GIGABYTE P35-DQ6 and ASUS P5K Deluxe Thermal Test Report

GIGABYTE P35-DQ6

ASUS P5K Deluxe

Run P4 MAX POWER for 20mins then record temperature

GIGABYTE P35-DQ6

Location	Temperature (deg C)
NB (SINK1)	57.2
MOS 1 (SINK2)	75.8
MOS 2 (SINK3)	71.8
CHOKE 1	90
CHOKE 2	84.4
Capacitor 1	83.3
Capacitor 2	74.9
CPU backside	61.6

7.7 C lower!

18.6 C lower!

36.7 C lower!

27.5 C lower!

54.1 C lower!

19.9 C lower!

41.2 C lower!

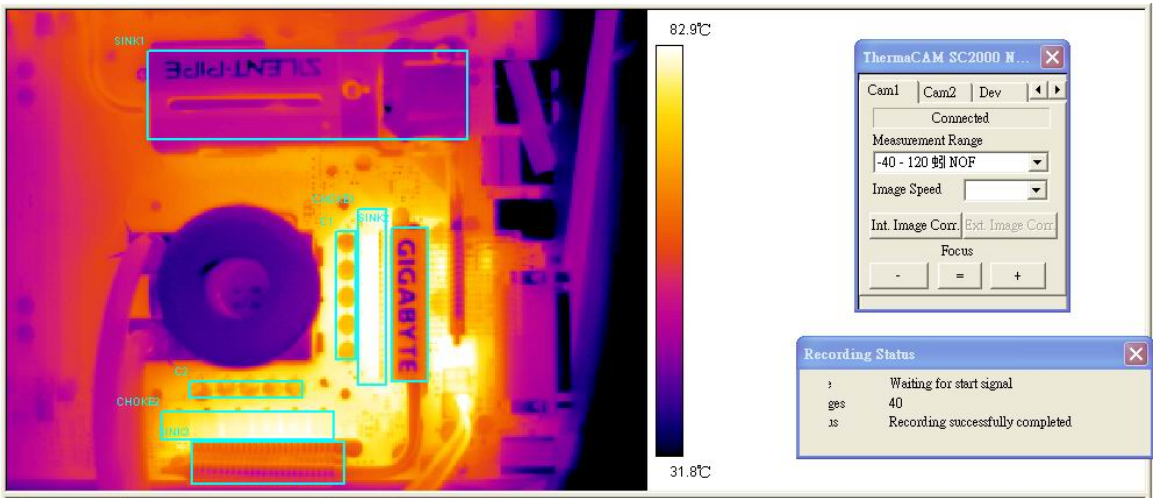
19.2 C lower!

ASUS P5K Deluxe

Location	Temperature (deg C)
NB (SINK1)	64.9
MOS 1 (SINK2)	94.4
MOS 2 (SINK3)	108.5
CHOKE 1	100.6/116.2/117.5
CHOKE 2	126.7/138.5/130.6
Capacitor 1	103.2
Capacitor 2	116.1
CPU backside	80.8

Too hot !!!

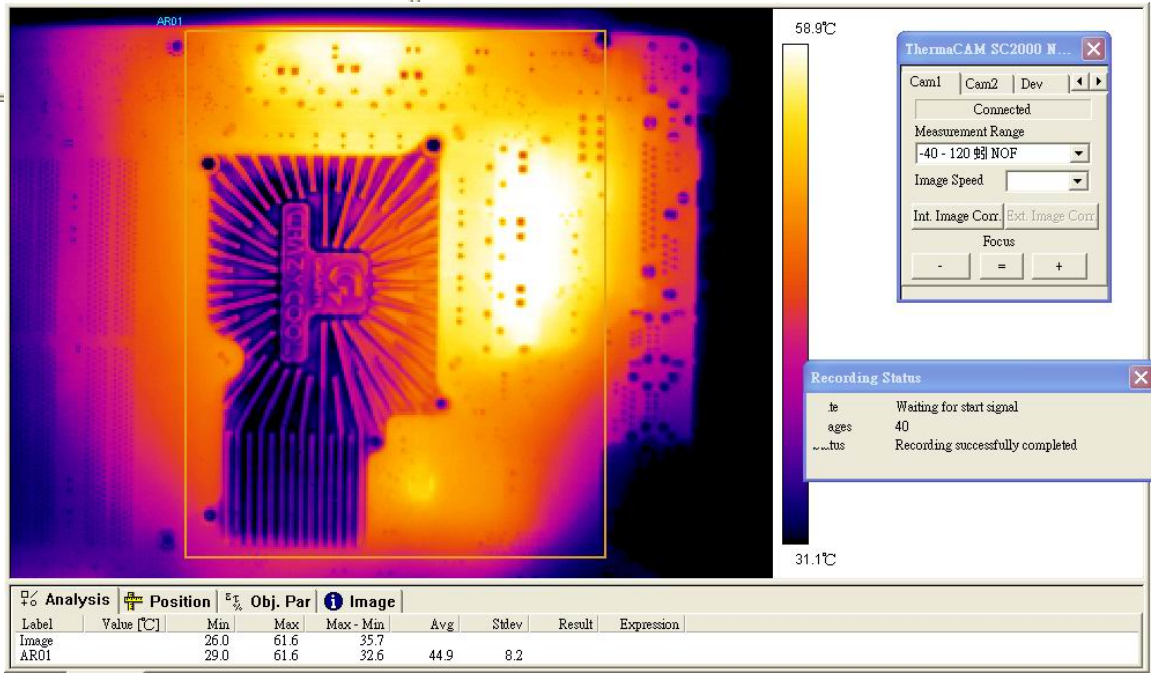
GIGABYTE P35-DQ6 Detail measurement data



Top Side

Analysis | Position | Obj. Par | Image

Label	Value [℃]	Min	Max	Max - Min	Avg	Stdev	Result	Expression
Image		26.9	90.0	63.1				
SINK1		30.2	57.2	26.9	42.0	3.5		
SINK2		33.7	75.8	42.1	54.9	9.3		
SINK3		41.7	71.8	30.1	54.1	6.2		
CHOKE1		66.7	90.0	23.3	82.2	3.8		
CHOKE2		65.2	84.4	19.2	77.5	3.8		
C1		61.6	83.3	21.7	72.7	5.7		
C2		59.6	74.9	15.3	67.0	3.3		



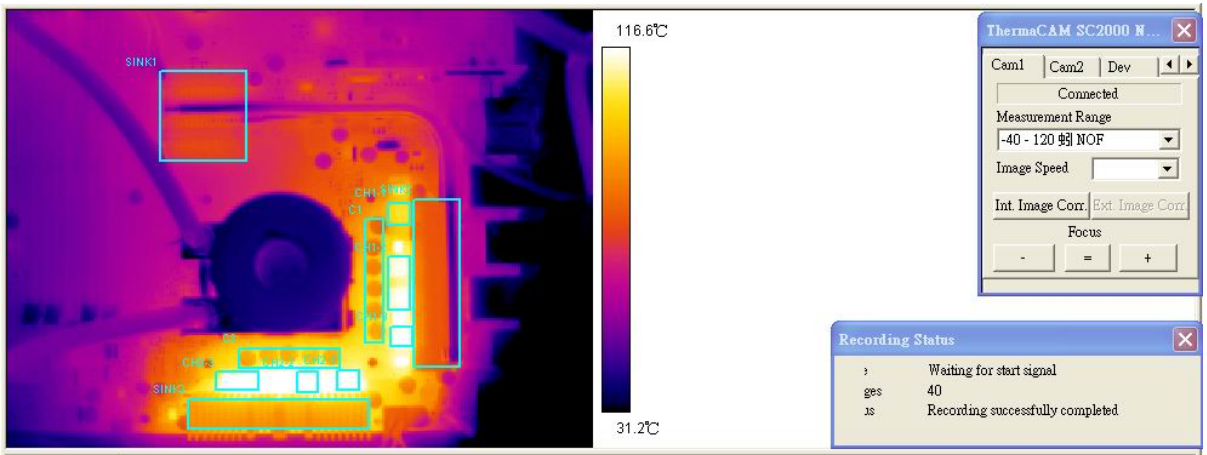
Back Side

Analysis | Position | Obj. Par | Image

Label	Value [℃]	Min	Max	Max - Min	Avg	Stdev	Result	Expression
Image		26.0	61.6	35.7				
AR01		29.0	61.6	32.6	44.9	8.2		

ASUS P5K Deluxe

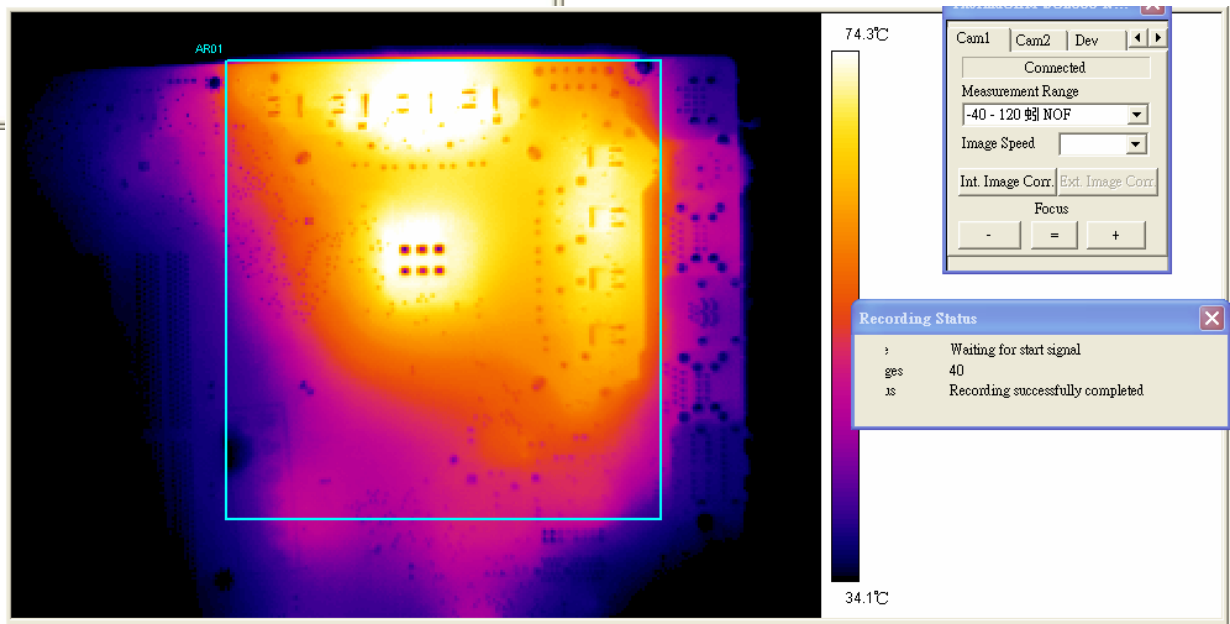
Top Side



Analysis | Position | Obj. Par | Image

Label	Value [℃]	Min	Max	Max - Min	Avg	Stdev	Result	Expression
Image		24.3	143.7	119.4				
SINK1		34.4	64.9	30.5	59.9	6.2		
SINK2		35.9	94.4	58.5	63.7	12.3		
SINK3		71.0	108.5	37.5	85.8	5.1		
CH1-1		79.3	100.6	21.3	95.3	5.1		
CH1-2		98.1	116.2	18.1	110.7	4.2		
CH1-3		104.6	117.5	12.8	113.4	3.4		
CH2-1		108.4	126.7	18.3	121.1	4.4		
CH2-2		116.8	135.8	19.1	130.1	4.8		
CH2-3		97.3	130.6	33.3	119.5	7.6		
C1		70.9	103.2	32.3	86.2	7.7		
C2		83.9	116.1	32.2	95.5	8.3		

Back Side



Analysis | Position | Obj. Par | Image

Label	Value [℃]	Min	Max	Max - Min	Avg	Stdev	Result	Expression
Image		24.6	80.8	56.2				
AR01		33.6	80.8	47.2	56.8	10.9		

Run 3DMark 2006 for 20 mins then record temperature

GIGABYTE P35-DQ6

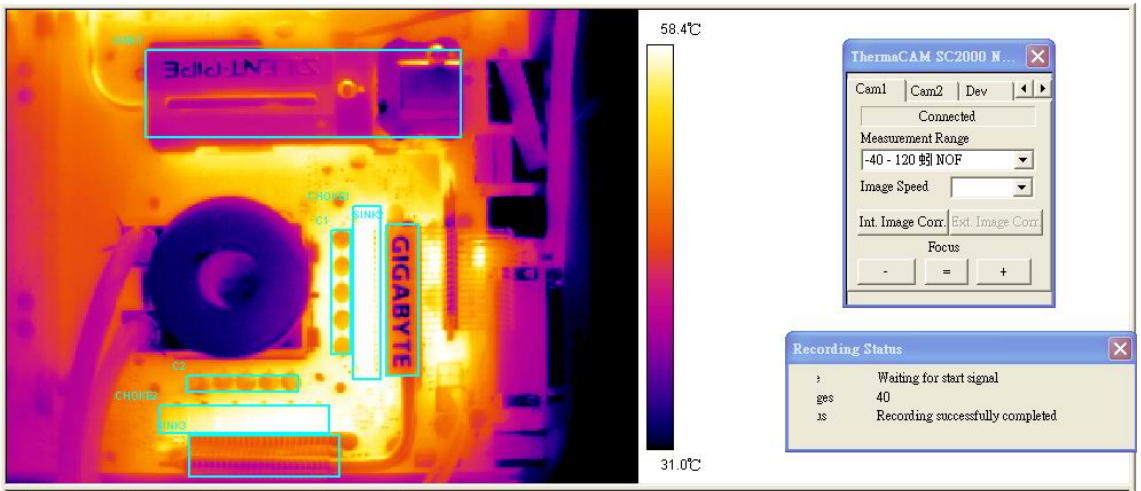
Location	Temperature (deg C)	
NB (SINK1)	57.7	5.8 C lower!
MOS 1 (SINK2)	54.5	30.9 C lower!
MOS 2 (SINK3)	53.5	46.1 C lower!
CHOKE 1	62.3	46 C lower!
CHOKE 2	59.8	64.1 C lower!
Capacitor 1	58.5	35.1 C lower!
Capacitor 2	55	48.4 C lower!
CPU backside	49.2	28.8 C lower!

ASUS P5K Deluxe

Location	Temperature (deg C)
NB (SINK1)	63.5
MOS 1 (SINK2)	85.4
MOS 2 (SINK3)	99.6
CHOKE 1	94.3/107.1/108.3
CHOKE 2	117.1/123.9/117.9
Capacitor 1	93.6
Capacitor 2	103.4
CPU backside	78

Too hot !!!

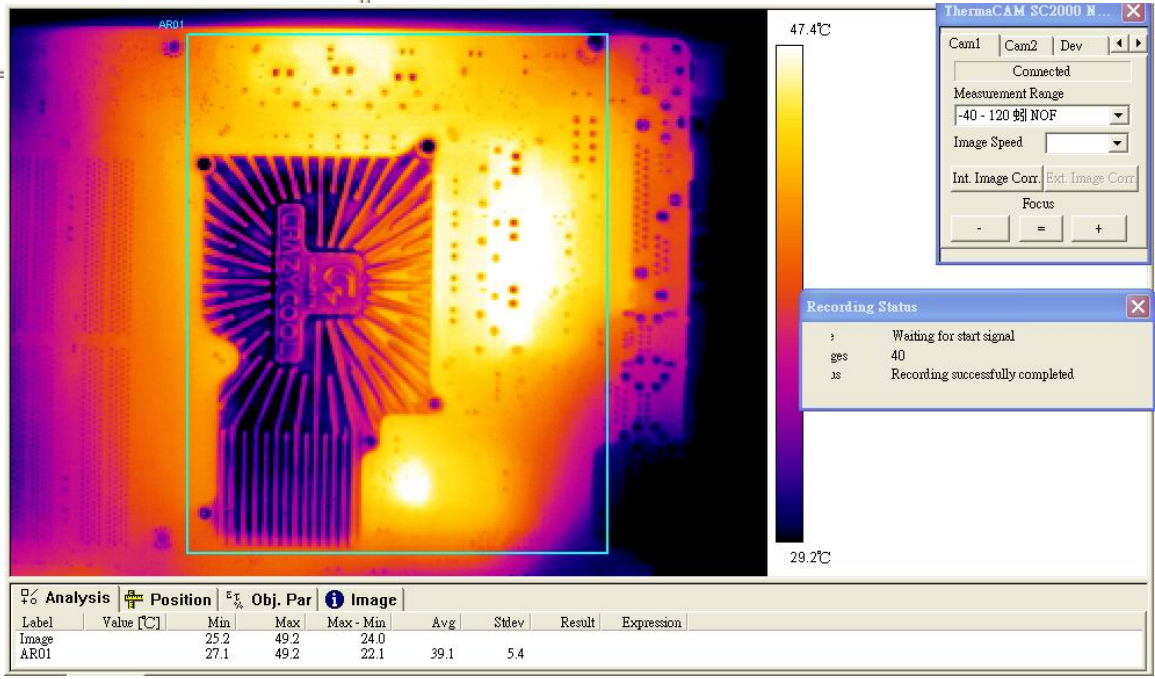
GIGABYTE P35-DQ6



Top Side

Analysis | Position | Obj. Par | Image

Label	Value [℃]	Min	Max	Max - Min	Avg	Stdev	Result	Expression
Image		26.4	62.3	35.9				
SINK1		28.8	57.7	28.9	38.6	3.2		
SINK2		30.8	54.5	23.7	44.2	5.5		
SINK3		36.6	53.5	16.9	44.1	3.6		
CHOKE1		52.0	62.3	10.3	58.8	1.7		
CHOKE2		50.3	59.8	9.5	56.3	2.1		
C1		48.2	58.5	10.3	53.7	2.6		
C2		46.0	55.0	9.0	50.2	1.8		



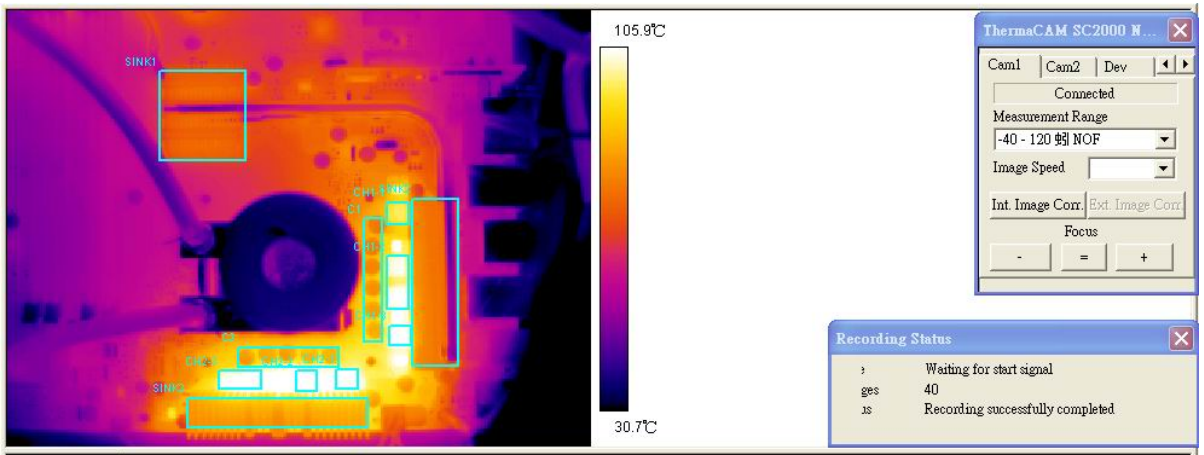
Back Side

Analysis | Position | Obj. Par | Image

Label	Value [℃]	Min	Max	Max - Min	Avg	Stdev	Result	Expression
Image		25.2	49.2	24.0				
AR01		27.1	49.2	22.1	39.1	5.4		

ASUS P5K Deluxe

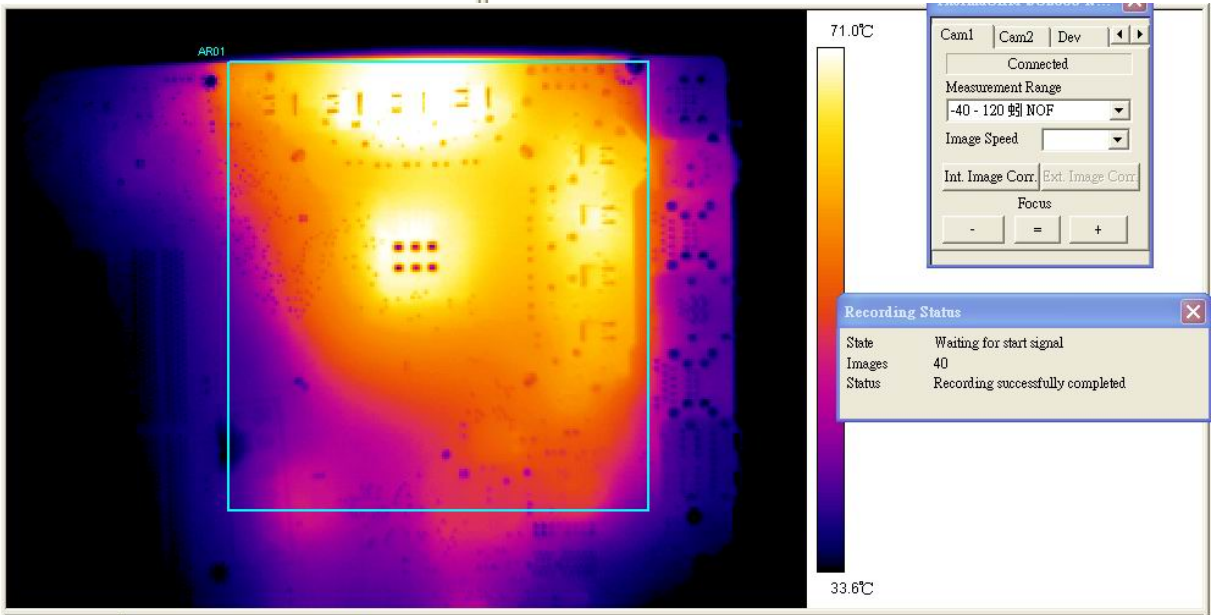
Top Side



Analysis | Position | Obj. Par | Image

Label	Value [℃]	Min	Max	Max - Min	Avg	Stdev	Result	Expression
Image		24.0	131.0	107.0				
SINK1		34.8	63.5	28.8	58.9	5.7		
SINK2		34.9	85.4	50.5	60.8	11.0		
SINK3		62.1	99.6	37.5	77.6	4.8		
CH1-1		73.5	94.3	20.9	88.7	5.2		
CH1-2		86.5	107.1	20.6	100.0	4.9		
CH1-3		93.4	108.3	14.8	103.7	3.9		
CH2-1		98.0	117.1	19.2	111.3	4.7		
CH2-2		104.9	123.9	19.0	118.0	4.8		
CH2-3		89.6	117.9	28.3	108.5	6.0		
C1		64.2	93.6	29.4	77.1	6.8		
C2		73.5	103.4	29.8	84.1	7.7		

Back Side



Analysis | Position | Obj. Par | Image

Label	Value [℃]	Min	Max	Max - Min	Avg	Stdev	Result	Expression
Image		24.5	78.0	53.5				
AR01		33.7	78.0	44.4	54.8	9.9		

Conclusion

- Asus P5K Deluxe Chipset, CPU components temperature is 64.1 deg C (max) higher than GIGABYTE P35-DQ6 !!!
- The reasons for lower temperature GIGABYTE P35-DQ6
  - Ultra Durable 2 – Low R(ds)on MOSFET
    - Ferrite core choke
    - All Japanese Solid capacitors
  - Quad Triple Phase (12 Phase) power design
  - All copper Silent Pipe thermal solution
  - All copper Crazy Cool back plate