

# UPCP-CR-VPX

Intel Atom E3940

## Thermal Image Analysis Report

Summary	<input type="checkbox"/> <b>Pass</b>			
	<input type="checkbox"/> <b>Fail</b> Note: There is/are ____ defect(s) not list in the report, please check it in the DTS Website.			
	<input checked="" type="checkbox"/> <b>Pass with Deviation</b> 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>			
<b>Test Result Summary</b>				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	2
Defect Unsolved	0	0	0	2

Issue date

2019 / 07 / 18

Supervisor

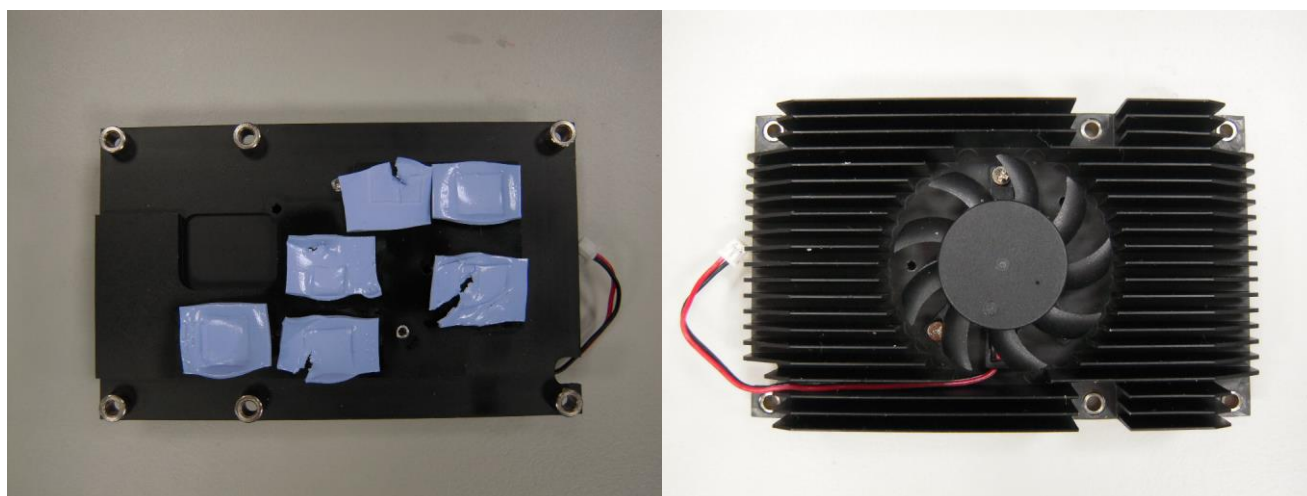
Louie Lee

Test Engineer

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 Linux
- **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

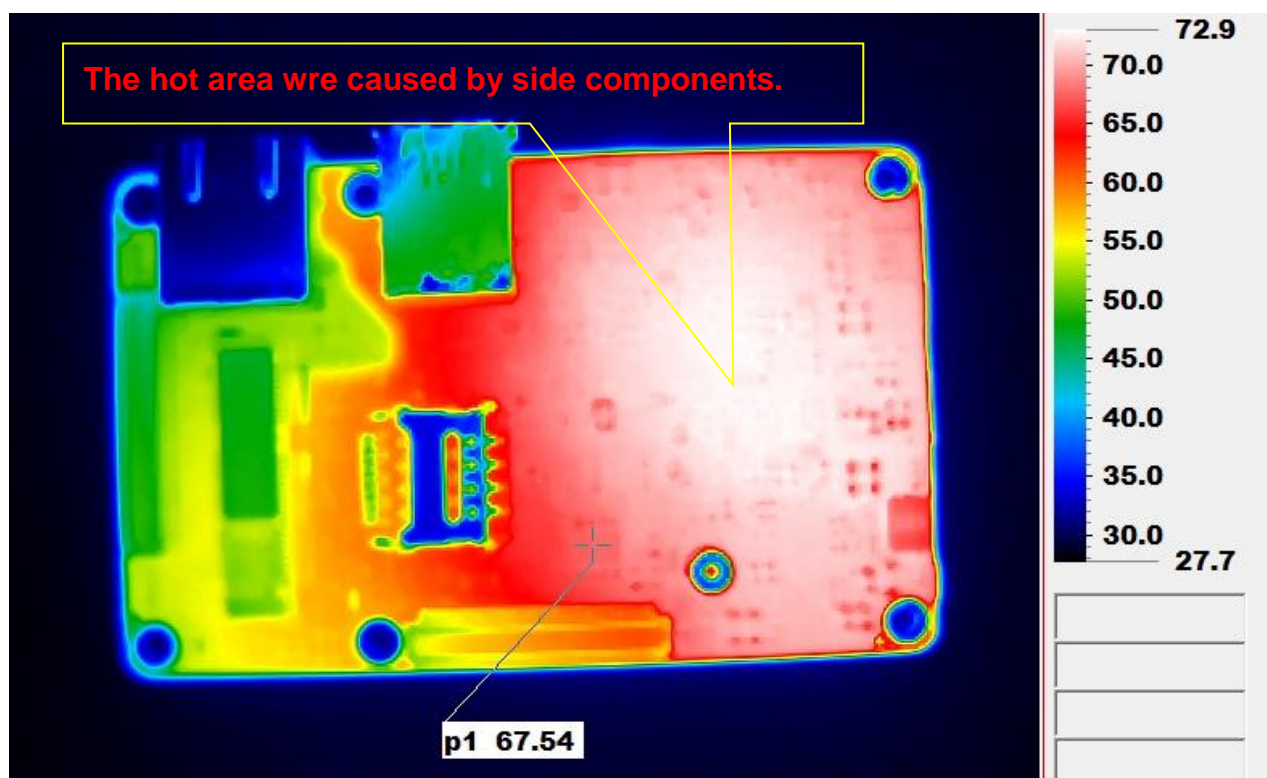
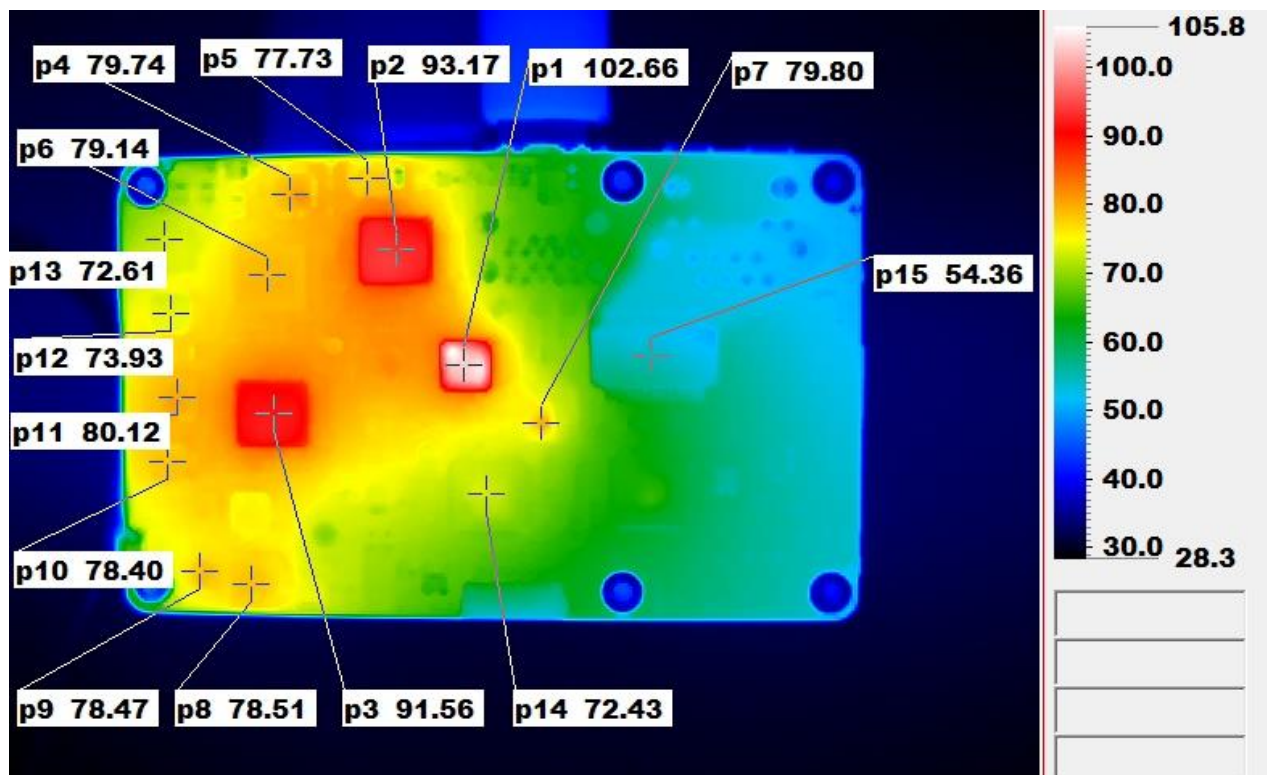
Serial Number: 1051444

5. Test Condition:

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

6. Take Picture Time:

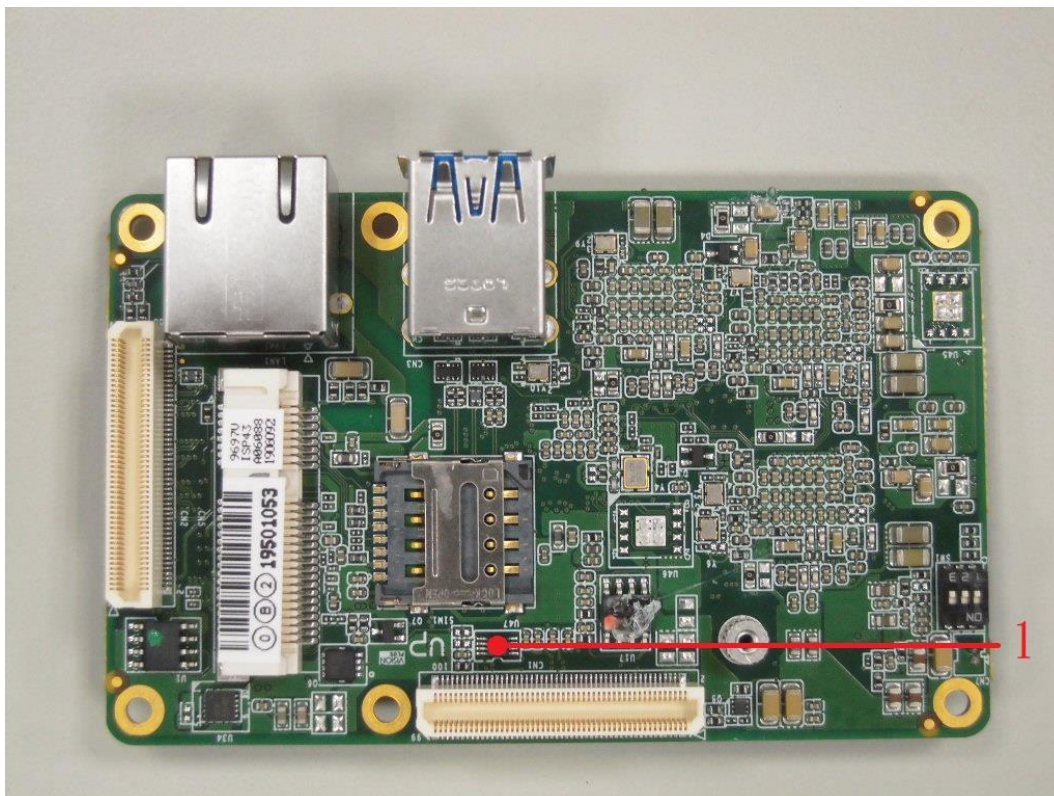
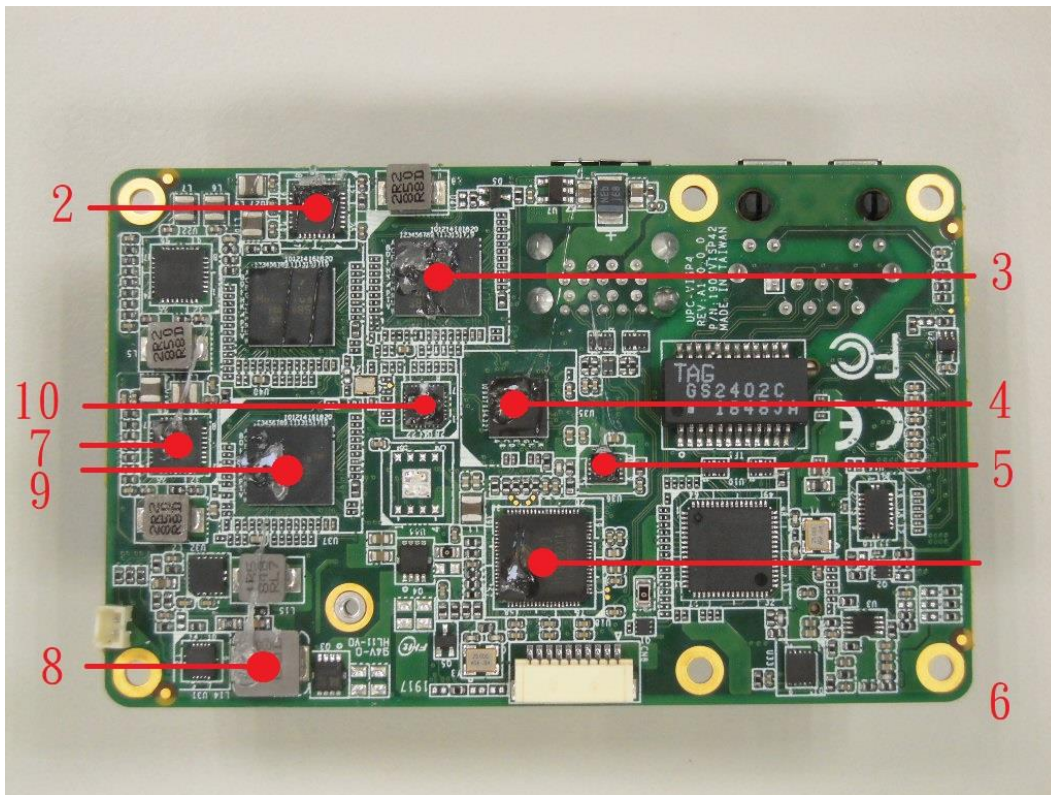
After power on 2 hours

**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](#)