

MD90-FS0 (R180-F34)
Thermal Test Report

Networking & Communication Business Unit

Thermal Department

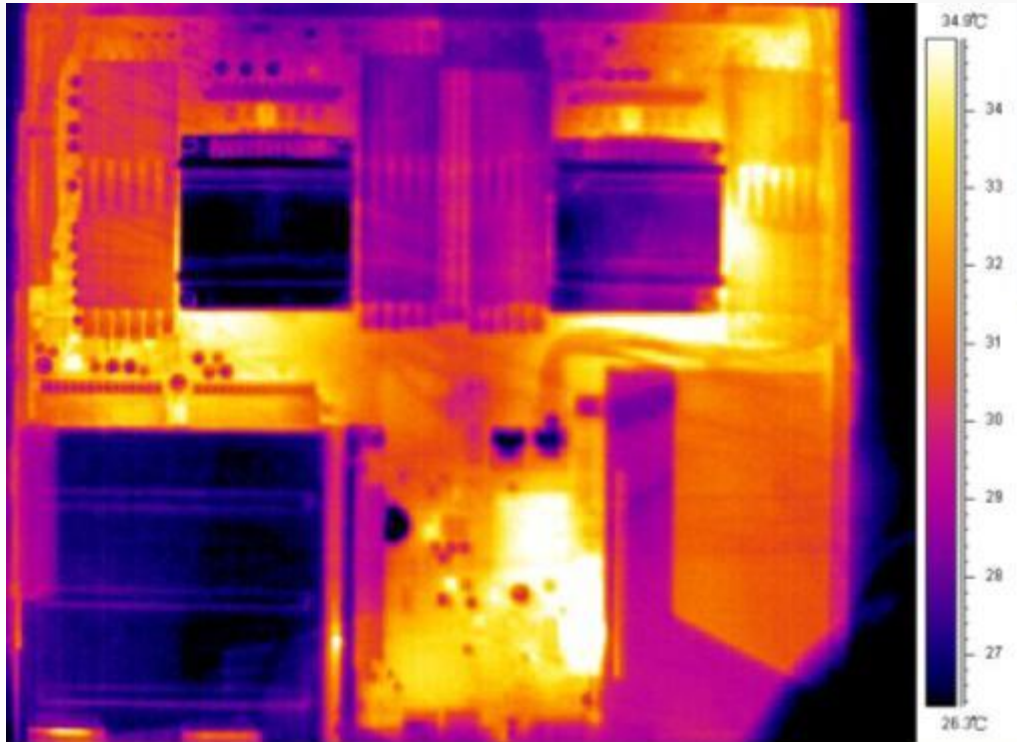
Jul-11,2014

Test Configuration

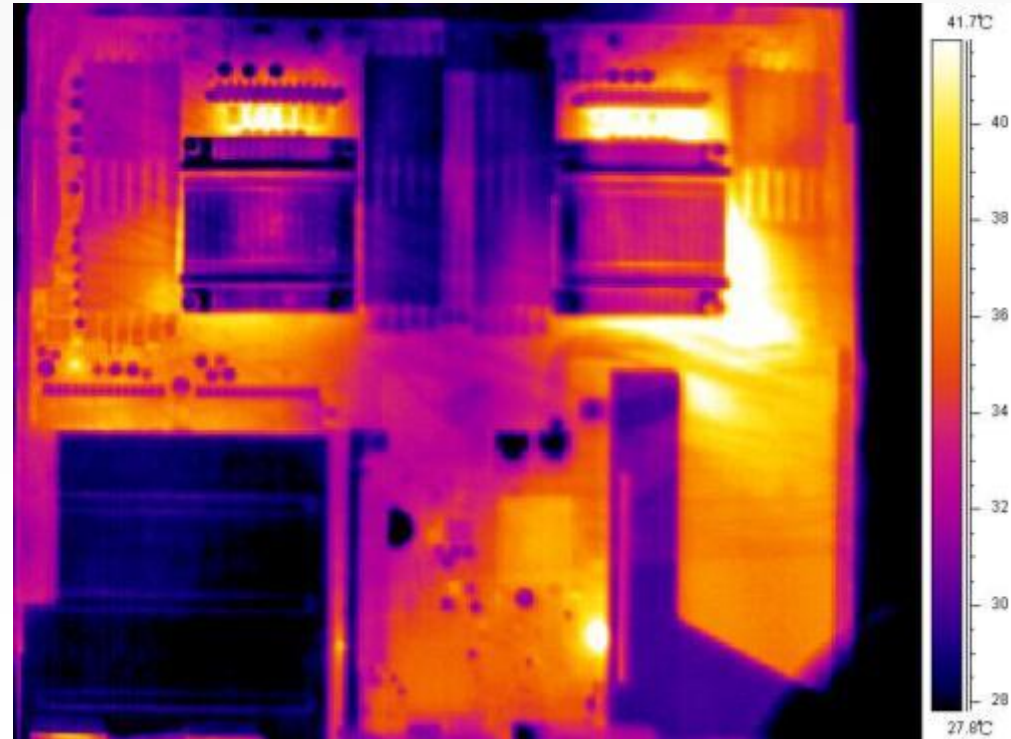
Hardware	
M/B	MD90-FS0 Rev: 0.1 BIOS: D02d BMC: 09.25 SKU: R180-F34
CPU	INTEL Haswell-EP QS C-0 E5-2697 v3 QGEF 2.60 GHz 145W 14Cores 35 MB LGA 2011-3 * 2
Memory	CRUCIAL CT8G4RFS4213ES.18FDA2 8GB 1Rx4 PC4-2133 RDIMM * 24
HD	SEAGATE 750GB 3.5" SATA, 7200 RPM * 4
System Fan	4056 Delta @ 23000rpm - 25ST2-445622-D0R * 4 4028 Delta @ 18000rpm - 25ST2-442822-D0R * 4
PSU	Delta @ 800W model: DPS-800RB B Rev:01F 80 Plus Platinum * 2
CPU cooler	Taitrans Y535 (25ST1-443202-T4R) * 2

Software and Tool	
OS	Windows Server 2012 R2 64bit
Stress Tool	Intel PwrThermalUtil XEON HSW-Rev1.4 I/O meter

IR Photo

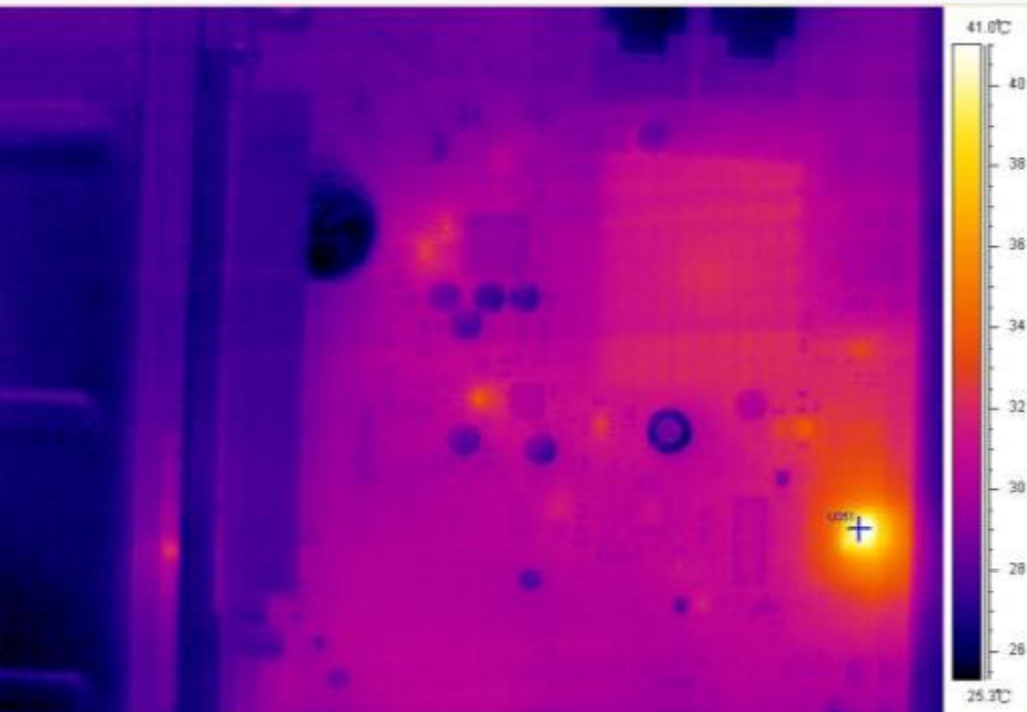


Idle mode

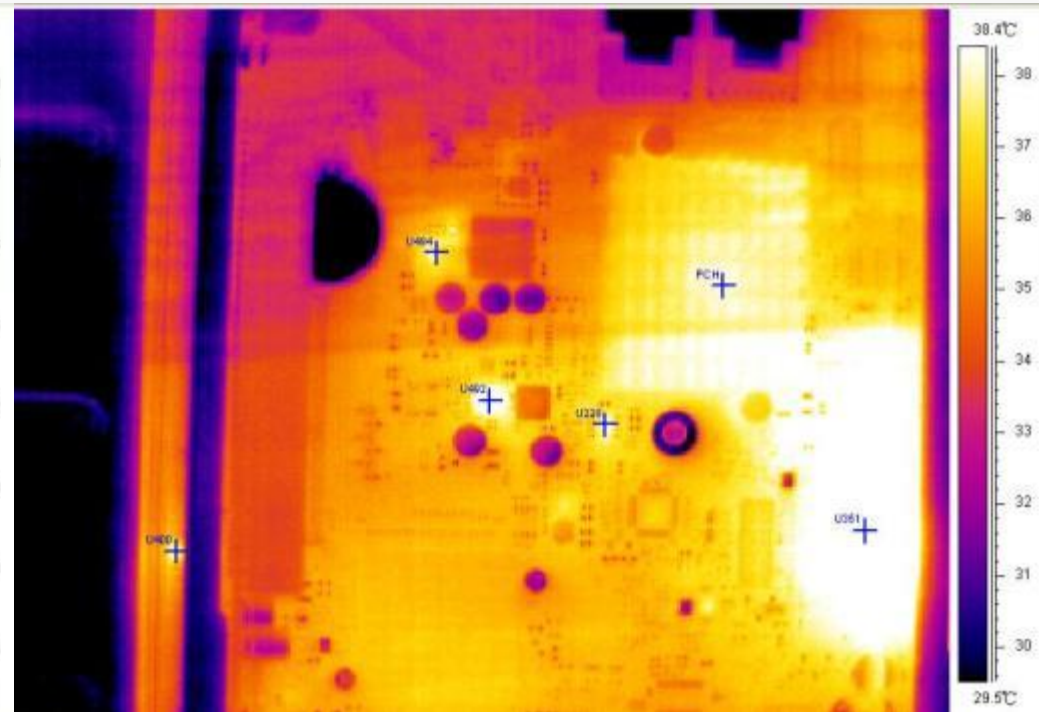


Operating mode

IR Photo

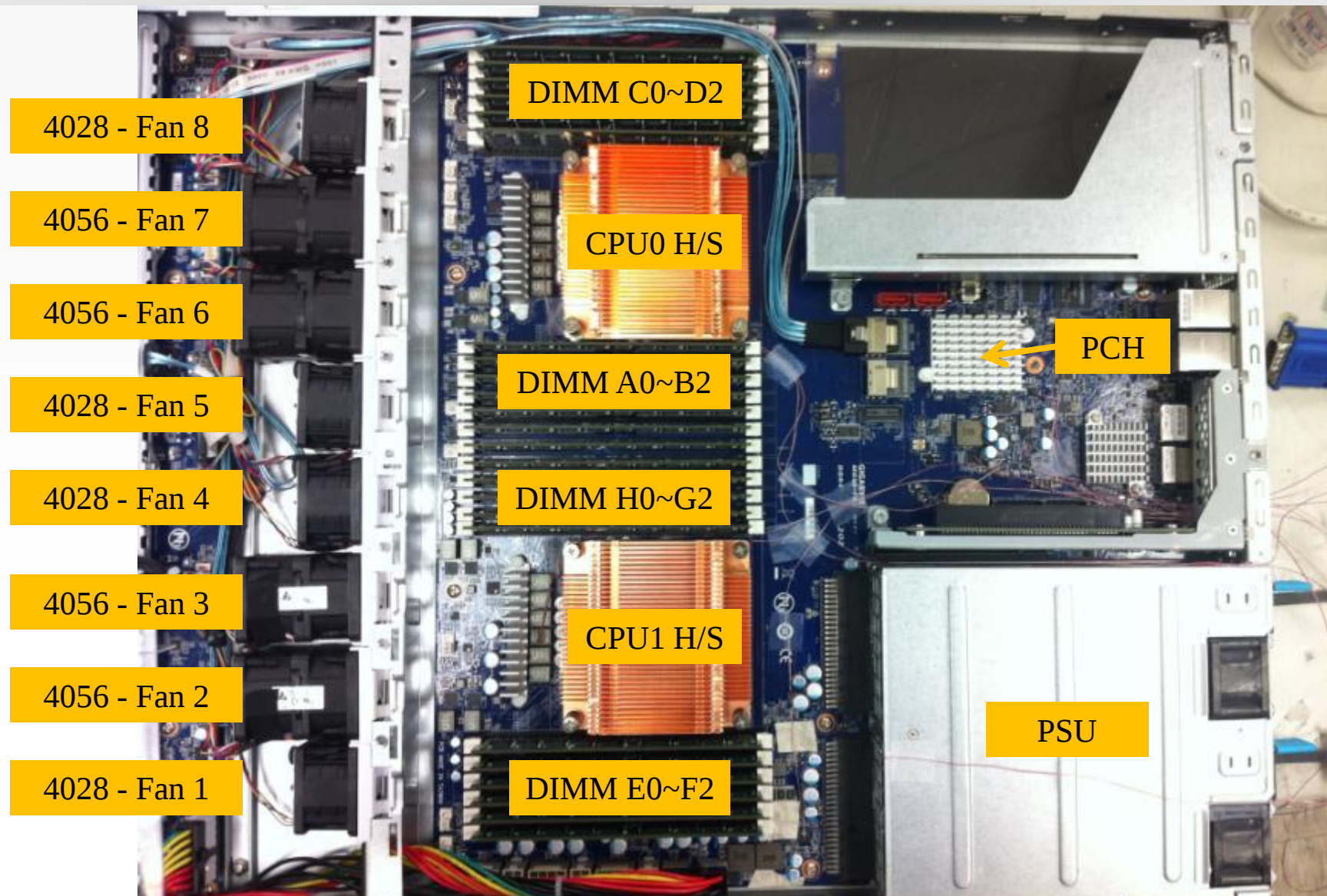


Idle mode

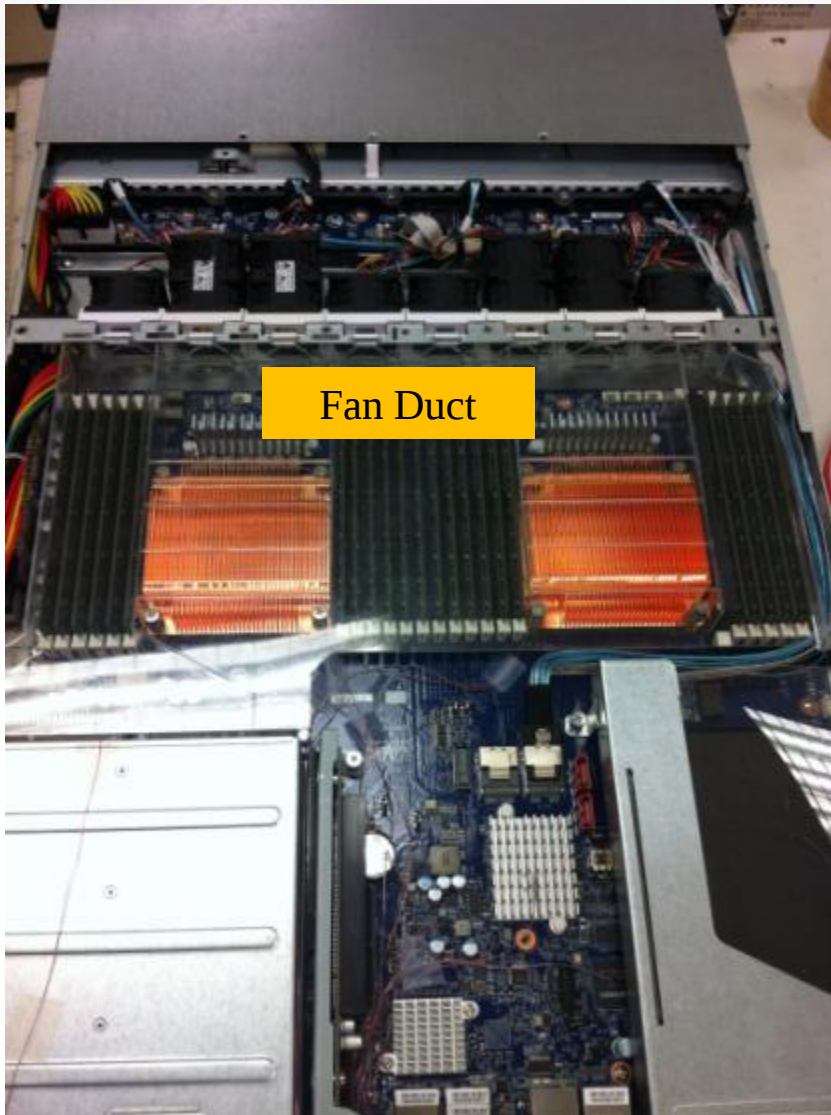


Operating mode

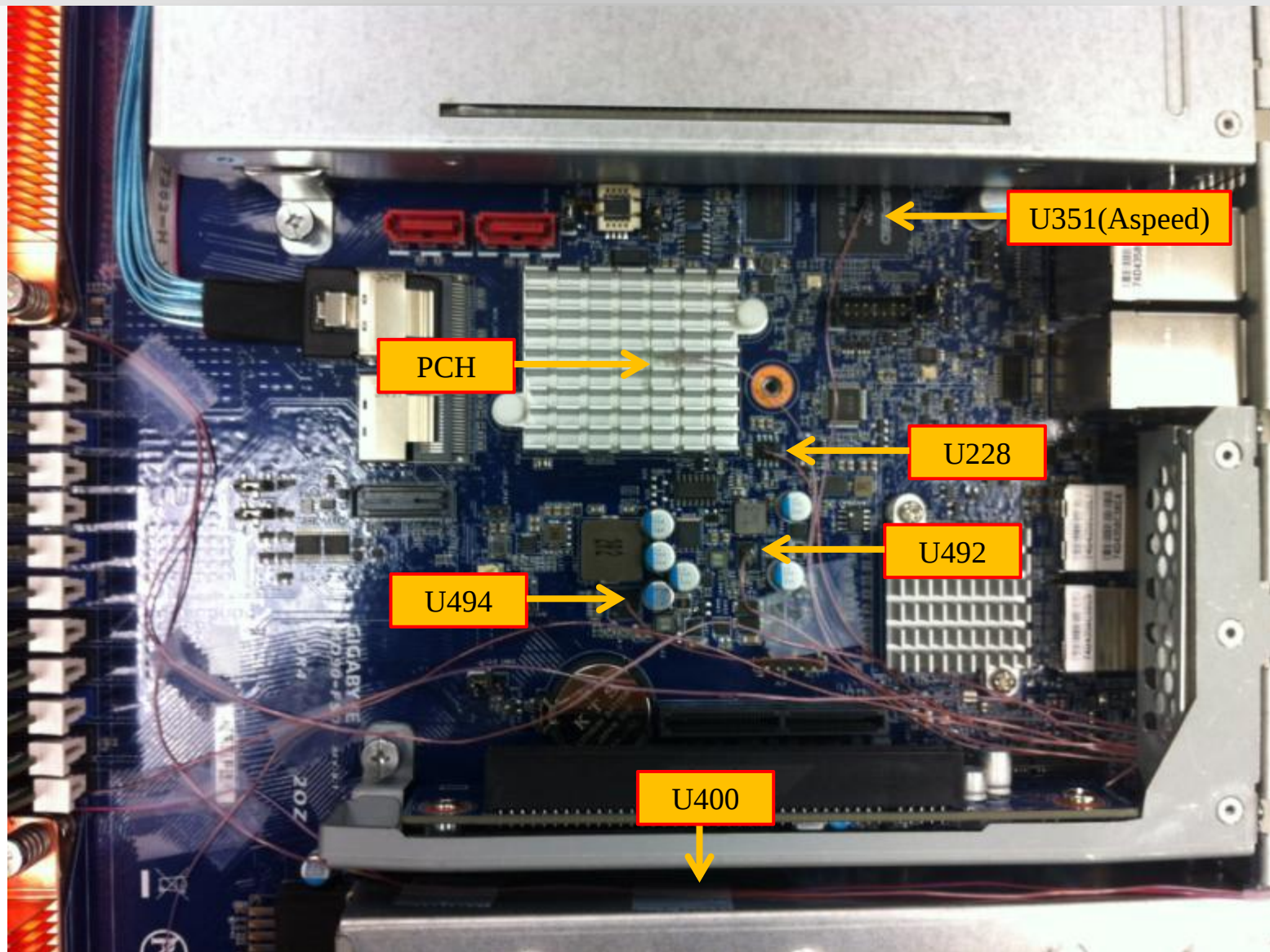
System Configuration



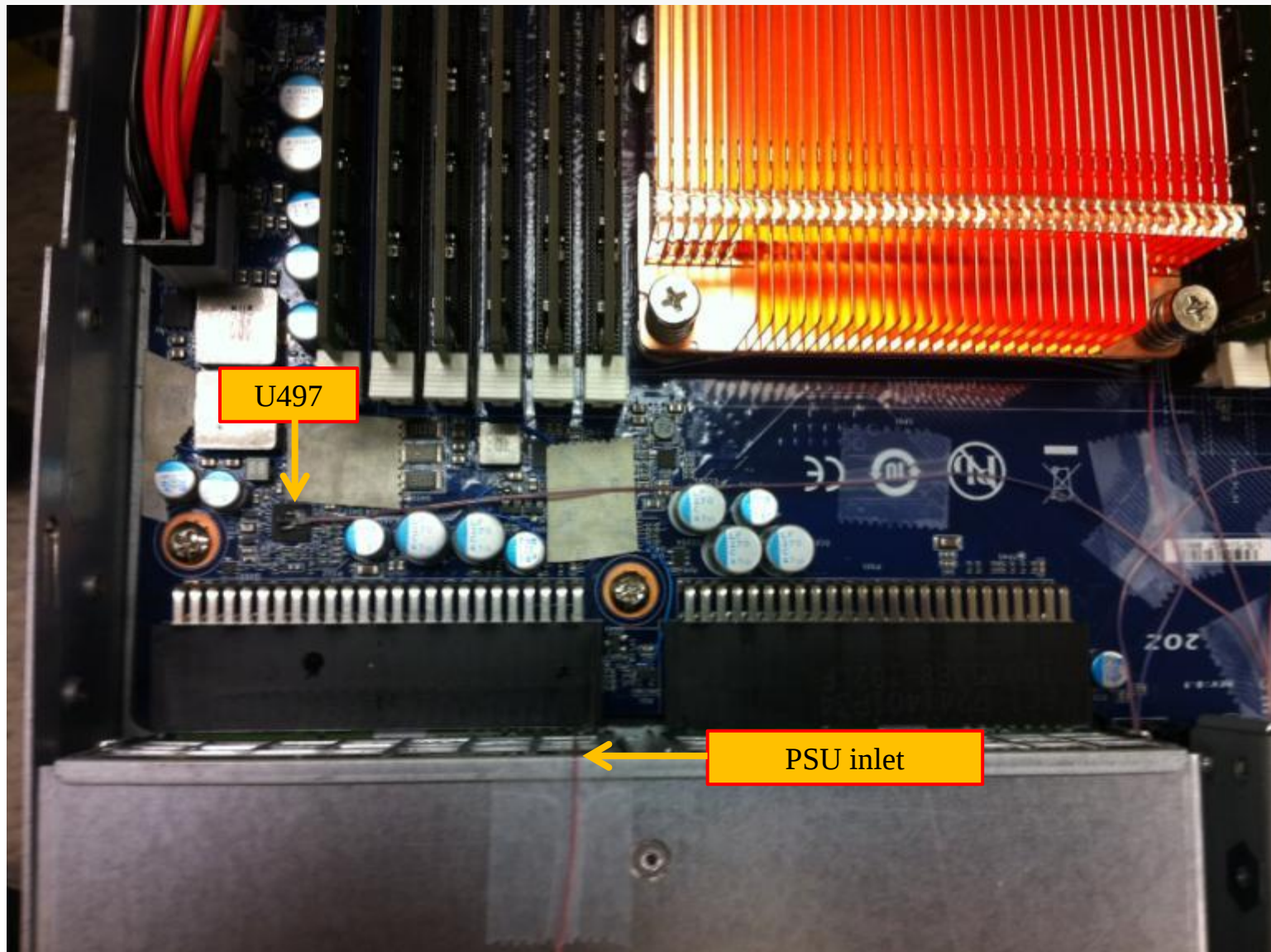
System Configuration



Thermal Measurement Point



Thermal Measurement Point



Thermal Measurement Point



Thermal Test Result

Test condition				25 Idle	25 full loading	30 Idle	30 full loading	35 Idle	35 full loading
Mode				Only I/O meter	Operating (PTU 100%+I/O meter)	Only I/O meter	Operating (PTU 100%+I/O meter)	Only I/O meter	Operating (PTU 100%+I/O meter)
		Indication of system fan speed	RPM	Auto run	Auto run	Auto run	Auto run	Auto run	Auto run
	Fan 1	Delta - 4028	RPM	10500	15900	10500	16200	11500	17400
	Fan 2	Delta - 4056	RPM	12500	18000	12500	20500	13500	22000
	Fan 3	Delta - 4056	RPM	12500	18000	12500	20500	13500	22000
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	Fan 7	Delta - 4056	RPM	12500	18000	12500	20500	13500	22000
	Fan 8	Delta - 4028	RPM	10500	15900	10500	16200	11500	17400
Item	Location	Component	Spec.						
1	CPU 0	DTS_temperature	88.5	51.0	69.0	47.0	73.0	51.0	78.0
2		T-case	76.52	35.9	60.0	40.3	64.4	45.4	69.9
3	CPU 1	DTS_temperature	88.5	39.0	68.0	45.0	72.0	50.0	77.0
4		T-case	76.52	34.9	59.6	37.1	64.0	42.1	69.5
5	HDD 1	3.5" 750G SATA	60	27.7	27.3	32.8	32.1	37.3	36.3
6	HDD 2	3.5" 750G SATA	60	28.7	27.9	33.1	33.1	38.2	36.8
7	HDD 3	3.5" 750G SATA	60	28.2	27.6	32.7	32.4	37.6	36.4
8	HDD 4	3.5" 750G SATA	60	27.2	26.6	31.7	31.5	36.6	35.8
9	DIMM_A0	CRUCIAL 8GB 1Rx4 RDIMM	85	32.0	34.0	36.0	38.0	41.0	43.0
10	DIMM_A1	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	33.0	36.0	38.0	41.0	43.0
11	DIMM_A2	CRUCIAL 8GB 1Rx4 RDIMM	85	30.0	32.0	35.0	37.0	40.0	42.0

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Item	Location	Component	Spec.						
12	DIMM_B0	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	33.0	36.0	38.0	41.0	43.0
13	DIMM_B1	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	33.0	35.0	37.0	40.0	42.0
14	DIMM_B2	CRUCIAL 8GB 1Rx4 RDIMM	85	30.0	32.0	35.0	37.0	40.0	42.0
15	DIMM_C0	CRUCIAL 8GB 1Rx4 RDIMM	85	35.0	45.0	40.0	50.0	45.0	55.0
16	DIMM_C1	CRUCIAL 8GB 1Rx4 RDIMM	85	35.0	45.0	40.0	49.0	45.0	54.0
17	DIMM_C2	CRUCIAL 8GB 1Rx4 RDIMM	85	34.0	43.0	39.0	47.0	44.0	52.0
18	DIMM_D0	CRUCIAL 8GB 1Rx4 RDIMM	85	34.0	42.0	38.0	46.0	43.0	51.0
19	DIMM_D1	CRUCIAL 8GB 1Rx4 RDIMM	85	33.0	39.0	37.0	44.0	42.0	49.0
20	DIMM_D2	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	34.0	37.0	44.0	42.0	49.0
21	DIMM_E0	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	34.0	36.0	38.0	41.0	43.0
22	DIMM_E1	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	35.0	36.0	39.0	41.0	44.0
23	DIMM_E2	CRUCIAL 8GB 1Rx4 RDIMM	85	32.0	35.0	36.0	39.0	41.0	44.0

Thermal Test Result

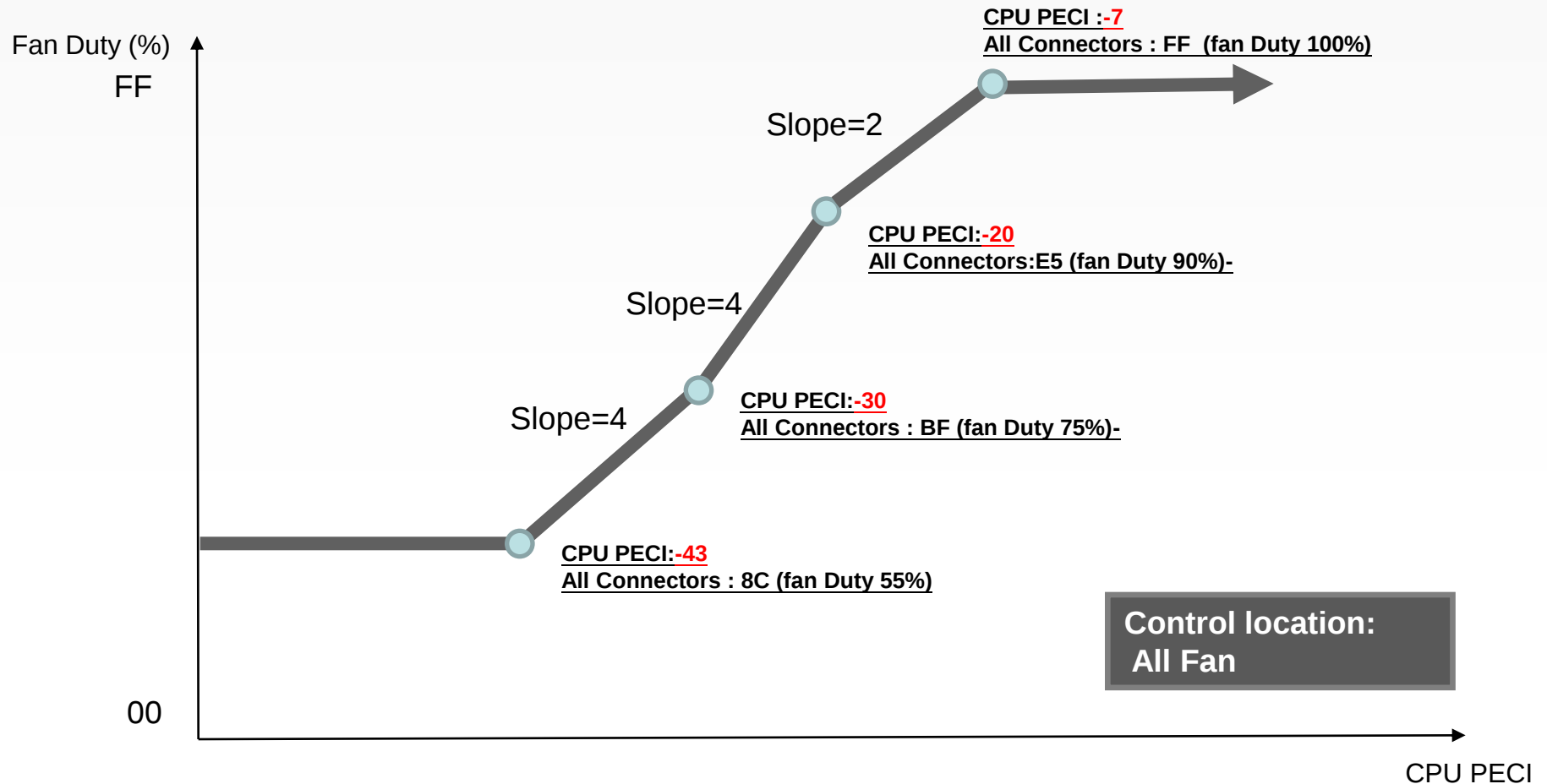
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Item	Location	Component	Spec.						
24	DIMM_F0	CRUCIAL 8GB 1Rx4 RDIMM	85	32.0	35.0	36.0	40.0	41.0	45.0
25	DIMM_F1	CRUCIAL 8GB 1Rx4 RDIMM	85	32.0	36.0	36.0	41.0	41.0	45.0
26	DIMM_F2	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	35.0	35.0	40.0	40.0	45.0
27	DIMM_G0	CRUCIAL 8GB 1Rx4 RDIMM	85	32.0	34.0	36.0	38.0	41.0	43.0
28	DIMM_G1	CRUCIAL 8GB 1Rx4 RDIMM	85	32.0	34.0	36.0	38.0	41.0	43.0
29	DIMM_G2	CRUCIAL 8GB 1Rx4 RDIMM	85	32.0	33.0	36.0	38.0	41.0	43.0
30	DIMM_H0	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	33.0	36.0	38.0	41.0	42.0
31	DIMM_H1	CRUCIAL 8GB 1Rx4 RDIMM	85	32.0	34.0	36.0	39.0	41.0	43.0
32	DIMM_H2	CRUCIAL 8GB 1Rx4 RDIMM	85	31.0	34.0	35.0	38.0	40.0	43.0
33	U494	mosfet	90	34.7	43.4	39.4	48.0	44.3	52.4
34	U492	mosfet	90	35.6	44.0	40.2	48.5	45.1	52.8

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Item	Location	Component	Spec.						
35	U228	mosfet	90	35.5	42.5	40.2	47.0	45.0	51.0
36	U351	Aspeed	90	45.0	50.4	49.7	55.0	54.5	59.2
37	U400	mosfet	90	39.0	48.9	43.7	53.5	48.6	57.5
38	U497	mosfet	90	36.6	41.8	41.0	46.2	45.9	50.6
39	EC143	CHOCK	90	33.8	43.6	38.5	48.3	43.3	53.0
40	EC171	CHOCK	90	32.0	39.1	36.6	43.6	41.3	47.9
41	PSU-inlet		50	29.8	36.5	34.4	41.2	39.4	45.6
42	PCH	Wellsburg	94.5	46.6	51.1	51.6	55.5	56.0	60.0
43	CPU 0 Watt	watt	145W	22.14	144.6	18.1	144.63	21.5	144.77
44	CPU 1 Watt	watt	145W	17.58	144.6	17.8	144.48	18.16	144.63
45	TA	Chamber Room		25.2	25.3	30.1	30.2	35.2	35.1

Fan Speed Control

- ◆ The FSC default has been setting at performance mode



Test Conclusion

➤ Normally test result:

1. According to the thermal test result for EVT stage, all item can meet each spec in R180-F34 system

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