SWSD3-SB 2.10-GB 3.5-inch Disk Drive SBB For Sun™ Product Notes

Thank you for purchasing our SWSD3-SB StorageWorks Building Block (SBB), designed and manufactured by Digital Equipment Corporation. Please note that this drive is preformatted and prelabled for Sun and is ready to go.

Overview of SWSD3-SB Drive:

This 3.5-inch drive has a formatted capacity of 2.10 GB. It features an average seek time of 9.5 ms and an average latency of 5.6 ms, providing an average data-access time of 15.1 ms. The drive uses a banded recording technique to keep the bit density constant regardless of track radius, obtaining media transfer rates as high as 5.5 MB/s. This drive has a 1024-KB segmented cache buffer that maximizes the cache hit rate for sequential reads; the buffer electronics uses a unique firmware algorithm to store a copy of the next track to be read before your host system asks for the data in that track — and can handle up to six different ongoing read sequences at a time.

The SWSD3-SB drive also offers unsurpassed data integrity, featuring a 264-bit ECC technique that can correct up to 11 noncontiguous bytes per block. The drive layout ensures proper addressing by providing four separate copies of the header for each sector, along with embedded servo data for fine-tuning the head position. In addition, the drive electronics add end-to-end checksum error detection code (EDC) to the data to ensure the integrity of the data returning to the system bus.

Other special features of note include:

- Banded recording.
- Fast SCSI-2 interface.
- Downloadable SCSI firmware.
- Automatic sector reallocation.
- Tagged command queuing.
- Zero-latency read and messages.
- Parity on cache RAM.
- Self diagnostics.
- 500,000-hour MTBF.
- UL, CSA, and VDE standards.

/etc/format.dat Information:

For your convenience, we have labeled this drive with a format utility, giving the drive traditional partitions, so that you can install this unit and get it up and running quickly. To do this, we used the following settings. Note that we designated a fixed *nsect* value, even though this banded drive allows a different number of sectors/track, depending on the radius of a given track. We determined this value by dividing the total number of blocks by the total number of heads, dividing that result by the total number of cylinders, and then rounding down the result to the next lower whole number. Some partition sizes also were selected to be consistent with the *newfs* command. (For example, the "g" partition was reduced to avoid truncation of the last cylinder group.) We recommend that you enter the applicable information into your */etc/format.dat* file at your earliest convenience so that the data will be readily available for any possible future use:

```
disk_type = "DEC_RZ28" \
  : ctlr = SCSI : fmt_time = 5 \
  : ncyl = 3043 : acyl = 2 : pcyl = 3045 : nhead = 16 : nsect = 84 \
  : rpm = 5400 : bpt = 43008
```

For SunOS systems, the partition data is as follows:

```
partition = "DEC_RZ28" \
  : disk = "DEC_RZ28" : ctlr = SCSI \
  : a = 0, 64512 : b = 48, 196224 : c = 0, 4089792 : g = 194, 3827712
```

For Solaris systems, the partition data is as follows:

```
partition = "DEC_RZ28" \
  : disk = "DEC_RZ28" : ctlr = SCSI \
  : 0 = 0, 64512 : 1 = 48, 196224 : 2 = 0, 4089792 : 6 = 194, 3827712
```

SWSD3-SB Specifications:

Physical Configuration	
Number of discs (platters)	8
Number of read/write heads	16
Servo	Embedded
Unformatted capacity	2,521 MB
Formatted capacity	2,105 MB
Number of cylinders	3,045
Tracks per surface	3,045
Track capacity (bytes)	30,720–61,440
Bytes/sector	512
Sectors/track	59–119
Sectors/drive	4,110,480

Power Requirements	
Seeking current	
+5 Vdc +/-5% (typical)	0.72 A
+12 Vdc +/5% (typical)	0.90 A
Power consumption:	
Active (100% seeking)	13.2 W
Active (40% seeking)	11.2 W
Idle	9.8 W

Performance Specifications	
Interface transfer rate:	
Synchronous	10 MB/s
Asynchronous	5 MB/s
Media transfer rate	2.7 – 5.5 MB/s
Cache buffer	1024 KB
Track-to-track seek:	1 ms

Recording	
Track density	3,256 tpi
Bit density	64,000 bpi
Areal density	206 MB/in^2
Recording method	RLL (1,7)

Physical	
Height	41.4 mm/1.63 inches
Width	101 mm/4.0 inches
Length	146 mm/5.75 inches
Weight	0.82 Kg/1.8 lbs

Environmental Specifications	
Non-Operating:	
Temperature	-40° C to 66° C
Humidity (RH)	8% to 95%, noncondensing
Operating:	
Temperature	5° C to 55° C
Humidity (RH)	10% to 90%, noncondensing
Shock	10 G peak half sine 10 ms duration
Vibration	22–500 Hz @ 0.5 G peak
Acoustics:	
Seeking	36 dBA @ 1.0 meter
Idle	32 dBA @ 1.0 meter

Power On Test

Disk drive status is displayed by two LEDs on the front of the storage device (Figure 1). Each LED has three states: *on, off,* and *flashing*. When the drive is powered on, both LEDs flash as a hardware/lamp test and then assume the following normal operating status activity:

• The left LED (green) is a device-controlled activity LED and is on or flashing when the drive is active

• The right LED (amber) is the drive fault LED and indicates an error condition when either on or flashing

Figure 1 Disk Drive Status LEDs

ACTIVITY LED (GREEN)

FAULT LED (AMBER)

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