

EVER CASE Thermal test result

Model Name: ECE1290-PST



Approved by : Tony Chang

2004/7/23

Equipment under Test :

Test instrument:

Manufacturer : Cambridge Accusense INC.
Hardware : Thermocouple Temperature Monitor TCM-24
Software : AccuTrac Ver. 4



Test Configuration:

Component Desc.	Supplier	Model No.	Quantity
CPU	INTEL (LGA775)	Prescott 550	1
Mainboard	ASUS	P5GD1-VM	1
Memory	VDATA	DDR400 256MB	2
CPU Heat Sink	AVC	Z9U700Z101	1
PSU	FSP	FSP250GLV(PF)	1
Hard disk	IBM	IC35L060AVER07 61.5GB 7200RPM	1
DVD-ROM	BENQ	DVP1648P	1
Top Fan(1)	GLOBE	S0701512M-3M	1

Sensor		
	CPU-t	CPU Tcase
	CPU_amb	Above the CPU heatsink
	RAM_amb	Centered between DIMMs in all 2 axes
	HDD	Above HDD IDE connector
	DVDROM	CDROM driver case bottom
	North bridge chipset	Above the chipset heatsink
	VR_amb	Above the VR chipset
	PSU_amb	At the center of the largest intake vent



Test Software :

Operation System : Windows XP Professional

Test program : Maximum Power Program for the Prescott Processor

Test Environment:

Operating ambient temperature : 35 dC

Evaluation Procedure :

1. Running Maximum Power Program for the Prescott Processor approximately 60 minutes, recording measurement.

2. INTEL Thermal Profile for Performance : $y=44.0 + 0.25 \times \text{Power}(w)$

y : CPU Tcase(max)

condition 1 : CPU workload power level 100%, real power : 115W, Tcase(max) : 72.8dC

(Processor Thermal Specifications : Table 5-1)

Thermal Test Results :

Condition 1 : CPU workload power level 100%

35 dC ambient temperature

Test Criteria	Supplier's Spec. limit	Result	Margin	Status
CPU_Tcase	72.8	69.7	-3.1	Pass
CPU_amb	38	37.3	-0.7	Pass
RAM_amb	55	46.6	-8.4	Pass
North bridge cs	105	47.6	-57.4	Pass
VR_amb	105	45.8	-59.2	Pass
HARD DISK(S)	55	46.1	-8.9	Pass
DVDROM	55	44.9	-10.1	Pass
PSU_amb	55	45.3	-9.7	Pass

Table 5-1. Processor Thermal Specifications

Processor Number	Core Frequency (GHz)	Thermal Design Power (W)	Minimum T _C (°C)	Maximum T _C (°C)	Notes
520	2.80 (PRB = 0)	84	5	See Table 5-3 and Figure 5-2	1, 2
530	3 (PRB = 0)	84	5	See Table 5-3 and Figure 5-2	1, 2
540	3.20 (PRB = 0)	84	5	See Table 5-3 and Figure 5-2	1, 2
550	3.40 (PRB = 1)	115	5	See Table 5-2 and Figure 5-1	1, 2
560	3.60 (PRB = 1)	115	5	See Table 5-2 and Figure 5-1	1, 2

NOTES:

1. Thermal Design Power (TDP) should be used for processor thermal solution design targets. The TDP is not the maximum power that the processor can dissipate.
2. This table shows the maximum TDP for a given frequency range. Individual processors may have a lower TDP. Therefore, the maximum T_c will vary depending on the TDP of the individual processor. Refer to thermal profile figure and associated table for the allowed combinations of power and T_c.