convex.nl,  
gerry@nlcvx.convex.nl, marius@nlcvx.convex.nl, ronald@nlcvx.convex.nl,  
vankats@nlcvx.convex.nl, Juergen Preuss <preuss@sushi.convex.com>,  
Karlheinz Kraft <kkraft@sushi.convex.com>  
Subject: Re: DKD505 information?

>  
> Kelvyn,  
> you just forwarded some mail with questions on 505 errors...  
>  
> As we are installing at a few places DKD505s NOW, can you give some  
> background? What type of errors did you see? Frequency?  
> What are we doing for quality-check?  
>  
> Thanks in advance,  
> Jan  
>  
> -----<You wrote:  
>  
>>From kgipp@sushi.convex.com Mon Dec 20 16:48:16 1993  
> Subject: DKD-505 Errors  
> To: all-sses@sushi.convex.com  
>  
>  
> In an attempt to understand some of the errors seen with the DKD-505 disk  
> drives, we are requesting that you supply us with copies of the errors  
> you may have seen at any of your customer sites.  
>  
> Information required is:-  
>  
> The error reported.  
> The version of the IDC code in use.  
> The action taken to correct this error, if any.  
>

My message was not meant to state that we have multitudes of errors with this disk, it was meant to try to find out what errors, if any, the field was seeing.

I know of one failure, apart from the normal failures that has been seen at some sites, and that shows as an FSC 1050 error. This does not break the system, you just get these error messages at times. An upgrade of the IDC s/w to version 6.1 has been found to reduce these type of error.

The quality-check issue is part of this original posting for information.

Hope this helps

Kelvyn

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Date: Mon, 20 Dec 93 9:45:41 CST  
From: Kelvyn Gipp <kgipp@sushi.convex.com>  
To: all-sses@sushi.convex.com  
Cc: John Rachels <rachels@sushi.convex.com>,  
Rick Pfeffer <pfeffer@sushi.convex.com>  
Subject: DKD-505 Errors

In an attempt to understand some of the errors seen with the DKD-505 disk drives, we are requesting that you supply us with copies of the errors you may have seen at any of your customer sites.

Information required is:-

The error reported.  
The version of the IDC code in use.  
The action taken to correct this error, if any.

Kelvyn

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Kelvyn Gipp  
Hardware Product Specialist  
Systems Integration & Support  
kgipp@convex.com

Date: Wed, 23 Jun 93 17:54:27 CDT  
From: Phil Kemp <kemp@convex1.convex.com>  
To: allfield@convex1.convex.com  
Subject: Elite 3/DKD-505 product announcement

I am pleased to announce that the new IDC disk drive, DKD-505 will be ready for customer shipments July 23, 1993. In keeping with industry trends we will also offer three new disk array configurations which will provide unsurpassed price-performance for high performance disk subsystems. This disk array offering is the first step in CONVEX's emerging disk array strategy which will combine performance, price, and data integrity features into powerful disk storage solutions for our customers.

The DKD-505 disk subsystem uses the Seagate Elite 3 disk assembly which is a high performance, high capacity, compact disk drive.

The DKD-505 drive is a 5.25 inch form factor drive subsystem. 24 DKD-505 disk drives can be configured in a single high performance peripheral cabinet. Compared to an equivalent configuration of DKD-504s the DKD-505 provides 68 percent more storage in the equivalent footprint.

The DKD-505 can transfer data at rates between 7.5 and 9.0 Mbytes/s. The range of data rates is due to the fact that the Elite 3 uses ZBR, or zone bit recording.

ZBR increases the recording density on the outer tracks of the disk surface. This allows smaller form factor disk drives to store more data than the larger form factors. Utilizing ZBR, the DKD-505 formats to 2.8 Gbytes capacity which is .3 Gbytes more than the DKD-504 disk drive, an 8 inch form factor disk. The smaller form factor also decreases the latency of the disk since the heads seek smaller distances.

The two new disk arrays, DAR-004, and DAR-005 provide 34 Gbytes and 67 Gbytes respectively in a single high performance peripheral cabinet. The DAR-006 offers an upgrade path from 34 to 67 Gbytes. These arrays are designed to operate with CONVEX's raid manager, VVM. VVM significantly improves overall system reliability through disk mirroring and disk parity striping. This improved reliability reduces the overall maintenance overhead and therefore the maintenance price.

Pricing Details

The following table summarizes the new disk products and prices.

Marketing #	Description	U.S. List	Option 1 Maint.
DKD-505	Elite 3 disk	20,500	135
DAR-004	34 Gbyte Array	224,000	1,390
DAR-005	67 Gbyte Array	395,000	2,350
DAR-006	33 Gbyte Add-on	210,000	1,140

Further details will be made available in the next two weeks with the new price list and product catalog. Data sheets and product

announcement details will be available in the same time frame.

For further information please send me e-mail or give me a call.

Good Selling  
PK

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