

Climatic Test Report

Equipment under Test (EUT): **D3313-S43**
Tested with and without FUTRO-chassis

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Test date: June 17, until July 21, 2015

Issue date: July 29, 2015

Result: Passed

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Signature

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Deputy Head of LAB E



Signature

The results in this report apply only to the tested sample(s).

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3. Summary of standards and results

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

3.1. Classification of climatic conditions

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

3.2. Summary of results

3.2.1. Valued tests

	passed	failed
Dry heat operation +35°C	X	
Dry heat operation +60°C	X	

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

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3.3. 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	SC 1000	58566127140 010	11.14CH	11.15CH
40. Data Acquisition Unit 30 ch.	Yokogawa	DA100-13-1F	27E834489	11.14C	11.16C
44. Data Acquisition Unit 30 ch.	Yokogawa	DA100-13-1F	27E749086	11.14C	11.16C
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

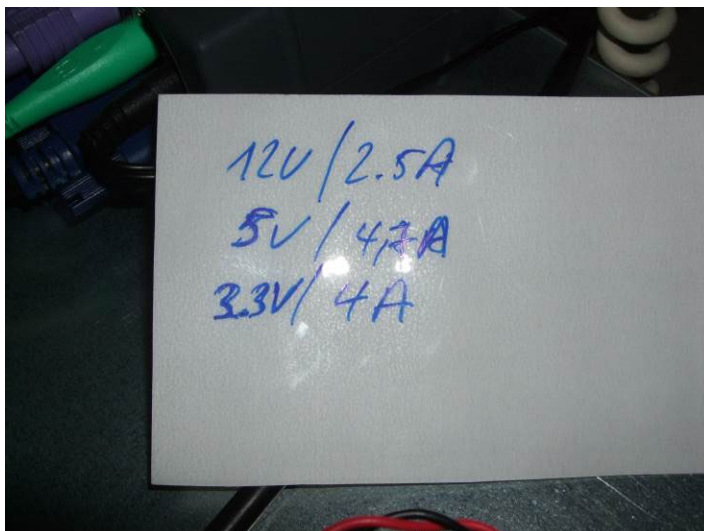
Product: D3313-S43
 Manufacturer: FUJITSU TECHNOLOGY SOLUTIONS GmbH
 Type: System board
 Approval name: D3313-S43

Part no.: S26361-D3313-S43
 Serial no.: 47025271

Component	Model	Manufacturer	Part no.	Serial no.	Rev.	Remark
CPU	GX-222GC SOC	AMD GmbH	n.a.	n.a.	n.a.	on board D3313 with Radeon(TM) R5E Graphics
Heat sink	B972-V4	Cooler Master	V26898-B972-V4	CM4201879	n.a.	CM P/N:HEL-00102-F1-GP2 (only used for tests in chassis)
Cooler	D6000-C300	EKL AG	C26361-D6000-C300	21310121003	15/2011	Active heat sink (only used for 60°C-test)
BIOS	V4.6.5.4	FTS	n.a.	n.a.	R1.0.1	for D3313-S4x 06/23/2015
RAM	M471B5173DB0-YK0	Samsung Electronics Co. Ltd.	n.a.	n.a.	n.a.	2x 4GB 1Rx8 PC3L-12800S-11-13-B4
other	D3318-A10	FTS	S26361-D3318-A10	42052239	GS50	PCIe riser
other	mSATA 3ME	innodisk	n.a.	B001504290 100010	02	64GB, P/N:DEMSR-64GD06RC2QC-A88, FW:S141002
Chassis	KIT FUTRO DS	n.a.	C26361-K528-A400-*Z100	G320E014FH	04	D/C:YYWW 1434, LOE P/N:15G320C02A0T-R (only used for 35°C-tests)

Receipt date: June 11, 2015
 Condition when received: Ready for test

4.2. Additional load



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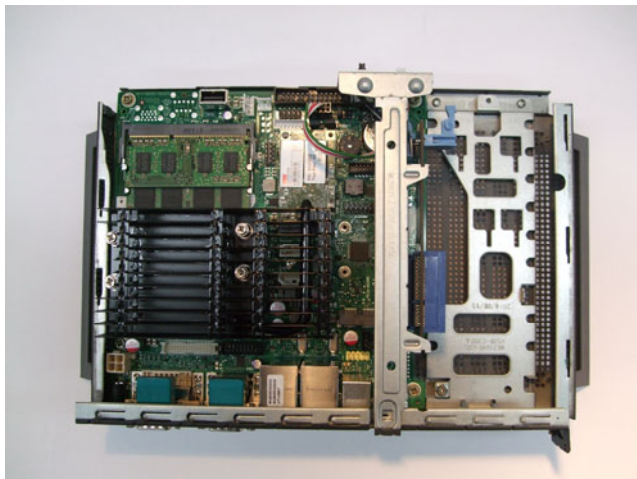
4.3. EUT photos



Picture no. 1: EUT front in chassis



Picture no. 2: EUT back in chassis



Picture no. 3: EUT top opened in chassis



Picture no. 4: System board type label

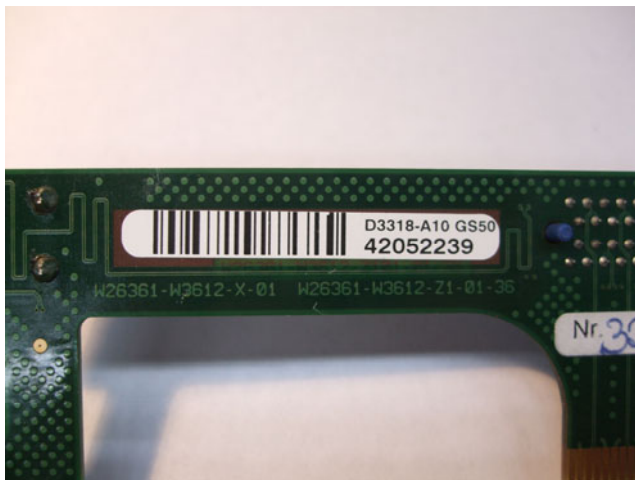
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Picture no. 5: mSATA type label



Picture no. 6: Type label of one memory

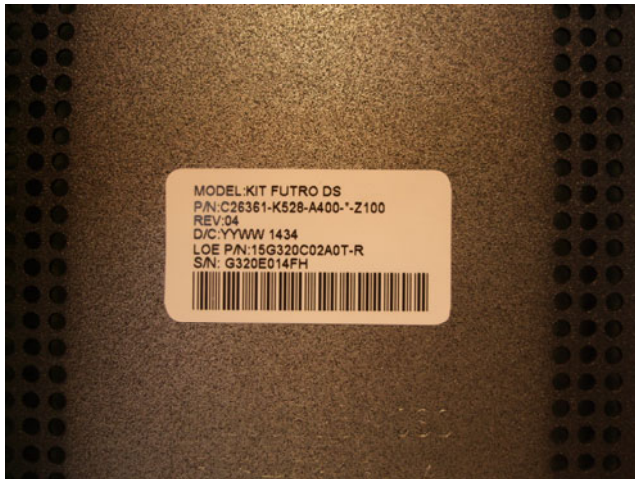


Picture no. 7: Riser card type label



Picture no. 8: Type label of heat sink for tests in chassis

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Picture no. 9: Chassis type label



Picture no. 10: EUT in chassis in climatic cabinet



Picture no. 11: CPU heat sink for test without chassis



Picture no. 12: EUT without chassis in climatic cabinet

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5. Test results

5.1. Dry heat operation, +35°C

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

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

Temperature values: +35°C

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

Test software: See page 10 + 11

Results: No objections

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

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Ch. #	ThC. #	Module/PWB	Component:	1 [°C]	Δt [K]	2 [°C]	Δt [K]	3 [°C]	Δt [K]	4 [°C]	Δt [K]	Max [°C]
1	U13	Unit	Ambient air	35		35		35		35		---
2	925	CPU	100D00 (CPU) tcase	45	45	75	15	82	8	78	12	90
3	769	SB	127C22 (VCC_CPU_CORE Elko)	43	29	64	8	68	4	66	6	72
4	30	SB	127C04 (P19VP Filter Core Elko)	41	27	56	12	60	8	57	11	68
5	54	SB	127C82 (VCC_CPU_NB Elko)	43	29	65	7	71	1	68	4	72
6	717	SB	920C77 (P5VP_STBY Elko)	43	25	54	14	56	12	55	13	68
7	D30	SB	923C69 (P12VP_STBY Elko)	43	25	55	13	58	10	56	12	68
8	F5	SB	430X60 (Battery)	39	31	43	27	44	26	43	27	70
9	40	SB	500D00 (SIO SMSC)	43	27	50	20	52	18	52	18	70
10	E67	SB	505D00 (SIO Nuvoton)	44	26	51	19	52	18	51	19	70
11	929	SB	920C57 (P3V3P_STBY Elko)	43	25	51	17	53	15	52	16	68
12	534	SB	780D00 (Audio Codec)	40	30	53	17	45	25	44	26	70
13	H77	SB	122N00 (CPU_CORE CTRL)	44	36	65	15	69	11	67	13	80
14	V66	SB	923L50 (P12VP_STBY Spule)	47	53	66	34	70	30	68	32	100
15	861	SB BS	522D00 (COM Driver)	43	27	52	18	54	16	52	18	70
16	K54	SB BS	800D00 (LAN CTRL)	44	26	52	18	54	16	53	17	70
17	754	SB BS	865D00 (DP to LVDS Converter)	42	28	56	14	60	10	58	12	70
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Description:

- Col. 1 Mains 230V / 50Hz; in FUTRO-chassis, horizontal, w/o load
Test: Windows IdleMode Date: 24.06.2015 08:28:59
- Col. 2 Mains 230V / 50Hz; in FUTRO-chassis, horizontal, w/o load
Test: SysTest32 Date: 23.06.2015 19:30:39
- Col. 3 Mains 230V / 50Hz; in FUTRO-chassis, horizontal, w/o load
Test: AMD TCT (boost enabled, HTC enabled) Date: 24.06.2015 09:46:29
- Col. 4 Mains 230V / 50Hz; in FUTRO-chassis, horizontal, w/o load
Test: AMD TCT (boost enabled, HTC+dHTC enabled) Date: 25.06.2015 09:00:29

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Ch. #	ThC. #	Module/PWB	Component:	5 [°C]	Δt [K]	6 [°C]	Δt [K]	7 [°C]	Δt [K]	8 [°C]	Δt [K]	Max [°C]
1	U13	Unit	Ambient air	35		35		35				---
2	925	CPU	100D00 (CPU) tcase	43	47	71	19	76	14			90
3	769	SB	127C22 (VCC_CPU_CORE Elko)	41	31	60	12	64	8			72
4	30	SB	127C04 (P19VP Filter Core Elko)	39	29	52	16	55	13			68
5	54	SB	127C82 (VCC_CPU_NB Elko)	42	30	63	9	67	5			72
6	717	SB	920C77 (P5VP_STBY Elko)	42	26	54	14	56	12			68
7	D30	SB	923C69 (P12VP_STBY Elko)	42	26	54	14	56	12			68
8	F5	SB	430X60 (Battery)	38	32	42	28	41	29			70
9	40	SB	500D00 (SIO SMSC)	41	29	50	20	49	21			70
10	E67	SB	505D00 (SIO Nuvoton)	43	27	52	18	53	17			70
11	929	SB	920C57 (P3V3P_STBY Elko)	41	27	52	16	52	16			68
12	534	SB	780D00 (Audio Codec)	40	30	56	14	48	22			70
13	H77	SB	122N00 (CPU_CORE CTRL)	43	37	64	16	67	13			80
14	V66	SB	923L50 (P12VP_STBY Spule)	45	55	63	37	66	34			100
15	861	SB BS	522D00 (COM Driver)	42	28	53	17	54	16			70
16	K54	SB BS	800D00 (LAN CTRL)	43	27	53	17	54	16			70
17	754	SB BS	865D00 (DP to LVDS Converter)	41	29	54	16	56	14			70
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Description:

- Col. 5 Mains 230V / 50Hz; in FUTRO-chassis, vertical, w/o load
Test: Windows IdleMode Date: 24.06.2015 11:30:39
- Col. 6 Mains 230V / 50Hz; in FUTRO-chassis, vertical, w/o load
Test: SysTest Date: 24.06.2015 12:49:19
- Col. 7 Mains 230V / 50Hz; in FUTRO-chassis, vertical, w/o load
Test: AMD TCT (boost enabled, HTC enabled) Date: 24.06.2015 16:23:39
- Col. 8 _____

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5.2. Dry heat operation, +60°C

	passed	failed
Operation at high temperature (+60°C)	X	

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

Temperature value: +60°C

Requirements: Specified performance data must be met.

Test software: See page 13

Results: No objections

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

1) Note: Battery operation is specified in temperature range up to 60°C.
Operation between 60°C and 70°C may result in:

- Higher self discharge rate
- Decline of specified characteristics
- Danger of leakage increases

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Ch. #	ThC. #	Module/PWB	Component:	9 [°C]	Δt [K]	10 [°C]	Δt [K]	11 [°C]	Δt [K]	12 [°C]	Δt [K]	Max [°C]
1	U13	Unit	Ambient air	60		60		60				---
2	925	CPU	100D00 (CPU) tcase	64	26	74	16	76	14			90
3	769	SB	127C22 (VCC_CPU_CORE Elko)	63	9	69	3	70	2			72
4	30	SB	127C04 (P19VP Filter Core Elko)	62	6	65	3	65	3			68
5	54	SB	127C82 (VCC_CPU_NB Elko)	63	9	67	5	68	4			72
6	717	SB	920C77 (P5VP_STBY Elko)	65	3	65	3	66	2			68
7	D30	SB	923C69 (P12VP_STBY Elko)	63	5	65	3	65	3			68
8	F5	SB	430X60 (Battery)	62	8	61	9	61	9			70
9	40	SB	500D00 (SIO SMSC)	66	4	63	7	63	7			70
10	E67	SB	505D00 (SIO Nuvoton)	68	2	64	6	64	6			70
11	929	SB	920C57 (P3V3P_STBY Elko)	65	3	61	7	61	7			68
12	534	SB	780D00 (Audio Codec)	63	7	66	4	61	9			70
13	H77	SB	122N00 (CPU_CORE CTRL)	64	16	70	10	70	10			80
14	V66	SB	923L50 (P12VP_STBY Spule)	78	22	86	14	87	13			100
15	861	SB BS	522D00 (COM Driver)	66	4	63	7	63	7			70
16	K54	SB BS	800D00 (LAN CTRL)	68	2	64	6	64	6			70
17	754	SB BS	865D00 (DP to LVDS Converter)	64	6	65	5	65	5			70
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Description:

- Col. 9 DC 24V; without chassis, with load, with additional fan
Test: Windows IdleMode Date: 20.07.2015 13:09:34
- Col. 10 DC 24V; without chassis, with load, with additional fan
Test: SysTest Date: 21.07.2015 05:49:34
- Col. 11 DC 24V; without chassis, with load, with additional fan
Test: AMD TCT (boost enabled, HTC enabled) Date: 21.07.2015 07:22:44
- Col. 12 _____
