

UPCP-CR-VPX

Intel Atom E3940

Thermal Image Analysis Report

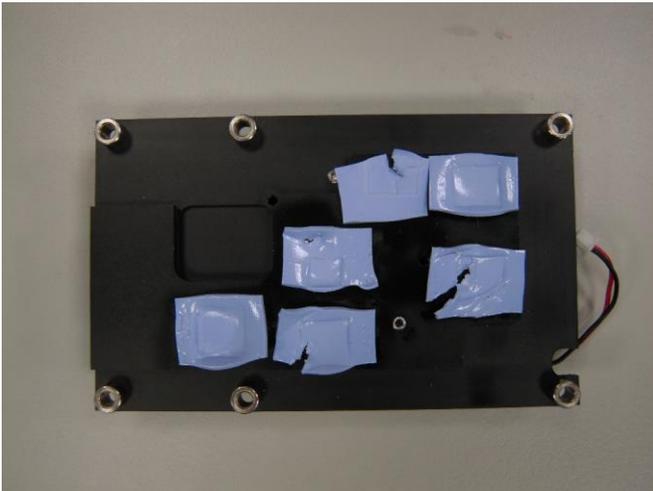
Summary	<input type="checkbox"/> Pass <input type="checkbox"/> Fail Note: There is/are ____ defect(s) not list in the report, please check it in the DTS Website. <input checked="" type="checkbox"/> Pass with Deviation Comment: 1. <u>There is 1 temperature point marginal passed but function is stable.</u> 2. <u>There are 5 component in the absence of Tc and Tj specification, so we are unable to determine.</u>
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Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	2
Defect Unsolved	0	0	0	2

Issue date	Supervisor	Test Engineer
2019 / 07 / 18	Louie Lee	Clement Chien

Sample Configuration & Quantity Under Test

- **Model name : UPCP-CR-VPX / A1.0**
- **CPU : Intel Atom E3940 @1.60GHz**
- **Memory : Samsung K4F8E304HB-MGCJ / LPDDR4 1GB x 2pcs**
- **Storage : IC.eMMC 5.1 / Flash.32GBSandisk.SDINBDA4-32G-V**
- **BIOS : UPCPSM10**
- **Test Software : Ubuntu 16.04 LTS / Run PassMark Burn In Test 3.2 for Lunix**
- **Power: PS1065-120IB500 12V / 5A / 60W**
- **CPU Cooler :**



Thermal Image Analysis

1. Test Date: 2019-07-08

2. Test Product: UPCP-CR-VPX A1.0

3. Test Site: AAEON QE Dept.

4. Temperature Measurement:

4.1. 40 Channel Thermal Recorder:

4.1.1 YOKOGAWA Inc,

4.1.2 Model: DA100-13-1D

Date of Calibration: 09/07/18

Dute Date of Calibration: 09/06/19

Serial Number: 12A323190

4.2. IR Scanner: Infrared Camera

4.2.1 NEC Avio Infrared Technologies Co., Ltd.

4.2.2 Model: Thermo GEAR G100W2-D

Date of Calibration: 11/06/18

Dute Date of Calibration: 11/05/19

Serial Number: 1051444

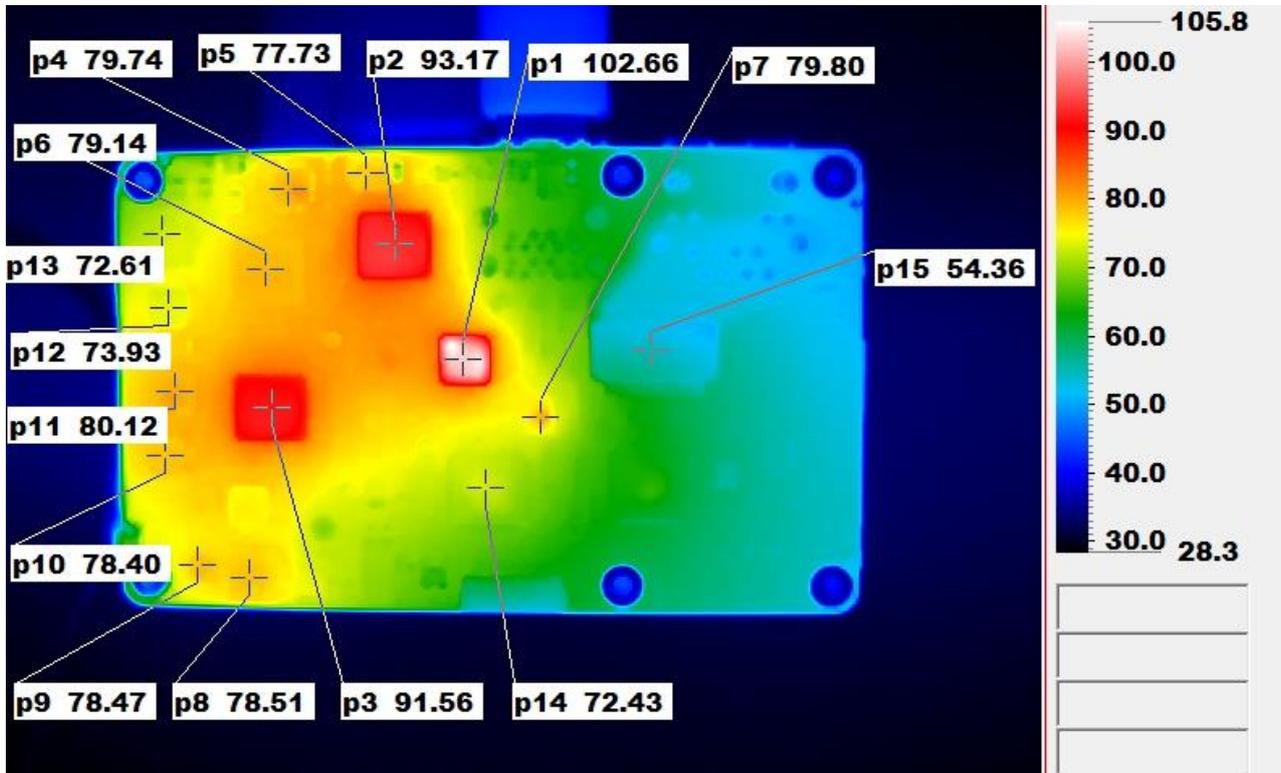
5. Test Condition:

Test by DA-100: 25.0°C with Heat Sink + Fan (Full Speed)

6. Take Picture Time:

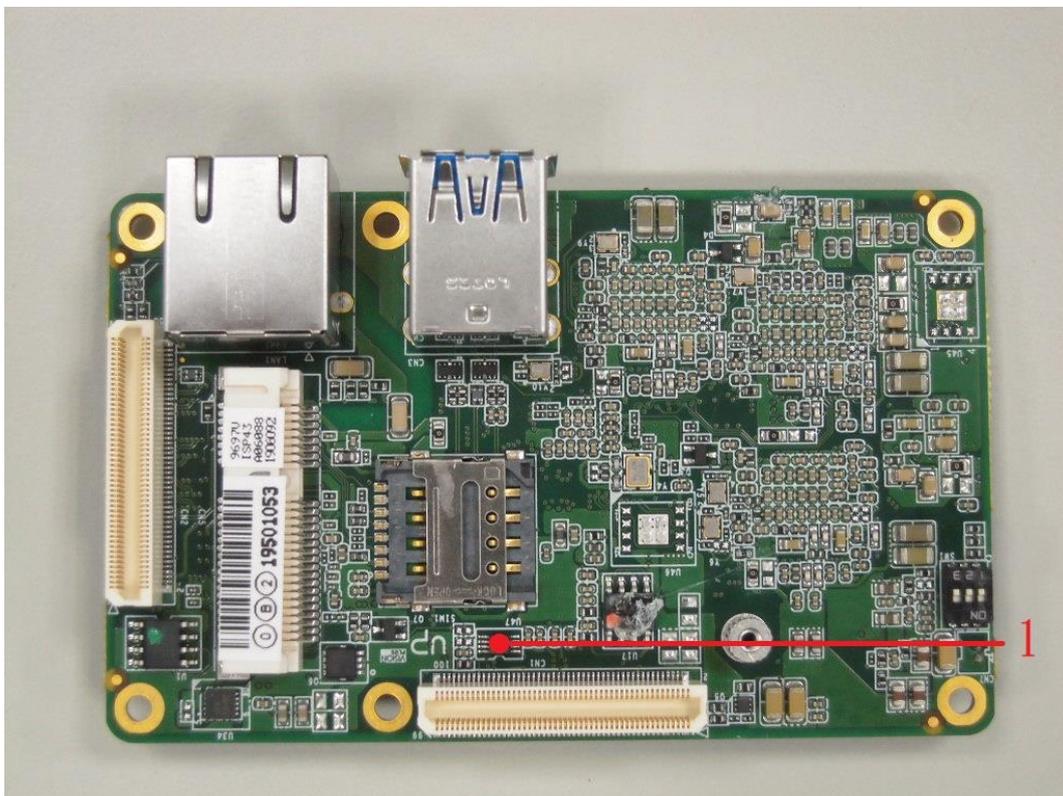
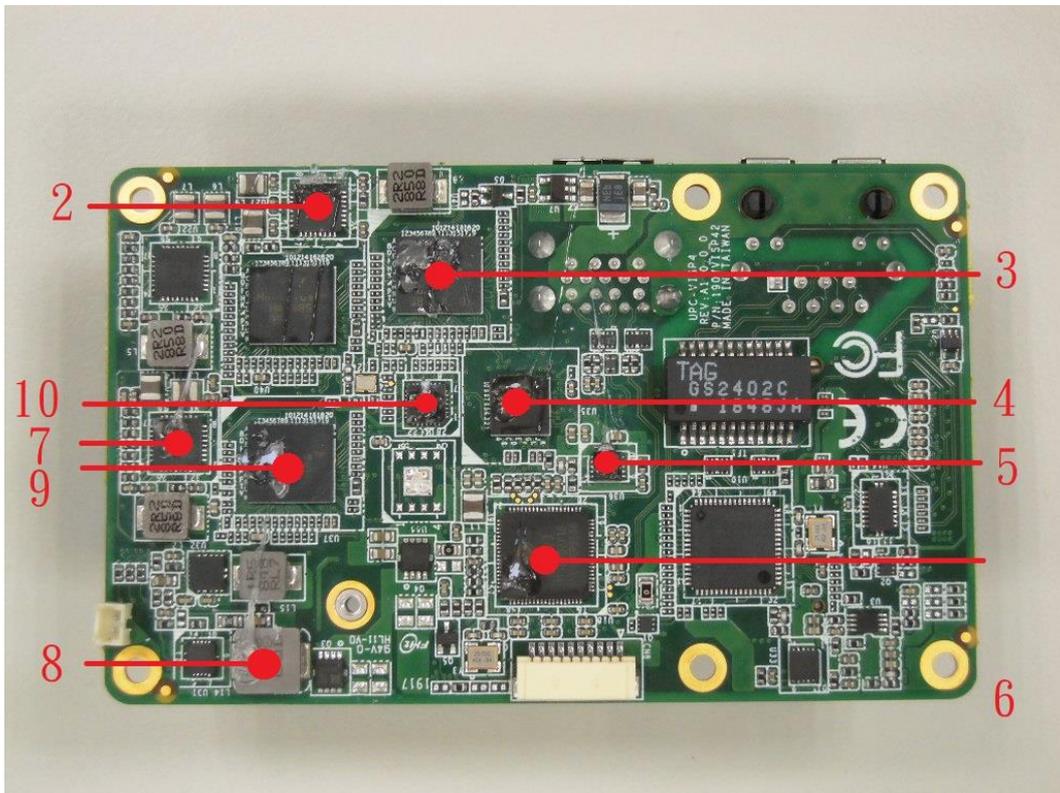
After power on 2 hours

Temperature Profile Test:
Component Side:



Terminal Recorder:

Measuring Thermal Couple Position :



Using YOKOGAWA / DA100-13-1D test

Point	Position	Describe	Tc (*1) (°C)	TAT(*2)		TPT(*3)	Note
				25°C	60°C		
1	U47	(TF)IC.VSSOP 8P.SMD.TI.PCA9306DCUR	N/A	59.4	94.4		
2	U27	(TF)Triple Synchronous.Step-DownConverter.	125	79.2	114.2		
3	U41	(TF)CHIPSET.VPU.MyriadX.VFBGA Movidius.MA2485-ES	125	61.2	96.2		
4	U35	(TF)PCIE to 2 port USB3.0.Host Controller.	N/A	60.8	95.8		
5	U36	(TF)ULDO Regulator RICHTEK.RT9059GQW	125	54.8	89.8		
6	U18	(TF)USB 3.1 HUB Controller.GL3523-OTY10	N/A	51.9	86.9		
7	U19	(TF)Triple Synchronous.Step-Down Converter	125	80.4	115.4		Note4
8	L14	(TF)COIL.3.3uH.Idc=6.5A.CYNTEC.PCMB063T-3R3MS	N/A	66.3	101.3		
9	U37	(TF)CHIPSET.VPU.MyriadX.Movidius.MA2485-ES	125	62.3	97.3		
10	U43	(TF)USB to GPIO.Host Controller.	N/A	69.0	104		

Note(*):

1. "Tc" indicates the component's case maximum temperature value specified in its datasheet.
2. "TAT" indicates the actual measured temperature under product specification.
3. "TPT" indicates the predicted temperature under 25°C working environmental.
4. Judgment Criteria:
 - Fail : $T_m > T_c + 5^\circ\text{C}$; The measured value is over specification plus margin.
 - Margin : $T_c + 5^\circ\text{C} > T_m > T_c - 10^\circ\text{C}$; 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 : $T_m < T_c - 10^\circ\text{C}$; The measured value is with safety margin.
5. RTC battery avoid to put on heat position. Please do not exceed battery temperature specification.

Defect No: [BUL1908D02](#)