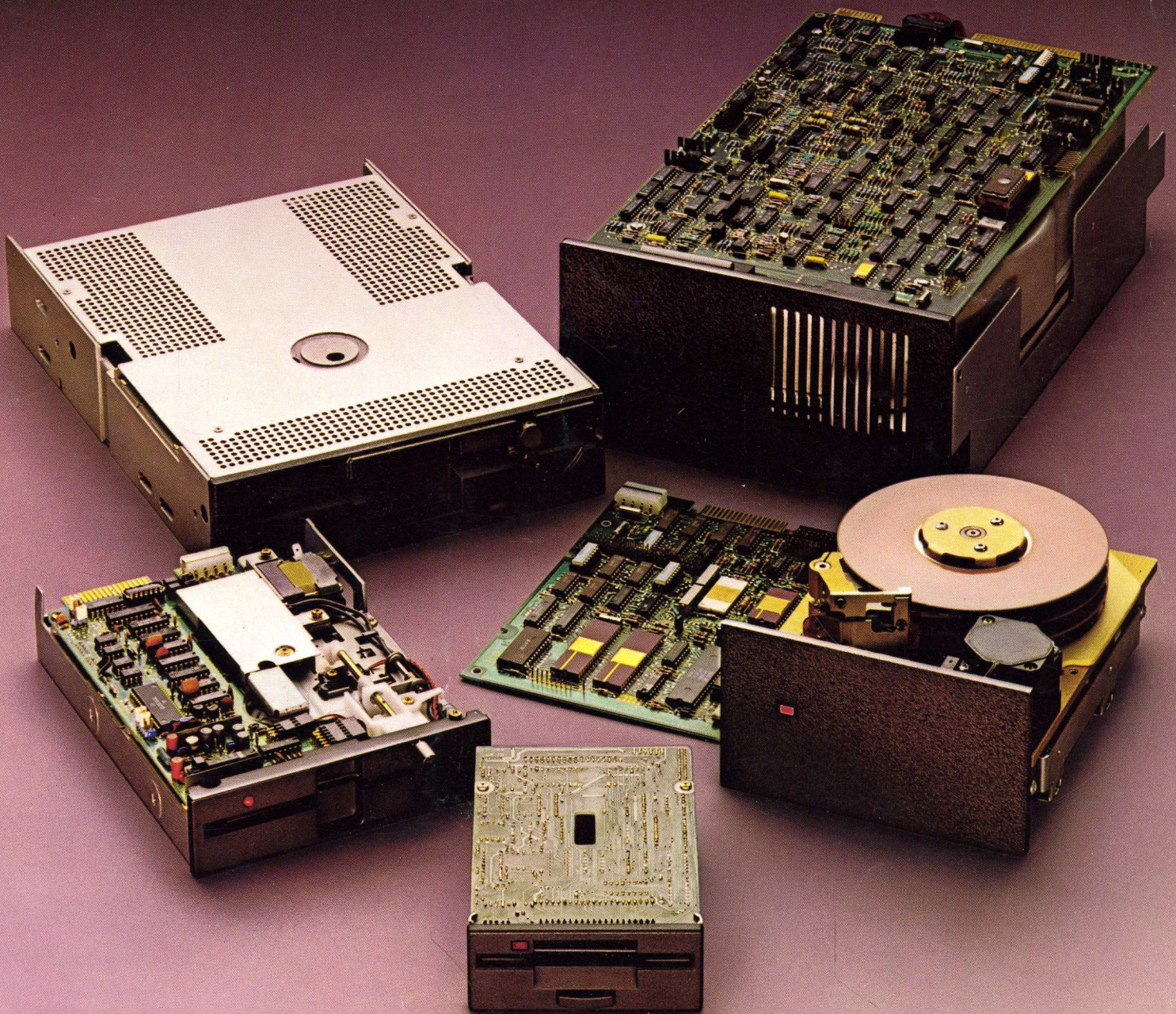


SHUGART

Product
Selection Guide



3.5-Inch Microfloppy Disk Drive

5.25-Inch Minifloppy™ Disk Drives

	SA300 Single/ Double Density	SA400 Single/ Double Density	SA400F Single/ Double Density
Performance			
Capacity (Unformatted)			
Per Drive	—	—	—
Per Disk	250/500 Kbytes	125/250 Kbytes	125/250 Kbytes
Per Surface	250/500 Kbytes	125/250 Kbytes	125/250 Kbytes
Capacity (Formatted)			
Per Drive	—	—	—
Per Disk	204.8/409.6 Kbytes	102.4/204.8 Kbytes	102.4/204.8 Kbytes
Per Surface	204.8/409.6 Kbytes	102.4/204.8 Kbytes	102.4/204.8 Kbytes
Per Track	2.6/5.1 Kbytes	2.6/5.1 Kbytes	2.6/5.1 Kbytes
Per Sector	256/512 bytes	256/512 bytes	256/512 bytes
Sector/Track	10	10	10
Transfer Rate	125/250 Kbits/sec	125/250 Kbits/sec	125/250 Kbits/sec
Access Time			
Track-to-Track	6 msec	20 msec	6 msec
Average	158 msec	275 msec	93 msec
Settling Time	15 msec	20 msec	15 msec
Head Load Time	—	50 msec	—
Average Latency	100 msec	100 msec	100 msec
Motor Start Time	500 msec	500 msec	200 msec
Functional			
Rotational Speed	300 rpm	300 rpm	300 rpm
Recording Density (inside track)	4,102/8,204 bpi	2,768/5,536 bpi	2,768/5,536 bpi
Flux Density	8,204 fci	5,536 fci	5,536 fci
Track Density	135 tpi	48 tpi	48 tpi
Cylinders	—	—	—
Tracks	80	40	40
R/W Heads	1	1	1
Disks	—	—	—
Encoding Method	FM/MFM	FM/MFM	FM/MFM
Physical			
Environmental Limits			
Ambient Temperature	50° to 115°F (10° to 46.1°C)	50° to 115°F (10° to 46.1°C)	50° to 115°F (10° to 46.1°C)
Relative Humidity	20 to 80%	20 to 80%	20 to 80%
Maximum Wet Bulb	85°F non-condensing (29.4°C)	85°F non-condensing (29.4°C)	85°F non-condensing (29.4°C)
AC Power Requirements	—	—	—
DC Voltage Requirements			
	+ 12 VDC ± 5% 0.4 A typical	+ 12 VDC ± 5% 0.9 A typical	+ 12 VDC ± 5% 0.9 A typical
	+ 5 VDC ± 5% 0.6 A typical	+ 5 VDC ± 5% 0.5 A typical	+ 5 VDC ± 5% 0.5 A typical
Mechanical Dimensions			
Height	1.62 in. (41.2 mm)	3.25 in. (82.6 mm)	3.25 in. (82.6 mm)
Width	4.00 in. (101.6 mm)	5.75 in. (146.1 mm)	5.75 in. (146.1 mm)
Depth	6.00 in. (152.4 mm)	8.00 in. (203.2 mm)	8.25 in. (209.6 mm)
Weight	1.3 lbs (.59 kg)	3 lbs (1.4 kg)	3.2 lbs (1.45 kg)
Heat Dissipation			
	27 BTU/hr 7.9 Watts typical	45.3 BTU/hr 13.25 Watts typical	45.5 BTU/hr 13.25 Watts typical
	13.5 BTU/hr 3.95 Watts standby	25.0 BTU/hr 7.3 Watts standby	25.0 BTU/hr 7.3 Watts standby
Reliability			
MTBF	10,000 POH under typical usage	8,000 POH under typical usage	8,000 POH under typical usage
PM	Not required	Not required	Not required
MTTR	30 minutes	30 minutes	30 minutes
Component Life	5 years	5 years	5 years
Error Rates			
Soft Read	1 per 10 ⁹ bits read	1 per 10 ⁹ bits read	1 per 10 ⁹ bits read
Hard Read	1 per 10 ¹² bits read	1 per 10 ¹² bits read	1 per 10 ¹² bits read
Seek Errors	1 per 10 ⁶ seeks	1 per 10 ⁶ seeks	1 per 10 ⁶ seeks

NOTE: Specifications subject to change without notice.

**SA410 Single/
Double Density****SA460 Single/
Double Density****SA455 Single/
Double Density
Half-Height****SA465 Single/
Double Density
Half-Height****SA200 Single/
Double Density
Reduced-Height**—
250/500 Kbytes
250/500 Kbytes—
500/1,000 Kbytes
250/500 Kbytes—
250/500 Kbytes
125/250 Kbytes—
500/1,000 Mbytes
250/500 Kbytes—
125/250 Kbytes
125/250 Kbytes—
204.8/409.6 Kbytes
204.8/409.6 Kbytes
2.6/5.1 Kbytes
256/512 Kbytes
10—
409.6/819.2 Kbytes
204.8/409.6 Kbytes
2.6/5.1 Kbytes
256/512 Kbytes
10—
204.8/409.6 Kbytes
102.4/204.8 Kbytes
2.6/5.1 Kbytes
256/512 Kbytes
10—
409.6/819.2 Kbytes
204.8/409.6 Kbytes
2.6/5.1 Kbytes
256/512 Kbytes
10—
102.4/204.8 Kbytes
102.4/204.8 Kbytes
2.6/5.1 Kbytes
256/512 Kbytes
10

125/250 Kbits/sec

125/250 Kbits/sec

125/250 Kbits/sec

125/250 Kbits/sec

125/250 Kbits/sec

6 msec
173 msec
15 msec6 msec
173 msec
15 msec6 msec
93 msec
15 msec3 msec
94 msec
15 msec26 msec
358 msec
20 msec100 msec
200 msec100 msec
200 msec100 msec
500 msec100 msec
500 msec100 msec
350 msec300 rpm
2,788/5,576 bpi
5,576 fci
96 tpi300 rpm
2,961/5,922 bpi
5,922 fci
96 tpi300 rpm
2,938/5,876 bpi
5,876 fci
48 tpi300 rpm
2,961/5,922 bpi
5,922 fci
96 tpi300 rpm
2,768/5,536 bpi
5,536 fci
48 tpi

80

80

40

80

40

1

1

1

1

1

FM/MFM

FM/MFM

FM/MFM

FM/MFM

FM/MFM

50° to 115°F (10° to 46.1°C)
20 to 80%
85°F non-condensing (29.4°C)50° to 115°F (10° to 46.1°C)
20 to 80%
85°F non-condensing (29.4°C)50° to 115°F (10° to 46.1°C)
20 to 80%
85°F non-condensing (29.4°C)50° to 115°F (10° to 46.1°C)
20 to 80%
85°F non-condensing (29.4°C)50° to 115°F (10° to 46.1°C)
20 to 80%
85°F non-condensing (29.4°C)+ 12 VDC ± 5%
1.2 A typical+ 12 VDC ± 5%
1.2 A typical+ 12 VDC ± 5%
0.75 A typical+ 12 VDC ± 5%
0.75 A typical+ 12 VDC ± 5%
0.77 A typical+ 5 VDC ± 5%
0.5 A typical+ 5 VDC ± 5%
0.5 A typical+ 5 VDC ± 5%
0.7 A typical+ 5 VDC ± 5%
0.7 A typical+ 5 VDC ± 5%
0.24 A typical3.25 in. (82.6 mm)
5.75 in. (146.1 mm)
8.25 in. (209.6 mm)
3.2 lbs (1.45 kg)3.25 in. (82.6 mm)
5.75 in. (146.1 mm)
8.25 in. (209.6 mm)
3.2 lbs (1.45 kg)1.63 in. (41.5 mm)
5.75 in. (146.1 mm)
8.00 in. (202 mm)
3.3 lbs (1.5 kg)1.63 in. (41.5 mm)
5.75 in. (146.1 mm)
8.00 in. (202 mm)
3.3 lbs (1.5 kg)2.05 in. (52.1 mm)
5.75 in. (146.1 mm)
7.87 in. (199.9 mm)
3 lbs (1.4 kg)62.0 BTU/hr
18.1 Watts typical62.0 BTU/hr
18.1 Watts typical42.7 BTU/hr
12.5 Watts typical42.7 BTU/hr
12.5 Watts typical35.6 BTU/hr
10.4 Watts typical49.8 BTU/hr
14.6 Watts standby49.8 BTU/hr
14.6 Watts standby12.3 BTU/hr
3.6 Watts standby12.3 BTU/hr
3.6 Watts standby9.6 BTU/hr
2.8 Watts standby8,000 POH under
typical usage8,000 POH under
typical usage10,000 POH under
typical usage10,000 POH under
typical usage8,000 POH under
typical usage

Not required

Not required

Not required

Not required

Not required

30 minutes
5 years30 minutes
5 years30 minutes
5 years30 minutes
5 years30 minutes
5 years1 per 10⁹ bits read
1 per 10¹² bits read
1 per 10⁶ seeks1 per 10⁹ bits read
1 per 10¹² bits read
1 per 10⁶ seeks1 per 10⁹ bits read
1 per 10¹² bits read
1 per 10⁶ seeks1 per 10⁹ bits read
1 per 10¹² bits read
1 per 10⁶ seeks1 per 10⁸ bits read
1 per 10¹¹ bits read
1 per 10⁶ seeks

NOTE: Specifications subject to change without notice.

8-Inch Floppy Disk Drives

	SA801 Single/ Double Density	SA851 Single/ Double Density	SA810 Single/ Double Density Half-Height	SA860 Single/ Double Density Half-Height
Performance				
Capacity (Unformatted)				
Per Drive	—	—	—	—
Per Disk	400/800 Kbytes	800/1,600 Kbytes	400/800 Kbytes	800/1,600 Kbytes
Per Surface	400/800 Kbytes	400/800 Kbytes	400/800 Kbytes	400/800 Kbytes
Capacity (Formatted)	(128 Bytes/Sector)	(128 Bytes/Sector)	(128 Bytes/Sector)	(128 Bytes/Sector)
Per Drive	—	—	—	—
Per Disk	250/500 Kbytes	500/1,000 Kbytes	250/500 Kbytes	500/1,000 Kbytes
Per Surface	250/500 Kbytes	250/500 Kbytes	250/500 Kbytes	250/500 Kbytes
Per Track	3.3/6.6 Kbytes	3.3/6.7 Kbytes	3.3/6.7 Kbytes	3.3/6.7 Kbytes
Per Sector	128/256 bytes	128/256 bytes	128/256 bytes	128/256 bytes
Sector/Track	32/16/8	32	32	32
Transfer Rate	250/500 Kbits/sec	250/500 Kbits/sec	250/500 Kbits/sec	250/500 Kbits/sec
Access Time				
Track-to-Track	8 msec	3 msec	3 msec	3 msec
Average (incl. Settling)	210 msec	91 msec	89 msec	89 msec
Settling Time	8 msec	15 msec	13 msec	13 msec
Head Load Time	35 msec	50 msec	—	—
Average Latency	83 msec	83 msec	83 msec	83 msec
Motor Start Time	2 sec	2 sec	120 msec (typical)	120 msec (typical)
Functional				
Rotational Speed	360 rpm	360 rpm	360 rpm	360 rpm
Recording Density (inside track)	3,268/6,536 bpi	3,408/6,816 bpi	3,268/6,536 bpi	3,408/6,816 bpi
Flux Density	6,536 fci	6,816 fci	6,536 fci	6,816 fci
Track Density	48 tpi	48 tpi	48 tpi	48 tpi
Cylinders	—	—	—	—
Tracks	77	154	77	154
R/W Heads	1	2	1	2
Disks	—	—	—	—
Encoding Method	FM/MFM	FM/MFM	FM/MFM	FM/MFM
Physical				
Environmental Limits				
Ambient Temperature	50° to 115°F (10° to 46.1°C)	50° to 115°F (10° to 46.1°C)	50° to 115°F (10° to 46.1°C)	50° to 115°F (10° to 46.1°C)
Relative Humidity	20 to 80%	20 to 80%	20 to 80%	20 to 80%
Maximum Wet Bulb	85°F non-condensing (29.4°C)	85°F non-condensing (29.4°C)	85°F non-condensing (29.4°C)	85°F non-condensing (29.4°C)
AC Power Requirements	50/60 Hz ± 0.5 Hz 110/115 VAC Installations = 85-127 V at 0.35 A typical 200/230 VAC Installations = 170-253 V at 0.23 A typical			
DC Voltage Requirements	+ 24 VDC ± 5% 1.3 A typical + 5 VDC ± 5% 0.8 A typical	+ 24 VDC ± 10% 0.85 A typical + 5 VDC ± 5% 1.0 A typical	+ 24 VDC ± 10% 1.0 A typical + 5 VDC ± 5% 0.7 A typical	+ 24 VDC ± 10% 1.0 A typical + 5 VDC ± 5% 0.7 A typical
Mechanical Dimensions				
Height	4.62 in. (117.3 mm)	4.62 in. (117.3 mm)	2.31 in. (58.7 mm)	2.31 in. (58.7 mm)
Width	8.55 in. (217.2 mm)	8.55 in. (217.2 mm)	8.55 in. (217.2 mm)	8.55 in. (217.2 mm)
Depth	14.25 in. (362 mm)	14.25 in. (362 mm)	12.0 in. (304.8 mm)	12.0 in. (304.8 mm)
Weight	13 lbs (5.9 kg)	13 lbs (5.9 kg)	7 lbs (3.2 kg)	7 lbs (3.2 kg)
Heat Dissipation	261.6 BTU/hr 76.5 Watts typical (115 VAC) 301.2 BTU/hr 88.1 Watts typical (230 VAC)	224.6 BTU/hr 65.7 Watts typical (115 VAC) 283.5 BTU/hr 83.5 Watts typical (230 VAC)	96.0 BTU/hr 28.0 Watts typical 34.0 BTU/hr 9.9 Watts standby	96.0 BTU/hr 28.0 Watts typical 34.0 BTU/hr 9.9 Watts standby
Reliability				
MTBF	8,000 POH under typical usage	8,000 POH under typical usage	10,000 POH under typical usage	10,000 POH under typical usage
PM	12 months	12 months	Not required	Not required
MTRR	30 minutes	30 minutes	30 minutes	30 minutes
Component Life	5 years	5 years	5 years	5 years
Error Rates				
Soft Read	1 per 10 ⁹ bits read	1 per 10 ⁹ bits read	1 per 10 ⁹ bits read	1 per 10 ⁹ bits read
Hard Read	1 per 10 ¹² bits read	1 per 10 ¹² bits read	1 per 10 ¹² bits read	1 per 10 ¹² bits read
Seek Errors	1 per 10 ⁶ seeks	1 per 10 ⁶ seeks	1 per 10 ⁶ seeks	1 per 10 ⁶ seeks

NOTE: Specifications subject to change without notice.

Winchester Disk Drives

SA1002/1004 (8-inch)	SA1104/1106 (8-inch)	SA604/606 (5.25-inch)	SA607/612 (5.25-inch)	SA706/712 (5.25-inch) Half-Height
5.33/10.67 Mbytes 5.33 Mbytes 2.67 Mbytes	20.3/33.9 Mbytes 13.5 Mbytes 6.77 Mbytes	6.66/10.0 Mbytes 3.33 Mbytes 1.66 Mbytes	6.47/12.95 Mbytes 6.47 Mbytes 3.24 Mbytes	6.37/12.74 Mbytes 6.37 Mbytes 3.18 Mbytes
—	—	—	—	—
4.2/8.4 Mbytes 4.2 Mbytes 2.1 Mbytes 8.2 Kbytes 256 bytes 32	16.0/26.6 Mbytes 10.6 Mbytes 5.3 Mbytes 8.2 Kbytes 256 bytes 32	5.2/7.8 Mbytes 2.6 Mbytes 1.3 Mbytes 8.2 Kbytes 256 bytes 32 + 1	5.09/10.19 Mbytes 5.09 Mbytes 2.54 Mbytes 8.2 Kbytes 256 bytes 32 + 1	5.01/10.27 Mbytes 5.01 Mbytes 2.5 Mbytes 8.2 Kbytes 256 bytes 32 + 1
4.34 Mbts/sec	4.34 Mbts/sec	5.0 Mbts/sec	5.0 Mbts/sec	5.0 Mbts/sec
19 msec 70 msec	10 msec 35 msec	16.2 msec 99 msec	16.2 msec 92 msec	16.2 msec 99 msec
—	—	—	—	—
9.6 msec	9.6 msec	8.33 msec	8.33 msec	8.33 msec
—	—	—	—	—
3,125 rpm 6,270 bpi 6,270 fci 172 tpi 256 512/1,024 2/4 1/2 MFM	3,125 rpm 6,006 bpi 6,006 fci 500 tpi 660 1,980/3,300 4/6 2/3 MFM	3,600 rpm 7,900 bpi 7,900 fci 256 tpi 160 640/960 4/6 2/3 MFM	3,600 rpm 9,300 bpi 9,300 fci 345 tpi 311 622/1,244 2/4 1/2 MFM	3,600 rpm 9,036 bpi 9,036 fci 360 tpi 306 612/1,224 2/4 1/2 MFM
50° to 115°F (10° to 46.1°C) 8 to 80% 78°F non-condensing (25.6°C)	50° to 115°F (10° to 46.1°C) 8 to 80% 78°F non-condensing (25.6°C)	50° to 115°F (10° to 46.1°C) 8 to 80% 78°F non-condensing (25.6°C)	50° to 115°F (10° to 46.1°C) 8 to 80% 78°F non-condensing (25.6°C)	50° to 115°F (10° to 46.1°C) 8 to 80% 78°F non-condensing (25.6°C)
50/60 Hz ± 0.5 Hz 110/115 VAC Installation 90–127 V at 1.1 A typical 200/230 VAC installations 180–253 V at 0.6 A typical	—	—	—	—
+ 24 VDC ± 10%, 2.8 A typical During stepping (0.2 A typical steady state) + 5 VDC ± 5%, 3.6 A typical - 5 VDC ± 5% (Option -7 to -16 VDC) 0.2 A typical	+ 24 VDC ± 10%, 2.4 A typical 4.0 A peak (10 sec) + 5 VDC ± 5%, 2.0 A typical	+ 12 VDC ± 5%, 1.8 A typical ± 10%, 4.0 A max starting + 5 VDC ± 5%, 1.8 A typical 2.0 A maximum	+ 12 VDC ± 5%, 1.8 A typical ± 10%, 4.0 A max starting + 5 VDC ± 5%, 1.2 A typical 2.0 A maximum	+ 12 VDC ± 5%, 1.1 A typical + 10%, 3.7 A max starting + 5 VDC ± 5%, 1.4 A typical 1.4 A maximum
4.62 in. (117.3 mm) 8.55 in. (217.2 mm) 14.25 in. (362 mm) 17 lbs (7.7 kg)	4.62 in. (117.3 mm) 8.55 in. (217.2 mm) 14.25 in. (362 mm) 18 lbs (8.2 kg)	3.38 in. (85.9 mm) 5.88 in. (149.4 mm) 8.19/8.0 in. (208.0/203.2 mm) 4.0 lbs (1.8 kg)	3.38 in. (85.9 mm) 5.88 in. (149.4 mm) 8.19 in. (208.0 mm) 4.0 lbs (1.8 kg)	1.63 in. (41.4 mm) 5.88 in. (149.4 mm) 8.0 in. (203.2 mm) 3.3 lbs (1.5 kg)
723.8 BTU/hr 211.6 Watts typical (115 VAC)	231.1 BTU/hr 67.6 Watts typical	89.2 BTU/hr 26.1 Watts typical	89.2 BTU/hr 26.1 Watts typical	69.0 BTU/hr 20.2 Watts typical
736.2 BTU/hr 215.3 Watts typical (230 VAC)	—	—	—	—
8,000 POH under typical usage	8,000 POH under typical usage	8,000 POH under typical usage	11,500 POH under typical usage	12,000 POH under typical usage
Not required	Not required	Not required	Not required	Not required
30 minutes 5 years	30 minutes 5 years	30 minutes 5 years	30 minutes 5 years	30 minutes 5 years
1 per 10 ¹⁰ bits read 1 per 10 ¹² bits read 1 per 10 ⁶ seeks	1 per 10 ¹⁰ bits read 1 per 10 ¹² bits read 1 per 10 ⁶ seeks	1 per 10 ¹⁰ bits read 1 per 10 ¹² bits read 1 per 10 ⁶ seeks	1 per 10 ¹⁰ bits read 1 per 10 ¹² bits read 1 per 10 ⁶ seeks	1 per 10 ¹⁰ bits read 1 per 10 ¹² bits read 1 per 10 ⁶ seeks

NOTE: Specifications subject to change without notice.

Controllers Guide

Controller \ Drive	Winchester Drives			Floppy Drives			Tape Cartridge Drives**	
	14"	8"	5.25"	8"	5.25"	3.5"	1/4-Inch	1/4-Inch
	SA4004 SA4008	SA1004 SA1104 SA1106	SA604 SA606 SA607 SA612 SA706 SA712	SA801 SA851 SA810 SA860	SA400 SA400F SA410 SA460 SA455 SA465	SA300	DEI	Archive Tandberg Cipher

3.5" Floppy Disk Controller

SA1620*			●				●	
---------	--	--	---	--	--	--	---	--

5.25" Rigid Disk Controllers

SA1410A			●					
SA1610*			●					

5.25" Rigid Disk Controllers With Floppy Disk Back-Up

SA1420A			●		●			
SA1435			●	●				
SA1620*			●		●			

8" Rigid Disk Controllers

SA1401		●						
SA1401-1		●						
SA1601*		●						

8" Rigid Disk Controllers With Floppy Disk Back-Up

SA1403		●		●				
SA1403D		●		●				
SA1403D-1		●		●				
SA1403E		●		●				
SA1603*		●		●				

8" Rigid Disk Controllers With Tape Drive Back-Up

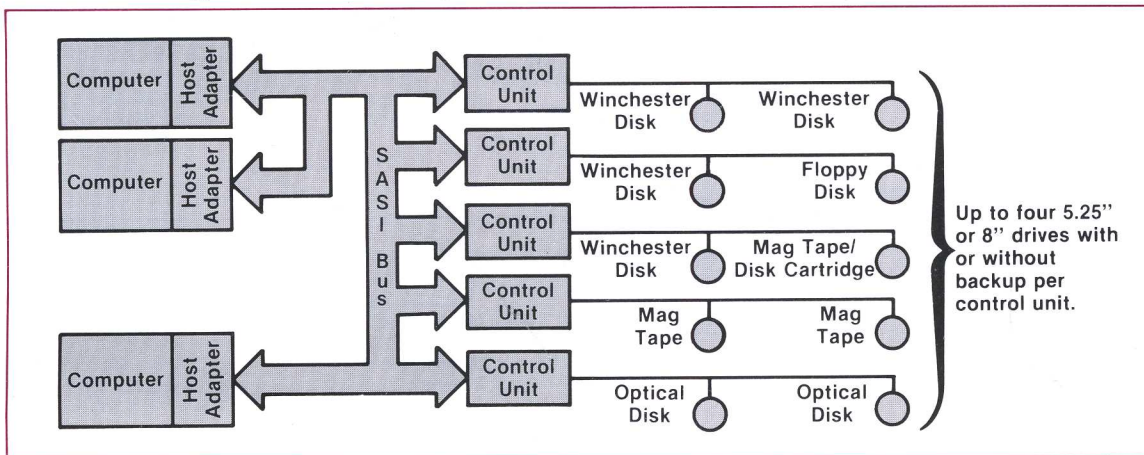
SA1406		●					●	
SA1408I		●						●

14" Rigid Disk Controllers

SA1404	●							
SA1404D	●			●				

*Custom LSI/Full SASI
**Not Shugart Products

SASI Configuration Example



Media Guide

3.5-Inch Cartridge

	135 TPI Single-Sided
Soft Sector Single/Double Density	SA130 P/N TBA
Alignment Diskette	SA138 P/N TBA
Cleaning Diskette	TBA

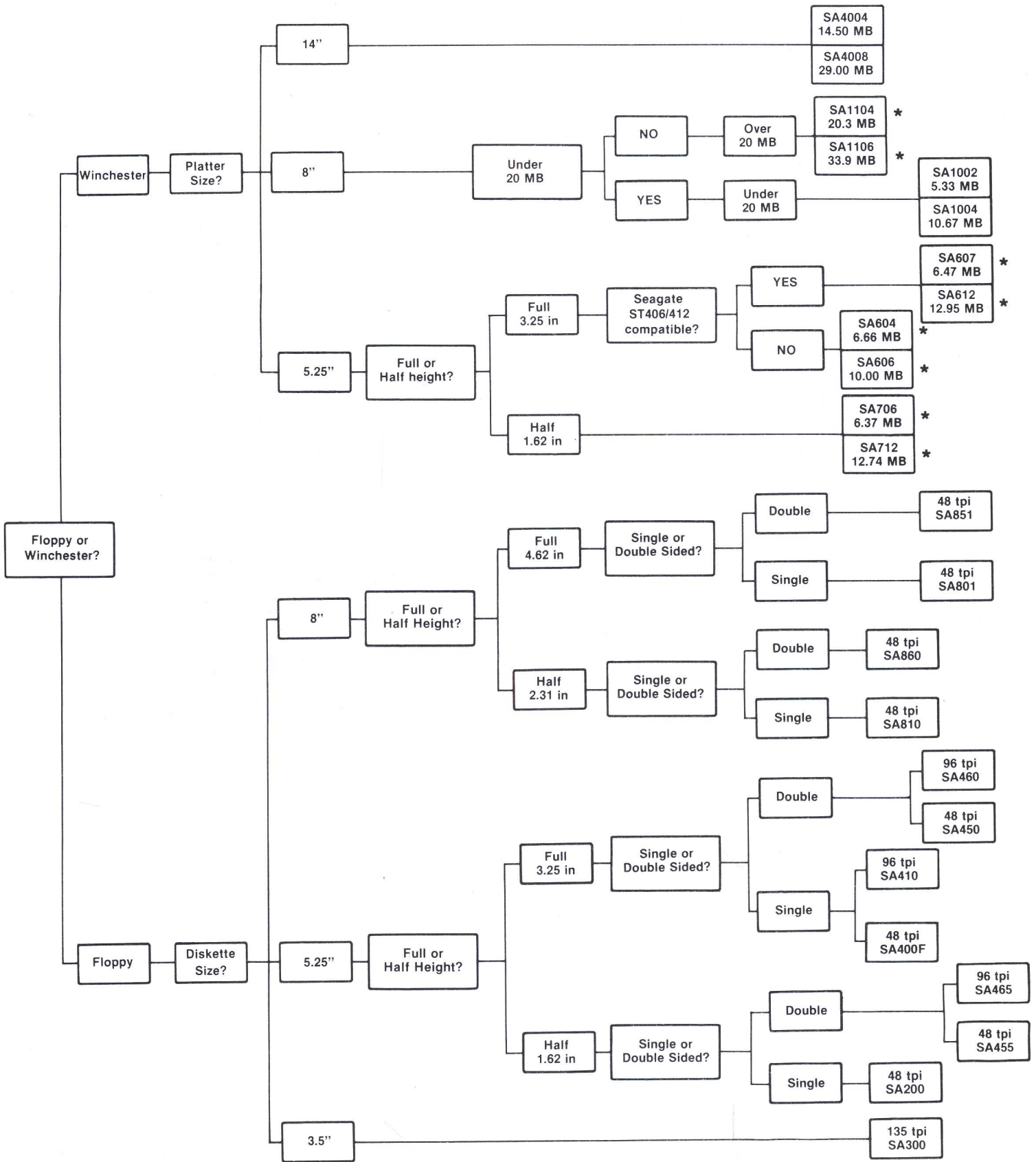
5.25-Inch Diskettes

	48 TPI Single-Sided	48 TPI Double-Sided	96 TPI Single-Sided	96 TPI Double-Sided
Soft Sector Single Density	SA104 P/N 54117	SA154 P/N 54169	SA114 P/N 54315	SA164 P/N 54318
Hard Sector 16 Sectors Single Density	SA105 P/N 54119	SA155 P/N 54170	SA115 P/N 54316	SA165 P/N 54319
Hard Sector 10 Sectors Single Density	SA107 P/N 54149	SA157 P/N 54171	SA117 P/N 54317	SA167 P/N 54320
Soft Sector Double Density	SA104 P/N 54117	SA154 P/N 54169	SA114 P/N 54315	SA164 P/N 54318
Hard Sector 16 Sectors Double Density	SA105 P/N 54119	SA155 P/N 54170	SA115 P/N 54316	SA165 P/N 54319
Hard Sector 10 Sectors Double Density	SA107 P/N 54149	SA157 P/N 54171	SA117 P/N 54317	SA167 P/N 54320
Alignment Diskettes	SA124 P/N 54221	SA128 P/N 54573	SA114 P/N 54315	SA148 P/N 54382
Cleaning Diskettes	SA112 P/N 54613	SA112 P/N 54613	SA112 P/N 54613	SA112 P/N 54613

8-Inch Diskettes

	48 TPI Single-Sided	48 TPI Double-Sided
Soft Sector Single Density	SA100 P/N 50417	SA150 P/N 50872
Hard Sector Single Density	SA101 P/N 50418	SA151 P/N 50873
Soft Sector Double Density	SA102 P/N 50646	SA150 P/N 50872
Hard Sector Double Density	SA103 P/N 50708	SA151 P/N 50873
Alignment Diskettes	SA120 P/N 50782	SA122 P/N 51189
Cleaning Diskettes	SA111 P/N 54612	SA111 P/N 54612

Model Flowchart



* AVAILABLE WITH SASI INTERFACE

NOTE: Specifications subject to change without notice.

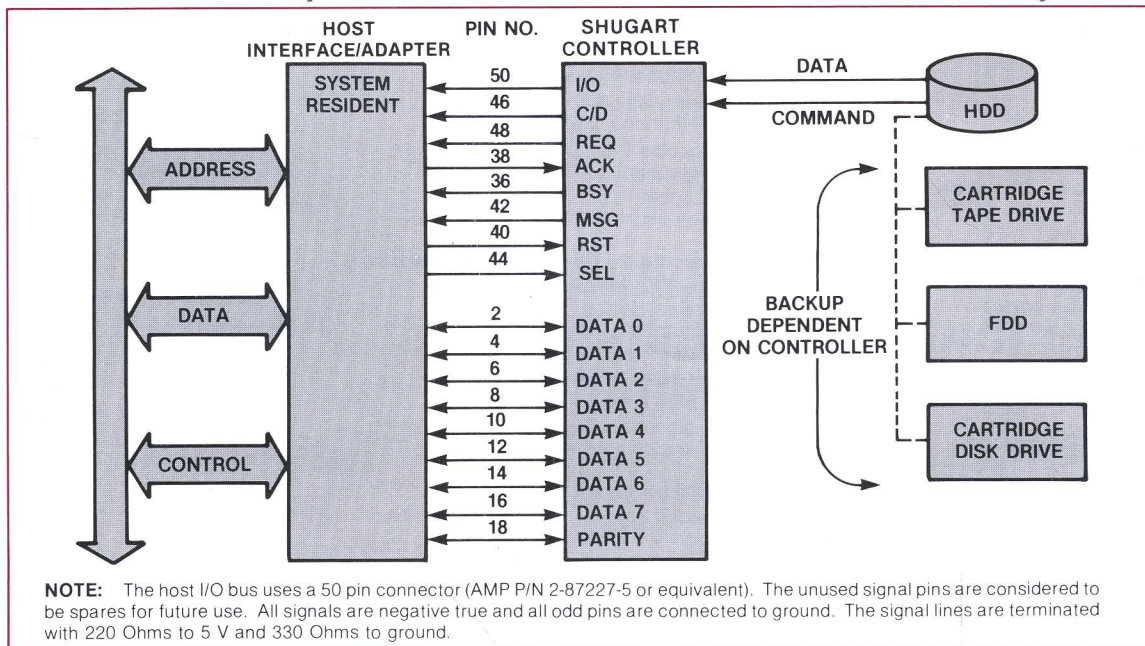
Host Adapters

HOST INTERFACE ADAPTERS		BUS STRUCTURES										
MODEL NO.	PSI NO.	S-100 IEEE 696	LSI-11 Q BUS	PDP-11 UNIBUS	TRS 80 MODEL I	TRS 80 MODELS II & III	IBM PC	APPLE II	INTEL MULTI-BUS	STD BUS	MOTOROLA EXERCISER BUS	MOTOROLA VERSA-BUS
SA1510	770194	●										
SA1511	770195		●									
SA1512	770212			●								
SA1550	770196					●						
SA1550-1	770410				●							
SA1550-2	770411					●						
SA1551	770449						●					
SA1568	770197										●	
SA1569	770215											●
SA1575	770198							●				
SA1586	770199							●				
SA1587	770213									●		

MODEL NO.	PART NO.	SOFTWARE DRIVERS
SASD 44	70201-0	CPM 2.2
SASD 34	70200-0	RT II RX01

FOOTNOTE: SUBJECT TO MANUFACTURERS TRADEMARK

SA1569 Host Adapter for Motorola Versabus Personal Computer



NOTE: The host I/O bus uses a 50 pin connector (AMP P/N 2-87227-5 or equivalent). The unused signal pins are considered to be spares for future use. All signals are negative true and all odd pins are connected to ground. The signal lines are terminated with 220 Ohms to 5 V and 330 Ohms to ground.

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Thousand Oaks, CA 91360
Telephone (805) 496-5388

West Coast Service

Shugart Corporation
750 Sycamore Drive
Milpitas, CA 95035
Telephone (408) 946-5220
TWX: 910-339-9338

Central Sales

Shugart Corporation
1571 Glenville Drive
Richardson, TX 75081
Telephone (214) 234-3568
TWX: 910-867-4791

Shugart Corporation
7271 Commerce Circle West
Minneapolis, MN 55432
Telephone (612) 574-9750
TWX: 910-576-1684

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1571 Glenville Drive
Richardson, TX 75081
Telephone (214) 234-3569
TWX: 910-867-4791

East Coast Sales

Shugart Corporation
1661 Worcester Road
Framingham, MA 01701
Telephone (617) 879-1700
TWX: 710-380-7620

Shugart Corporation
Park 80 Plaza West #1
Saddle Brook, NJ 07662
Telephone (201) 368-8445
TWX: 710-990-1290

Shugart Corporation
41 Perimeter Place
Atlanta, GA 30339
Telephone (404) 955-8968
TWX: 810-766-2272

East Coast Service

Shugart Corporation
18 Kane Industrial Drive
Hudson, MA 01749
Telephone (617) 568-1492

Eastern Canada Sales

Shugart Corporation
401 Alden Road, Unit 11
Markham, Ontario
L3R 4N4 Canada
Telephone (416) 475-2566
Telex 06-986-766

Europe Sales/Service

Shugart Corporation
1, Place des Etats-Unis,
Immeuble Liege,
Silic 311
94588 Rungis Cedex, France
Telephone (1) 687-31-41
Telex 204 858

Shugart Corporation GMBH
Drygalski-Allee 33
D-8000 Munich 71
West Germany
Telephone (089) 78-60-21
Telex 524752

Shugart Corporation
P.O. Box 57
Sherwood Place
Cope Rd., St. Johns
Woking Surrey
England GU21 1AJ
Telephone (44) 4862-24527
Telex: 859592 AB LSI

North American Representatives

Washington, Oregon, Idaho, British Columbia

Olson, Ferree & Associates, Inc.
Bellevue, WA
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Hillsboro, OR
Telephone (503) 640-9660

Iowa, Kansas, Nebraska, Missouri

Technical Representatives, Inc.
Cedar Rapids, IA
Telephone (319) 393-1300
Wichita, KS
Telephone (316) 529-0114
Earth City, MO
Telephone (314) 291-0001
Kansas City, MO
Telephone (816) 756-3575
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Telephone (402) 475-2115

Michigan, Ohio, W. Pennsylvania, W. Virginia, Kentucky

Infinity Inc.
Southfield, MI
Telephone (313) 557-7230
Bedford Heights, OH
Telephone (216) 439-8146
Columbus, OH
Telephone (614) 262-4291

California

Mesa Engineering
San Diego, CA
Telephone (619) 278-8021
Bestronics Incorporated
Culver City, CA
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Woodland Hills, CA
Telephone (213) 704-5616
Irvine, CA
Telephone (714) 979-9910
Magna Sales Inc.
Santa Clara, CA
Telephone (408) 727-8753

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Southern Engineering Associates
St. Petersburg, FL
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Arizona, Nevada

Thorson Desert States
Scottsdale, AZ
Telephone (602) 998-2444

Illinois, Minnesota, Wisconsin, Indiana, Iowa

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Telephone (312) 773-9540
Eden Prairie, MN
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EMC Corporation
Newton, MA
Telephone (617) 244-4740

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Robert Electronic Sales
Columbia, MD
Telephone (301) 995-1900

Utah, Colorado

Front Range Marketing
Salt Lake City, UT
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Boulder, CO
Telephone (303) 443-4780

New York

T-Squared Electronics Co., Inc.
Victor, NY
Telephone (716) 924-9101
Syracuse, NY
Telephone (315) 463-8592

Lorac Sales

Hicksville, N.Y.
Telephone (516) 681-8746

New Jersey/Pennsylvania

B.G.R. Associates
Marlton, NJ
Telephone (609) 428-2440

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Thorson Desert States, Inc.
Albuquerque, NM
Telephone (505) 293-8555

Oklahoma, Texas

ION Associates, Inc.
Grand Prairie, TX
Telephone (214) 647-8225
Tulsa, OK
Telephone (918) 664-0186
Austin, TX
Telephone (512) 346-7160
Houston, TX
Telephone (713) 977-4354

Alabama, Georgia, Tennessee, North Carolina

Electronic Manufacturers' Agents
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Atlanta, GA
Telephone (404) 329-0527
Raleigh, NC
Telephone (919) 876-6781
Knoxville, TN
Telephone (615) 690-6560

Canada

Longman Sales Incorporated
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Telephone (416) 677-8100
Ottawa, Ont.
Telephone (613) 593-8805
Kirkland, Quebec,
Telephone (514) 694-3911

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10950 Washington Blvd.
Culver City, CA 90230
Telephone (213) 558-2765
Or contact local office

Hamilton/Avent Electronics

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Arizona

Phoenix, (602) 231-5100

California

Avent, L.A., (213) 558-2345
Avnet, O.C., (714) 754-6111
Hamilton, L.A., (213) 558-2121
Hamilton, O.C., (714) 641-4100
Sacramento, (916) 925-2216
San Diego, (714) 571-7510
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Danbury, (203) 797-2800

Connecticut

Danbury, (203) 797-2800

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Miami, (305) 971-2900

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Indianapolis, (317) 844-9333

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Kansas City, (913) 888-8900

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Boston, (617) 273-7500

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Detroit, (313) 522-4700
Grand Rapids, (616) 243-8805

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Minneapolis, (612) 932-0600

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St. Louis, (314) 344-1200

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Cherry Hill, (609) 424-0100

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Cleveland, (216) 831-3500
Dayton, (513) 433-0610

Oregon

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Dallas, (214) 659-4111
Houston, (713) 780-1771
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Washington

Seattle, (206) 453-5844

Wisconsin

Milwaukee, (414) 784-4510

Canada

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Montreal, (514) 331-6443
Ottawa, (613) 226-1700
Calgary, (403) 230-3586

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Telex 64446 MCA b

France

YREL
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Telex 696-379

Germany and Austria

Synelec Datensysteme GmbH
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Telephone (089) 7-25-30-81
Telex 5212289 syn-d

Greece, Cyprus, Turkey

Microdigital
Athens 141, Greece
Telephone (1) 360-5842
Telex 210890

Ireland

Ferrotec
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Ireland
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Telex 918 10 FRTCEI

Israel

SDSI (Elbit Computers Ltd.)
Haifa, Israel
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Telex 46774

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Telcom, S.R.L.
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Telephone (02)404-76-48
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Magnetron
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Telephone 571916
Telex 42650

Switzerland

Stolz AG
CH-5405 Baden-Dattwill, Switzerland
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Telex 54070

United Kingdom and Ireland

CPU Peripherals
Shepperton, England
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Telex 922637

Scandinavia**Sweden**

Teleinstrument A.B.
16204 Vallingby 4, Sweden
Telephone (08) 38-03-70
Telex 15770

Norway

Teleinstruments A/S
1371 Asker, Norway
Telephone (02) 789460
Telex 19396

Finland

Komdel OY
SF002271 ESP0021, Finland
Telephone (90) 885-011
Telex 121926

Denmark

BLT-Agenturer A/S
DK-2550 Valby, Denmark
Telephone 01/161100
Telex 16279

Latin America**Argentina**

Thiko Automacion S.R.L.
Buenos Aires, Argentina
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Telex 390 17825

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Mountain View, U.S.A.
Telephone (415) 967-8818
Telex 345-545

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Telex 62118 ESENG HX

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Sujata Sales & Exports
Bombay 400 021, India
Telephone 234658
Telex 0113855

American Components, Inc.
Bombay 400 021 India
Telephone 222999
Telex 0113855

American Components, Inc.
Santa Clara, U.S.A.
Telephone (408) 727-2440
Telex 35-2073

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Matsushita Communications, Inds. Co., LTD
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Telex 3822671

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Taipei, R.O.C.
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Schmidt Scientific (PTE) LTD
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Telex 22265

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South Melbourne, Australia
Telephone 69-0151
Telex 31370

New Zealand

Warburton Franki (Wellington)
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Telephone 693-016
Telex NZ 3824

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