FUJITSU

Product Compliance Center

Thermography Test Report

Equipment under Test (EUT):	**System board D3236-S10 GS60**
Applicant:	FUJITSU TECHNOLOGY SOLUTIONS GmbH FTS PDG WPS R&D OEM Mr. Mertes, Wilbert Bürgermeister-Ulrich-Strasse 100 86199 Augsburg
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Test date:	May 13, 2013
Issue date:	May 14, 2013

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	---	08.13C
Lens	FLIR	Clos-up IR lens 0.5X, f=75mm	---	---	08.13C
Lens	FLIR	IR lans, f=19mm, 45°	---	---	08.13C
Software	FLIR	ThermaCAM Researcher	---	---	---
	FLIR	Reporter pro	---	---	---
Temperature reference	AGEMA	1010	12013	11.12C	11.13C

* C = Calibration CH = Check

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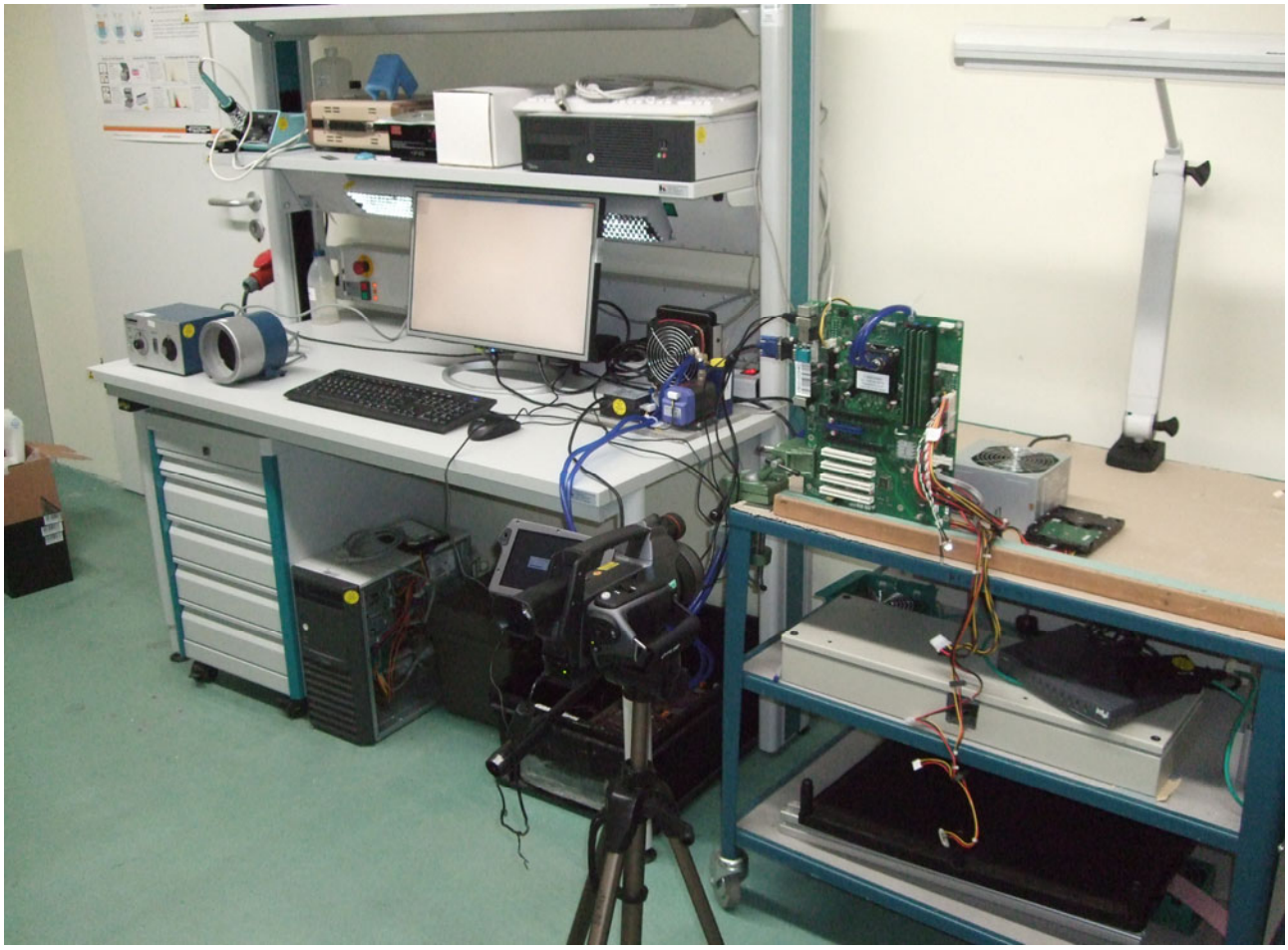
4. Equipment under test

4.1. System description

Product type:	System board
Manufacturer:	Fujitsu Technology Solutions GmbH
Model:	D3236-S10 GS60 SN: 41606033



EUT with IR-scanner

BIOS:V4.6.5.4 R1.0.2 for D3236-S1x 04/25/2013, **CPU:**Intel i5-4670 3.40GHz, **RAM:**4xM378B5773CH0-CK0 2GB 1Rx8 PC3-12800U-11-10-A0 dc:1250, **Water cooling used instead of original heat sink** for CPU, USB **keyboard and mouse**, LAN-ports connected to each other

Heat up time: >2h

Receipt date:	May 08, 2013
Condition when received:	Ready for test

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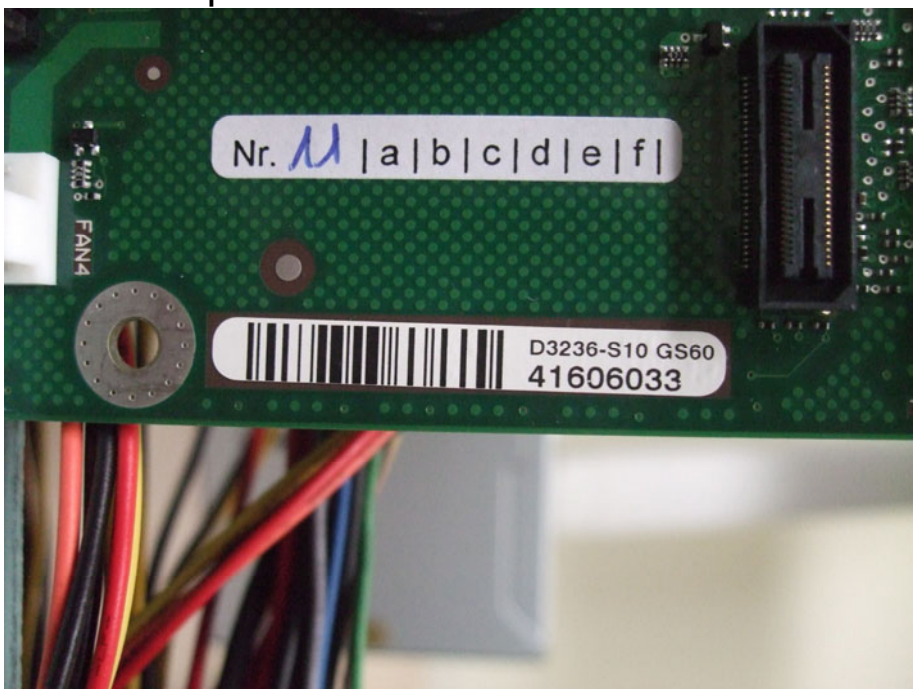
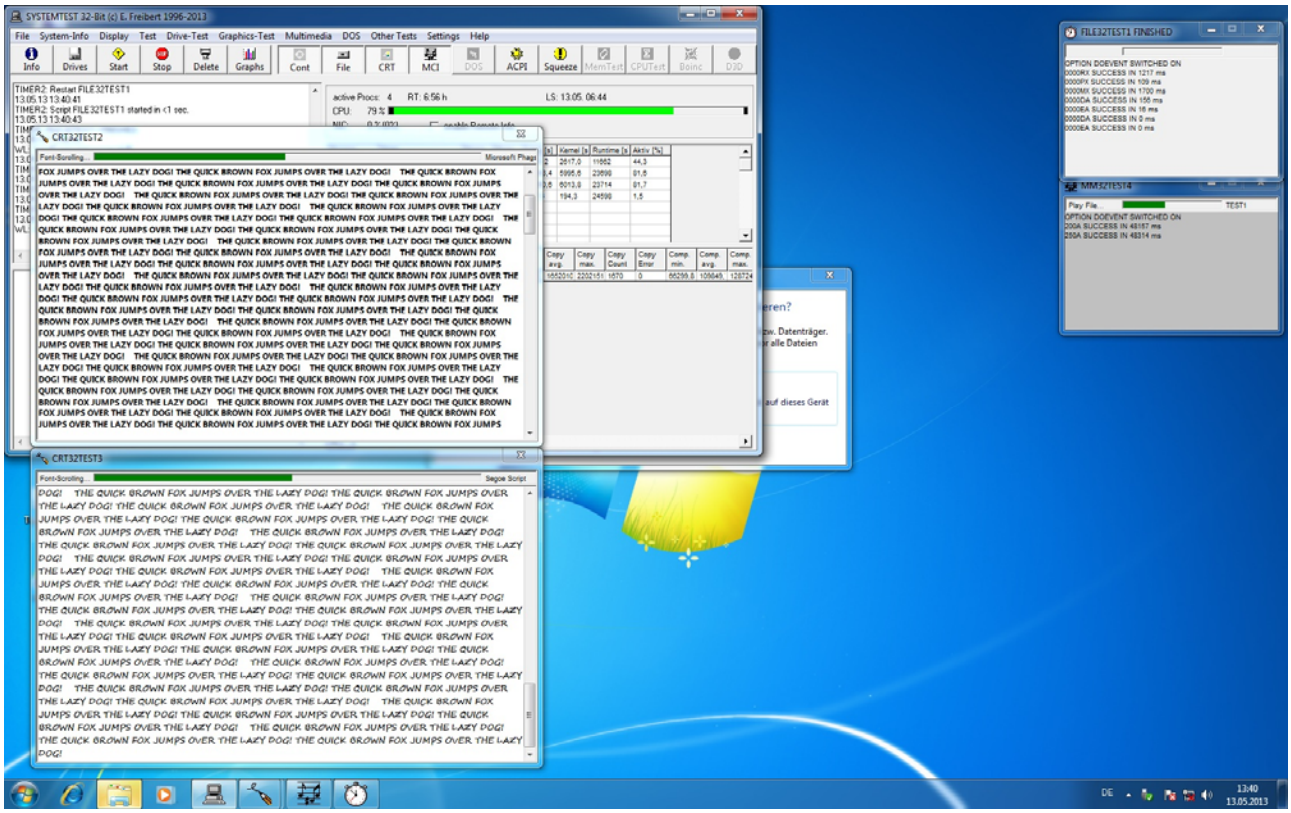
4.2. EUT photos



System board type label



Screenshot of testing software

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5. Test results

5.1. Detected temperature peaks

Component topside temperature at an ambient temperature of 23 °C

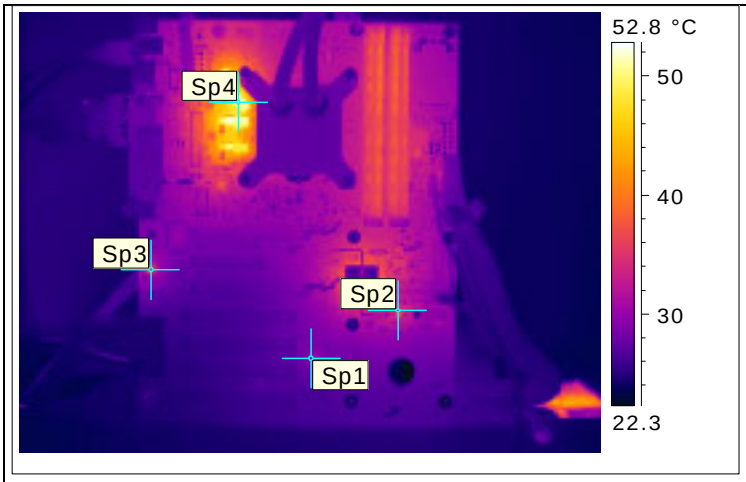
Through film ☐ **Reference black body: debit 95°C (24° lens) is** **95,2** **°C**

no#	Location	Component	Temperature with film	Temperature without film	IR-images no:	Spot	Comment:	Sens point
01	D3236-S10	660D00	---°C	---°C	5.2.1	SP1	Overview to see hot spots	
02	-"-	340N00	---°C	---°C	-"-	SP2	-"-	
03	-"-	780D00	---°C	---°C	-"-	SP3	-"-	
04	-"-	120L20	---°C	---°C	-"-	SP4	-"-	
05	-"-	660D00	---°C	32,4°C	5.2.2	SP1		
06	-"-	340N00	---°C	44,0°C	5.2.3	SP1		
07	-"-	400D00 heat sink	---°C	40,4°C	5.2.3	SP2		
08	-"-	780D00	---°C	38,1°C	5.2.4	SP1		
09	-"-	120L20	---°C	54,8°C	5.2.5	SP1		
10	-"-	120V23	---°C	51,8°C	-"-	SP2		
11	-"-	120N50	---°C	52,6°C	-"-	SP3		
12	-"-	120V13	---°C	53,7°C	-"-	SP4		

EUT : System board D3236-S10 GS60

5.2. IR-Images

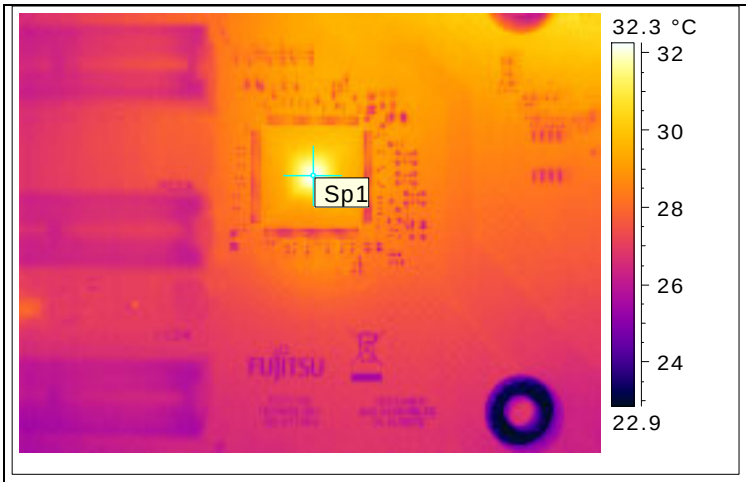
5.2.1 IR-Image



Date	13.05.2013
Filename	1SB13-0008_001.fff
Max Temperature	54.8 °C
Min Temperature	22.1 °C
Emissionsgrad	0.95
Objektabstand	0.5 m
Atmosphärentemperatur	23.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	31.0 °C
Sp2 Temperatur	38.8 °C
Sp3 Temperatur	36.3 °C
Sp4 Temperatur	51.2 °C

5.2.2 IR-Image



Date	13.05.2013
Filename	1SB13-0008_002.fff
Max Temperature	32.5 °C
Min Temperature	22.7 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	23.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	32.4 °C

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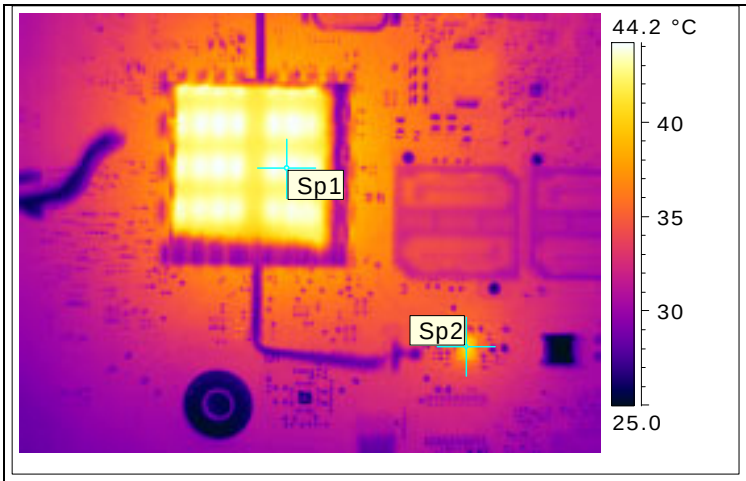
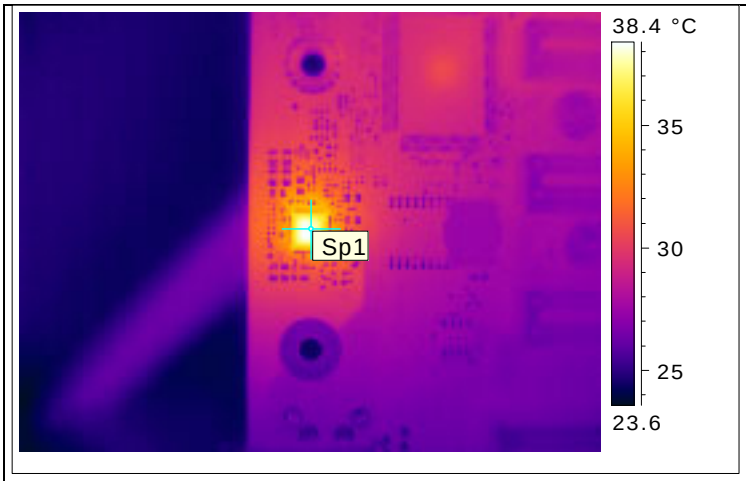
5.2.3 IR-Image



Date	13.05.2013
Filename	1SB13-0008_003.fff
Max Temperature	44.3 °C
Min Temperature	24.8 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	23.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	44.0 °C
Sp2 Temperatur	40.4 °C

5.2.4 IR-Image

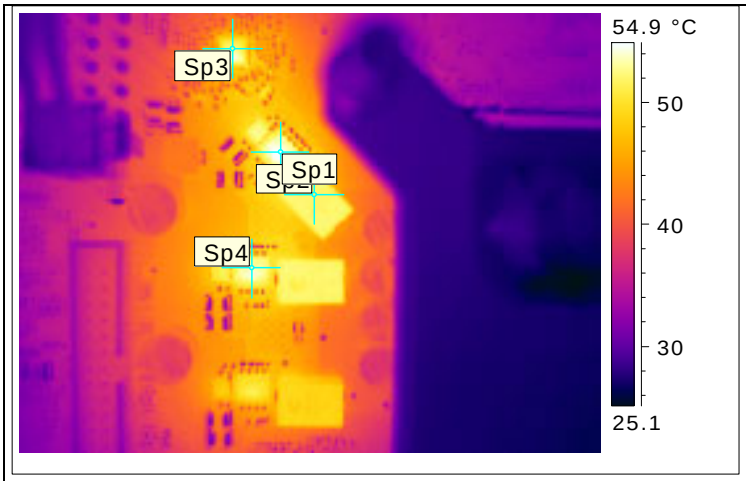


Date	13.05.2013
Filename	1SB13-0008_004.fff
Max Temperature	38.6 °C
Min Temperature	23.3 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	23.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	38.1 °C

EUT : System board D3236-S10 GS60

5.2.5 IR-Image



Date	13.05.2013
Filename	1SB13-0008_005.fff
Max Temperature	55.2 °C
Min Temperature	25.0 °C
Emissionsgrad	0.95
Objektabstand	0.1 m
Atmosphärentemperatur	23.0 °C
Relative Luftfeuchtigkeit	35.0 %
Bild Kameratyp	FLIR SC620
Bild Kameraobjektiv	FOL19
Bild Kamerafilter	

Sp1 Temperatur	54.8 °C
Sp2 Temperatur	51.8 °C
Sp3 Temperatur	52.6 °C
Sp4 Temperatur	53.7 °C