FUJITSU

Product Compliance Center

Thermography Test Report

Equipment under Test (EUT):	**System board D3434-S10** with CPU Intel Core i7-6700 @ 3.40GHz
Applicant:	FUJITSU TECHNOLOGY SOLUTIONS GmbH FTS PDG WPS R&D OEM Mr. Mertes, Wilbert Bürgermeister-Ulrich-Strasse 100 86199 Augsburg
Document No.:	THP+1SB-15014-PR04-K01
Test date:	November 18, 2015
Issue date:	December 15, 2015

Prepared by:	Matthias Härle Technician	 Signature
Reviewed by:	Alexander Gerum Deputy Head of LAB E	 Signature

2. Table of contents

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3. Summary of standards and results

The system was tested according to the test specification listed below.

3.1. Test specifications:

Thermography	A26099-Y0023-V261	FTS work specification

3.2. Summary of results

3.2.1. Evaluation of test results

see detected temperature peaks on page 6

Note: The results are only applicable for the tested configuration.

3.3. Table of used instruments

Thermography

Test- / Measure device	Equipment name			Check / Calibration	
	Manufacturer	Type	Serial-No.	last*	next*
Thermography system	FLIR	SC620	404003720	---	08.16CH
Lens	FLIR	Clos-up IR lens 0.5X, f=75mm	---	---	08.16CH
Lens	FLIR	IR lans, f=19mm, 45°	---	---	08.16CH
Software	FLIR	ThermaCAM Researcher	---	---	---
	FLIR	Reporter pro	---	---	---
Temperature reference	AGEMA	1010	12013	11.14C	11.15C

* C = Calibration CH = Check

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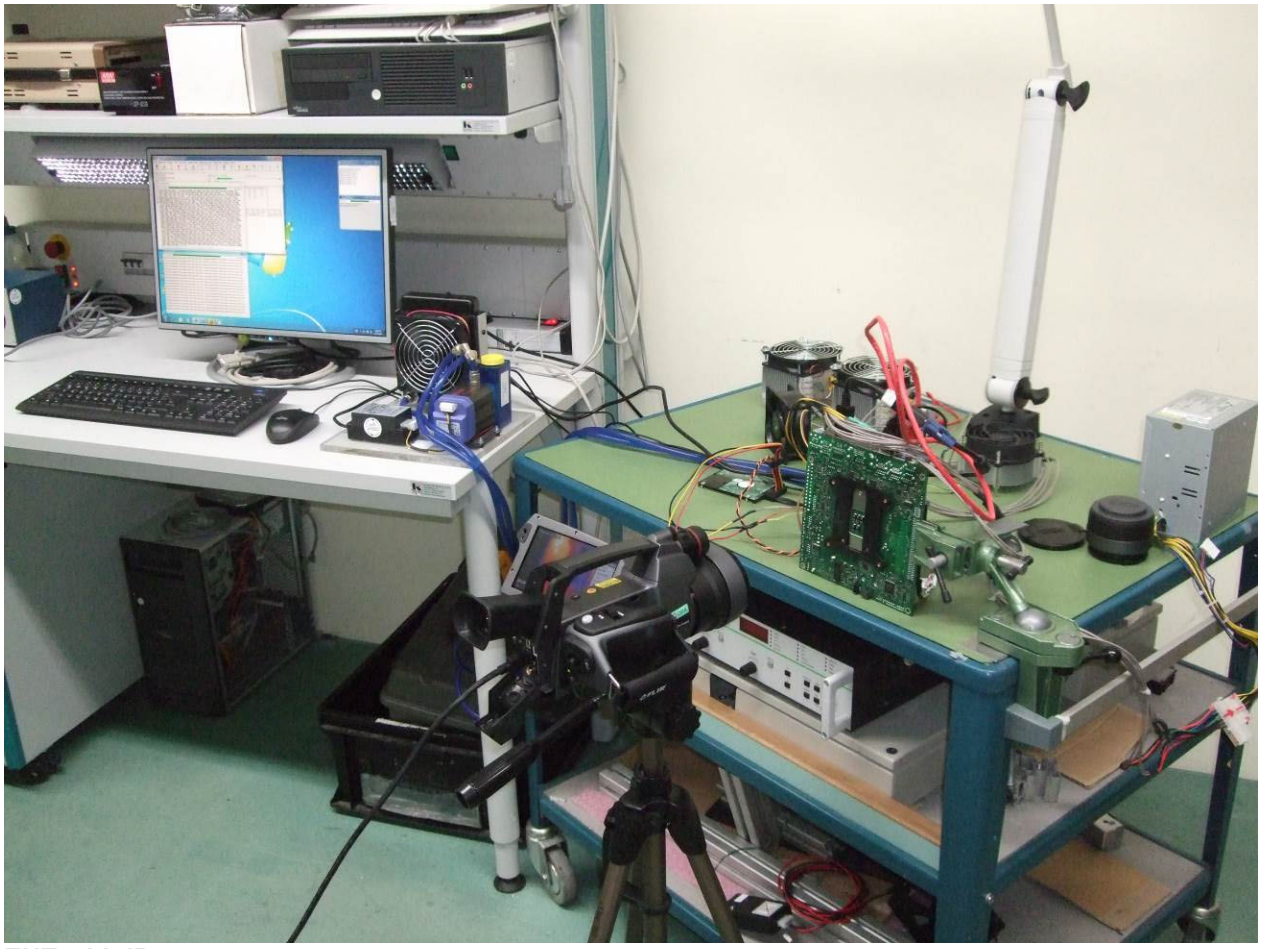
4. Equipment under test

4.1. System description

Product type:	System board
Manufacturer:	Fujitsu Technology Solutions GmbH
Model:	D3434-S10 GS51 SN: 48444028



EUT with IR-scanner

BIOS: V5.0.0.11 R1.6.0 11/05/2015, **CPU:** Intel Core i7-6700 @ 3.40GHz with external water cooling, **RAM:** 2x HMA451S6AFR8N-TF N0 AB 4GB 1Rx8 PC4-2133-SA0-10 dc:1524, **HDD:** WD5000LPVX, **VGA**: on board D3434-S10, USB **keyboard and mouse**, **LAN-ports connected to each other**, with external load (+5V/8A - +3.3V/4A), **PSU:** FSP Group Inc. FSP250-30PFJ

Heat up time: >2h

Receipt date:	November 17, 2015
Condition when received:	Ready for test

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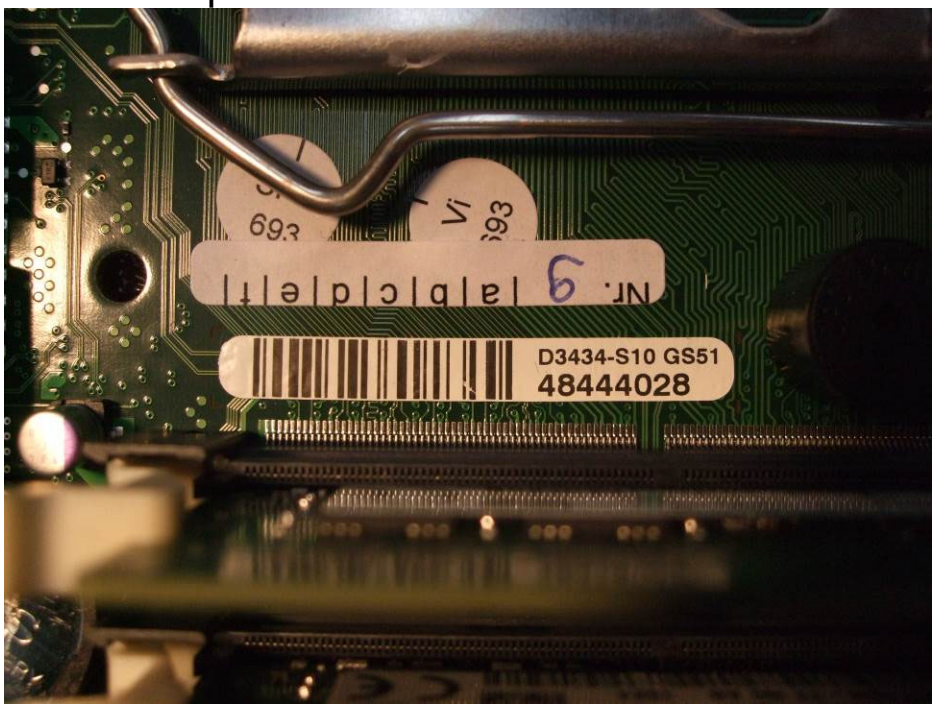
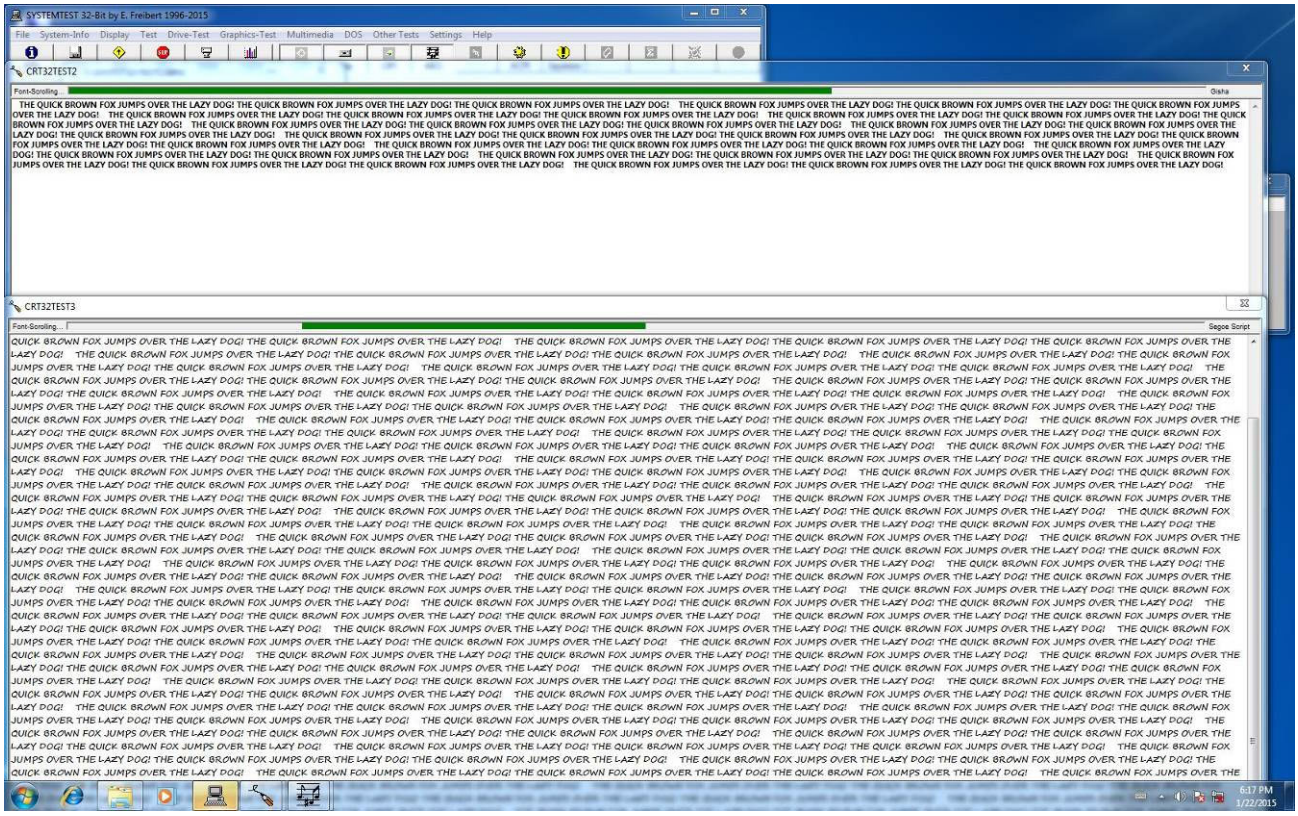
4.2. EUT photos



System board type label



Screenshot of test software

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5. Test results

5.1. Detected temperature peaks

Component topside temperature at an ambient temperature of 23 °C

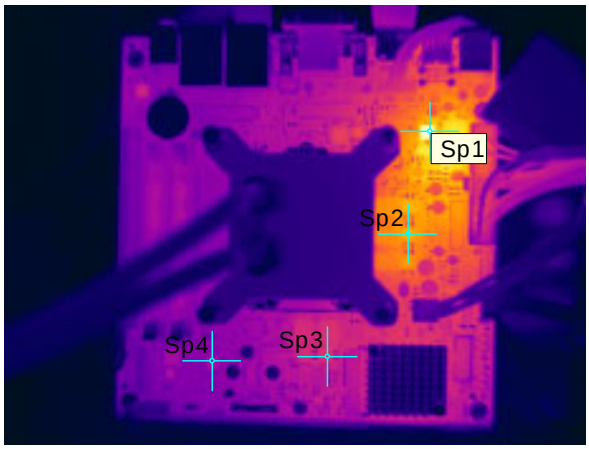
Through film ☐ **Reference black body: debit 95°C (24° lens) is** 95,2 **°C**

no#	Location	Component	Temperature with film	Temperature without film	IR-images no:	Spot	Comment:	Sens point
01	D3434 front	920L50	---°C	---°C	5.2.1	SP1	Overview to see hot spots	
02	-"-	125V20	---°C	---°C	-"-	SP2	-"-	
03	-"-	130V20	---°C	---°C	-"-	SP3	-"-	
04	-"-	760D00	---°C	---°C	-"-	SP4	-"-	
05	-"-	920L50	---°C	64°C	5.2.2	SP1		
06	-"-	920V51	---°C	67°C	-"-	SP2		
07	-"-	920L70	---°C	58°C	-"-	SP3		
08	-"-	125V10	---°C	50°C	5.2.3	SP1		
09	-"-	125V20	---°C	52°C	-"-	SP2		
10	-"-	125V30	---°C	53°C	-"-	SP3		
11	-"-	125L20	---°C	49°C	-"-	SP4		
12	-"-	130V20	---°C	39°C	5.2.4	SP1		
13	-"-	130L20	---°C	39°C	-"-	SP2		
14	-"-	569L41	---°C	36°C	-"-	SP3		
15	-"-	769L70	---°C	36°C	-"-	SP4		
16	-"-	760D00	---°C	35°C	5.2.5	SP1		
17	-"-	162L60	---°C	35°C	-"-	SP2		
18	-"-	162N00	---°C	36°C	-"-	SP3		
19	-"-	780D00	---°C	39°C	5.2.6	SP1		
20	-"-	341L40	---°C	41°C	5.2.7	SP1		
21	D3434 back	940V80	---°C	---°C	5.2.8	SP1	Overview to see hot spots	
22	-"-	940V62	---°C	---°C	-"-	SP2	-"-	
23	-"-	500D00	---°C	---°C	-"-	SP3	-"-	
24	-"-	800D00	---°C	---°C	-"-	SP4	-"-	
25	-"-	940V80	---°C	58°C	5.2.9	SP1		
26	-"-	940V62	---°C	58°C	5.2.10	SP1		
27	-"-	941V20	---°C	57°C	-"-	SP2		
28	-"-	500D00	---°C	34°C	5.2.11	SP1		
29	-"-	820D00	---°C	40°C	5.2.12	SP1		
30	-"-	800D00	---°C	34°C	-"-	SP2		

EUT : System board D3434-S10

5.2. IR-Images

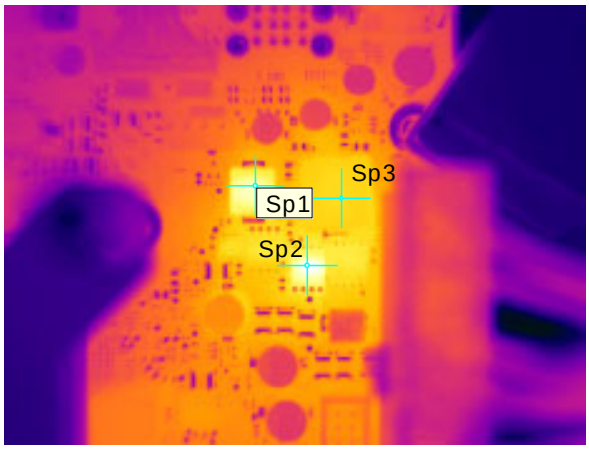
5.2.1. IR-Image



Date	18.11.2015
Filename	1SB-15014-PR04-K01_001.fff
Max Temperature	65.9 °C
Min Temperature	22.4 °C
Emissionsgrad	0.95
Objektabstand	0.5 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL38
Bild Kamerafilter	

Sp1 Temperatur	63.6 °C
Sp2 Temperatur	51.8 °C
Sp3 Temperatur	39.4 °C
Sp4 Temperatur	34.7 °C

5.2.2. IR-Image

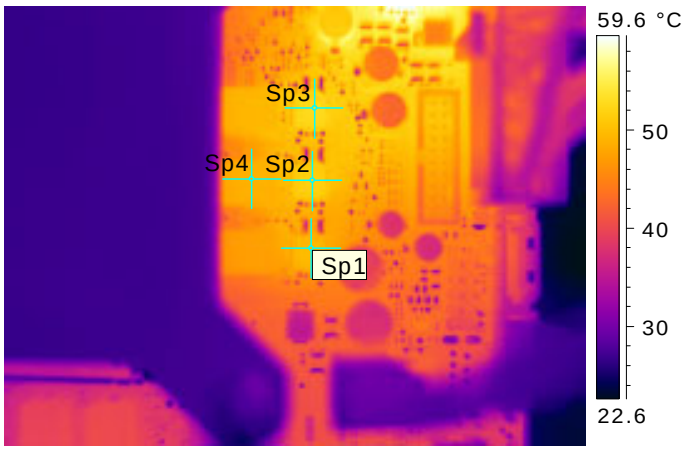


Date	18.11.2015
Filename	1SB-15014-PR04-K01_002.fff
Max Temperature	66.6 °C
Min Temperature	23.0 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	64.4 °C
Sp2 Temperatur	66.5 °C
Sp3 Temperatur	58.3 °C

EUT : System board D3434-S10

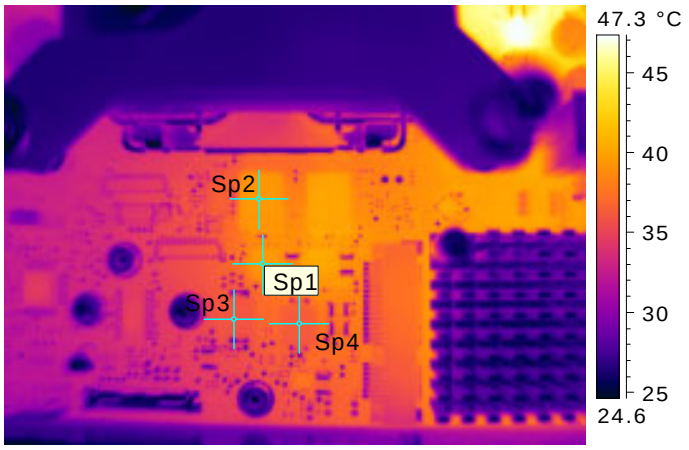
5.2.3. IR-Image



Date	18.11.2015
Filename	1SB-15014-PR04-K01_003.fff
Max Temperature	60.6 °C
Min Temperature	22.5 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	49.7 °C
Sp2 Temperatur	51.9 °C
Sp3 Temperatur	52.6 °C
Sp4 Temperatur	48.9 °C

5.2.4. IR-Image

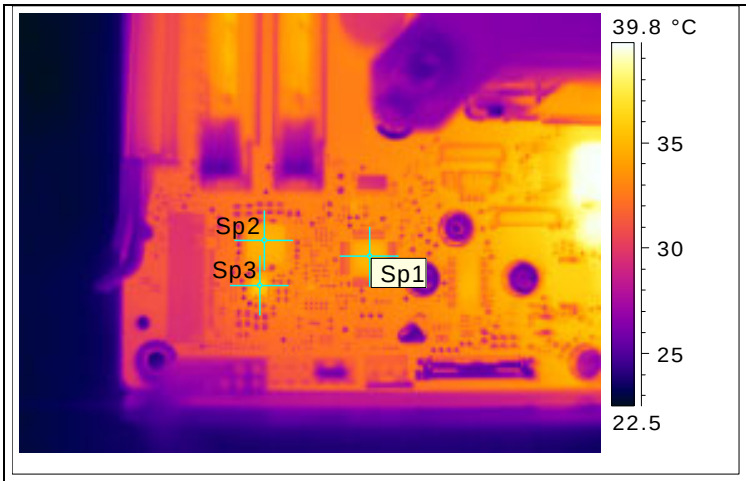


Date	18.11.2015
Filename	1SB-15014-PR04-K01_004.fff
Max Temperature	47.4 °C
Min Temperature	24.4 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	39.4 °C
Sp2 Temperatur	39.3 °C
Sp3 Temperatur	36.0 °C
Sp4 Temperatur	36.4 °C

EUT : System board D3434-S10

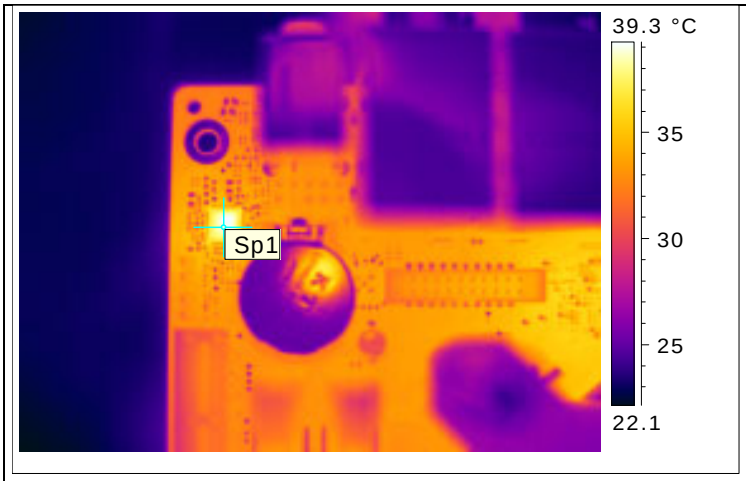
5.2.5. IR-Image



Date	18.11.2015
Filename	1SB-15014-PR04-K01_005.fff
Max Temperature	39.8 °C
Min Temperature	22.3 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	35.1 °C
Sp2 Temperatur	35.0 °C
Sp3 Temperatur	35.9 °C

5.2.6. IR-Image

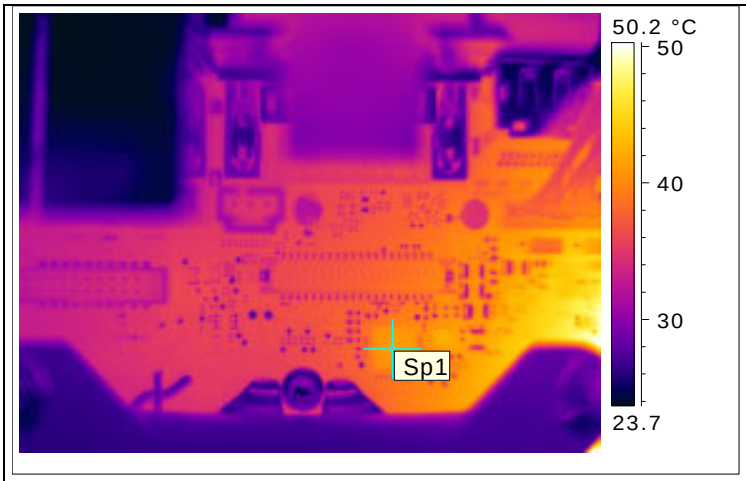


Date	18.11.2015
Filename	1SB-15014-PR04-K01_006.fff
Max Temperature	39.6 °C
Min Temperature	21.9 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	38.9 °C

EUT : System board D3434-S10

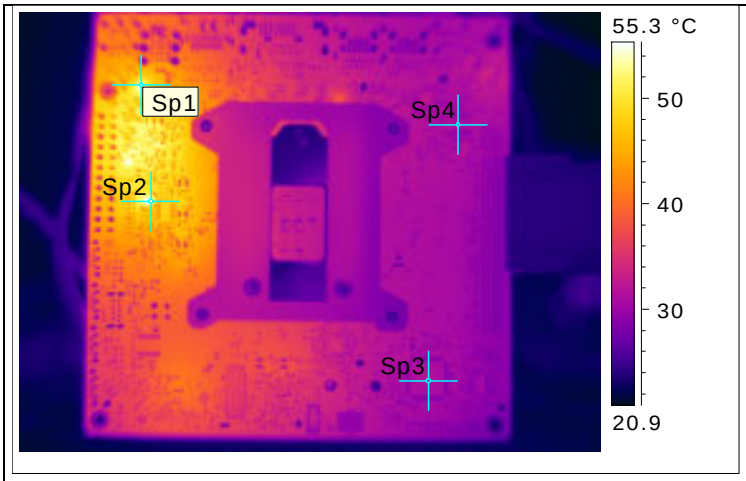
5.2.7. IR-Image



Date	18.11.2015
Filename	1SB-15014-PR04-K01_007.fff
Max Temperature	52.1 °C
Min Temperature	23.5 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	41.2 °C

5.2.8. IR-Image

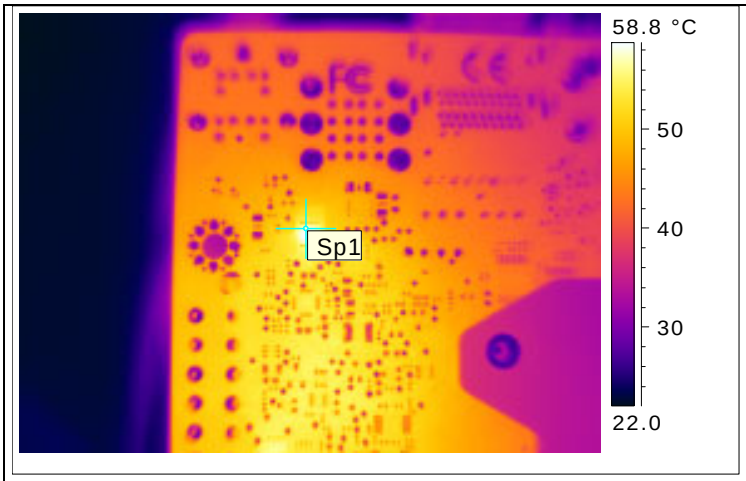


Date	18.11.2015
Filename	1SB-15014-PR04-K01_008.fff
Max Temperature	56.7 °C
Min Temperature	20.7 °C
Emissionsgrad	0.95
Objektabstand	0.5 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL38
Bild Kamerafilter	

Sp1 Temperatur	55.1 °C
Sp2 Temperatur	55.1 °C
Sp3 Temperatur	32.0 °C
Sp4 Temperatur	31.4 °C

EUT : System board D3434-S10

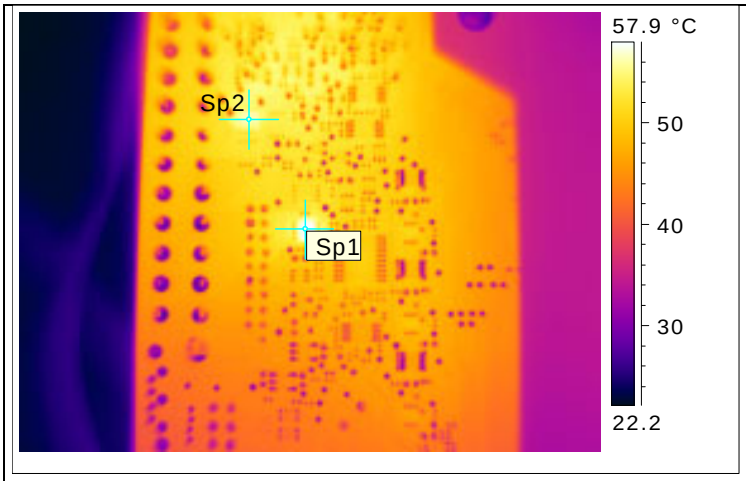
5.2.9. IR-Image



Date	18.11.2015
Filename	1SB-15014-PR04-K01_009.fff
Max Temperature	59.4 °C
Min Temperature	21.8 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	58.0 °C

5.2.10. IR-Image

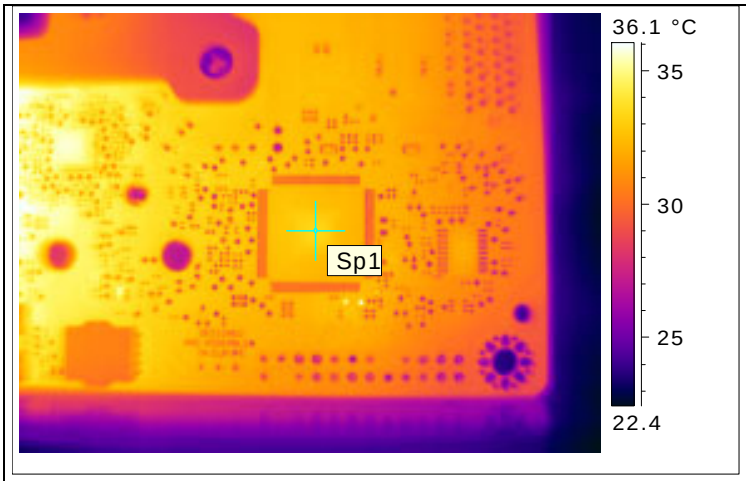


Date	18.11.2015
Filename	1SB-15014-PR04-K01_010.fff
Max Temperature	58.2 °C
Min Temperature	21.9 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	58.1 °C
Sp2 Temperatur	56.6 °C

EUT : System board D3434-S10

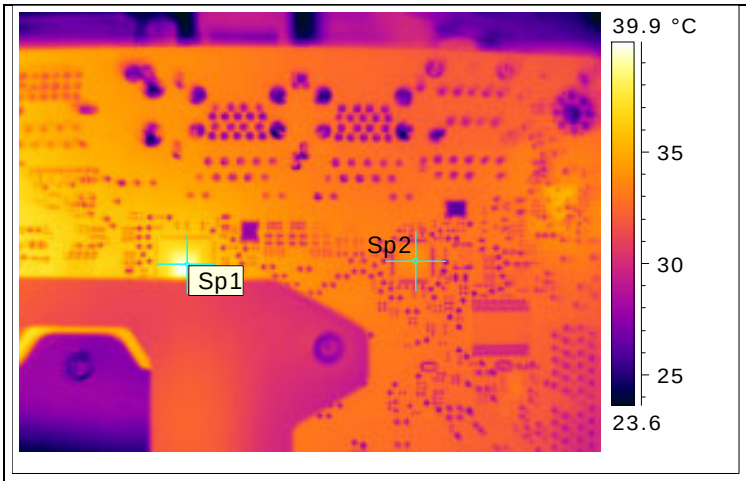
5.2.11. IR-Image



Date	18.11.2015
Filename	1SB-15014-PR04-K01_011.fff
Max Temperature	36.7 °C
Min Temperature	22.2 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	33.5 °C

5.2.12. IR-Image



Date	18.11.2015
Filename	1SB-15014-PR04-K01_012.fff
Max Temperature	40.4 °C
Min Temperature	23.3 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	20.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	39.7 °C
Sp2 Temperatur	34.0 °C