Climatic Test Report

Equipment under Test (EUT):	**D3313-S32 in FUTRO-chassis** with CPU AMD GX-420CA SOC 2.0GHz, active cooled
Applicant:	FUJITSU TECHNOLOGY SOLUTIONS GmbH FTS PDG WPS R&D OEM Mr. Mertes, Wilbert Bürgermeister-Ulrich-Strasse 100 86199 Augsburg
Document No.:	CLI+1SB13-0024+K03
Test date:	February 27, until March 12, 2014
Issue date:	March 17, 2014

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

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2. Table of contents

3. Summary of standards and results

The system was tested according to the applicable standards as referenced below.

3.1. Classification of climatic conditions

Climatic environmental conditions according to: DIN EN 60721-3-3 (Edition 09/95)

Equipment under test:

Product specification: Operation: Class 3K2 according to DIN EN 60721 Part 3-3

Test specification:

Climatic test	DIN EN 60068-1 (Edition 03/95)	Environmental tests part 1, general and guidance.
Climatic test dry heat operation	DIN EN 60068-2-2 (Edition 05/08)	Environmental tests; part 2: test section B, dry heat

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3.2. Summary of results

3.2.1. Valued tests

	passed	failed
Dry heat operation +35°C	X	
Dry heat operation +40°C	X	
Dry heat operation +50°C	X	

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

Table of used instruments

Climatic test cabinet

Test- / Measure device	Equipment name			Check / Calibration	
	Manu-facturer	Type	Serial-No.	last*	next*
Climatic test cabinet	Vötsch Industrie-technik	VC³ 4150	595661117700 10	11.13CH	11.14CH
31. Data Acquisition Unit 30 ch.	Yokogawa	DA100-13-1F	27CA20068	10.12C	10.14C
44. Data Acquisition Unit 30 ch.	Yokogawa	DA100-13-1F	27E749086	10.12C	10.14C
Thermocouples	Thermocoax	Chrom-Alumel	Type:K	with	Recorder
Multimeter	Fluke	87V TRUE RMS	88630333	11.13C	11.15C

- C = Calibration CH = Check

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4. Equipment under test

4.1. System description

Product:	S26361-D3313-S32
Manufacturer:	FUJITSU TECHNOLOGY SOLUTIONS GmbH
Type:	Personal Computer
Approval name:	D3313-S

Part no.:	S26361-D3313-S32
Serial no.:	43428624

Component	Model	Manufacturer	Part no.	Serial no.	Rev.	Remark
System board	D3313-S32	FTS	S26361-D3313-S32	43428624	GS52	with CPU AMD K16 GX-420CA SOC with Radeon HD Graphic 2.0GHz, BIOS: V4.6.5.4 R1.2.0 for D3313-S3x 01/31/2014
Heat sink	B972-V20	Cooler Master	V26898-B972-V20	CM0004176	n.a.	CM P/N:DEL-00030-F1-GP
RAM 2x	HMT325S6CFR8A-PB N0 AA	SK hynix	n.a.	n.a.	n.a.	2GB 1Rx8 PC3L-12800S-11-12-B2, dc:1323/1317
WLAN board	GA5G M7930LX3	n.a.	n.a.	6302AF4C79025927	n.a.	
HDD	THMSMX032GMCT	Toshiba	n.a.	Y33A304WKZTK	n.a.	Solid State Drive, 32GB
Graphic controller	NVS 300	nVidia	S26361-D1473-V338	0325110019422	GS1	Not used for all tests!
other	D3318-A10	FTS	S26361-D3318-A10	42052269	GS50	PCIe riser card
Chassis	FUTRO DS	LiteOn	C26361-K528-A400-*-Z100	G320C00084	03	Module for D3003, LOE P/N:15G320C02A0T-R, D/C:YYWW 1211
AC adapter	FSP100-RAA	FSP Group Inc.	n.a.	H00001148	n.a.	DC output:24V=4.17A (100Wmax)
HDD frame	K528-C301	FTS	C26361-K528-C301	ME21049	B	With FAN, dc:2013/11/14, not used for all tests!

Product specification: operation: Class 3K2 according to EN 60721 part 3-3

Receipt date:	February 27, 2014
Condition when received:	Ready for test

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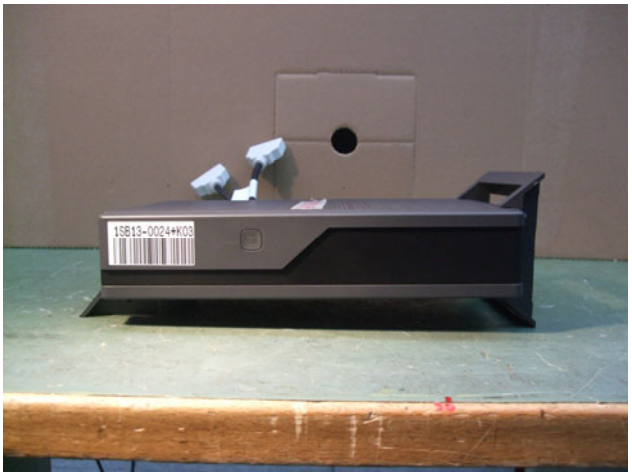
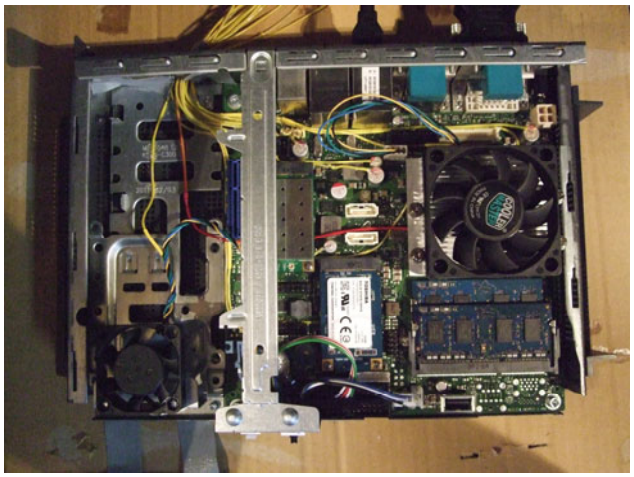
4.2. EUT Photos



Picture no. 1: EUT front

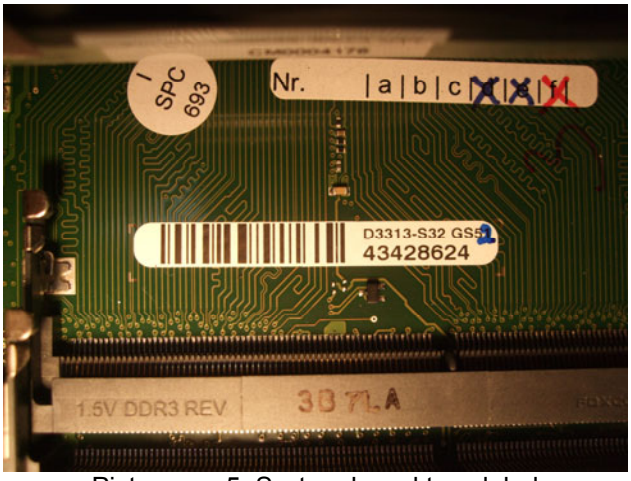
Picture no. 2: EUT back

Picture no. 3: EUT top opened

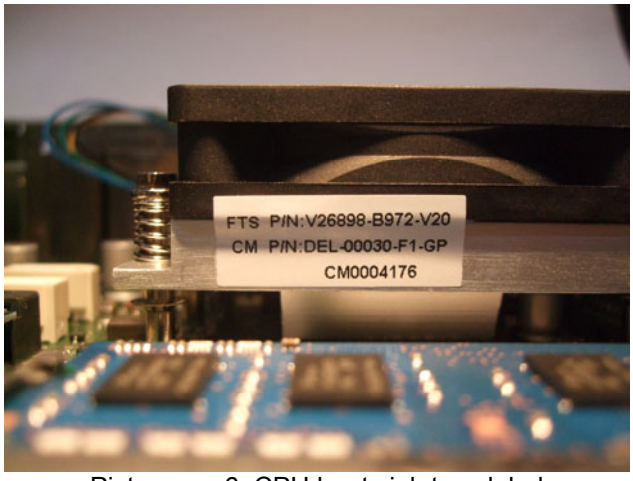


Picture no. 4: EUT top opened w/o VGA with FAN

EUT: D3313-S32 in FUTRO-chassis

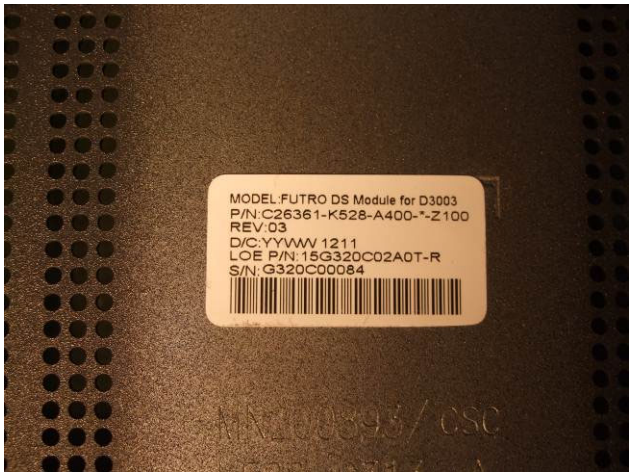


Picture no. 5: System board type label



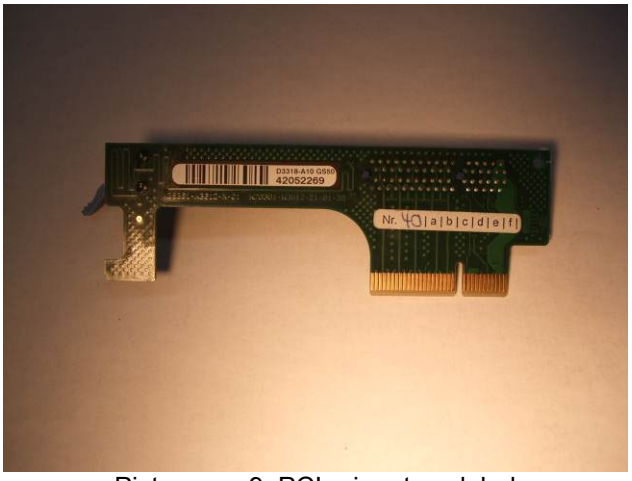
Picture no. 6: CPU heat sink type label

Picture no. 7: Memory type label



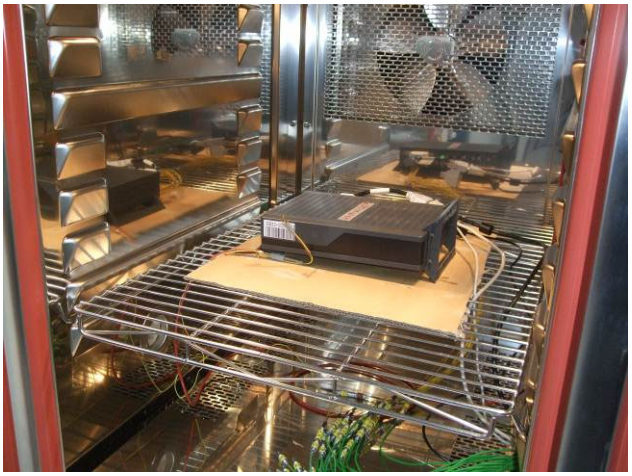
Picture no. 8: Chassis type label

EUT: D3313-S32 in FUTRO-chassis



Picture no. 9: PCIe riser type label

Picture no. 10: VGA type label



Picture no. 11: EUT in climatic cabinet

Picture no. 12: EUT prepared for measurement

EUT: D3313-S32 in FUTRO-chassis

5. Test results

5.1. Dry heat operation, +35°C, +40°C, +50°C

	passed	failed
Operation at high temperature (+35°C)	X	
Operation at high temperature (+40°C)	X	
Operation at high temperature (+50°C)	X	

Test conditions: SN29067-1 (Edition 11/95)
Class: 3K2

Standards: DIN EN 60068-2-2 (Edition 05/08) Test section B: dry heat

Temperature values: +35°C, +40°C, +50°C

Requirements: Specified performance data must be met.
For all components the maximum temperatures allowed must not be exceeded.

Test software: See page 10 – 12

Results: **No objections**

Remarks: **After directional stability of all temperatures the tests were running for at least 30 minutes.**

EUT: D3313-S32 in FUTRO-chassis

Ch. #	ThC. #	Module/PWB	Component:	1 [°C]	Δt [K]	2 [°C]	Δt [K]	3 [°C]	Δt [K]	4 [°C]	Δt [K]	Max [°C]
1	63	Unit	Ambient air	35		35		35		35		---
2	503	CPU	100D00 CPU	57	33	56	34	69	21	69	21	90
3	725	SB	127C22 VCC_CPU_CORE Elko	52	16	51	17	62	6	61	7	68
4	U23	SB	127C04 P19VP Filter Core Elko	46	22	45	23	54	14	52	16	68
5	138	SB	127C82 VCC_CPU_NB Elko	52	16	51	17	62	6	62	6	68
6	81	SB	923L50 P12VP_ STBY Spule	64	36	62	38	72	28	72	28	100
7	G63	SB	923C69 P12VP_STBY Elko	52	16	52	16	58	10	58	10	68
8	E19	SB	430X60 Battery	47	13	45	15	51	9	49	11	60
9	E58	SB	500D00 SIO SMSC	51	19	50	20	57	13	56	14	70
10	U25	SB	505D00 SIO Nuvoton	58	12	57	13	63	7	62	8	70
11	546	SB	920C57 P3V3P_STBY Elko	55	13	53	15	60	8	59	9	68
12	H83	SB	920C77 P5VP_STBY Elko	51	17	51	17	56	12	57	11	68
13	F91	SB	620C10 P12VP Elko	51	17	50	18	56	12	56	12	68
14	2	SB	780D00 Audio Codec	50	20	49	21	63	7	63	7	70
15	G23	SB BS	522D00 COM Driver	53	17	52	18	58	12	58	12	70
16	616	SB BS	800D00 LAN CTRL	52	18	51	19	56	14	57	13	70
17	H30	SB BS	865D00 DP to LVDS Converter	48	32	47	33	55	25	55	25	80
18	718	VGA*	Ambient air under VGA-card	49		50		59		59		---
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												

Description: *Additional Graphics Controller nVidia NVS300

Col. 1 Mains 230V / 50Hz; Horizontal stand;
Test: Idle mode Date: 28.02.2014 10:01:07

Col. 2 Mains 230V / 50Hz; Vertical stand;
Test: Idle mode Date: 28.02.2014 11:17:07

Col. 3 Mains 230V / 50Hz; Horizontal stand;
Test: Systest Date: 28.02.2014 13:04:37

Col. 4 Mains 230V / 50Hz; Vertical stand;
Test: Systest Date: 28.02.2014 12:28:07

EUT: D3313-S32 in FUTRO-chassis

Ch. #	ThC. #	Module/PWB	Component:	5 [°C]	Δt [K]	6 [°C]	Δt [K]	7 [°C]	Δt [K]	8 [°C]	Δt [K]	Max [°C]
1	63	Unit	Ambient air	35		35						---
2	503	CPU	100D00 CPU	67	23	67	23					90
3	725	SB	127C22 VCC_CPU_CORE Elko	61	7	62	6					68
4	U23	SB	127C04 P19VP Filter Core Elko	52	16	53	15					68
5	138	SB	127C82 VCC_CPU_NB Elko	61	7	63	5					68
6	81	SB	923L50 P12VP_ STBY Spule	69	31	70	30					100
7	G63	SB	923C69 P12VP_STBY Elko	53	15	54	14					68
8	E19	SB	430X60 Battery	47	13	47	13					60
9	E58	SB	500D00 SIO SMSC	52	18	52	18					70
10	U25	SB	505D00 SIO Nuvoton	57	13	57	13					70
11	546	SB	920C57 P3V3P_STBY Elko	54	14	54	14					68
12	H83	SB	920C77 P5VP_STBY Elko	52	16	53	15					68
13	F91	SB	620C10 P12VP Elko	51	17	52	16					68
14	2	SB	780D00 Audio Codec	50	20	52	18					70
15	G23	SB BS	522D00 COM Driver	54	16	55	15					70
16	616	SB BS	800D00 LAN CTRL	52	18	54	16					70
17	H30	SB BS	865D00 DP to LVDS Converter	52	28	54	26					80
18	718	VGA	Ambient air under VGA-card	60		65						---
19												
20												
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28												
29												
30												

Description: *Additional Graphics Controller nVidia NVS300

Col. 5 Mains 230V / 50Hz; Horizontal stand;
Test: ThermNow! Date: 03.03.2014 09:19:11

Col. 6 Mains 230V / 50Hz; Vertical stand;
Test: ThermNow! Date: 03.03.2014 11:41:51

Col. 7

Col. 8

EUT: D3313-S32 in FUTRO-chassis

Ch. #	ThC. #	Module/PWB	Component:	9 [°C]	Δt [K]	10 [°C]	Δt [K]	11 [°C]	Δt [K]	12 [°C]	Δt [K]	Max [°C]
1	63	Unit	Ambient air	35		40		50		50		---
2	503	CPU	100D00 CPU	69	21	69	21	71	19	70	20	90
3	725	SB	127C22 VCC_CPU_CORE Elko	62	6	64	4	66	2	66	2	68
4	U23	SB	127C04 P19VP Filter Core Elko	53	15	56	12	60	8	60	8	68
5	138	SB	127C82 VCC_CPU_NB Elko	62	6	64	4	67	1	66	2	68
6	81	SB	923L50 P12VP_ STBY Spule	70	30	72	28	74	26	74	26	100
7	G63	SB	923C69 P12VP_STBY Elko	56	12	58	10	62	6	62	6	68
8	E19	SB	430X60 Battery	43	17	47	13	55	5	55	5	60
9	E58	SB	500D00 SIO SMSC	52	18	55	15	60	10	60	10	70
10	U25	SB	505D00 SIO Nuvoton	53	17	56	14	63	7	63	7	70
11	546	SB	920C57 P3V3P_STBY Elko	53	15	56	12	61	7	61	7	68
12	H83	SB	920C77 P5VP_STBY Elko	54	14	57	11	61	7	62	6	68
13	F91	SB	620C10 P12VP Elko	52	16	55	13	60	8	60	8	68
14	2	SB	780D00 Audio Codec	58	12	61	9	67	3	67	3	70
15	G23	SB BS	522D00 COM Driver	55	15	58	12	62	8	63	7	70
16	616	SB BS	800D00 LAN CTRL	54	16	57	13	63	7	63	7	70
17	H30	SB BS	865D00 DP to LVDS Converter	54	26	57	23	61	19	62	18	80
18	718	VGA	Ambient air under VGA-car	43		46		55		55		---
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												

Description: Measured with empty HDD-carrier with FAN

Col. 9 Mains 230V / 50Hz; Horizontal stand;
Test: SysTest Date: 03.03.2014 13:58:51

Col. 10 Mains 230V / 50Hz; Horizontal stand;
Test: SysTest Date: 03.03.2014 16:05:31

Col. 11 Mains 230V / 50Hz; Horizontal stand;
Test: SysTest Date: 05.03.2014 12:14:01

Col. 12 Mains 230V / 50Hz; Vertical stand;
Test: SysTest Date: 12.03.2014 13:02:59