

Energy Efficiency Test Report

COMMISSION REGULATION (EU) No 617/2013



Product: CELSIUS W530 (maybe followed by suffixes)
Model: MI5W

Document number: Energy+1BU13-0252+EF02

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EUT: CELSIUS W530 (MI5W)

EUT:	Product Name:	CELSIUS W530
	Model:	MI5W
	Product Type:	Desktop Computer
	ErP Category:	B, D
	Manufacturer:	FUJITSU TECHNOLOGY SOLUTIONS GmbH
	Serial No.:	YLNf000001
	Additional Info:	The unit tested (EUT) is the highest power-demanding configuration.
APPLICANT:	Customer:	FUJITSU TECHNOLOGY SOLUTIONS GmbH
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SIGNATURE:	Release Date:	September 30, 2014
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2 Reference to the standards / requirements

COMMISSION REGULATION (EU) No 617/2013 of 26 June 2013 implementing Directive 2009/125/EC (ErP) of the European Parliament and of the Council with regard to ecodesign requirements for computers and computer servers.

Referring to EN 62623:2013 – Desktop and notebook computer - Measurement of energy consumption
Test Protocol for Energy Efficiency of Internal Power Supply (IPS), revision 6.6

(<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:175:0013:0033:EN:PDF>)

(http://www.plugloadsolutions.com/docs/collatrl/print/Generalized_Internal_Power_Supply_Efficiency_Test_Protocol_R6.6.pdf)

3 Test result judgment

	Requirements		Results
	AC input	Lowest power state	
ErP: EU No 617/2013 (up from 7/2013)	230V / 50Hz	≤ 0,50 [W]	Pass

	Requirements					Results
	AC input	$E_{TEC} \leq E_{TEC_MAX}$	Sleep (S3)	Off (S5)	IPS	
ErP: EU No 617/2013 (up from 7/2014)	230V / 50Hz	pass	≤ 5,00 [W] at WoL disabled ≤ 5,70 [W] at WoL enabled	≤ 1,00 [W] at WoL disabled ≤ 1,70 [W] at WoL enabled	pass	Pass
ErP: EU No 617/2013 (up from 1/2016)	230V / 50Hz	pass	≤ 5,00 [W] at WoL disabled ≤ 5,70 [W] at WoL enabled	≤ 1,00 [W] at WoL disabled ≤ 1,70 [W] at WoL enabled	pass	Pass

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4 General information about the test site

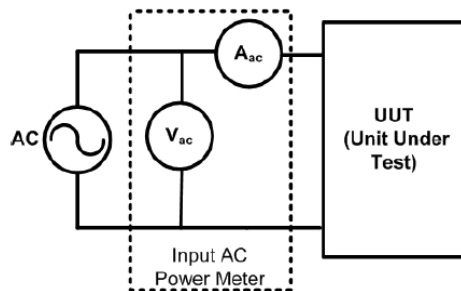
4.1 Test site conditions

- Supply voltage 230V: $\pm 1\%$
- Supply frequency 50Hz: $\pm 1\%$
- Total harmonic distortion (THD) of the electricity supply system: $< 2\%$
- Ambient temperature: 24°C
- Relative humidity: 43%

4.2 Test equipment

Type	Manufacturer	Model	Serial No.	Last Valid.	Next Valid.
Electricity supply system	ELGAR	TW5250-4	0625A02664	Feb. 2014	Feb. 2015
Type	Manufacturer	Model	Serial No.	Last Calibr.	Next Calibr.
POWER HITESTER	HIOKI	3332	070206070	Nov. 2013	Nov. 2014

4.3 Test set-up and circuits



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5 Equipment under test (EUT) information

5.1 Arrival date of the tested unit

Receipt date: June 06, 2014

5.2 Configuration and conditions

5.2.1 Configuration

Category B (specific)

CPU / Speed / Power / Physical cores	Intel, Core i3-4150 / 3.5GHz / 54W / 2 cores
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Category D (specific)

CPU / Speed / Power / Physical cores	Intel, Xeon E3-1286v3 / 3.7GHz / 84W / 4 cores
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All categories

Internal power supply (IPS), (Fujitsu name)	Delta, DPS-300AB-56 A (S26113-E566-V50)
IPS maximum continuous output power rating	300W
System board	Fujitsu, D3227-A12
Onboard components	Graphic: Integrated in CPU LAN: Intel, I217-LM (1Gbit)
Memory	4x 8GB, Samsung, M378B1G73BH0-CK0, DDR3
Additional cards	Graphic: 2x NVIDIA, NVS 300 WLAN: Intel Centrino 62205ANHMW LAN: Fujitsu, D2907-A11
Hard Disk drive	2x 500GB, Western Digital, WD5000AAKX, 3.5" SATA 1x 600GB, Western Digital, WD6000BLHX, 2.5" SATA
Optical Disk drive	Toshiba, SH216, DVD super multi Toshiba, SN-506, BD super multi
Multi Card reader	I/O Interconnect, HI215-5
System fan	AVC, DS12025B12H
Category of discrete graphic	G1
Operating System name / version	Windows 8.1 Pro / 6.3 (build 9600)

5.2.2 Conditions

Shipment condition

Display shut down	10 minutes
Computer to sleep (S3)	20 minutes
Computer to hibernate (S4)	60 minutes

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Measurement condition

Display shut down	Never
Computer to sleep (S3)	Never
Computer to hibernate (S4)	Never
Screen saver	None
LAN connection	One connection (onboard) at 1Gbit network
LAN driver version (onboard)	12.9.16.0
Bios version	R1.23.0

Shipment and Measurement condition

Bios:	LAN Controller CPU C3 Report CPU C6 Report CPU C7 Report Enhanced Speed Step Energy Performance ^{#1)} Low Power Soft Off Hibernate like Soft Off	Enabled Enabled Enabled CPU C7s Enabled Performance Enabled Enabled
Windows: Power Options	Fujitsu Computers EcoSettings	
Hard Disk drive turn off	10 minutes	
Wake on LAN (WoL) from sleep (S3) mode	Possible	
Wake on LAN (WoL) from off (S5) mode	Not possible	
LAN speed less than 1Gbit in sleep (S3) mode	Yes	
LAN speed less than 1Gbit in off (S5) mode	Yes	

#1) not available with Core i3-4150

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6 Test information

6.1 Test procedure

Measure the power consumption of the unit with a true RMS wattmeter according to section 2 (Reference to the standards / requirements) as follows.

Brief description

- Make sure that before starting the ACPI S0 idle test all preliminary file indexing and other one-time/periodic process are complete (e.g. virus scan and defragmentation programs).
- Connect the unit to a live Ethernet network switch of the unit highest network speed.
- Connect an AC power source and boot the unit.
- Configure the unit as required by the reference standards.
- Put the unit to the lowest power mode and measure the power consumption during a 5 minutes period.
- Boot and shut down the unit to sleep mode (ACPI S3 state) and measure the power consumption during a 5 minutes period.
- Boot the unit, wait 15 minutes and measure the power consumption in idle mode (ACPI S0 idle state) during a 5 minutes period.
- Shut down the unit to off mode (ACPI S5 state) and measure the power consumption during a 5 minutes period.
- Disable the discrete graphics cards and repeat the measurement of the sleep mode (ACPI S3 state), idle mode (ACPI S0 idle state), off mode (ACPI S5 state) and calculate the E_{TEC} value (kWh).
- Disable the wake on LAN (WoL) for sleep mode (ACPI S3 state) and repeat the measurement in sleep mode.
- Enable the wake on LAN (WoL) for off mode (ACPI S5 state) and repeat the measurement in off mode.

6.2 Notes to test procedure

- The AC outlet, if available, is not used during the test.
- The external display is connected to an AC power source external to the test unit.

6.3 Test method

Test method: Accumulate power values and record the average value according to EN 62623:2013

6.4 Test date

Test date: September 18, 2014

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6.5 Test result

EU No 617/2013, up from 7/2013

AC input	Power consumption measured	
	Lowest power state	Achieved by
230V / 50Hz	0,35 [W]	Short movement of On/Off switch on the front side
Does the computer automatically switch into a power saving mode?		Yes, Sleep (S3)

EU No 617/2013, up from 7/2014 and 1/2016

Category B

AC input	Power consumption measured			
	Idle	Sleep (S3)	Off (S5)	E _{TEC}
230V / 50Hz	42,3 [W] ^{#1)}	1,86 [W]	0,35 [W]	150,7 [kWh / year]

E_{TEC} requirement according to EU No 617/2013

Formula: $E_{TEC} = (8760 / 1000) * (0,55 * P_{off} + 0,05 * P_{sleep} + 0,40 * P_{idle})$

E_{TEC_MAX} criteria for category B: 292,0 [kWh / year] (158,0 kWh / year base + 134 kWh / year total adder ^{#2)}
up from 7/2014

E_{TEC_MAX} criteria for category B: 221,0 [kWh / year] (112,0 kWh / year base + 109 kWh / year total adder ^{#2)}
up from 1/2016

#1) The idle measurement was done according to annex E of EN 62623.

#2) The total adder depends on the tested configuration.

Measurements against shipment condition regarding wake on LAN (WoL)

AC input	Power consumption measured	
	Sleep (S3) WoL disabled	Off (S5) WoL enabled
230V / 50Hz	1,77 [W]	0,89 [W]

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Category D

AC input	Power consumption measured			
	Idle	Sleep (S3)	Off (S5)	E _{TEC}
230V / 50Hz	45,9 [W] ^{#1)}	1,86 [W]	0,34 [W]	163,3 [kWh / year]

E_{TEC} requirement according to EU No 617/2013

Formula: $E_{TEC} = (8760 / 1000) * (0,55 * P_{off} + 0,05 * P_{sleep} + 0,40 * P_{idle})$

E_{TEC_MAX} criteria for category D: 343,0 [kWh / year] (211,0 kWh / year base + 132 kWh / year total adder ^{#2)}
up from 7/2014

E_{TEC_MAX} criteria for category D: 257,0 [kWh / year] (150,0 kWh / year base + 107 kWh / year total adder ^{#2)}
up from 1/2016

#1) The idle measurement was done according to annex E of EN 62623.

#2) The total adder depends on the tested configuration.

Measurements against shipment condition regarding wake on LAN (WoL)

AC input	Power consumption measured	
	Sleep (S3) WoL disabled	Off (S5) WoL enabled
230V / 50Hz	1,77 [W]	0,87 [W]

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7 Test data of internal power supply (IPS)

Model name	DPS-300AB-56 A
Internal part number	S26113-E566-V50-01
Serial number	001701
Manufacturer	Delta
Continuous output power	300W
Type	AC-DC, multi-output
Test Method	Test Protocol for Energy Efficiency of Internal Power Supply (IPS), revision 6.6

Power consumption to be measured					
AC input	Continuous output power [W]		Input power [W]	Efficiency [%]	Power factor
100V / 60Hz	100%	300,97	342,95	87,76	0,936
	50%	151,64	167,57	90,49	0,961
	20%	61,22	69,17	88,51	0,983
	10%	30,96	37,06	83,54	0,989
115V / 60Hz	100%	301,02	339,39	88,69	0,988
	50%	151,64	166,80	90,91	0,979
	20%	61,21	68,88	88,86	0,951
	10%	30,95	36,93	83,81	0,916
230V / 50Hz	100%	301,03	330,85	90,99	0,970
	50%	151,69	164,68	92,11	0,938
	20%	61,19	68,89	88,82	0,842
	10%	30,95	37,53	82,47	0,720

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8 Energy efficiency relevant system information

Category according EU No 617/2013	A	B	C	D
Number of CPU cores	1	2	3	4
Year of manufacturer	2013			
Test voltage / frequency	230V / 50Hz			
E _{TEC} value and capability adjustments applied when all discrete graphic cards (dGfx) are disabled and if the system is tested with switchable graphics mode with UMA driving the display.	–	164,0kWh	–	166,8kWh
E _{TEC} value and capability adjustments applied when all discrete graphics cards (dGfx) are enabled.	–	150,7kWh	–	163,3kWh
Idle state power demand.	–	42,3W	–	45,9W
Sleep mode with WoL disable power demand.	–	1,77W	–	1,77W
Sleep mode with WoL enabled power demand.	–	1,86W	–	1,86W
Off mode with WoL disable power demand.	–	0,35W	–	0,34W
Off mode with WoL enabled power demand.	–	0,89W	–	0,87W
Sequence of steps for achieving a stable condition with respect to power demand.	In accordance to EN 62623:2013			
Description of how sleep and/or off mode was selected or programmed. Sequence of events required to reach the mode where the equipment automatically changes to sleep and/or off mode.	The information is available in the manual “Enviromental and energy saving information”. http://www.fujitsu.com/fts/support			
The duration of idle state condition before the computer automatically reaches sleep mode, or another condition which does not exceed the applicable power demand requirements for sleep mode.	20 minutes (Sleep, S3)			
The length of time after a period of user inactivity in which the computer automatically reaches a power mode that has a lower power demand requirement than sleep mode.	80 minutes (Hibernate, S4)			
The length of time before the display sleep mode is set to activate after user inactivity.	10 minutes			
User information on the energy-saving potential of power management functionality. User information on how to enable the power management functionality.	The information is available in the manual “Enviromental and energy saving information”. http://www.fujitsu.com/fts/support			
List of model configurations that are represented by the model for which the information is reported above.	Multiple configurations are available in the product data sheet. http://www.fujitsu.com/fts/products			