Report NO: 10E080013

GENE-1350

Thermal Image Analysis Report

Summary	☐ Pass ☐ Fail ☑ Pass with Deviation Comment: Please refer to page 6 U22/U18 temperature margin

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date	Approval	Test Engineer
2010/09/08	Jansin Lee	Mike Lee

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Sample Configuration & Quantity Under Test

- **PCB Board: GENE-1350 Rev A0.3**
- **Carrier Board: N/A**
- **CPU: TI OMAP 3530**
- **Memory: Onboard 128 MB DDR RAM**
- **HDD: N/A**
- **BIOS : N/A**
- **Test Software: Windows CE 6.0 / Run.WMV**
- **DC Adapter: FSP 12V(FSP036-1AD101C)**
- **Cooler: N/A**

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Thermal Image Analysis

1. Test Date: 09/08/2010

2. Test Product: GENE-1350 Rev A0.3

3. Test Site: AAEON QA Internal Lab.

4. Temperature Measurement:
   1. GRAPHTEC midi LOGGER TYPE - GL200
   2. IR Scanner: Infrared Camera
      NIPPON AVIONICS CO., LTD.
      Model: TVS-100
      Date of Calibration: 09/17/09
      Serial Number: 0179L2746

5. Test Condition:
   Component Side-1 (Test by GL200): 23.6℃ With cooer
   Component Side-2 (Test by GL200): 24.6℃ With cooler

6. Test Software:
   Windows CE 6.0 / Run.WMV

7. Take Picture Time:
   After power on 2 hours

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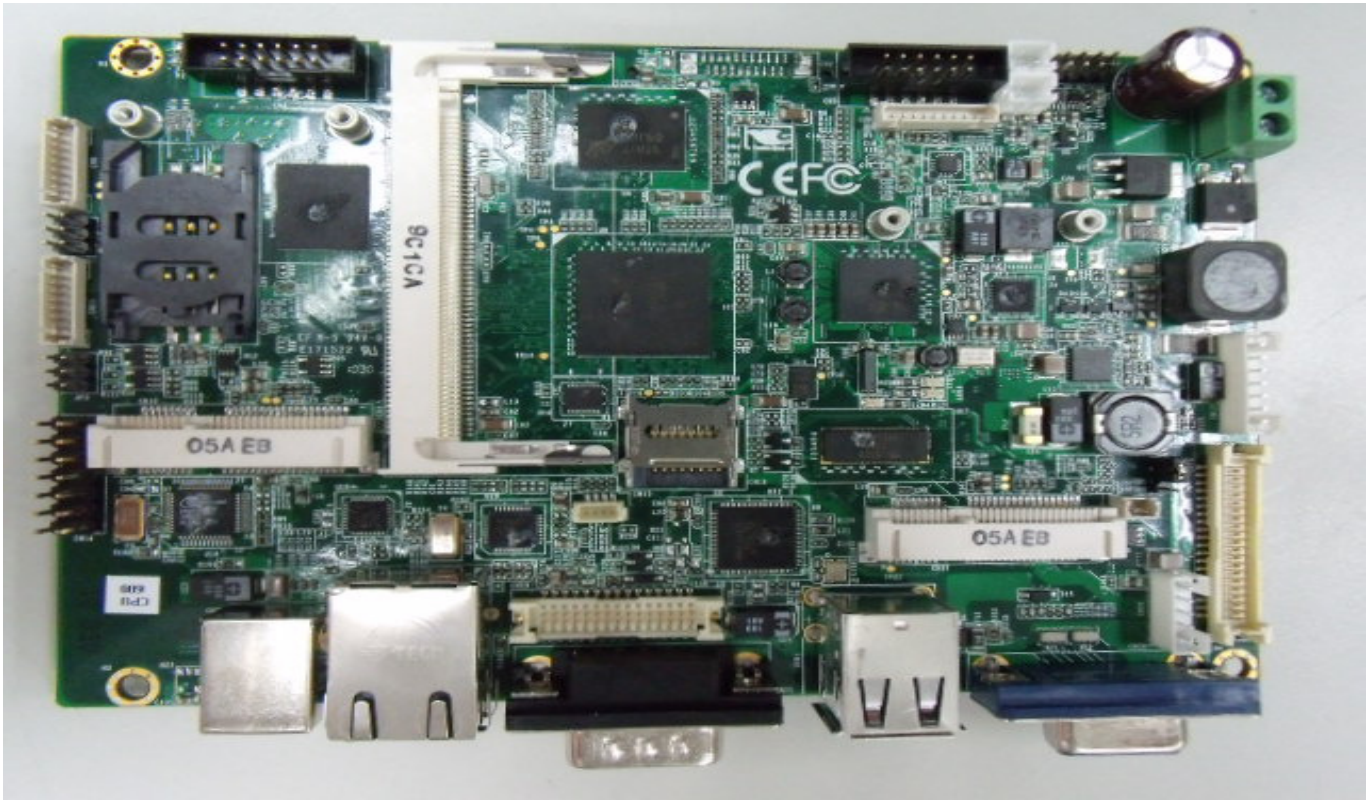
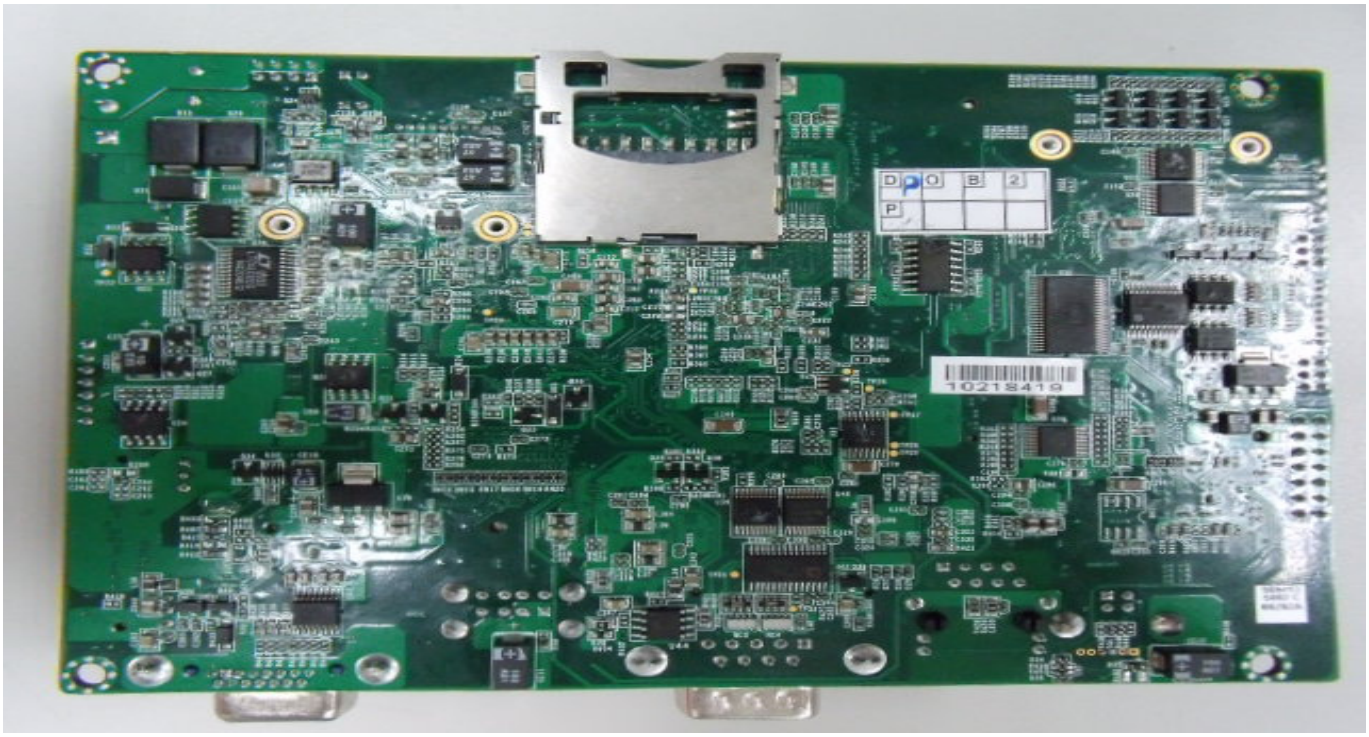
Temperature Profile Test:





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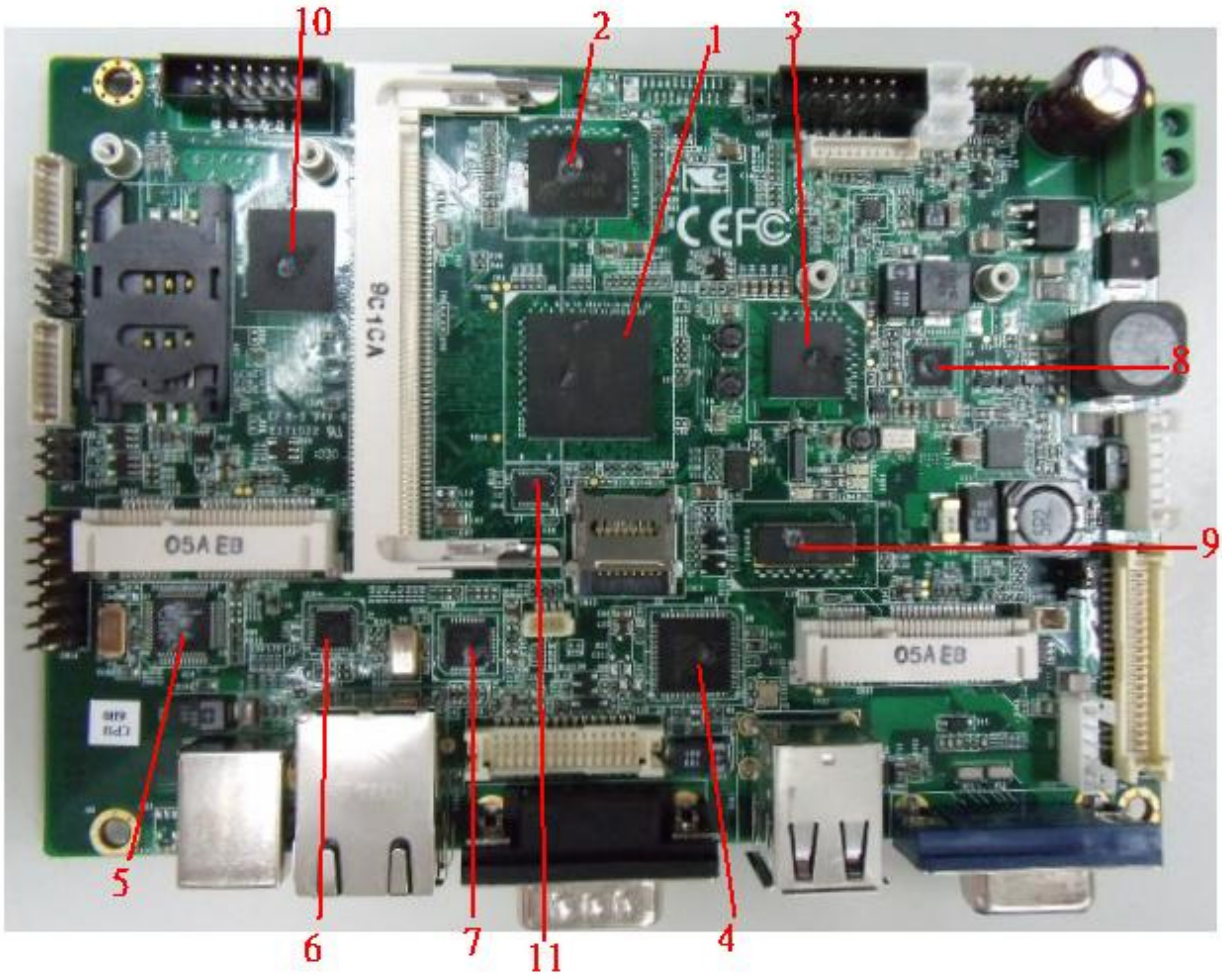
Component Side-1: (GL200 with Point 1~11)



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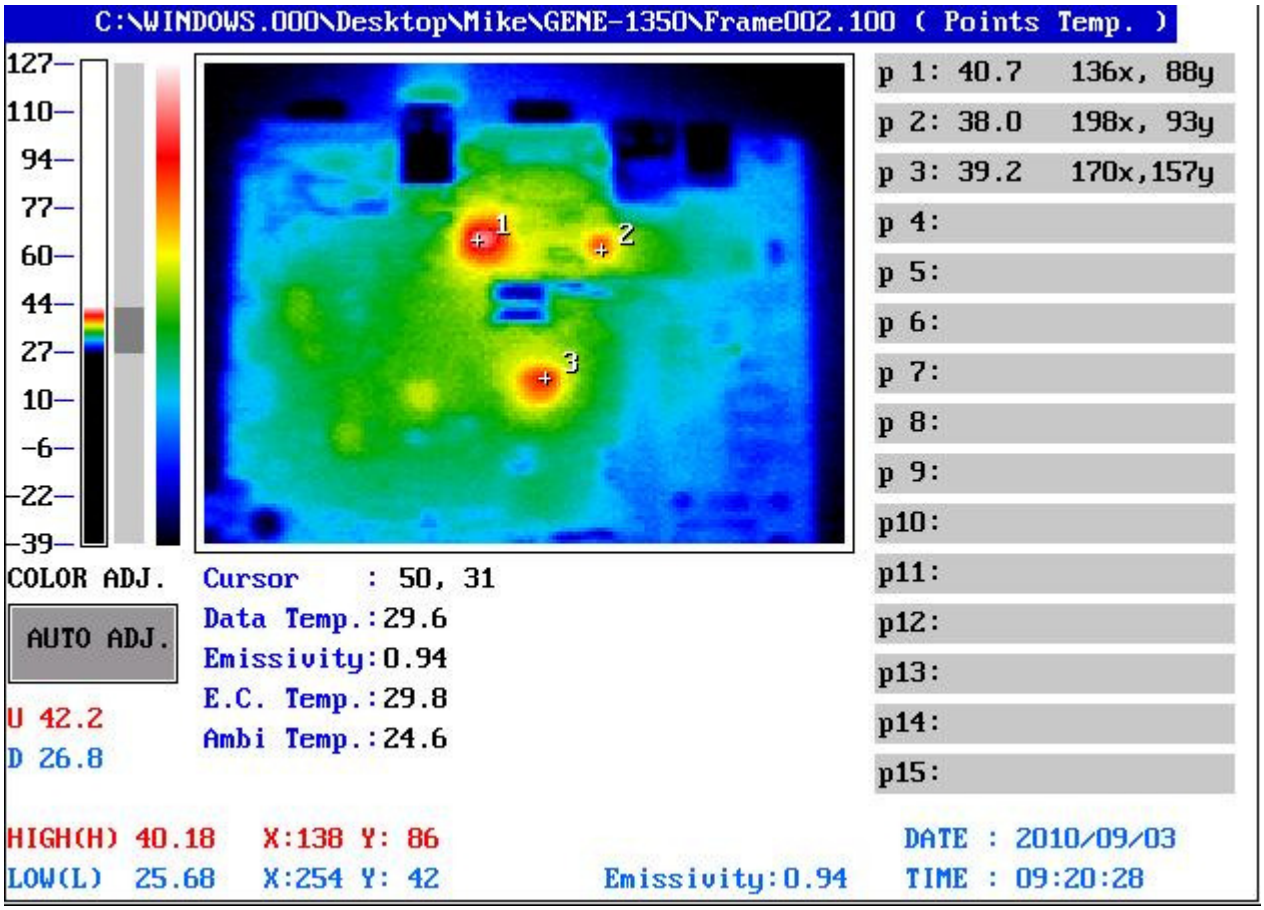

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				23.6℃	70℃	
1	U9	(TF)IC.SMD PBGA 423Pin.RISC Processor.600MHz.TI.OMAP3530DCUS	100	40.2	86.6	
2	U4	(TF)IC.SMD.BGA.90Pin.LPDDR-SDRAM.32Mx32bits.166MHz.1.8 V.Elpida.EDD10323BBH-6ELS-F	100	37.5	83.9	
3	U7	(TF)IC.SMD PBGA 139Pin.Integrated Power Management.With Audio Codec.TI.TPS65930BZCH	100	40.5	86.9	
4	U22	(TF)IC.SMD QFN.88P.HDTV/VGA/LVDS Encoder.CHRONTEL.CH7034 A-BFI	100	44.8	91.2	
5	U18	(TF)IC.LQFP 48P.Non PCI Ethernet CHIP.DAVICOM.DM9000AEP	85	34.1	80.5	
6	U19	(TF)IC.SMD.QFN 32P.ULPI Hi-Speed.USB OTG Transceiver.SMSC.USB3320C-EZK	100	36.7	83.1	
7	U20	(TF)IC.SMD QFN 36Pin.USB Hub controller.SMSC.USB2514I-AEZG	100	41.1	87.5	
8	U8	(TF)IC.SMD.MLPQ-32P 5*5.Single Phase DC-DC Converter.with Programmable LDO.Semtech.SC417MLTRT	100	37.8	84.2	
9	U17	(TF)IC.SMD.LFBGA96.TI.SN74AVC32T245ZKER	100	38.2	84.6	
10	U6	(TF)IC.SMD.VFBGA.63ball.NAND-FLASH.MICRON.MT29F2G16A BDHC-ET	----	33.8	80.2	
11	U16	(TF)IC.SMD QFN 20Pin.8 Bit Voltage-Level Translator.TI.TXS0108ERGYR	100	39.5	85.9	

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Note(*):
1. "Tc" indicates the component's case maximum temperature value specified in its datasheet.
2. "Tm" indicates the measured Tc value under working environmental temperature within product specification.
3. Judgment Criteria:
- **Fail** : Tm > Tc+5℃; The measured value is over specification plus margin.
- **Margin** : Tc+5℃ > Tm > Tc-10℃; The measured value is within specification with margin. For FANLESS system application, it is strongly recommended to add thermal dissipation design for better reliability.
- **Pass** : Tm < Tc-10℃; The measured value is with safety margin.

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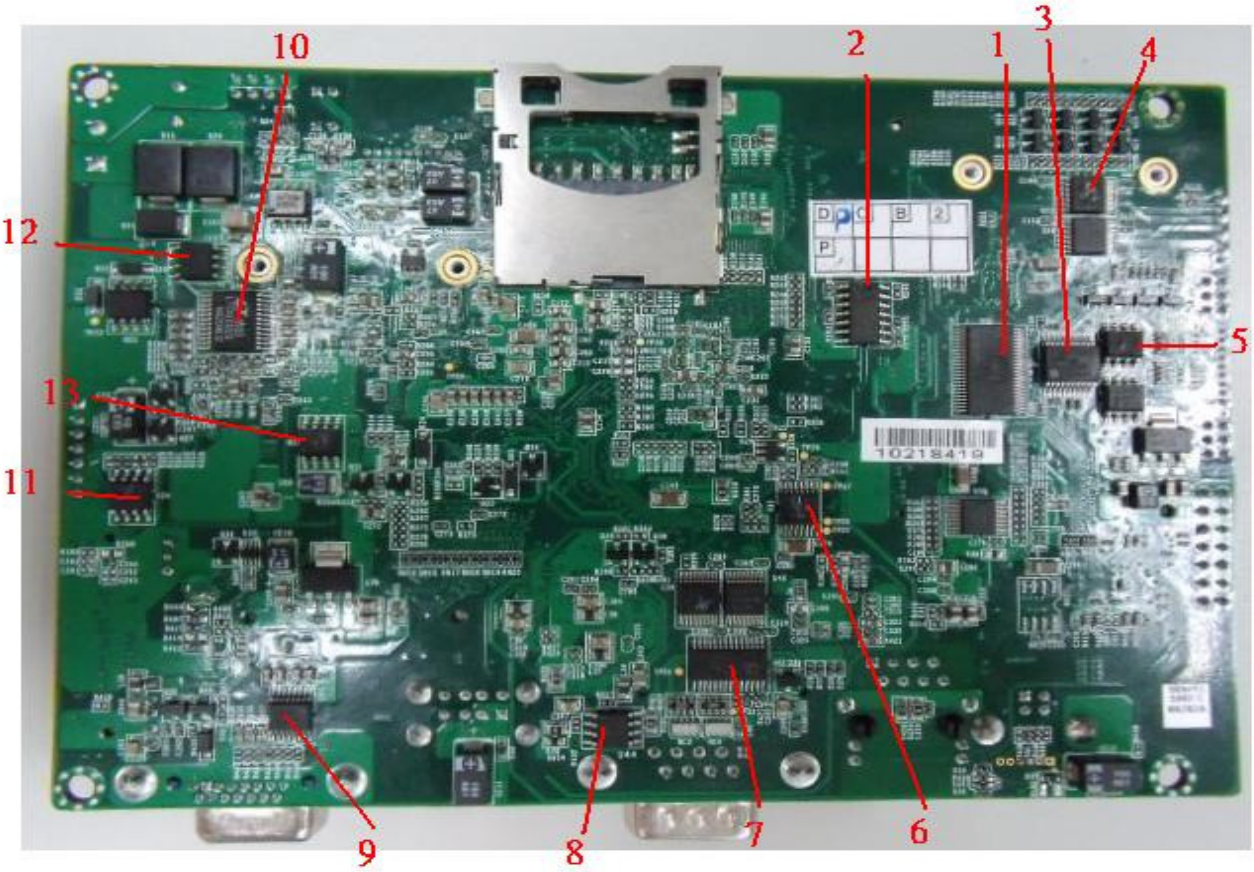
Component Side-2: (GL200 with Point 1~13)



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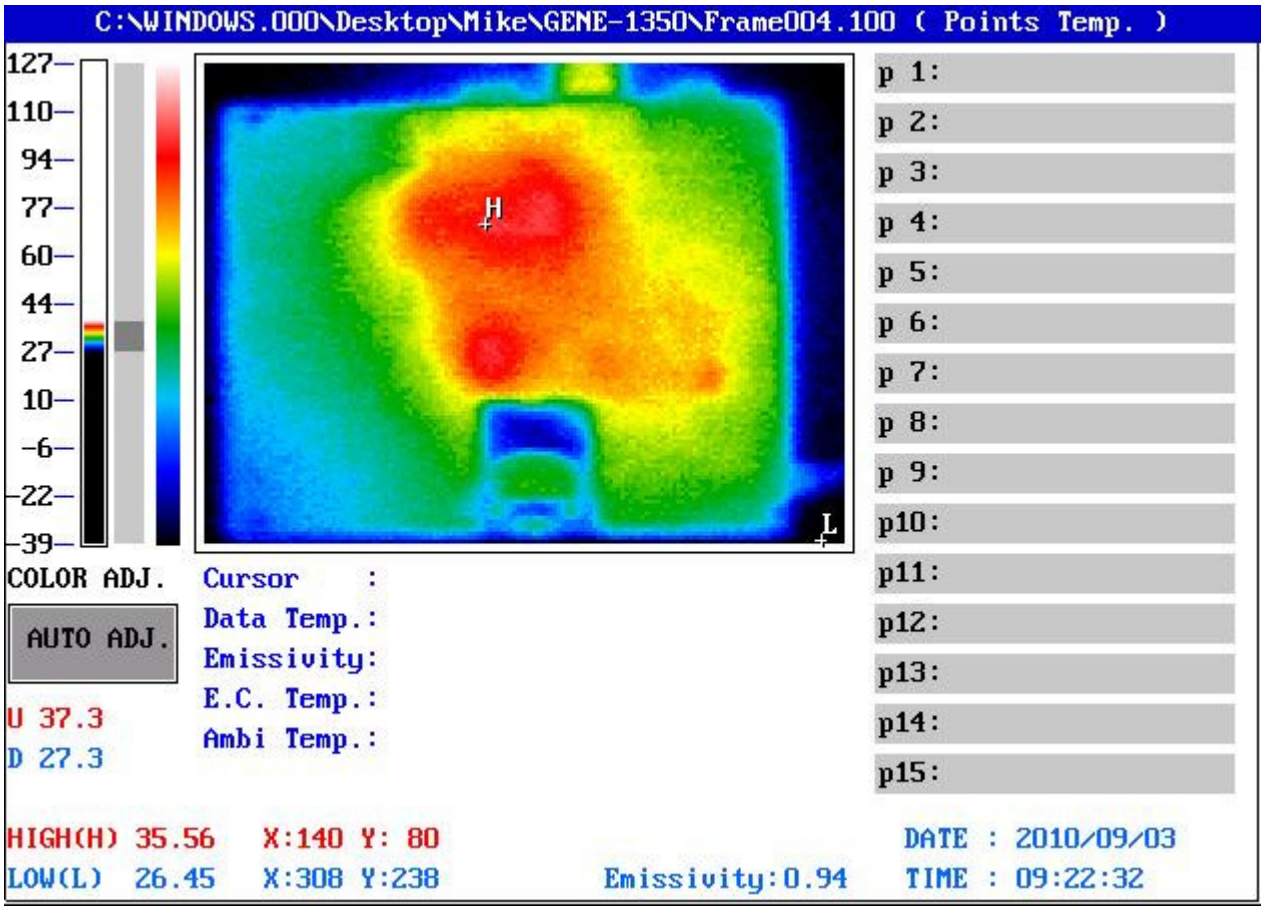

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				24.6℃	70℃	
1	U31	(TF)IC.SMD.TSSOP 48P.TI.SN74AVC16T245DGGR	100	34.2	79.6	
2	U27	(TF)IC.SMD SO.14Pin.PHILIPS.74LVC07AD-T	140	34.1	79.5	
3	U30	(TF)IC.SMD.SSOP20.RS232 Transceivers.460Kbits.ANALOG DEVICES.ADM3222ARSZ	100	33.4	78.8	
4	U25	(TF)IC.SMD.TSSOP 24P.TI.SN74AVC8T245DGVR	100	31.9	77.3	
5	U29	(TF)IC.SMD.SO8.RS-485 Transceiver.Analog.ADM485ARZ	100	32.1	77.5	
6	U35	(TF)IC.SMD TSSOP 16Pin.Touch Screen Controller.TI.TSC2046IPWR	100	36.2	81.6	
7	U42	(TF)IC.SMD TSSOP 28P.2.7V to 3.6V.RS232 Transceivers ESD 15KV.ANALOG DEVICES.ADM3311EARUZ	100	39.1	84.5	
8	U44	(TF)IC.SMD SOIC 8P.Dual USB PowerControl Switch.MICREL.MIC2026-1YM	100	36.0	81.4	
9	U43	(TF)IC.SMD.QSOP 16P.VGA ESD Protection Array.CMD.CM2009-02QR	100	32.6	78.0	
10	U28	(TF)IC.SMD.SSOP 24P.Battery Charger Controller.Linear Technology.LTC4100EG#PBF	100	34.4	79.8	
11	U34	(TF)IC EEPROM.SMD SOIC8 8P.32K bit.Microchip.24LC32AT-I/SN-G	100	33.1	78.5	

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12	Q20	(TF)PWR.SMD SO-8.P-Channel MOSFET.Vgs=-4.5V/-10V.Ids=-20A.Rds=6.5m/4.6m.Vds=-30V.FAIRCHILD.FDS6681Z	125	33.4	78.8	
13	Q28	(TF)PWR.SMD.SO-8P.P-Channel MOSFET.APEC.AP6679GM-HF	125	31.9	77.3	

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