IBM IBM IBM IBM IBM IBM IBM

3350

Disk Storage

IBM 3350

The 3350 subsystem is composed of up to four 3350 Disk Storage modules for a maximum of eight disk drives.

Four different 3350 Models are available

Model A2: Dual drive with controller function to attach to System/370 145, 158, 168 via their ISCs or the 3830 Model 2 and to the System//370 135, 155-II, 165-II via the 3830 Model 2. It provides logic and power for the attachment of up to three 3350 models B2 and/or B2F units. A 3350 model A2 or A2F has always to be the first machine in a 3350 file string.

Model A2F: Dual drive and associated control with the same attachment capabilities as the model A2. It has a Fixed Head feature providing more than 1 MBytes of zero seek time on each drive. Total capacity of a HDA will not be increased by this feature.

Model B2: Dual drive disk storage unit. Up to three 3350 model B2 and/or B2F can be attached to a 3350 model A2/A2F.

Model B2F: Dual drive disk storage unit with the same attachment capabilities as model B2. This model has a Fixed Head feature providing the same capacity and function as descriped on model A2F.

Modelconversion from Model A2 to A2F or B2 to B2F can be done in the field.

Three operational modes are abailable for the 3350 Models on a spindle basis:

Product Description

The IBM 3350/3344 Disk Storage Facilities consists out of direct access storage devices providing fast access, high capacity and low cost data storage. They are based upon the 3340 technology with several significant changes and improvements. The storage media is a non-removable sealed Head Disk Assembly (HDA) with a high degree of reliability.

The 3350/3344 are designed for attachment to the System/370 Model 135 and larger via the Integrated Storage Control (ISC) or the 3830 Model 2 Control Unit.

3330 Model 1 compatibility mode

Each 3350 spindle contains two 100 megabyte logical volumes.

3330 Model 11 compatibility mode

Each 3350 spindle contains one 200 megabyte logical volume.

3350 Native mode

Each 3350 spindle contains one 320 megabyte logical volume.

Modes refer to a unique Home Address configuration. Conversion of modes may be done in the field.

General Characteristics

Access time (average) -25ms
Data Rate - 1200 Kilobytes/sec. about
Disk Rotation - 3600 rpm
Recording Density - 6425 bits/inch

Design Features

■ The 3350 uses a Head/Disk Assembly (HDA) as a storage medium. The HDA is a fixed, sealed unit containing disks, heads, carriage, spindle and voice coil. Although the HDA is permanently mounted with respect to normal operational use, it is field replaceable by the CE. The carriage is operated by the Voice Coil Motor (VCM).

Prerecorded servo tracks provide precise track positioning locations for the servo system. CE tracks on each data surface eliminate the need for a CE pack.

■ Error Correction Coding - ECC

ECC in the controller provides the capability of correcting data error bursts of up to four bits as well as all single error bursts of up to a ten-bit-span.

■ Logic is MST 1 and MST-E.

■ Open loop Air System - The HDA environment is maintained in an open loop air flow system using an absolute filter and a prefilter.

■ Read Only Feature - The Read Only Feature offers data protection in that a toggle switch must be placed in the Write position before a Write operation can be performed.

Optional Features

■ String Switch enables a 3350 String to be attached to two Control Units or ISC's.

Rotational Position Sensing - RPS

■ This feature is available on all 3350's. It permits the channel to disconnect during most of the record search time.

Programming Support

This product will be supported in the following System Control Programs.

S C P	NATIVE MODE	3330-1 3330-11 Compatibility
OS/VS1	X	X
OS/VS2	X	X
DOS/VS		3330-1 only
VM 370	X	X

Service Features

■ CE panel - The 3350 Model A2/A2F incorporates a CE panel for executing in-line microdiagnostics and displaying device status bytes.

■ On-Line Test (OLTs) - On-line maintenance programs run under control of the processor concurrent with customer operations.

Maintenance Information Manuals

■ (MLMs) - Contain Error Code Dictionaries, Installation Instructions and MAPs. MAPs, the prime CE tool, have been enhanced by including circuit descriptions and timing charts, second level diagrams and scope wave form pictures.

■ Microdiagnostics (Micros) - Reside in control storage with the control program for the ISC or control unit. They are initiated from the CE panel and operate any 3350 of the subsystems varied offline.

■ Preventive Maintenance - will be performed on a unscheduled basis. Unscheduled PM means that PM will be made at the time of an unscheduled service call.

■ Expanded Sense Data - System logging of detailed sence information associated with an error establishes a MAP entry point.

IBM 3344

The IBM 3344 offers a significant increase in capacity for
the 3340 user on System/370 model 135 and above. It is a
two drive machine which attaches to a 3340 Model A2.
Up to three 3340 Model B1, B2, or 3344 units in any com-
bination can be attached to a 3340 Model A2. A 3340 string
which includes 3344 units may be attached to System/370 145,
158, 168 via their ISCs or the 3830 Model 2, to the 155-II,
165-II via the 3830 Model 2, and to the 135 via its IFA.
It is not available on the System/370 115 or 125.

Two 3344 models are available

Model B2	Dual drive disk storage unit.
Model B2F	Dual drive disk storage unit with a Fixed Head feature. It provides more than 1 MBytes of data under the fixed heads with zero seek time.

Each of the two drives on a 3344 Model B2 or B2F is
equivalent in format and capacity to four logical 3348
Model 70 Data Modules. Thus each 3344 unit utilizes
eight logical device addresses.

Modelconversion from Model B2 to B2F can be done in
the field.

General Characteristics

Access time (average)	-	25ms
Data Rate	-	885 Kilobytes/sec about
Disk Rotation	-	2964 rpm
Logical Volumes per drive	-	4 (70 MB)

Design Features

The same Design Features are available as on IBM
3350 units.

Programming Support

This product will be supported by the following
System Control Programs providing the same
functions as for 3340 DAS.

OS/VS1
OS/VS2
DOS/VS
VM 370

Service Features

Same as for IBM 3350

Maintenance Information Manuals

Same as for IBM 3350

CE Career Path

The 3350/3344 is an Career Path
"General Systems" product.