

INTEGRATION INFORMATION

IBM OEM STORAGE PRODUCTS

DATA SHEET 0664002

0664 Model CSH & ESH

4 GB Disk Drives

General Installation Tips

COOLING

This drive does require airflow in order to fulfil its reliability performance.

Please refer to Environmental section of the 0664 (CSH, ESH) hardware specification for full details of the maximum allowable temperatures and measurement points.

Operation at excessive temperatures will void the drive warranty.

INTEGRATION INTO USING SYSTEM

- The drive's mounting frame is electrically isolated from the drive's disk enclosure.

The Disk Enclosure is not at Ground Potential

Any user mounting scheme must not result in the disk enclosure being sorted to ground. Drive malfunction will result if this occurs.

The correct length screws must be used.

FAST SCSI

The ANSI SCSI committee recommend that fast SCSI devices (such as 0664) must have cable lengths of less than 3 metres and must use active terminators.

Active 50 & 68 pin single ended terminators are available from Datamate and Amphenol.

Note that the standard Datamate active 50 Pin terminator (P/N dm550-06-ADR) will not directly attach to the S20, but may still be used elsewhere on the bus (for instance at the last device if the S20 is not the last device).

MODE SELECT PARAMETERS

One of the many advantages of the SCSI interface is the provision of user-programmable (mode select) parameters to allow devices to be customized and optimized.

These parameters are fully described in the 0664 (CSH, ESH) functional specification. Further advice is available from IBM OEM Technical Support.

COMPATIBILITY

- Testing should be carried out to ensure that the drive is fully compatible with the using system.

System BIOS, Operating System, Device drivers and interface card BIOS/characteristics can affect the ability to attach the drive to the system. All need to be verified jointly as compatible with the drive.

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| SCSI ATTACHMENT |
| INFORMATION     |
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SYNCHRONOUS DATA TRANSFER REQUESTS.

In the default (shipped) mode, the drive does not initiate the negotiation for synchronous data transfer rate during the initialization sequence.

SDTR (Synchronous Data Transfer Request) may cause problems with some SCSI controller cards which do not conform to the ANSI SCSI specification. The drive synchronous data transfer request may be switched off/on if required by modifying the mode select parameters, Page 0, Byte 5, Bit 5. (Labelled in SCSI spec. as DSN bit).

The SCSI controller will then negotiate with the drive for the highest common bus speed.

IDLE TIME FUNCTIONS

The 0664 has advanced self-diagnostic features. If this is not supported in the specific application, the time taken to update the drive's internal status tables may cause problems especially in high speed or very long data transfers. Mode select Page 0 Byte 5 Bit 0 (LITF) will disable the main idle time features when set to "1". (See functional specification).

ATTACHMENT TIPS

Autostart Jumper is required for any adaptor or system that does NOT issue START UNIT commands, e.g. Adaptec 1542C.

Operating Systems -

DRDOS 6.0 does not support partitions>1GB
 UNIX Boot Partition limit usually 1024 cylinders

ATTACHMENT TO SPECIFIC SYSTEMS / SCSI CONTROLLERS

PC - SCSI ADAPTERS

- The following SCSI Adapters have been evaluated
 with the 0664 drives on typical ISA/EISA platforms
 with a range of operating systems. Any limitations
 are noted below.

ISA BUS ADAPTERS

ADAPTEC 154BS6 - ASPI4DOS reqd. for drives>1GB
 ADAPTEC 1542C ***
 BUSLOGIC BT545S
 FUTURE DOMAIN TMC 885M AT Bus
 FUTURE DOMAIN TMC 7000 FAST SCSI-ISA/16

***: Enable>1GB support option for DOS/Windows
 Disable for UNIX/NOVELL

EISA BUS ADAPTERS

ADAPTEC 1720
 ADAPTEC 1740A 32-bit EISA
 BUSLOGIC 757S
 BUSLOGIC 747S
 DPT PM 2012B2/95 W2.5M Cache
 DPT PM 2012A/95 32-bit EISA - partition limit of 1GB
 DPT PM 2012A/90 - partition limit of 1 GB
 FUTURE DOMAIN TMC7000EX 32-bit EISA
 (partition limit of 512MB)

MICROCHANNEL BUS ADAPTERS

ADAPTEC 1640
 FUTURE DOMAIN MCS-600
 FUTURE DOMAIN MCS-700-Partition limit 1 GB

DEC SYSTEMS

Platforms	DEC STATION 3100 ----- DECVAX Station3100 DECMicro Vax3100
Operating System	VMS V5.5 VMS V5.6

Note: Attachment to earlier versions of the VMS

operating system is not possible.

Configuration Required:

Alter MODE SELECT Page 1, Byte 2 to '04'
Alter MODE SELECT Page 7, Byte 2 to '04'

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Platforms          DEC STATION 3100
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                   DECVAX Station3100
                   DECMicro Vax3100

Operating System(s)  Ultrix V4.1
                   Ultrix V4.2
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Configuration Required:

SDTR is again required to be disabled since the S20 ships in this mode, it should attach as is.

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Platforms          DEC STATION 5000
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Operating System(s)  Ultrix V4.1
                   Ultrix V4.2
```

Configuration Required:

No modifications to the drive are required.
However it is necessary to modify the list of device types in the table of known drives contained in the 'usr/sys/data/scsi-data,c' system file as follows:

Change first line from:
/*UNKNOWN DISK*/to/*IBM OEM*/.

Following this change, the operating system kernel must be rebuilt (recompiled).

DEC ALPHA SYSTEMS

Operating system OPENVMS/USF V1.2 attachment as for VMS.

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| SUN SYSTEMS |
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Platforms(s)       SUN Sparc Station
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                   IPC etc...
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Operating System(s) Sunos V4.1.2
Sunos V4.1.3

Note: Attachment to earlier versions of operating system is not possible.

Some CPU boxes have inadequate cooling and internal clearances to allow internal installation of the 0664 drive - see cooling requirements above.

Configuration Required:

The drive will attach with no changes but should the drive enter degraded mode, due for instance to an interrupted format, it will be necessary to ground the option pin on the drive jumper block before the drive can be reformatted on the system.

DEVICE PARAMETER SETTINGS DECLARED TO SYSTEM:

The system will accept a wide range of settings provided these do not result in the total number of data sectors declared (Data Cylinders x Heads x Sectors per track) exceeding the number available on the drive.

One set of parameters which work and give a close system estimate of formatting time is:

Cylinders : 2328
Alt. Cylinders : 2
Heads : 16
Sectors : 211
RPM : 5400

HP Systems

Platforms HEWLETT PACKARD

HP9000-710 etc

Operating System(s) Proprietary (supplied with platform)

Configuration Required: Should attach in default mode.

APPLE SYSTEMS

Platforms MAC/QUADRA

Operating System(s) Proprietary (supplied with platform)

Configuration Required:

The drive should attach to Apple Systems provided a third party device driver such as those available from software Architects and Macpeak.

All trademarks are acknowledged.

This information is provided for the use of OEM Manufacturers attaching IBM disk drives & is believed to be accurate but is supplied without guarantee.