

# Winner3A Project WA32163A

## FEATURES

- 5,400 rpm Spindle Speed
- 11 ms Average Seek Time
- 92.86 Mbits/sec Maximum Data Rate
- Adaptively Optimized Configuration for Each Unit
- 128KB Segmented Read/Write Cache Buffer
- Fast ATA-3/Enhanced IDE Interface
- 144 Bits Reed-Solomon ECC / 4 Bytes CRC
- Data Buffer Streaming Support
- Power On Self Diagnostics
- Automatic Reassignment of Defective Sector
- PIO Mode 4 Multi Word DMA Mode 2
- Automatic / Host Power Saving Mode
- S.M.A.R.T.

## DRIVE ARCHITECTURE

Formatted Capacities	
Megabytes per Drive	2162
Megabytes per Surface	540.5
Bytes per Sector	512
Physical Organization	
Disks	2
Data Surfaces	4
Read/Write Heads	4
Cylinder	6724
Sectors per Track	100 ~ 195

## FUNCTIONAL SPECIFICATIONS

Actuator Type	Rotary Voice Coil
Interface	Enhanced IDE
Servo	Embedded Sector Servo
Recording Method	PR4ML
Recording Density (max)	107,829 bpi
Flux Density (max)	121,308fcpi
Track Density at Zero Skew	6,900 tpi

## PERFORMANCE SPECIFICATIONS

Seek Time (typical)	
Track to Track	2 ms
Average	11 ms
Full Stroke	20 ms
Average Latency	6.67 ms
Spindle Speed	5,400 ± 0.1% rpm
Data Transfer Rate	
Media to/from Buffer	92.86 Mbits/s
Buffer to/from Host	16.6 MBytes/s
Start Time	
Typical	15 sec
Maximum	20 sec
Stop Time	
Typical	7 sec
Maximum	15 sec
Buffer Size	128 Kbytes

## RELIABILITY SPECIFICATIONS

Recoverable Read Error	1 in 10 <sup>10</sup> bits
Correctable Read Error	1 in 10 <sup>12</sup> bits
Non-recoverable Read Error	1 in 10 <sup>14</sup> bits
MTBF (POH)	500,000 hours
MTTR (typical)	5 minutes
Start/Stop Cycles	50,000
Component Design Life	5 years

## ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating	5 ~ 55 °C
Non-operating	-40 ~ 65 °C
Thermal Gradient (max.)	20 °C/hr
Humidity (non-condensing)	
Operating	8 ~ 80 %
Non-operating	8 ~ 95 %
Maximum Wet Bulb (operating)	29 °C
Maximum Wet Bulb (non-operating)	40 °C
Altitude (relative to sea level)	
Operating	-200 to 10,000 feet
Non-operating	-1,000 to 40,000 feet

## SHOCK AND VIBRATION

Shock (1/2 sine pulse, 11 ms duration)	
Operating	10 G
Non-operating	75 G
Vibration (swept sine, 1 octave per minute)	
Operating	
5 ~ 21 Hz	0.034" (double amplitude)
22 ~ 400 Hz	1.5 Gp-p
Non-operating	
5 ~ 21 Hz	0.195" (double amplitude)
22 ~ 500 Hz	8 Gp-p

## POWER CONSUMPTION

Voltage	+5	+12	
Regulation	± 5%	± 10%	
Current (max.)	0.58 A	1.20 A	
Power Dissipation +5v(mA) +12v(mA) Power(W)			
Power Up (max)	564	1195	17.06
R/W* (typical)	477	249	5.27
Seek* (typical)	481	521	8.59
Idle (typical)	216	225	3.70
Standby (typical)	198	78	1.91
Sleep (typical)	120	78	1.52
* 30 % duty cycle			

## ACOUSTIC NOISE

Maximum value at 1 meter	
Idle	35 dBA
Random Read/Write	40 dBA

## PHYSICAL DIMENSION

Height	1 inch
Width	4 inches
Depth	5.75 inches
Weight	1.2 pounds

*Specifications are subject to change without notice*



ELECTRONICS