

Thermal Test Report
Model : YY-A2xx
Thermal Performance Contest

Date:Mar.03, 2004

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1. Introduction

The purpose of this evaluation is to find the best performance thermal solution by system operated as for Intel P4 3.2G processor .

2. References

ATX spec <http://formfactors.org>

3. Thermal Test

3.1 Test Configuration

Chassis	YY-A2xx(Panel:09)
Power Supply	CWT 250MDP12; Delta DPS-230GB-1A
Chassis Fan	TOP DF1206BM,Speed: 3700RPM, Quantity:2
	TOP DF1206BH,Speed: 4400RPM, Quantity:2
Processor	Intel P4 3.2GHz/800MHz, Quantity:1
Processor Thermal solution	Glacialtch Igloo 4200
Motherboard	ASUS P4P800-VM
Memory	Kingston DDR400 512MB, Quantity: 2
Hard Drive	SEAGATE 40G, Quantity: 1
CD ROM	Cyber CD526D, Quantity: 1
Floppy Drive	Mitsumi D359M3, Quantity: 1
AGP Card	ASUS V3800MP, Quantity: 1
Sound Card	None

3.2 Test Equipment Used

FULL SYSTEM OPERATION

Fluke Hydra 2635A

Software: Intel P4MAXPOWER (100%)

3.3 Test Process

The peripherals listed in section 1 were installed in the chassis and thermocouples were attached at the points designated in section 4. The chassis was tested in a controlled temperature held at a constant 35°C. The thermal readings communicated from the sensors on the test board to the test software. The system was exercised until the initial thermal gradient reached a consistent level with a slope-nearing zero. During testing, the ambient temperature was monitored approximately 2" from the front bezel of the chassis.

3.4 Data Recorded

Temperature readings are measured at the following location(s):

- Ambient -- Hotbox ambient temperature (2" from the front center of the chassis)
- Tinlet1 – Internal ambient temperature of the processor heatsink .5" away from the center of fan hub (near the rear port)
- Tinlet2 – Internal ambient temperature of the processor heatsink .5" away from the center of fan hub (near the PSU)

- Tinlet3 – Internal ambient temperature of the processor heatsink .5” away from the center of fan hub (near the DIMM slot)
- Tinlet4 – Internal ambient temperature of the processor heatsink .5” away from the center of fan hub (near the chipset)
- Tcase -- Processor case temperature

4. Test Result (see table 4.1), & Test mode details (Table 4.2)

5. Summary: *PASS*

The system was tested by P4MAXPOWER at 100% load,, the thermal solution to the system is conditioned of :

1. Must improve CAG to be ver. 1.1 which come with more venting holes and enlarge the air guide.
2. In the meanwhile, must build in two system fans in the rear side of chassis, and the fans must be hi-speed.

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Table 4.1
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position	Mode 1	Mode 2	Mode 3
Power model	CWT 250MDP12	CWT 250MDP12	
Fan model	TOP DF1206BM	TOP DF1206BH	
SYSTEM FAN (Rear)	Two	One;top	Two
Airguide (CAG1.1)	Yes	Yes	Yes
DIMM-1	51	51.6	44.7
DIMM-2	48.4	48.6	41.8
HDD	46.9	46.6	42.4
CD ROM	40.9	40.8	37.5
POWER	46	45.6	43.8
AGP	68.2	68.7	58.8
T-inlet 1	40.1	42.7	35.7
T-inlet 2	41.5	39	36.3
T-inlet 3	36.3	35.8	34
T-inlet 4	38.2	38.2	34.1
T-inlets average Tambient(1~4)	<u>39</u>	<u>38.9</u>	<u>35</u>
T-case	<u>65.6</u>	<u>64.9</u>	<u>63.3</u>
Ambient(case outside)	35	35.1	35

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position	Mode 4	Mode 5	Mode 6
Power model	Delta DPS-230GB-1A	Delta DPS-230GB-1A	
Fan model	TOP DF1206BM	TOP DF1206BH	
SYSTEM FAN (Rear)	Two	One;top	Two
Airguide (CAG1.1)	Yes	Yes	Yes
DIMM-1	51.2	54.1	47.2
DIMM-2	48.6	50.8	45.5
HDD	51.2	53.4	47.4
CD ROM	39.4	40.4	37.7
FDD	42	44	38.3
POWER	47.8	48.4	46.9
AGP	71.2	73.5	66.1
T-inlet 1	42.9	45.5	38.3
T-inlet 2	40.7	41	37.8
T-inlet 3	37.5	38	35.8
T-inlet 4	38.7	42.7	36.1
T-inlets average Tambient(1~4)	<u>40</u>	<u>41.8</u>	<u>37</u>
T-case	<u>65.3</u>	<u>66.6</u>	<u>62.2</u>
Ambient(case outside)	35.1	35	35.1

Table 4.2



The view of chassis front side.



The view of chassis left side.



The view of chassis back side.





The view of thermocouples connections.



The view of CAG 1.1 sample(Prototype)