

RICO-3288

Thermal Image Analysis Report

Summary	☐ Pass ☐ Fail ☒ Pass with Deviation Comment: <u>There are 8 temperature points marginal passed, the functions are stable.</u>			
	Test Result Summary			
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	8
Defect Unsolved	0	0	0	8

Issue date

2017 / 12 / 12

QE Manager

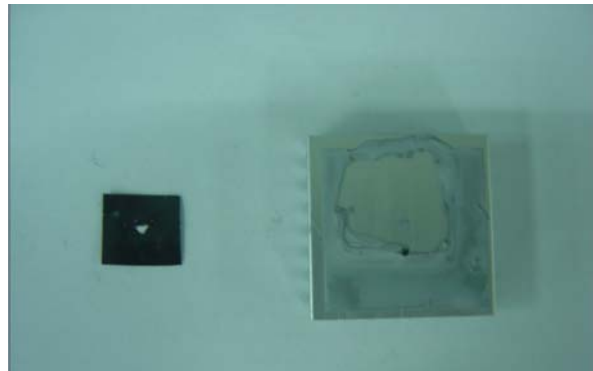
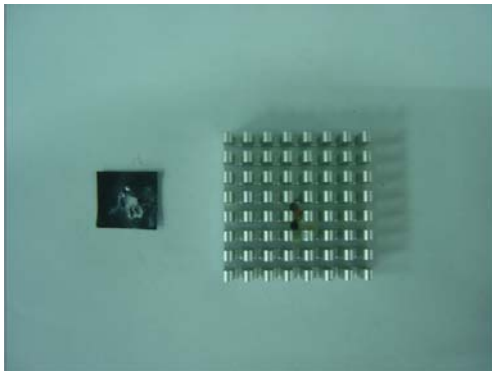
KJ Wang

Test Engineer

Juno Cheng

Sample Configuration & Quantity Under Test

- **Model name : RICO-3288**
- **CPU : Rockchip RK3288 1.6GHz(up to 1.8GHz)**
- **Onboard Memory : NANYA 2GB DDR3L**
- **Onboard eMMC : Hynix 16GB**
- **BIOS : T0.901 (EAPLAT0901)(08/01/2017)**
- **Test Software : Android 6.0.1 / Run Stability Test App V2.7**
- **Power : FSP060-DIBAN2**
- **Heat Sink and Graphene :**



Thermal Image Analysis

1. Test Date: 2017-12-12

2. Test Product: RICO-3288 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: 2016/11/29

Serial Number: 1051444

5. Test Condition:

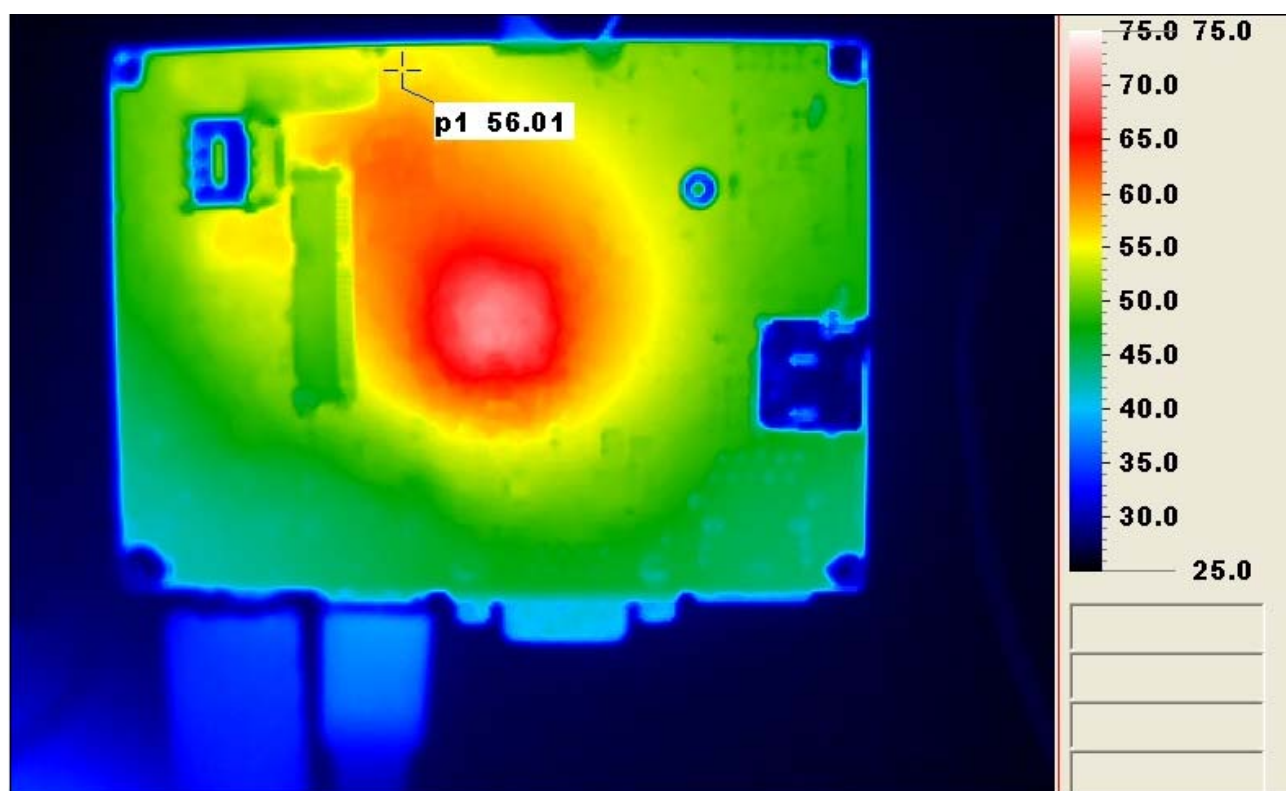
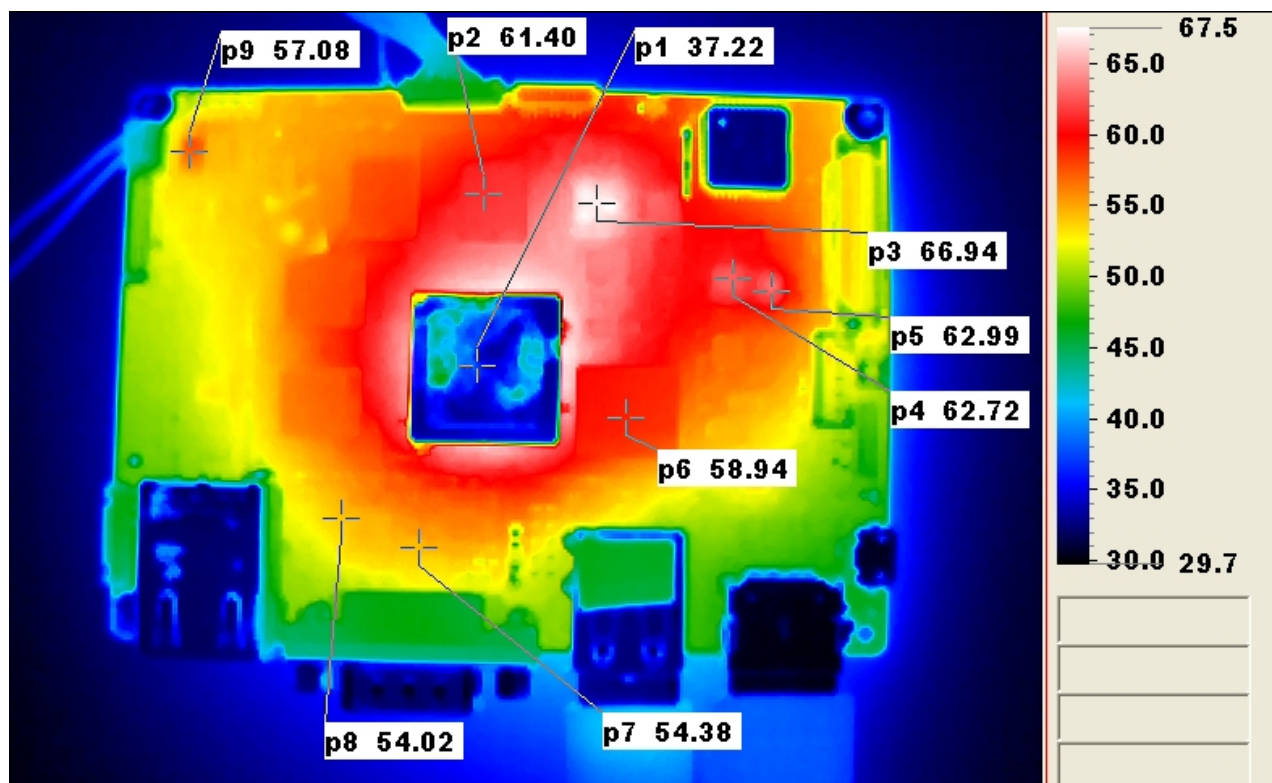
Test by DA-100: 26.0°C with Heat Sink

6. Take Picture Time:

After power on 2 hours

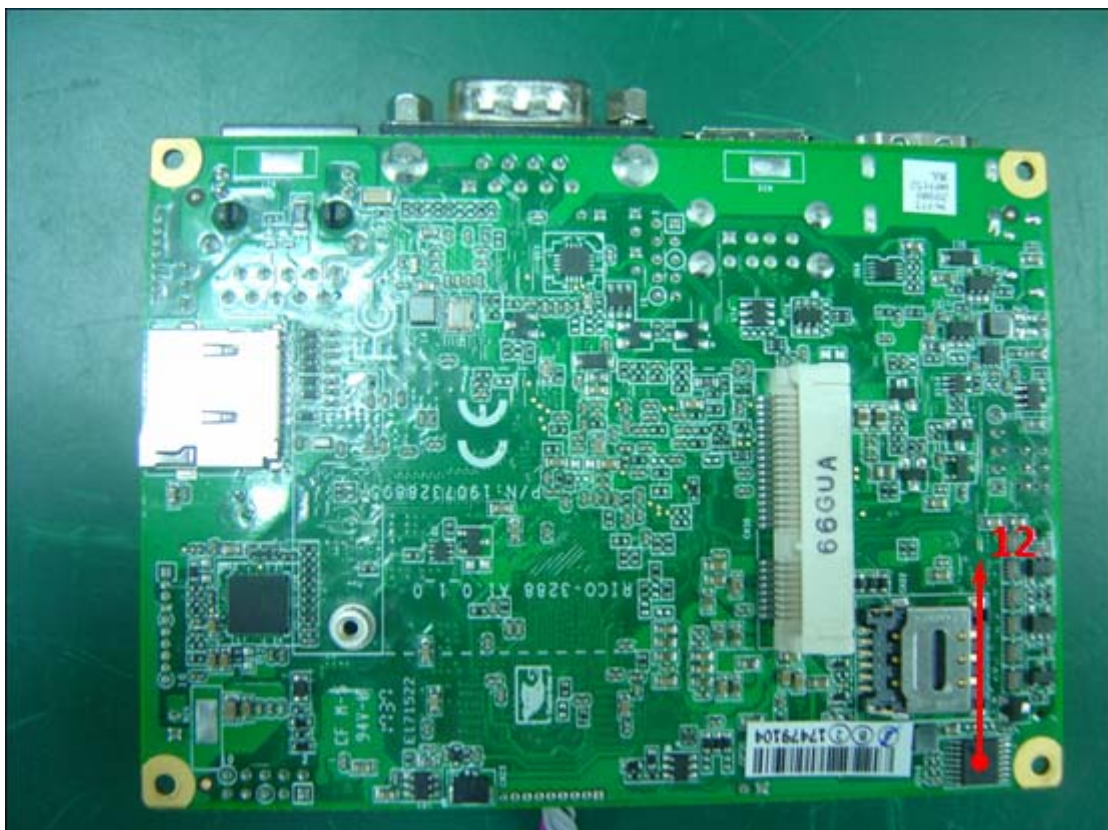
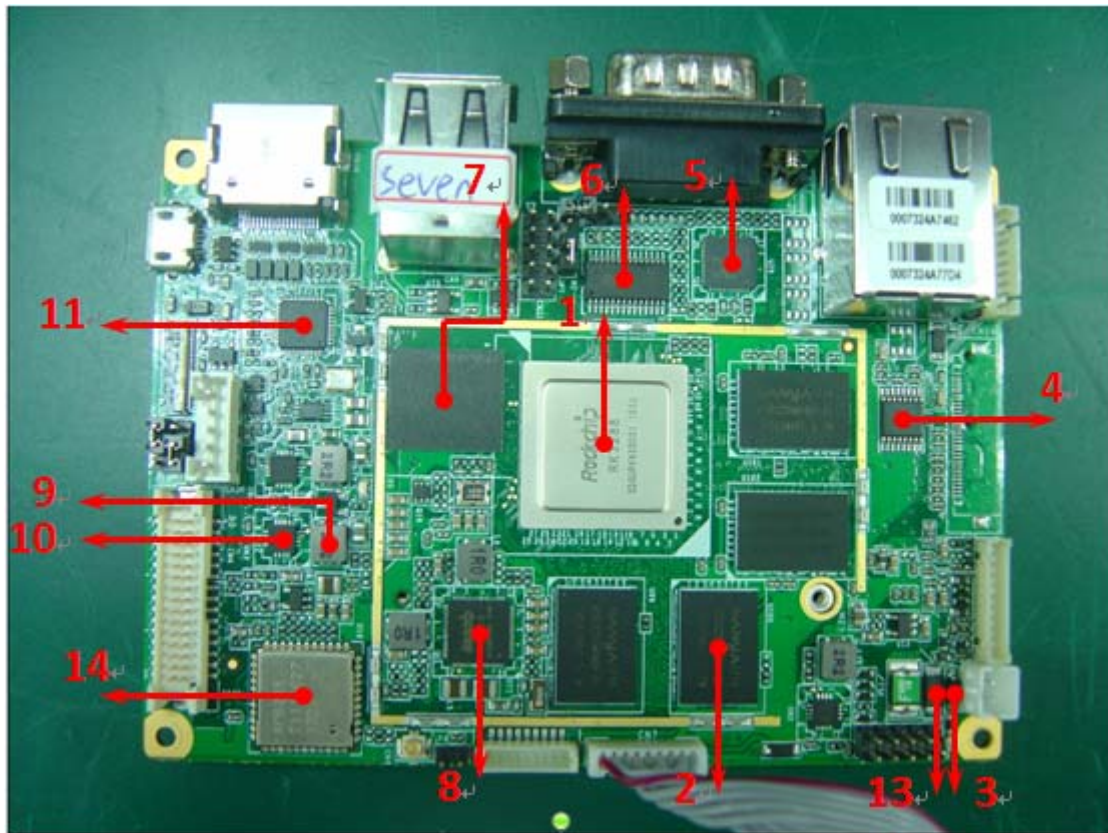
Temperature Profile Test:

Component Side:



Terminal Recorder:

Measuring Thermal Couple Position :



Using OMRON / ZR-RX25 test

Point	Position	Describe	T _c (*1) (°C)	T _{AT} (*2)	T _{PT} (*3)	Note
				25.0°C	60°C	
1	U1	CPU ARM.Cortex-A17 FCBGA636LD.SMD.RK3288	125°C	70.9	105.9	
2	U99	DDR3L-1600.SDRAM. NANYA.NT5CC256M16DP-DI	95°C	59.2	94.2	
3	D10	Amazing.AZ4012-01G.R7G	85°C	54.0	89.0	
4	U77	DEVICES.ADM202EARUZ	85°C	46.5	81.5	
5	U20	Realtek.RTL8211E-VB-CG	100°C	50.3	85.3	
6	U16	RS-232/RS-485/RS-422 transceiv.Fintek.F81438G	85°C	53.5	88.5	
7	U5	IC.eMMC Flash.16GB.Hynix.H26M52103FMR	85°C	55.0	90.0	
8	U11	C.PMIC.Rockchip.RK808-B	125°C	60.3	95.3	
9	L20	COIL. Zenithtek.ZPWM-4020M-2R2M	125°C	57.7	92.7	
10	U83	IC.Step-Down Converter TI.TPS62130RGT	100°C	58.0	93.0	
11	U15	IC.USB Controller SMSC.USB2514B-AEZC	85°C	47.0	82.0	
12	U116	IC.RS232 Transceivers. ANALOG DEVICES.ADM202EARUZ	85°C	49.4	84.4	
13	D46	D Schottky. SMAF.SMD.PANJIT.BX310F	125°C	48.3	83.3	
14	U18	IC.WiFi 11ac+Bluetooth.4.1 Module.47P.SMD.AMPAK.AP6255	85°C	52.0	87.0	

Note(*):

- "T_c" indicates the component's case maximum temperature value specified in its datasheet.
- "T_{AT}" indicates the actual measured temperature under product specification.
- "T_{PT}" indicates the predicted temperature under 25°C working environmental.
- Judgment Criteria:**
 - Fail** : T_m > T_c+5°C; The measured value is over specification plus margin.
 - Margin** : T_c+5°C > T_m > T_c-10°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°C; The measured value is with safety margin.
- RTC battery avoid to put on heat position. Please do not exceed battery temperature specification.

4. Defect NO. : [R170401LABD01](#)