IMBI-Q45

Intel Q45 Mini-ITX Advance Board

Thermal Image Analysis Report

Report NO: 09I08003

2009/06/04	*Wenyuan Yang*	*Allen Hsu*
Issue Stamp	**Manager**	**Test Engineer**

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Thermal Image Analysis

Ⅰ. Model Name: IMBI-Q45 A1.0
BIOS: IMBI-Q45 BIOS Rev A1.0 (05/27/2009)

Ⅱ. Description: Intel Q45 Mini-ITX Advance Board

Ⅲ. Date: 2009/06/04

Ⅳ. Measure Site: AAEON QE Dept.

Ⅴ. Issued by : Allen Hsu

Ⅵ.Equipment:
YOKOGAWA PR1000(TH-046)

Ⅶ. Simulation Environment:
- **Temperature: Component Side-1 : 25.3℃ , Component Side-2 : 25.6℃**
- **CPU : Intel Core 2 Quad Q9400 @ 2.66GHz – 1333MHz**
- **RAM : DSL DDR3 1066 2GB CL7 *2**
- **BIOS : IMBI-Q45 BIOS Rev A1.0 (05/27/2009)**
- **CF Card : N/A**
- **HDD : WD SATA 3.5 H.D 80G WD800AAJS**
- **Application Software: Run Prime95 under Windows XP Professional V2002 Service Pack 3**
- **Take Picture Time: After Power on 2 hours.**

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Temperature Profile Test:

Frontside picture ↓

Backside picture ↓

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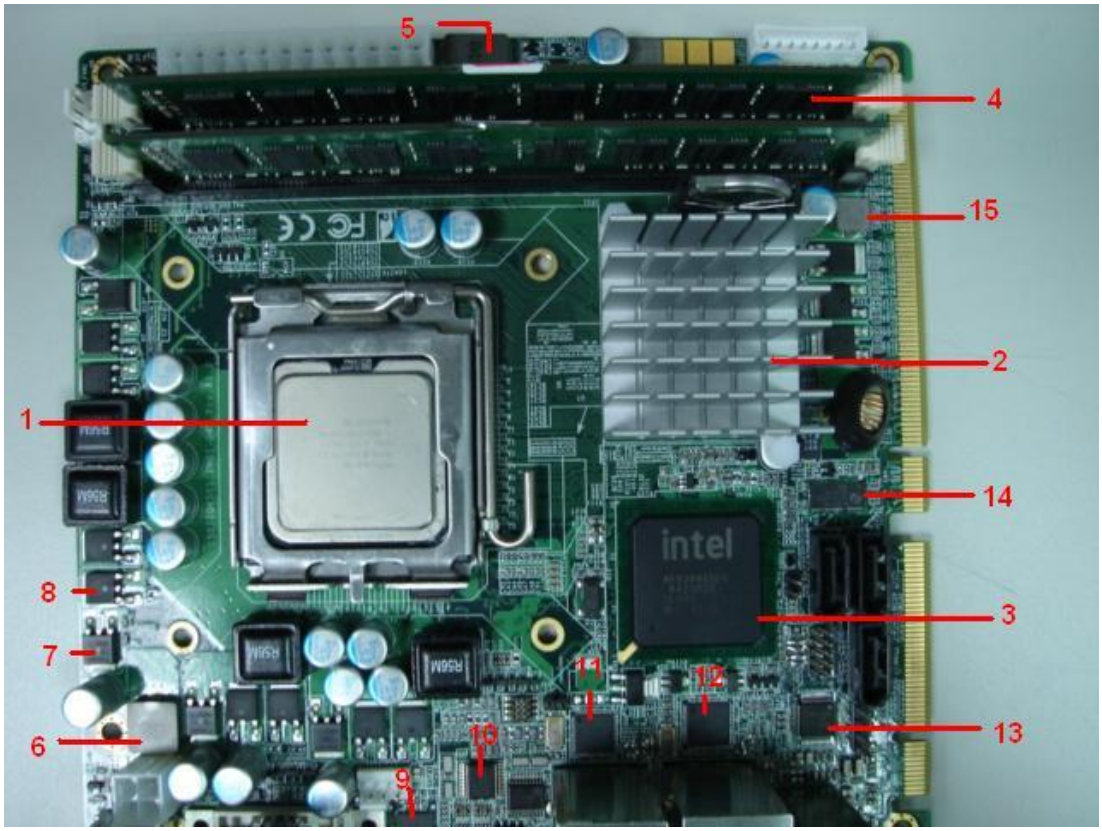
Component Side-1:



Point	Position	Describe	Tc (℃)*1	Tm*2 Measured Under		Note
				25.3℃	60℃	
1	LGA775	Intel Core 2 Quad Q9400 @ 2.66GHz – 1333MHz	71.4	37.6	72.3	
2	U13	(TF)IC.SMD.FCBGA 1254Pin.Chipset.Intel.AC82Q45 SLB8A;EE-A090088;14S4824500;TWN	150	47.1	81.8	
3	U12	(TF)IC.SMD.ChipsetICH10DO.INTEL.AF82801JDO SLG8U;EE-A090089;14S4280123;TWN	----	43.7	78.4	
4	RAM	DSL DDR3 1066 2Gb- ELPIDA J1108BABG	95	48.9	83.6	
5	L6	(TF)COIL.2.2uH.SMD.13.8*12.8*5.0mm.DCR=4.6m ohm.Irms=20A.GOTREND.GSTC135P-2R2MF;EE-A070367;1 211102266;TWN	125	48.5	83.2	
6	L3	(TF)COIL.0.56uH.Irms=25A.Isat=40A.20%.SMD(11.5x10.3x4. 0).2pin.RDC=1.8m Ohm.GOTREND.GSTC104P-R56MN;EE-A061714;121110567 3;TWN	125	37.5	72.2	
7	Q4	(TF)PWR.SMD TO-252.30V 58A.N-channel Power MOSFET.FAIRCHILD.FDD8880;EE-A061121;1315888010;T WN	125	40.1	74.8	

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8	Q8	(TF)PWR.SMD.TO-252.30V 94A.N-channel Power MOSFET.FAIRCHILD.FDD8896_NL;EE-A070814;1315889612;TWN	125	40.2	74.9	
9	U5	(TF)IC.SMD.TQFN 48Pin.Digital Video Level Shifter.for DP to HDMI.PERICOM.PI3VDP411LSTZDE;EE-A090104;14S934110 0;TWN	85	43.2	77.9	
10	U6	(TF)IC.SMD SSOP.20Pin RS-232 Driver&Receivers.TI.GD75232DBR;EE-A010945;14S5A23200;TWN	----	46.1	80.8	
11	U9	(TF)IC.SMD.QFN 56P.GigaBit Ethernet Chipset.INTEL.WG82567LM SLAVV;EE-A081561;14S4256700;TWN	115	35.1	69.8	
12	U14	(TF)IC.SMD.QFN 64P.PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8;EE-A081303;14S4825740;TWN	109	39.9	74.6	
13	U15	(TF)IC.SMD.LQFP 48P.7.1Channel HD Audio Codec.REALTEK.ALC888-VC2-GR;EE-A081306;14S3088801;TWN	100	39.6	74.3	
14	U16	(TF)IC.SMD.TQFN 56Pin.6 Differential Channel.1:2Mux/Demux for PCI-E.PERICOM.PI3PCIE2612-AZFE;EE-A090087;14S2261200;TWN	85	44.0	78.7	
15	L11	(TF)COIL.1uH.+/-20%.SMD.7.3*6.8*3.0mm.DCR=9mohm.Irms=11Amp.GOTREND.GSTC063P-1R0MN;EE-A061520;1211000180;TWN	125	42.3	77	

Note(*):
1. Tc is meaning the component Tcase value that specified in the component datasheet.
2. Tm is meaning the Measured Tcase value when the component operated under temperature stably.
3. The Tm value showed in **BLUE** words which meaning the MEASURED operation temperature within (Tc-10℃)>Tm >(Tc +5℃), particular thermal dissipation design is needed if you wanna to utilize this board in an enclosure box or chassis.
4. Any Tm value showed in **RED** words which meaning the operation temperature is over (Tc+5 degree C). The result is "Failed" and must be solved before the product launched into next design stage.

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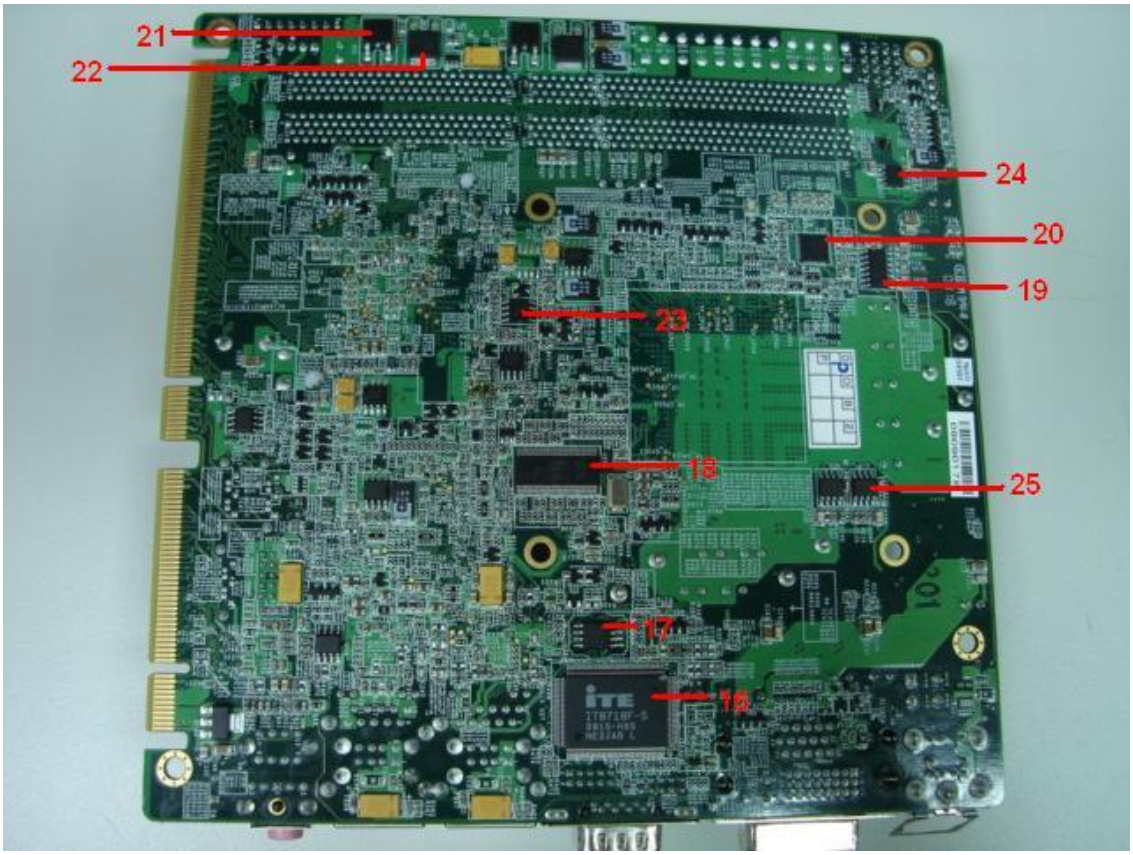
Component Side-2:



Point	Position	Describe	Tc (℃)*1	Tm*2 Measured Under		Note
				25.6℃	60℃	
16	U27	(TF)IC.SMD.QFP128PSuper I/O.ITE.IT8718F/HX-L;EE-A090544;14S4871800;TWN	100	38.8	73.1	
17	U28	(TF)IC.SMD.SOIC-8P 208mil.32 Mbit SPI Flash.Winbond.W25X32VSSIG;EE-A071947;14S6203202;TWN	105	35.2	69.5	
18	U29	(TF)IC.SMD.TSSOP64P.CLOCK GENERATOR.SILEGO.SLG505YC264BTTR;EE-A081678;14S3050500;TWN	100	42.2	76.5	
19	U18	(TF)IC.SMD.SOIC 14Pin.MosFET Driver.Intelsil.ISL6614ACBZ;EE-A061489;14S4661400;TWN	100	29.1	63.4	
20	U23	(TF)IC.SMD.QFN 40Pin.VR11.1 4Phase PWM Controler.Intersil.ISL6334CRZ;EE-A090093;14S3633400;TWN	100	40.1	74.4	

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21	U35	(TF)REG.SMD.TO-2525ALinear Regulator.Diodes.AP1084DG-13;EE-A011431;1314108412;TWN	100	50.8	85.1	
22	Q81	(TF)PWR.SMD.TO-252.N-Channel PowerMosfet.ANPEC.APM3054NUC-TR-L;EE-A071574;1315305411;TWN	125	50.9	85.2	
23	U30	(TF)IC.SMD.SO8P.OP AMP.NS.LM358M-NOPB;EE-A041003;14S1035801;TWN	100	39.0	73.3	
24	U17	(TF)REG.SMD SOP-8.1.5A DDRIII Termination Regula.ANPEC.APL5336KAI-TRG;EE-A090095;1314533610;TWN	125	34.7	69	
25	U19	(TF)IC.SMD.SOIC8Pin.MOSFET Drivers.INTERSIL.ISL6612ACBZ;EE-A061931;14S9661200;TWN	100	51.2	85.5	

Note(*):
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