

Thermal Test Report
Model : YY-4301 (2nd prototype)
Thermal Performance Contest

Date: Sep.07 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 3.4G processor (LGA775).

2. References

ATX spec <http://formfactors.org>

3. Thermal Test

3.1 Test Configuration

Chassis	YY-4301
Power Supply	Delta GPS-350CN-100A,350W
Chassis Fan	Jamicon JF0825B1M, Quantity:1 Speed:2500RPM (Middle Speed) <i>System configure to be tested with various modes, please refer to table 4.1 & 4.2</i>
Processor	Intel P4 Prescott FMB 3.4GHz/800MHz 1MB L2-Cache LGA-775, Quantity:1
Processor Thermal solution	Intel Boxed Thermal Module TypeI-C60097-001_XA11_S829
Motherboard	Intel D915GMH (Intel 915G)
Memory	Kingston DDR400 512MB, Quantity: 2
Hard Drive	SEAGATE 40G, Quantity: 1
CD ROM	Cyber CD526D 52X, Quantity: 1
Floppy Drive	Mitsumi D359M3, Quantity: 1
PCI-Lan Card	D-LINK DFE-530TX, Quantity: 1
PCI-Sound Card	ESS SC1938, Quantity: 1

3.2 Test Equipment Used

FULL SYSTEM OPERATION

Fluke Hydra 2635A

Software: Intel P4 Prescott MAXPOWER (85% & 100%)

DC POWER SUPPLY (Model:TES 6210) INPUT 12V FOR CPU FAN

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*

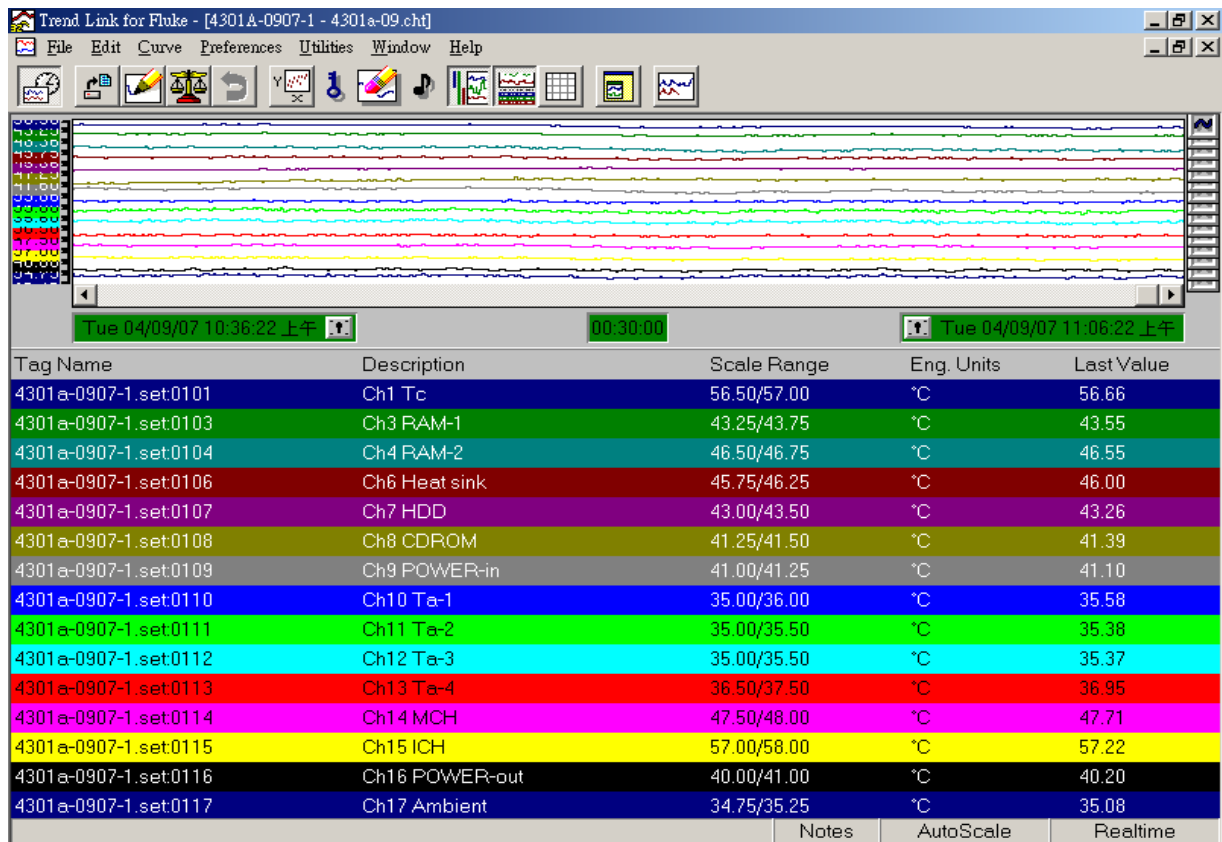
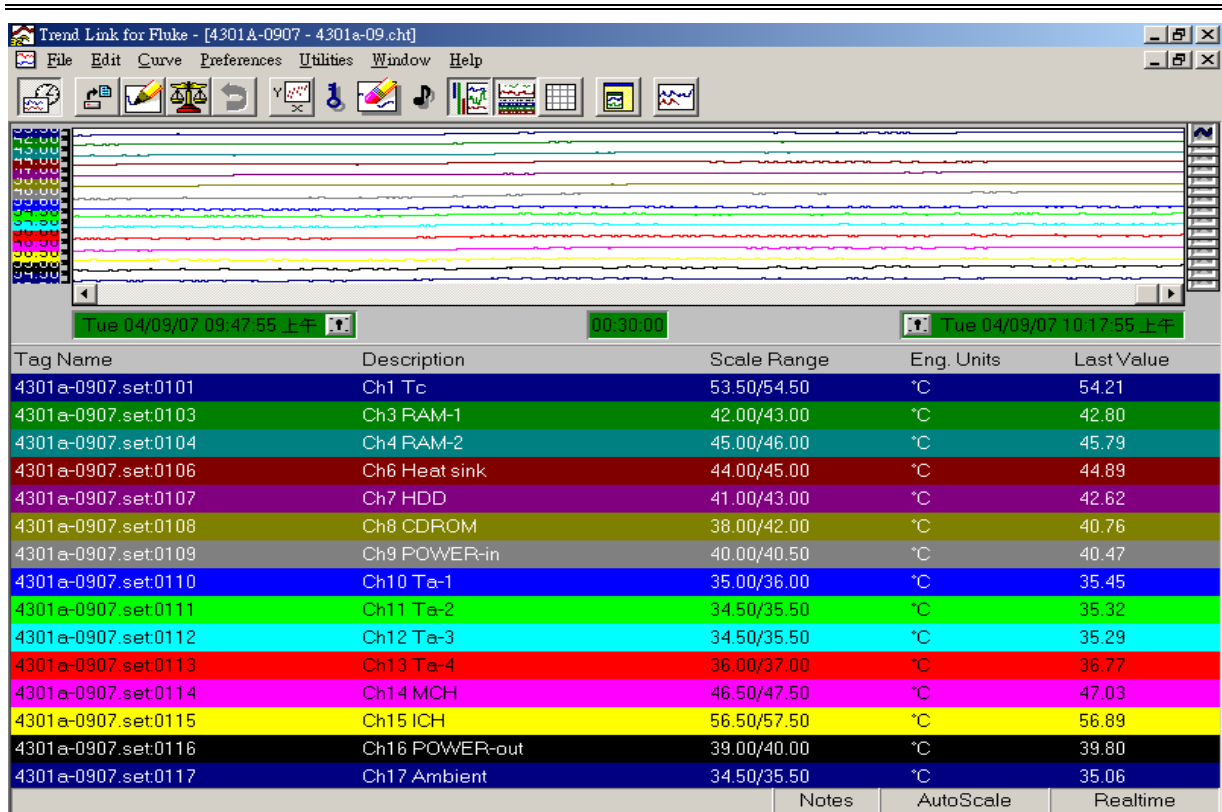
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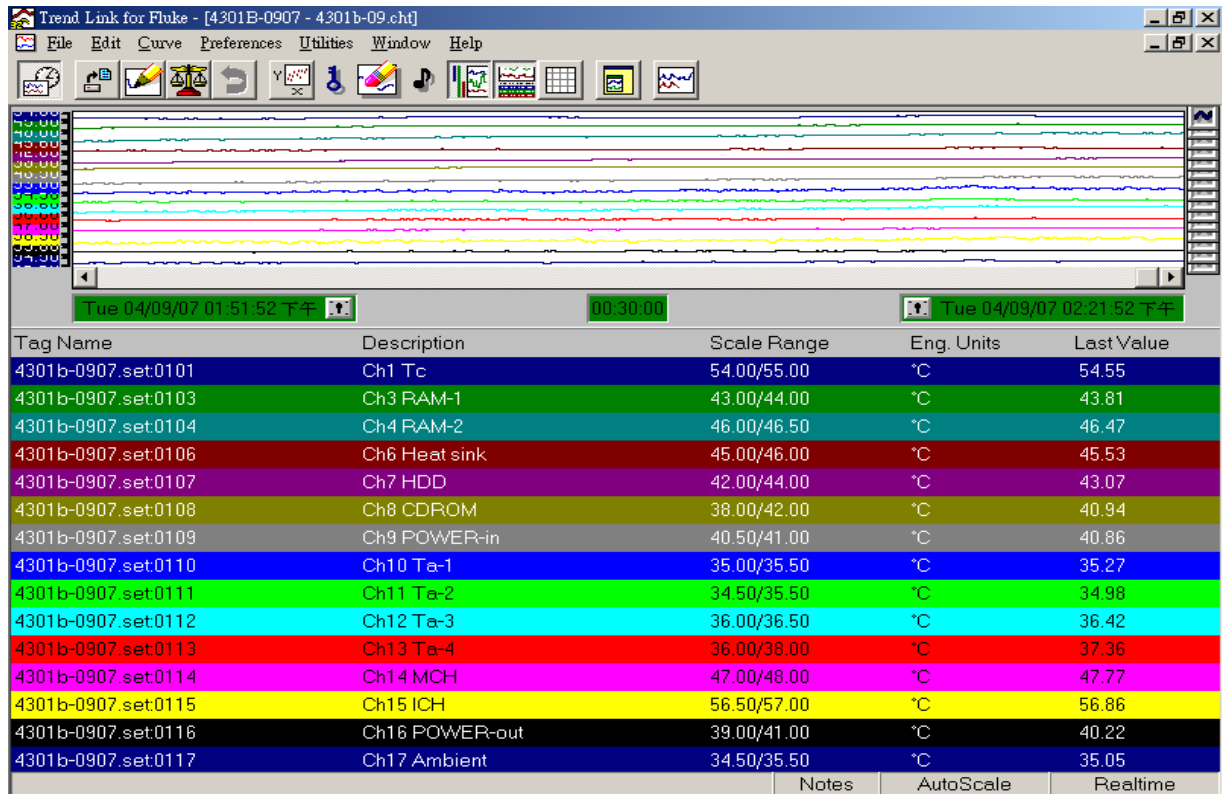
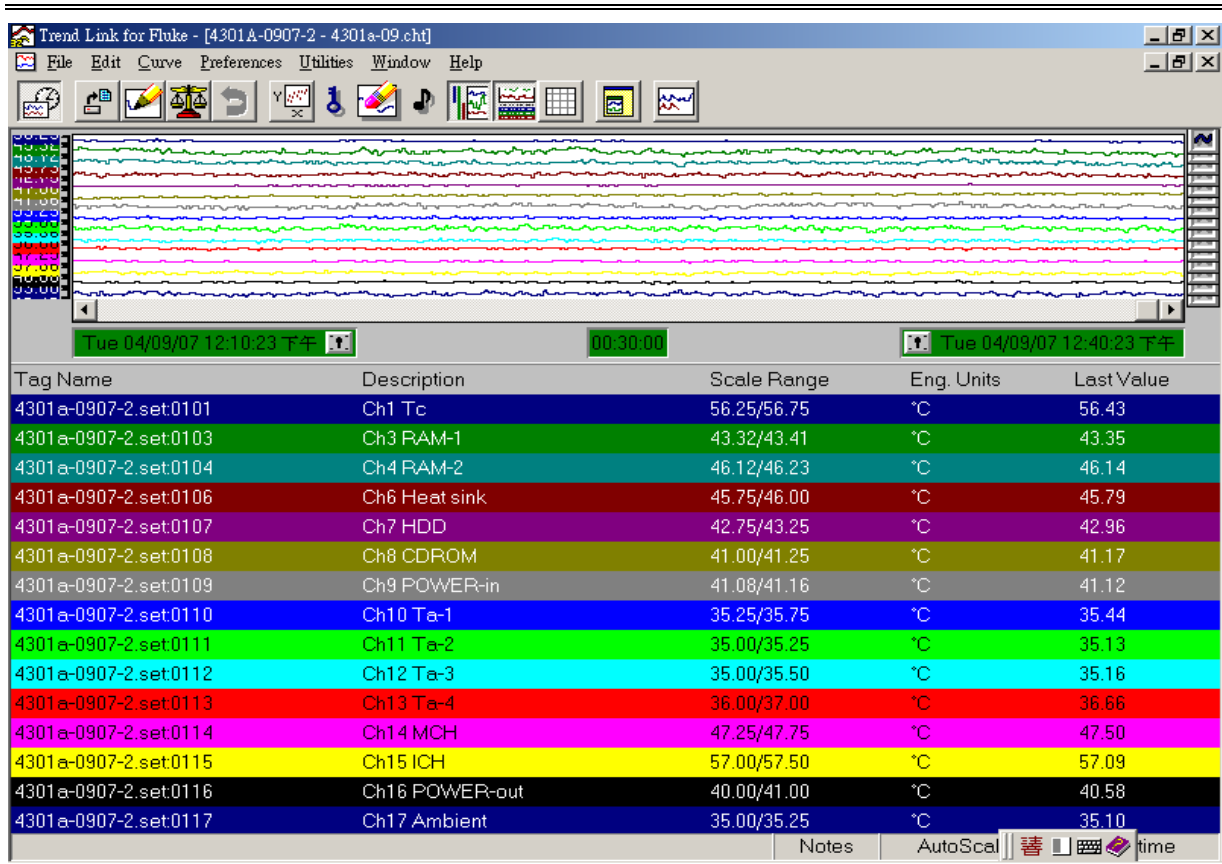
Table 4.1
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Mode Introductions	Mode 1	Mode 2	Mode 3	Mode 4	Mode 5
Power Model	Delta 350CN-100A (with 8cm Fan for airflow out, vents for air flow out)				
Front Panel	YY-4301G mockup			YY-4301C5 mockup	
System Fan- 8 cm (Mounted in rear side of chassis)	No	No	Yes	No	No
Run the test under the software on 85% & 100% level	85%	100%	100%	85%	100%
Test Result (values was according to the screens of Fluke monitor)					
DIMM-1	42.8	43.6	43.4	43.8	44.5
DIMM-2	45.8	46.6	46.1	46.5	47.2
HDD	42.6	43.3	43	43.1	43.7
CD ROM	40.8	41.4	41.2	40.9	41.5
MCH	47	47.7	47.5	47.8	48.4
ICH	56.9	57.2	57.1	56.9	57.3
Heat sink	44.9	46	45.8	45.5	46.6
POWER-in	40.5	41.1	41.1	40.9	41.5
POWER-out	39.8	40.2	40.6	40.2	40.7
T-inlet 1	35.5	35.6	35.4	35.3	35.3
T-inlet 2	35.3	35.4	35.1	35	34.9
T-inlet 3	35.3	35.4	35.2	36.4	36.5
T-inlet 4	36.8	37	36.7	37.4	37.7
T-inlets average Tambient(1~4)	<u>35.7</u>	<u>35.9</u>	<u>35.6</u>	<u>36</u>	<u>36.1</u>
T-case	<u>54.2</u>	<u>56.7</u>	<u>56.4</u>	<u>54.6</u>	<u>57</u>
Ambient(case outside)	35.1	35.1	35.1	35.1	35

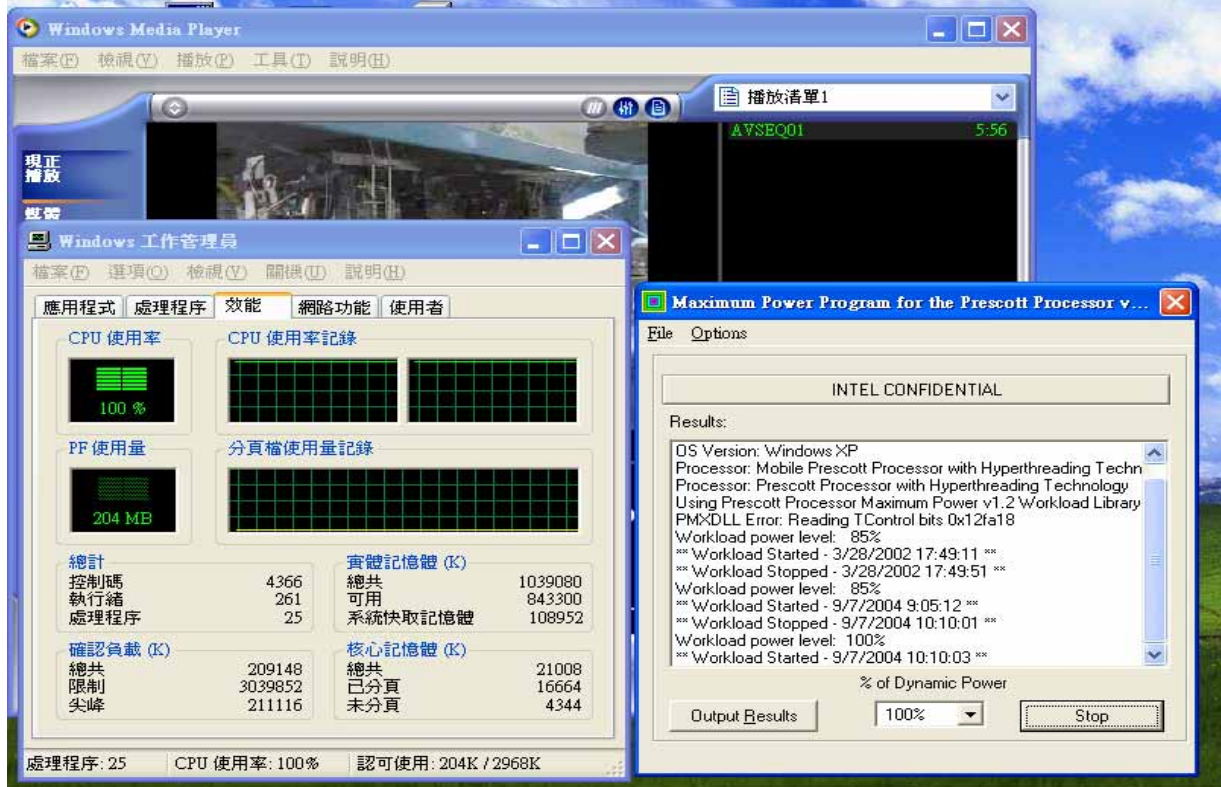
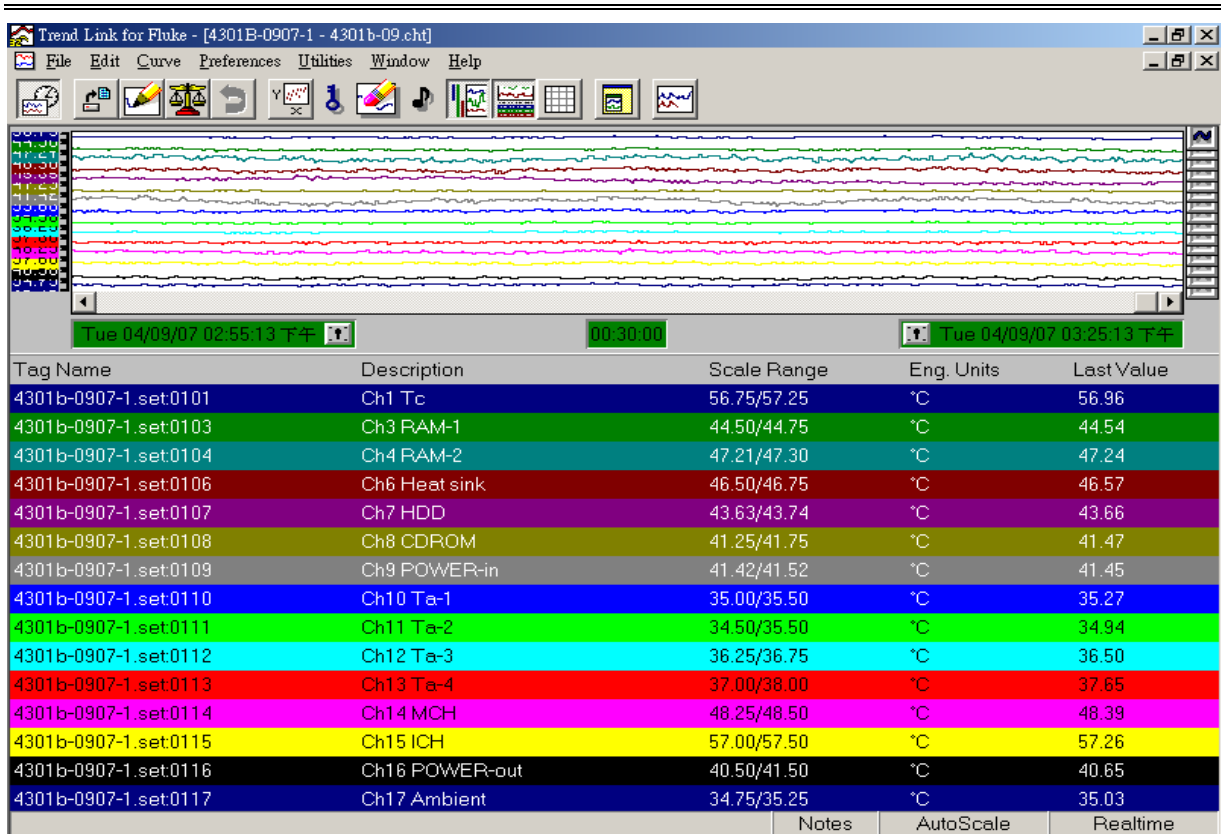
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Table 4.2



The view of the chassis with Front Panel YY-4301G (mockup)



The view of the chassis right side.



The view of the chassis left side.



The view of the chassis back side.



The view of the thermocouples connections.



The view of the chassis with Front Panel YY-4301C5(mockup).



The view of Ta points measured.