3670/3675, 3650 and 3652 Intelligent Dual Interface

General

The Memorex® Intelligent Dual Interface (IDI) feature increases the performance, redundancy, and flexibility of the Memorex 3670/3675, 3650 and 3652 Disc Storage Subsystems by providing two data transfer paths for each drive in a string.

The Memorex IDI offers substantial advantages over other dual ported configurations. Contention for the two data paths in a two-string attachment configuration is resolved at the head of the string by the String Controllers, rather than in the CPU. The CPU overhead is reduced, and no modifications are required in the Storage Control Unit (SCU) or Integrated Storage Controller (ISC).

The heart of the Memorex IDI feature is the Intelligent Interface in the Memorex 3673, 3653/4 or 3655/6 String Controller (see Figure 1). All commands to the disc string are presented to both the primary String Controller (at the head of the string), and the secondary String Controller (at the end of the string). The IDI allows both String Controllers to be on line and assures that one (and only one—whichever is idle) responds to a command. The IDI performs the string switch function.

IDI Highlights

Dual Port
Permits two simultaneous data transfers between two Storage Control Units and one disc string (but not on the same spindle).

System Interface
Attaches to any CTL compatible interface without modification, including the following: Memorex 3672 SCU (supports only 3670/3675 drives); Memorex 3674 SCU; IBM 3830-2 SCU; and IBM Integrated Storage Controller (ISC).

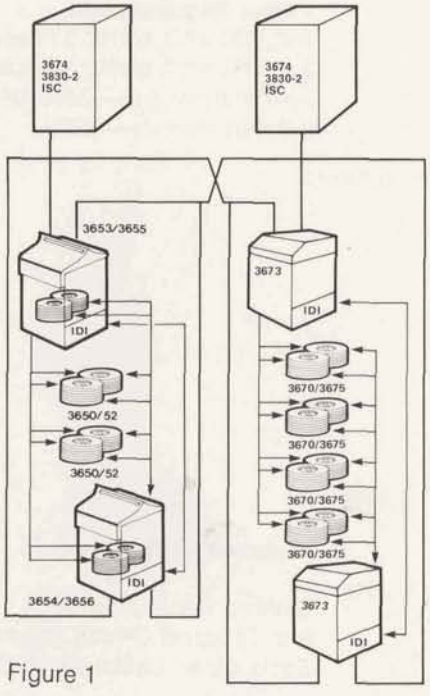
Reduced Complexity
Reserve and Release registers are not required in each drive.

Increased Performance
Each String Controller can "process" commands when the other Controller is busy.

Increased Redundancy
Either String Controller can process all commands for the string in the event that the other Controller is unavailable, or failing.

Field Upgrade
Both 365X and 367X strings can be upgraded in the field. IDI and Disc Cache are mutually exclusive.

Reduces R.P.S. Delay
R.P.S. missed reconnections are one of the most significant causes of delay in high performance disc strings. Since either string controller can handle a sector ready interrupt R.P.S. misses can be greatly reduced.



Example incorporates two strings. Up to four strings of drives (32 spindles) can be supported. Logical attachment diagram only. Cables are actually "daisy chained."

Figure 1

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MEMOREX

3670/3675, 3650 and 3652
Intelligent Dual Interface

MEMOREX

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3652 Direct Access Subsystems Specifications

Storage Capacity

3650
Compatibility: 635 MB
(2 logical volumes/spindle)

3675
Compatibility: 400 MB
(2 logical volumes/spindle)

3650
Compatible mode:
2,288M fixed head/drive
1,484 MB fixed head/drive
Physical Track: 19,069 bytes

Data Transfer Rate
1,198K bytes/second

Rotational Speed
3,600 RPM

Average Rotational Delay
8.4 ms

Access Time/Spindle
45 ms—maximum
22 ms—average
6 ms—minimum
15 ms—average/logical volume

Physical Dimensions
3655
44.5″ wide x 32″ deep x 46″ high
(113 cm. wide x 81 cm. deep x
117 cm. high)

3652/3656
43.3″ wide x 32″ deep x 46″ high
(110 cm. wide x 81 cm. deep x
117 cm. high)

Weight
1,050 lbs.—3655
(476 kg.)
950 lbs.—3652/3656
(431 kg.)

Operating Environment
60°-90°F, 20%-80% Relative Humidity
(16°-32°C)

Heat Dissipation
6,110 BTU/hr.—3652
(1,790 Watts)
7,310 BTU/hr.—3655/3656
(2,142 Watts)

Power Requirements
3652
208/230 +/− 10%, 60 +/− 0.5 Hz
3 phase, 60 amp
3655/3656
220/380 +/− 10%, 50 +/− 0.5 Hz
3 phase, 60 amp

3670 and 3675 Direct Access Storage Subsystem Specifications

Storage Capacity

3670
100,018,280 bytes/drive
200,365,560 bytes/module

3675
200,036,560 bytes/drive
400,073,120 bytes/module

Data Transfer Rate
806,000 bytes/second

Rotational Speed
3600 RPM

Access Time
50 ms—maximum
27 ms—average
7 ms—minimum

Physical Dimensions
44″ wide x 32″ deep x 47″ high
(112 cm. wide x 81 cm. deep x
119 cm. high)

Weight
1,100 lbs.—3670/3675
(500 kg.)
360 lbs.—3673
(164 kg.)

Operating Environment
60°-90° F, 20%-80% Relative Humidity
(16°-32° C)

Heat Dissipation
8,900 BTU/hr.—3670/3675
(2294 Watts)
2950 BTU/hr.—3673
(743 Watts)

Power Requirements
208/230 VAC, 60 Hz, 3 Phase, 60 Amps
220/380 VAC, 50 Hz, 3 Phase, 60 Amps
3.15 KVA/module—3670/3675
1.0 KVA/module—3673

3650 Direct Access Storage Subsystem Specifications

Storage Capacity

3650 Native Mode
317,498,850 bytes/drive
1,144,140 bytes/drive (optional fixed
head area)

3675 Compatibility Mode
200,036,560 bytes/drive
742,710 bytes/drive (optional fixed
head area)

Data Transfer Rate
1,198 MB/sec:

Rotational Speed
3600 RPM

Access Time
50 ms—maximum
25 ms—average
10 ms—minimum

Physical Dimensions
44.5″ wide x 32″ deep x 46.3″ high
(113 cm. wide x 81 cm. deep x
118 cm. high)

Weight
975 lbs.—3653/3654
(443 kg.)
860 lbs.—3650
(391 kg.)

Operating Environment
60°-90° F, 20%-80% Relative Humidity
(16°-32° C)

Heat Dissipation
7310 BTU/hr.—3653/3654
(2142 Watts)
6110 BTU/hr.—3650
(1790 Watts)

Power Requirements
208/230 VAC, 60 Hz, 3 Phase, 60 Amps
220/380 VAC, 50 Hz, 3 Phase, 60 Amps
2.5 KVA/module—3653/3654
2.0 KVA/module—3650

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