AIOT-MSSP01

Thermal Image Analysis Report

Summary	☑ **Pass** ☐ **Fail** ☐ **Pass with Deviation** **Comment:** _____

Test Result Summary				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	1
Defect Unsolved	0	0	0	1

Issue date	QE Manager	Test Engineer
2017 / 12 / 11	KJ Wang	Ben Sun

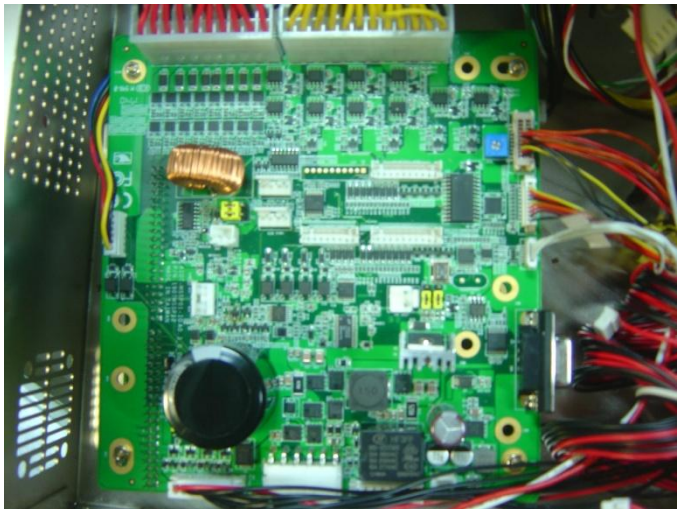
AAEON Technology Inc.
5F, No.135, Lane 235, Pao Chiao Rd.,
Hsin-Tien City, Taipei, Taiwan, R.O.C.
TEL: +886-2-8919-1234
FAX: +886-2-8919-1053

Test Product: AIOT-MSSP01 A1.0

Sample Configuration & Quantity Under Test:

M/B Photo:

AIOT-MSSP01 A0.3



Test System:

1. CPU: Intel N4200 1.1GHz
2. BIOS: UP-APL01 R1.3(UPA1AM13)
3. Chipset: Intel Apollo Lake
4. Memory: 4GB on board
5. Storage: eMMC 32GB on board
6. Test Software: Windows 10 / Run LLAPI Test Suit for Reliability
7. Test Power In: 24V

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Thermal Image Analysis

1. Test Date: 2017-12-06~07

2. Test Product: AIOT-MSSP01 A1.0

3. Test Site: AAEON QE Dept.

4. Temperature Measurement:

4.1. 40 Channel Thermal Recorder:

4.1.1 YOKOGAWA Inc,

4.2.2 Model: DA100-13-1D

Date of Calibration: 2017/09/08

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: 2017/11/23

Serial Number: 1051444

5. Test Condition:

Test by DA-100: 24.8℃ with Heat Sink & Fan

6. Take Picture Time:

After power on 2 hours

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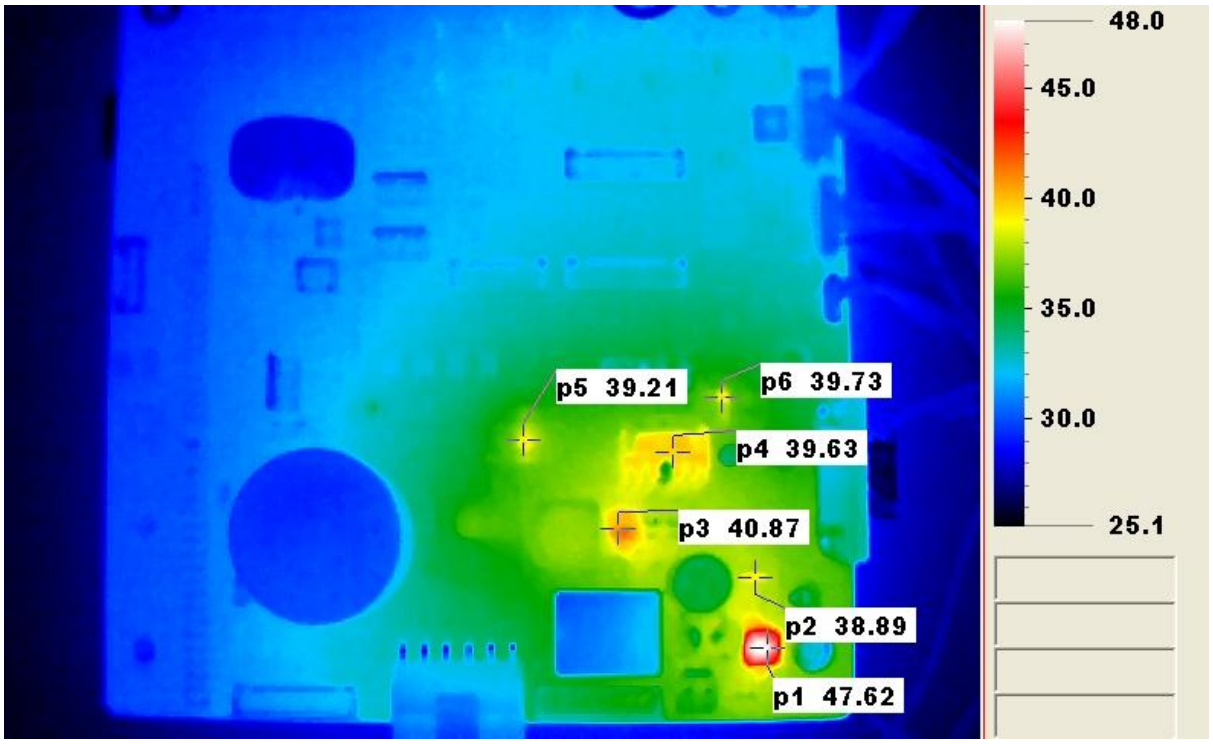
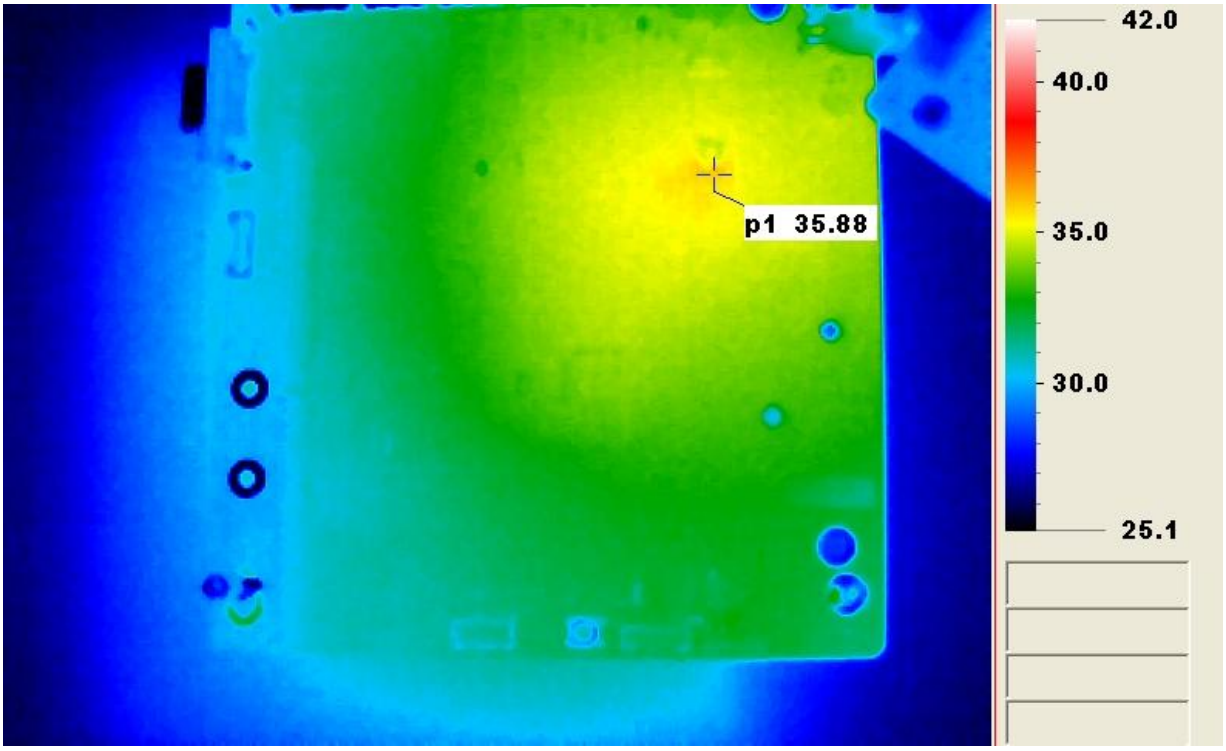
Temperature Profile Test:

Component Side:





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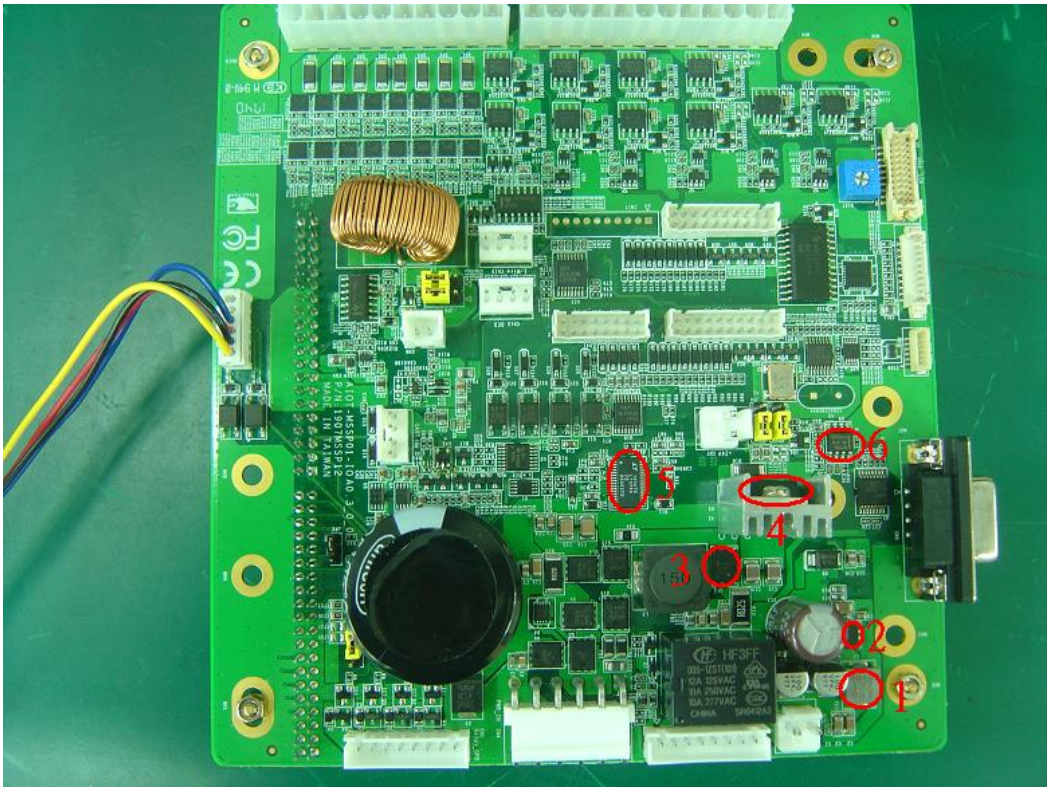
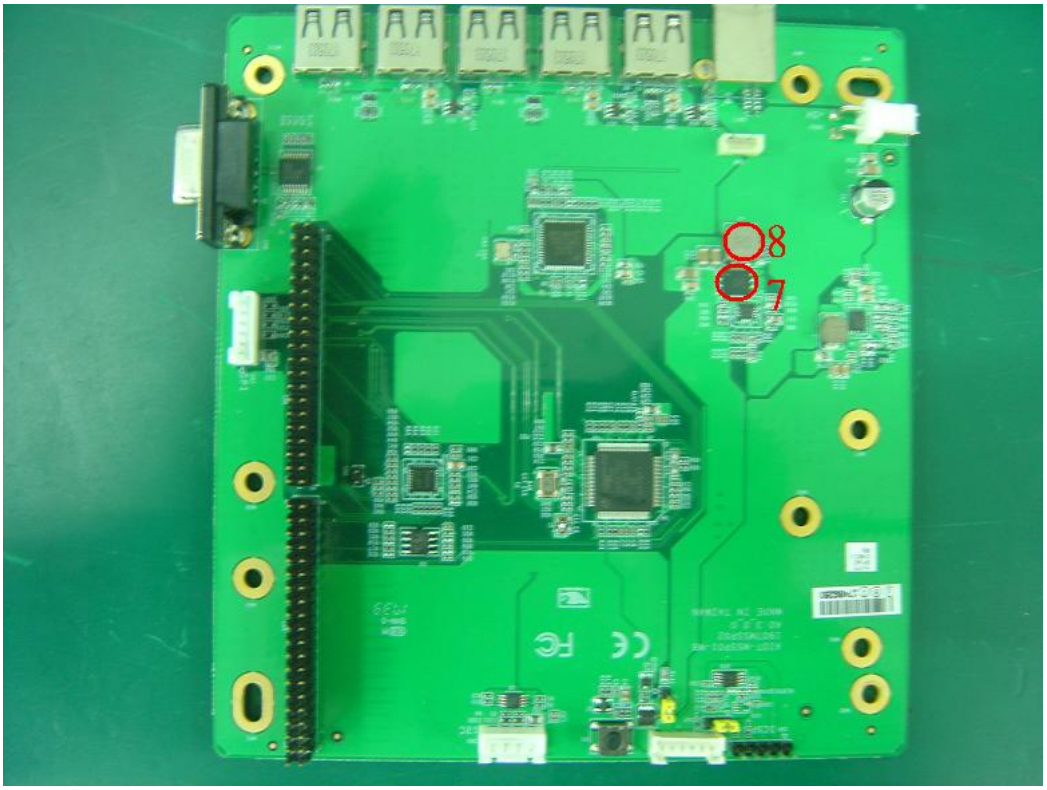
Terminal Recorder:

Measuring Thermal Couple Position：





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Using YOKOGAWA / DARWIN DA100-100-13-1D test

Point	Position	Describe	Tc (*1) (℃)	TAT(*2) 25.0℃	TPT(*3) 60℃	Note
1	L1	(TF)INDUCTOR.10uH.20%.SMD.7.3*6.8* 3mm.CYNTEC PCMB063T-100MS;EE-A121801;1211110062;TWN	125	46.2	81.2	
2	Q7	(TF)PWR.SMD.PMPAK5X6 DUAL N-MOSFET Vgs1/2=(+/-)20V.Id1=10.1A Id2=12A.Vds1/2=30V FAIRCHILD.FDMS7620S;EE-A112028;1315762010;TWN	125	37.4	72.4	
3	Q13	(TF)PWR.SMD.PMPAK5X6 DUAL N-MOSFET Vgs1/2=(+/-)20V Id1=10.1A.Id2=12A.Vds1/2=30V FAIRCHILD.FDMS7620S;EE-A112028;1315762010;TWN	125	39.4	74.4	
4	U6	(TF)IC.LDO.Vin=3~40V.Vout=1.25~37V.TO-220.Iout=1.5A. DIP.TI.LM317KCS	125	39.1	74.1	
5	U7	(TF)IC.60V Synchronous.4-Switch Buck-Boost Controller.TSSOP 38P.SMD.LINEAR.LT3790EFE#TRPBF	100	38.5	73.5	
6	U9	(TF)IC.SMD.8P.Precision Timers.TI.NE555DR	70	35.6	70.6	NOTE4
7	Q1	(TF)PWR.SMD.PMPAK5X6 DUAL N-MOSFET Vgs1/2=(+/-)20V Id1=10.1A.Id2=12A.Vds1/2=30V FAIRCHILD.FDMS7620S;EE-A112028;1315762010;TWN	125	41.3	76.3	
8	L2	(TF)COIL.1uH.DCR=6.7mohm.Idc=14Amp.20%.SMD.7.3*6. 8*3mm.HDTPower.MPC-7066CZ-1R0-M	150	38.2	73.2	

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℃ working environmental.

4. 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.

5. **RTC battery avoid to put on heat position.** Please do not exceed battery temperature specification.

4. Defect NO.

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