AMD-K6® Motherboard Test Procedure

Motherboard Vendor: _____ WWW Address: _____

Motherboard Model: _____ Motherboard Revision: _____

Form Factor: _____

Chipset Vendor: _____ Chipset Model: _____

BIOS Vendor: _____

BIOS Revision: _____ BIOS Build Date: _____

Please complete all testing according to the attached test procedures. For the electrical and BIOS testing, provide actual measured or observed results. For the software testing, indicate pass or fail in the space provided.

Electrical

	AMD-K6/300 (or AMD-K6/266)	**AMD-K6-2/300**	**AMD-K6-2/333**	**AMD-K6-2/350**
V_{cc2min}				
V_{cc2rms}				
V_{cc2max}				
V_{cc3min}				
V_{cc3rms}				
V_{cc3max}				
CPU clock rise time (T_5)				
CPU clock fall time (T_4)				
CPU clock high time (T_2)				
CPU clock low time (T_3)				

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Manual/BIOS

	AMD-K6/300 (or AMD-K6/266)	AMD-K6-2/300	AMD-K6-2/333	AMD-K6-2/350
BIOS Boot Display				
Core Voltage Setup Information				
Bus Speed Setup Information				
Clock Multiplier Setup Information				
Write Allocate Support (16 MB)*				
Write Allocate Support (32 MB)*				
Write Allocate Support (64 MB)*				
Write Allocate Support (128 MB)*				

* Verify proper values are loaded into the write allocate registers by the BIOS at boot. This can be done using the write allocate utility available from AMD. Refer to the AMD-K6 Write Allocate Application Note (available on the AMD web site) for proper register settings.

Software

Windows 95	AMD-K6/300 (or AMD-K6/266)	AMD-K6-2/333	AMD-K6-2/350
Install			
Floppy Read/Write			
Windows 95 SCT			
Winstone 98			
Power Management (desktop)			
Power Management (DOS box)			
Windows NT			
Install			
Floppy Read/Write			
Windows NT HCT Stress Test			
Winstone 98			
Power Management (desktop)			
Power Management (DOS box)			
OS/2 Warp			
Install			
Floppy Read/Write			
OS/2 Warp HCT Stress Test			
Winstone 98			
Power Management (desktop)			
Power Management (DOS box)			

Electrical Specifications

	AMD-K6/266	AMD-K6/300	AMD-K6-2/300	AMD-K6-2/333	AMD-K6-2/350
V_{cc2} (Core)	2.2V ± 100mV				
V_{cc3} (IO)	3.3V +300mV/-165mV	3.45V ± 150mV	3.3V +300mV/-165mV		
CPU clock rise time (T_5)	0.15 nS ≤ T_5 ≤ 1.5 nS				
CPU clock fall time (T_4)	0.15 nS ≤ T_4 ≤ 1.5 nS				
CPU clock high time (T_2)	T_2 ≥ 4.0 nS		T_2 ≥ 3.0 nS		
CPU clock low time (T_3)	T_3 ≥ 4.0 nS		T_3 ≥ 3.0 nS		
CPU Bus Speed	66 MHz		100 MHz	95 MHz	100 MHz
Clock Multiplier	4x	4.5x	3x	3.5x	3.5x

V_{cc} Test Procedure

This test procedure is designed to verify that motherboard power supply designs provide sufficient regulation to maintain the required voltage to the processor. This test will accurately measure V_{ccmin} and V_{ccmax} values under worst case conditions. Please follow this procedure for all V_{cc2} and V_{cc3} measurements.

Required Equipment:
750 MHz (or higher) sampling scope
750 MHz (or higher) probe with tip style ground (a lead type ground may introduce inaccuracies into measurements)

Test steps:

1) Configure the scope to display two signals in full bandwidth: V_{cc} and STPCLK#. Set the scope to infinite persistence to capture a series of acquisitions. For easy reading, set the display to 500 ns/div by 300 mV/div with an offset of 3V for the V_{cc} signal.
2) For V_{ccmin} values, set the scope to trigger on the rising edge of STPCLK#. For V_{ccmax} values, set the scope to trigger on the falling edge of STPCLK#.
   Note: On some boards STPCLK# is not used in the power management scheme. For these boards, use a solder socket to isolate the STPCLK# signal from the motherboard and a function generator to simulate the STPCLK# signal to the processor. Configure the function generator to generate a 3.3V pulse at 50 KHz with a 50% duty cycle.
3) Power up system running DOS. BIOS power management should be enabled and set to a minimum of 1 minute. Run the DOS editor (edit.exe). To create a high power state, pull down the file menu within the DOS editor and highlight (but do not select) one of the selections.
4) With the DOS editor file menu active, use the probe to measure the V_{cc} on the backside of the CPU socket. This may require tilting the board to take the measurement. To ensure consistent, reproducable measurements, use pins AJ11 (V_{cc2}) and AJ9 (ground) for V_{cc2} measurements and pins U33 (V_{cc3}) and U35 (ground) for V_{cc3} measurements.
5) Triggering off of STPCLK#, record acquisitions for 45 seconds in infinite persistence mode.
6) The V_{cc} level is now represented by a trend of measurements taken over 45 seconds. Spurious measurements can be ignored. Use the scope cursor to determine the minimum (V_{ccmin}) or maximum (V_{ccmax}) voltage level for the V_{cc} signal.

Windows 95 Test Procedure

1) Boot system from DOS system disk
2) Using fdisk.exe, eliminate any partitioning from hard drive
3) Create FAT32 partition on hard drive using all available space
4) Install Microsoft Windows 95 on hard drive
5) Install Ziff Davis Winstone 97 on hard drive
6) Run Windows 95 Defragment utility
7) Reboot system
8) Run Winstone 97 Business Suite and record overall score
9) Read and write from floppy drive
10) Install Microsoft Windows 95 SCT
11) Run all tests in SCT
12) Enable power management in BIOS
13) Test power management at Windows 95 desktop
14) Test power management with DOS box open at DOS prompt

Windows NT Test Procedure

1) Boot system from DOS system disk
2) Using fdisk.exe, eliminate any partitioning from hard drive
3) Create NTFS partition on hard drive using all available space
4) Install Microsoft Windows NT on hard drive
5) Install Ziff Davis Winstone 97 on hard drive
6) Run Windows NT defragment utility
7) Reboot system
8) Run Winstone 97 Business Suite and record overall score
9) Read and write from floppy
10) Install Microsoft Windows NT HCT
11) Run Windows NT HCT stress test
12) Test power management at Windows NT desktop
13) Test power management with DOS box open at DOS prompt

OS/2 Warp Test Procedure

1) Boot system from DOS system disk
2) Using fdisk.exe, eliminate any partitioning from hard drive
3) Create HPFS partition on hard drive using all available space
4) Install OS/2 Warp
5) Read and write from floppy
6) Install OS/2 Warp HCT (if available)
7) Run HCT stress test (if available)
8) Test power management at OS/2 Warp desktop
9) Test power management with DOS box open at DOS prompt