EMB-BT2

Thermal Image Analysis Report

Test Cause
For ATRF No.QE141110 Request

Summary	☐ **Pass** ☐ **Fail** ☑ **Pass with Deviation** **Comment: There are 11 points marginal passed, the system is functional.**

Issue date	Approval	Test Engineer
2014 / 12 / 08	Vincent Chen	Ben Sun

Sample Configuration & Quantity Under Test

- **Model name : EMB-BT2 Ver. R1.02**

- **Mother Board : EMB-BT2 Ver. R1.02**

- **BIOS : R0.7(EBT2BT07)**

- **CPU : Intel Celeron J1900 1.99GHz**

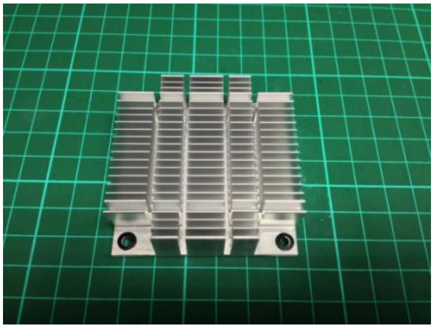
- **Memory : Transcend DDR3L 1600 8GB (SEC / K4B4G0846D)**

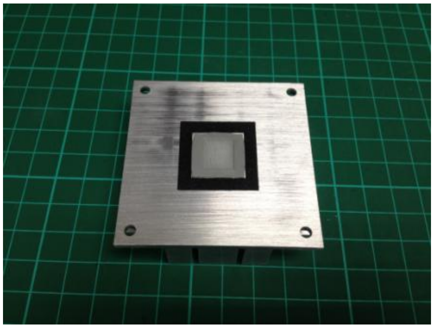
- **2.5" SATA HDD : WD / WD5000BPKX 500GB**

- **Test Software : Windows 8.1 / Run PassMark Burn In Test 7.1 Pro**

- **ATX Power Supply: CWT / SDA400P-C**

- **Board / Heat Sink Photos:**





Thermal Image Analysis

1. Test Date: 2014-12-04

2. Test Product: EMB-BT2 Ver. R1.01

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: 2014/09/11

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: 2013/12/30

Serial Number: 1051444

5. Test Condition:

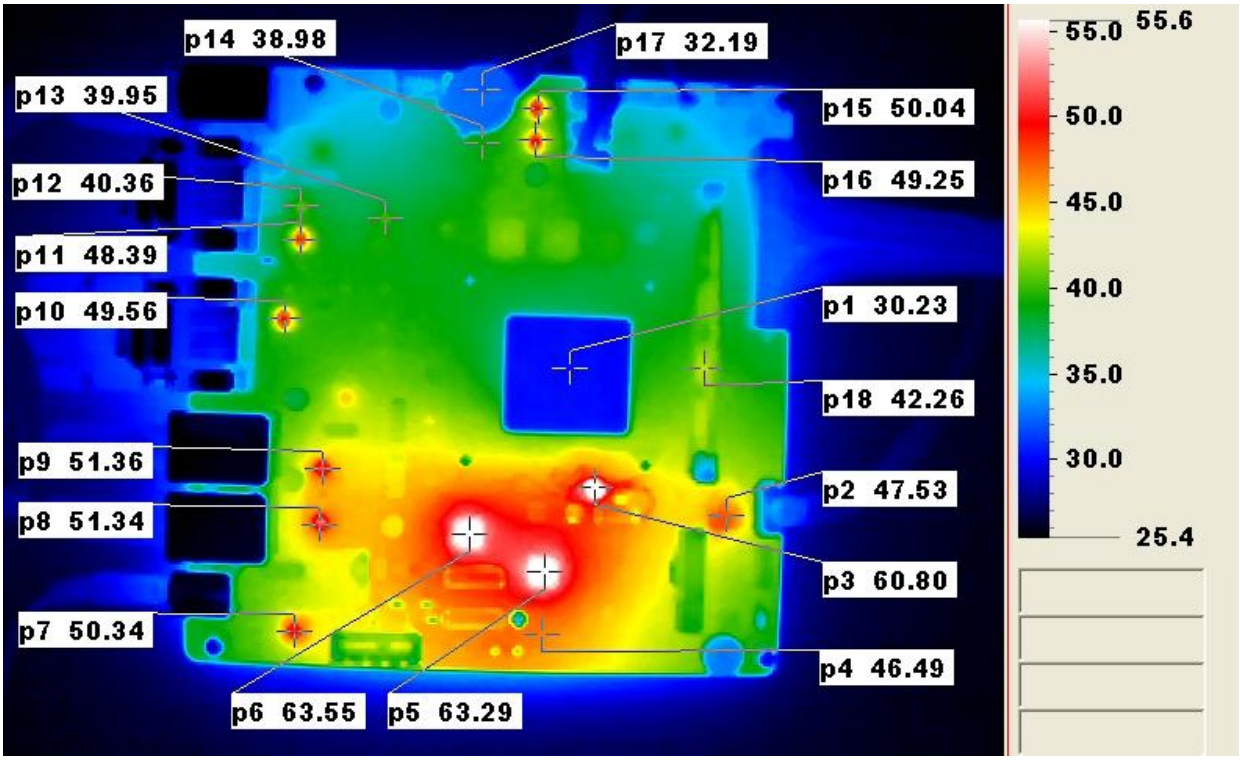
Test by DA-100: 25℃ With Heat Sink

6. Take Picture Time:

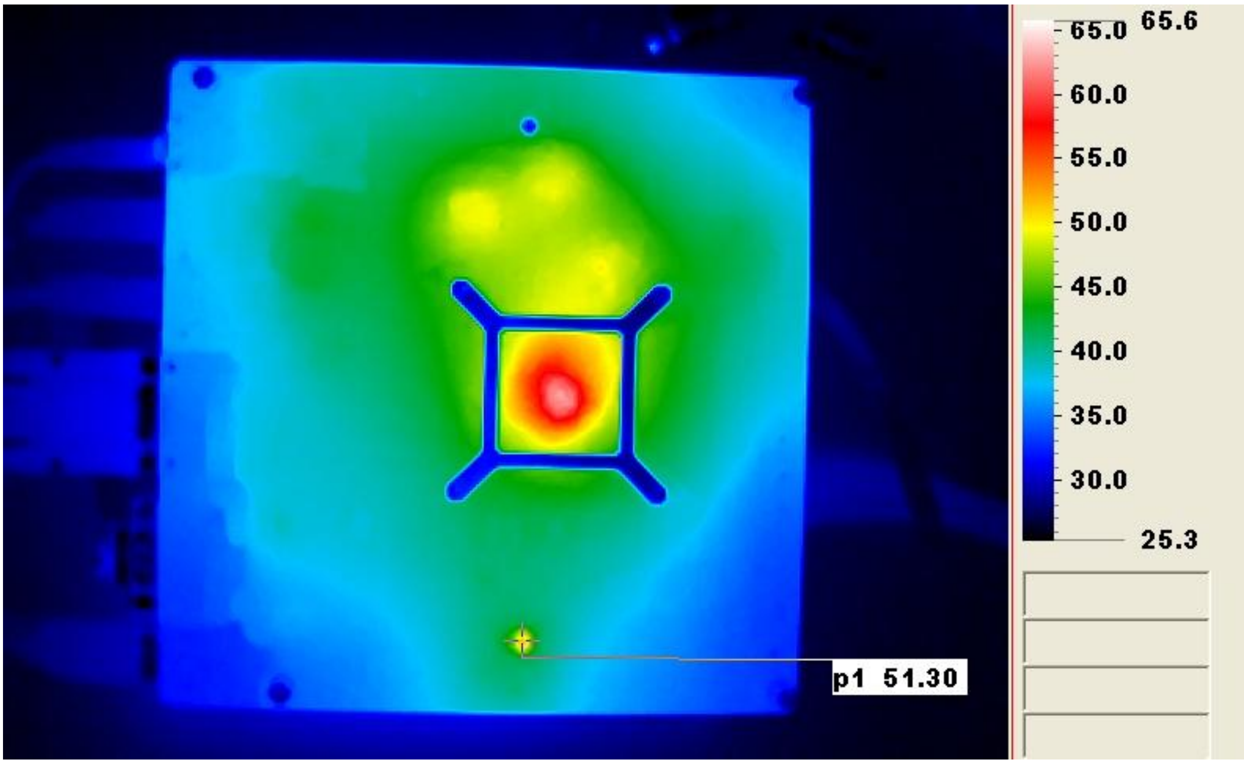
After power on 2 hours

Temperature Profile Test:

Front Side:

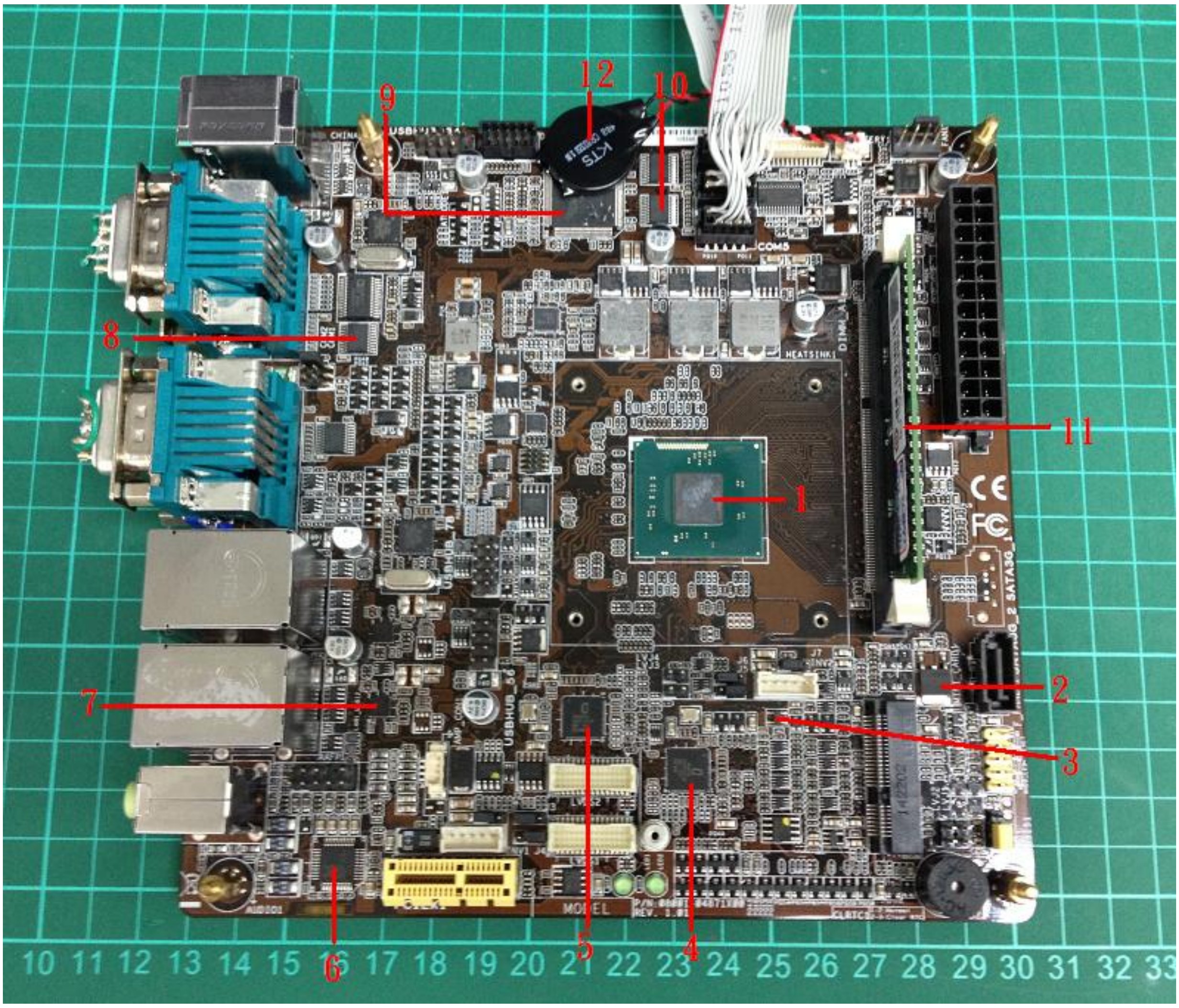


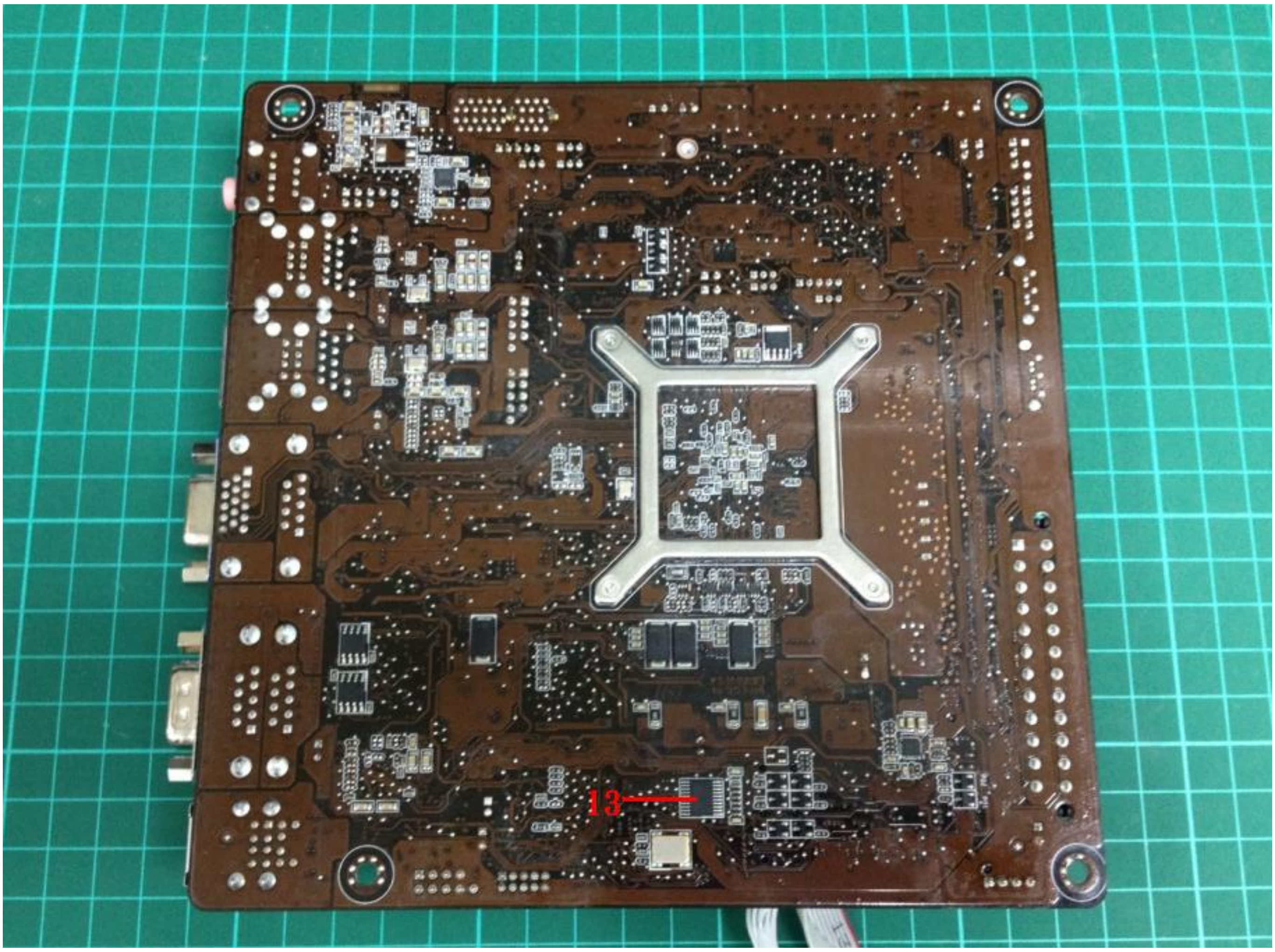
Rear Side:



Terminal Recorder:

Measuring Thermal Couple Position：

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

Point	Position	Describe	Tc (*1) (℃)	Tm (*2) Measured Under		Note
				25℃	60℃	
1	U4	CPU – Intel Celeron J1900 1.99GHz	105	64.1	99.1	NOTE3
2	PU1	LIN REG. UZ2085G-AD-TN3-R	100	50.8	85.8	
3	WU2	LDO. EM5102A	100	64.0	99.0	NOTE3
4	LVU1	C.S CH7511B-BF QFN68	100	58.3	93.3	NOTE3
5	LVU2	C.S CH7511B-BF QFN68	100	59.1	94.1	NOTE3
6	AU1	C.S ALC887-VD2-CG LQFP-48	85	48.5	83.5	NOTE3
7	U3	C.S RTL8111G-CG QFN-32	85	54.4	89.4	NOTE3
8	U8	AZ75232A (DIODES)	100	50.9	85.9	
9	OU1	C.S F81866D-I LQFP-128	85	47.7	82.7	NOTE3
10	U20	AZ75232A (DIODES)	100	59.6	94.6	NOTE3
11	DIMM_A1	Transcend DDR3L 1600 8GB (SEC/ K4B4G0846D)	85	49.2	84.2	NOTE3
12	BATTERY1	CR2032	70	39.8	74.8	NOTE3
13	U17	AZ75232A (DIODES)	100	59.8	94.8	NOTE3

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.

4. Defect NO. BUL1418QED02