COM-U15 & ECB-951D

Intel Menlow Platform COM Express CPU Module
COM Express Carrier Board

Thermal Image Analysis Report

Report NO: 09E080004

2009/03/02	*Wenyuan Yang*	*Allen Hsu*
Issue Stamp	**Manager**	**Test Engineer**

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Thermal Image Analysis

Ⅰ. Model Name: COM-U15 Rev.A0.3 + ECB-951D Rev.A0.3

Ⅱ. Description: Intel Menlow Platform COM Express CPU Module

Ⅲ. Date: 2009/03/02

Ⅳ. Measure Site: AAEON QE Dept.

Ⅴ. Issued by : Allen Hsu

Ⅵ.Equipment:
YOKOGAWA PR1000(TH-046)

Ⅶ. Simulation Environment:
- •Temperature: Component Side-1 : 25.1℃ , Component Side-2 : 25.6℃
- •CPU : Onboard Intel Atom Z530 process 1.6GHz
- •RAM : Kingston DDR2 SO-DIMM 667 2G KVR667D2S5-(7KE12D9HNL)
- •BIOS : COM-U15 BIOS Rev0.F (02/17/2009)
- •CF Card : N/A
- •HDD : Onboard SSD Chip Intel SSD 4G (SSDPAPS0004G1)
- •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:

Fabricate Picture: CPU Board (COM-U15 A0.3 + ECB-951D A0.3)

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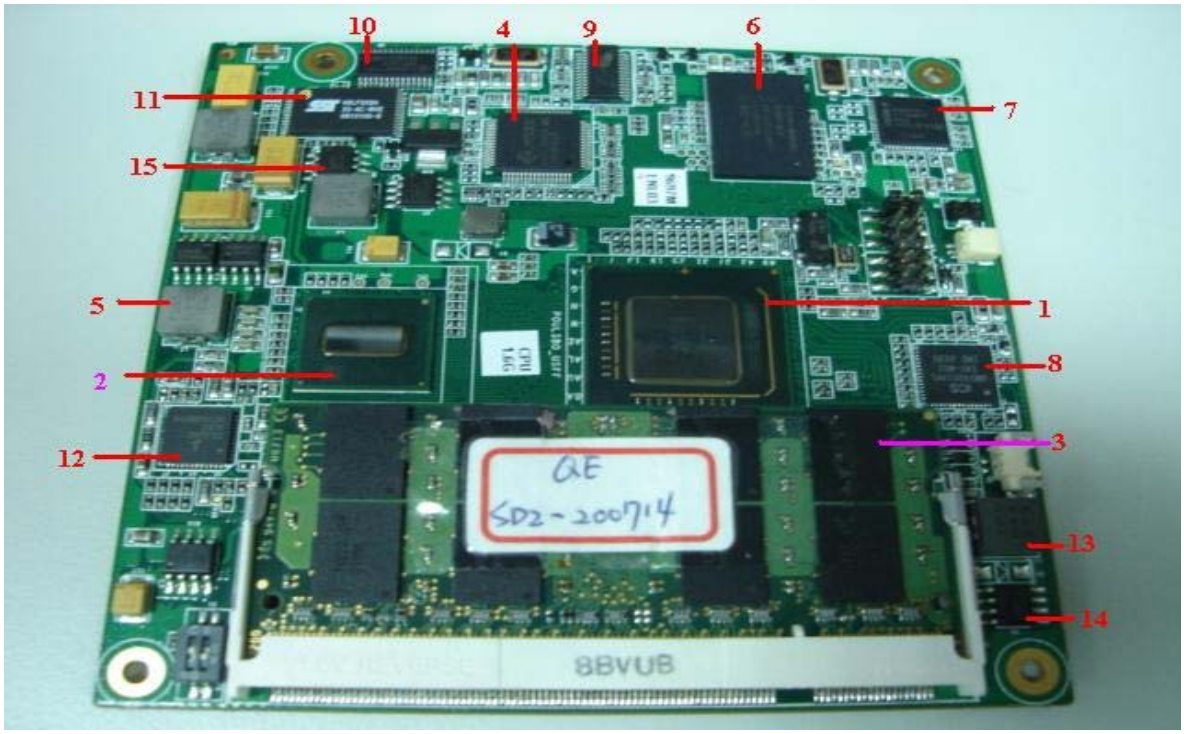
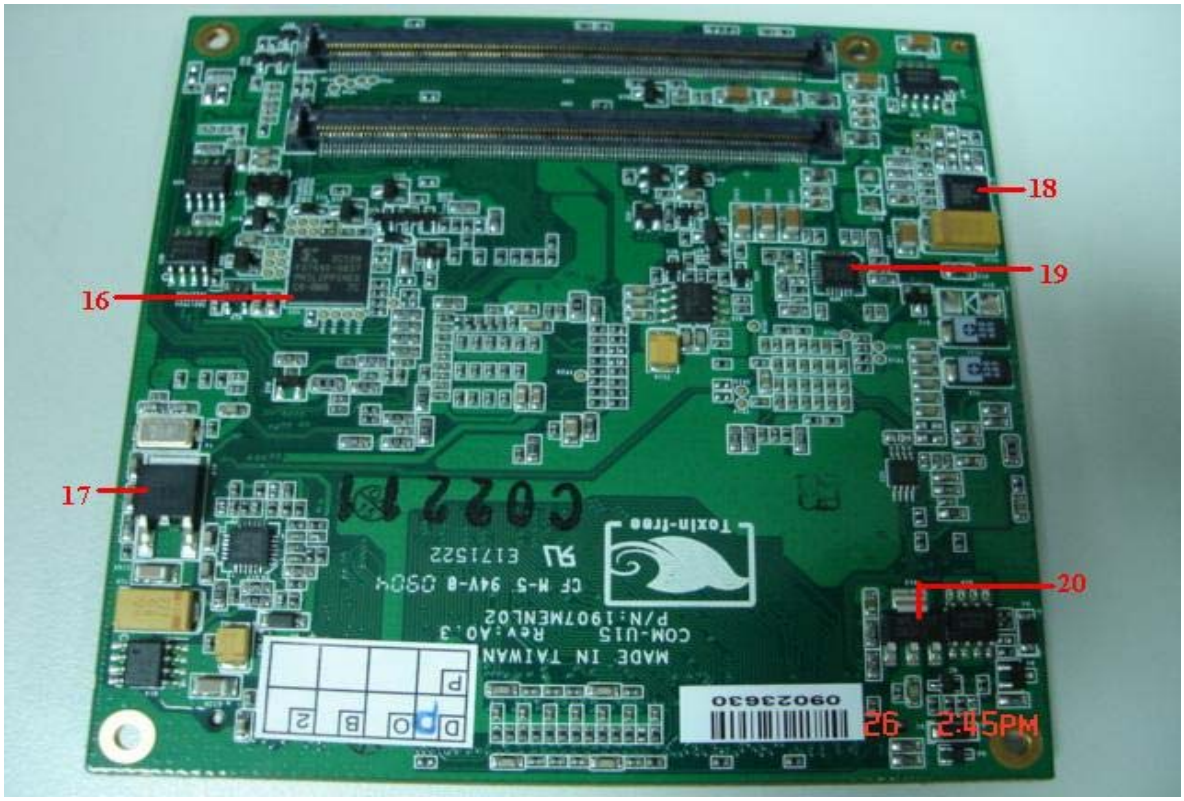
Component Side-1:



Frontside picture



Backside picture

Rad line: Frontside Pink line: Backside

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Point	Position	Describe	Tc (℃)	Tm (25.1 ℃)	Tm (60℃)	Note
1	U3	(TF)IC.SMD.Chipset SCH.Poulsbo.INTEL.AF82US15W SLB4U	90	51.2	86.1	
2	U1	(TF)INTELCPU.Silverthorne.1.6GHz/533.AC80566UE025DW SLB6P;EE-A081328;14S4025000;TWN	90	50.8	85.7	
3	RAM	Kingston DDR2 SO-DIMM 667 2G (7KE12-D9HNL)	95	54.2	89.1	
4	U29	(TF)IC.SMD.TQFP64P.SATAtoIDE/ATAChip.JMicron.JM20330APB5-TGCA;EE-A080101;14S4033000;TWN	100	55.1	90	
5	L2	(TF)COIL.3.3uH.SMD.7.3*6.8*3.0mm.DCR=28mohm.Irms=6Amp. GOTREND.GSTC063P-3R3MN;EE-A061509;121110336L;TWN	155	48.6	83.5	
6	U11	(TF)IC.SMD.BGA 168P.Z-P140 PATA SSD 4G.Intel.SSDPAPS0004G1MM#893475;EE-A081324;14S4000401;TWN	100	50.1	85	
7	U12	(TF)IC.SMD.QFN 64P.PCI-E GigaBit Ethernet Chipset.Intel.WG82574L SLBA8;EE-A081303;14S4825740;TWN	100	50.7	85.6	
8	U5	(TF)IC.SMD.MLF 56P.Clock Generator.IDT.ICS9UMS9001AKLFT;EE-A081329;14S4900100;TWN	150	50.0	84.9	
9	U16	(TF)IC.SMD.SSOP 28P.WatchDog.Fintek.F75111RG;EE-A061692;14S4751100;TWN	115	51.3	86.2	
10	U6	(TF)IC.SMD TSSOP28.Trusted Platform Module.Infineon.SLB9635TT1.2;EE-A071258;14S4963500;TWN	100	53.3	88.2	
11	U13	(TF)IC.SMD.TSOP.32P.8M bit Flash Memory.SST.SST49LF008A-33-4C-WHE;EE-A080004;14S6200802;TWN	125	51.4	86.3	
12	U4	(TF)IC.SMD.QFN 48P.IMVP6 Two Phase PWM.Intersil.ISL6262ACRZ-T;EE-A081065;14S3626201;TWN	100	49.4	84.3	
13	L1	(TF)COIL.1uH.+/-20%.SMD.7.3*6.8*3.0mm.DCR=9mohm.Irms=11Amp.GOTREND.GSTC063P-1R0MN;EE-A061520;1211000180;TWN	155	47.0	81.9	
14	Q1	(TF)PWR.SMD.SO8.N-Channel.30V.12A.ANPEC.APM4420KC-TRL;EE-A060271;1315442011;TWN	120	46.3	81.2	
15	Q6	(TF)PWR.SMD.SO8.N-Channel.30V.12A.ANPEC.APM4420KC-TRL;EE-A060271;1315442011;TWN	120	50.1	85	
16	U23	(TF)IC.SMD.CP132P.CoolRunner-IICPLD.Xilinx.XC2C128-7CPG132C;EE-A081321;14S8212802;TWN	125	50.5	85.4	
17	Q18	(TF)REG.SMD.TO-2525ALinearRegulator.Diodes.AP1084DL-13;EE-A011431;1314108412;TWN	100	51.1	86	
18	U28	(TF)IC.SMD.MLPQ-32P 5*5.Single Phase DC-DC Converter.with ProgrammableLDO.Semtech.SC417MLTRT;EE-A080832;14S2041700;TWN	100	51.4	86.3	
19	U25	(TF)IC.SMD.MLPQ-32P 5*5.Single Phase DC-DC Converter.with ProgrammableLDO.Semtech.SC417MLTRT;EE-A080832;14S2041700;TWN	100	51.3	86.2	
20	Q13	(TF)REG.SMDSOT223.1AAdjustableLinearRegulator.ANPEC.APL1117-VC-TRL;EE-A060717;131411171C;TWN	125	50.5	85.4	

1. Tm (Measured operation temperature) must be less than Tc (Specified case temperature) +5 degree C
2. Any Tm value showed in red words which meaning the value is over the Tc+ 5 degree C of this device specification

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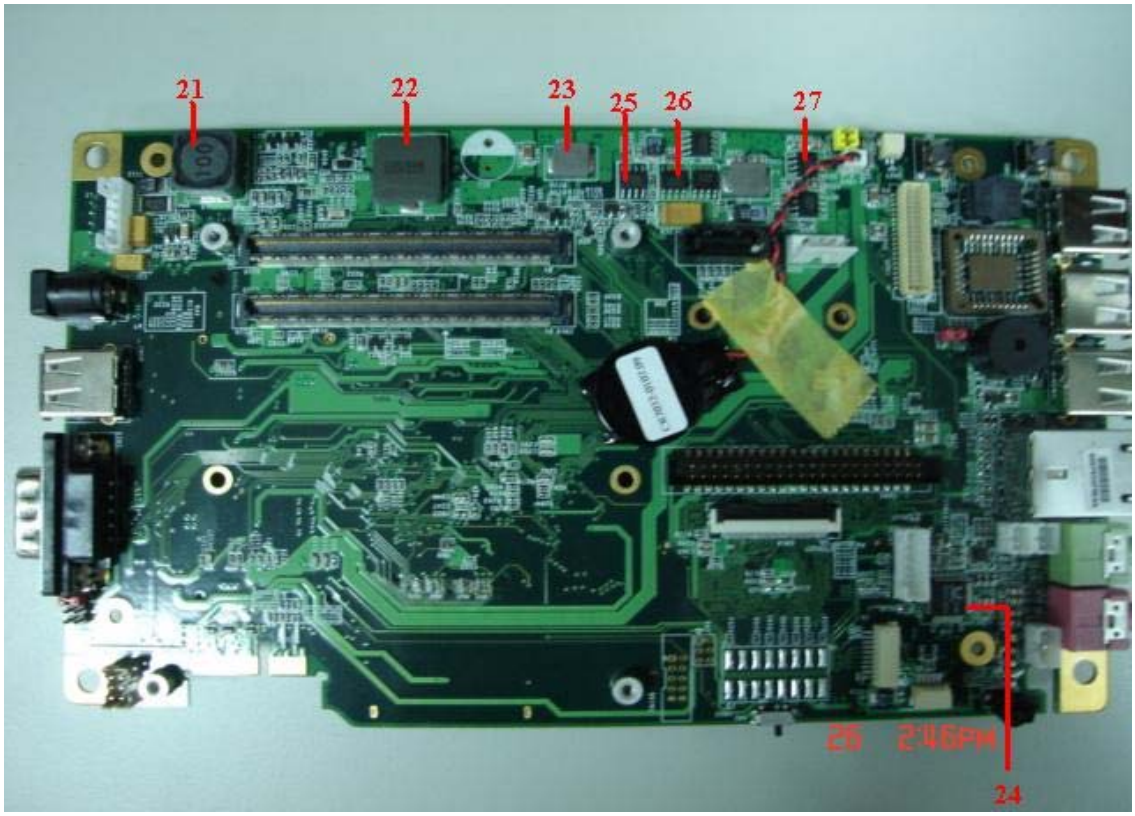
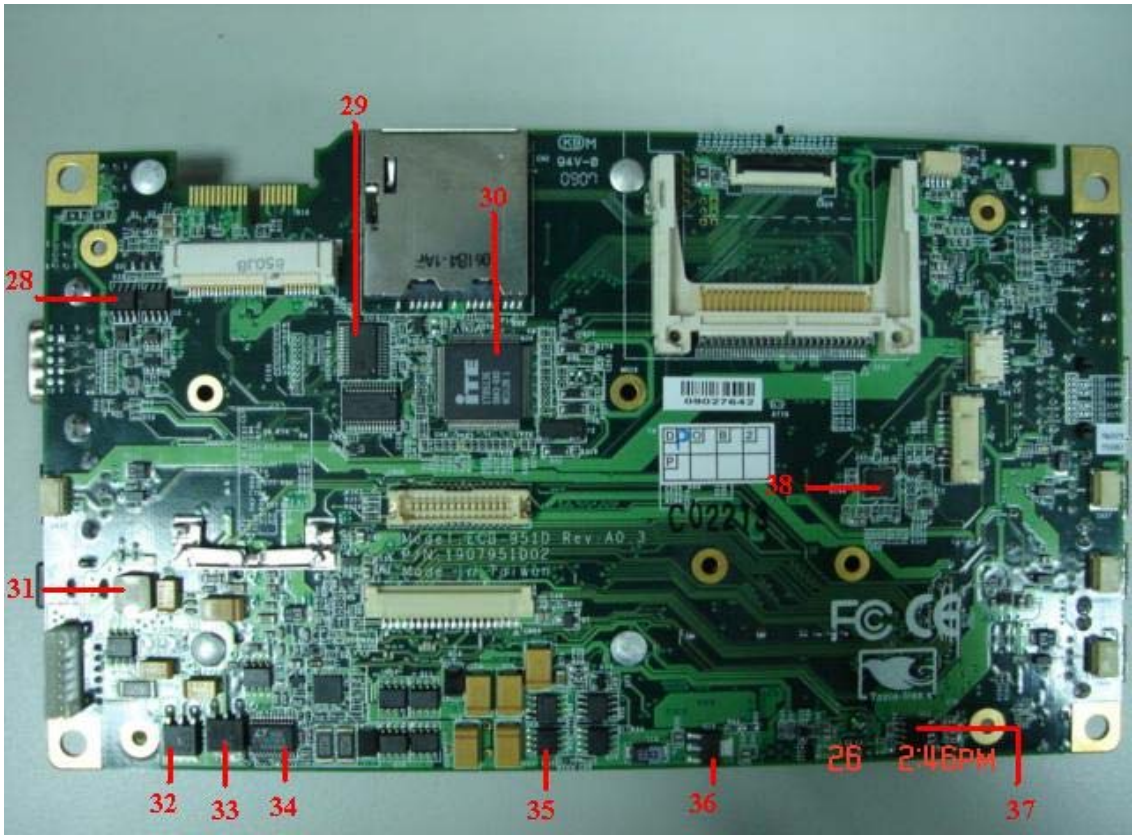
Component Side-2:



Frontside picture



Backside picture

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Point	Position	Describe	Tc (℃)	Tm (25.6 ℃)	Tm (60℃)	Note
21	L5	(TF)COIL.10uH.20%.DCR=21.6mOhm.Idc=5.4A.12x12x8mm.SMD.GOTREND.GSDRH-127-P-T-100M;EE-A080892;121110100R;TWN	105	44.8	79.2	
22	L4	(TF)COIL.3.3uH.SMD.13.8*12.8*5.0mm.DCR=7.7mohm.Irms=15Amp.GOTREND.GSTC135P-3R3MF;EE-A070362;121110336H;TWN	155	64.2	98.6	
23	L6	(TF)COIL.3.3uH.SMD.7.3*6.8*3.0mm.DCR=28mohm.Irms=6Amp.GOTREND.GSTC063P-3R3MN;EE-A061509;121110336L;TWN	155	46.8	81.2	
24	U18	(TF)IC.SMD.LQFP 48P.7.1+2 Channel High Definition.Audio Codec.REALTEK.ALC888-GR;EE-A071056;14S3088800;TWN	100	48.2	82.6	
25	Q33	(TF)PWR.SMD.SO-8.N-Channel.30V.10A.13.5mΩ.MOSFET.APEC.AP4410GM;EE-A030505;1315441012;TWN	125	49.7	84.1	
26	Q32	(TF)PWR.SMD.SO-8.N-Channel.30V.10A.13.5mΩ.MOSFET.APEC.AP4410GM;EE-A030505;1315441012;TWN	125	43.5	77.9	
27	U27	(TF)IC.SMD.SOIC8P.UltraLowDropoutRegulator.APEC.APU1150M;EE-A070999;14S3115001;TWN	125	42.3	76.7	
28	U1	(TF)IC.SMD.SO8.RS-485Transceiver.Analog.ADM3485EARZ;EE-A081441;14S4348500;TWN	115	39.0	73.4	
29	U26	(TF)IC.SMDSSOP28P.2.7Vto3.6V.RS232TransceiversESD15KV.ANALOGDEVICES.ADM3311EARSZ;EE-A081491;14S4331101;TWN	115	38.0	72.4	
30	U46	(TF)IC.SMD.LQFP.128L.EmbeddedController.ITE.IT8513E-L;EE-A081479;14S4851300;TWN	125	41.0	75.4	
31	Q10	(TF)PWR.SMDSO-8.P-ChannelMOSFET.Vgs=-4.5V/-10V.Ids=-20A.Rds=6.5m/4.6m.Vds=-30V.FAIRCHILD.FDS6681Z;EE-A080956;1315066810;TWN	125	42.7	77.1	
32	Q14	(TF)PWR.SMD.TO-252.P-ChannelPowerMosfet.FAIRCHILD.FDD6685;EE-A071802;1315668510;TWN	150	40.5	74.9	
33	Q15	(TF)PWR.SMD.TO-252(DPAK).N-Channel.30V MOSFET.ON Semiconductor.NTD4810NT4G;EE-A081201;1315481011;TWN	150	45.8	80.2	
34	U14	(TF)IC.SMD.SSOP 24P.Battery Charger Controller.Linear Technology.LTC4100EG#PBF;EE-A080540;14S2410000;TWN	100	47.2	81.6	
35	Q17	(TF)PWR.SMD.SO-8.N-Channel.30V.10A.13.5mΩ.MOSFET.APEC.AP4410GM;EE-A030505;1315441012;TWN	125	57.1	91.5	
36	U15	(TF)REG.SMDSOT223.1AAdjustableLinearRegulator.ANPEC.APL1117-VC-TRL;EE-A060717;131411171C;TWN	125	41.3	75.7	
37	U13	(TF)IC.SO8SMD.VoltageDetecting.SystemResettingIC.MITSUBISHI.M51957A;EE-A060753;14S4195710;TWN	---	32.9	67.3	
38	U52	(TF)IC.SMD.QFN28Pin.USBI/FTouchController.PenMount.PenMount 6000/Firmware 3.0.0;EE-A090188;14S4600003;TWN	105	34.1	68.5	

3. Tm (Measured operation temperature) must be less than Tc (Specified case temperature) +5 degree C
4. Any Tm value showed in red words which meaning the value is over the Tc+ 5 degree C of this device specification

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