

SCSI v ATA Interface Comparison

Distinct markets



- Different classes of disk drives

Characteristic	Mobile	Desktop	Enterprise
rpm	3600, 4200, 5400 rpm	5400, 7200 rpm	10K, 15K rpm
Seek time	12 – 14 ms	8.9 – 9.5 ms	3.2 – 7.4 ms
Performance as file server*	N/A	79 – 136	146 - 366
Write cache	2 MB	2 – 8 MB	2 – 8 MB
Capacity	10 – 80 GB	40 – 250 GB	18, 36, 72, 144, 180 GB
Reliability	300 K hr MTBF	500 K hr MTBF	1.2 M hr MTBF
Power	2.5 W	10 W	15 W
Cost	\$73 – \$160	\$75 – \$240	\$160 – \$1400
Interfaces	ATA/66, ATA/100	ATA/100, ATA/133	Ultra 160 SCSI, Ultra 320 SCSI, FC

* Benchmark of many drives on <http://www.storagereview.com>

Note: As of mid 2002

SCSI benefits

- Better seek times
 - ☞ SCSI drops below 3ms,
 - ☞ ATA about 10msec
- Better rotational latencies
 - ☞ SCSI 10K, 15K
 - ☞ ATA 7200rpm
- Reliability
- Interface speed
- Versatility of devices

ATA benefits

- Cost
- Command overhead
- Fewer disk platters->head switch time
- Disk radius
 - ☞ Same or faster media speed
 - ☞ larger capacity
- Convergence

Summary of IDE/ATA and SCSI Comparisons

Interface Factor	IDE/ATA	SCSI
Cost	Low	Moderate to high
Performance	High for single devices or single tasking, moderate to low for multiple devices or multitasking	High in most situations
Ease of Configuration and Use	High for small number of devices, moderate for large number of devices	Low to moderate for both small and large numbers of devices
Expansion and Number of Devices	Moderate	High
Device Type Support	Moderate	High
Device Availability and Selection	High	Moderate
Software / Operating System Compatibility	High	Moderate to high
System Resource Usage	Moderate to poor	Good
Support for non-PC Platforms	Moderate	Good

Diameter



7200 RPM
Disk Drive



10,000 RPM
Disk Drive



15,000 RPM
Disk Drive