WHITE PAPER
ENERGY CONSUMPTION ESPRIMO C5731 E-STAR 5.0

In order to strengthen the leadership in implementing European environmental protection regulations, Fujitsu Technology Solutions provides all important energy information about their products. With the publication of energy consumption values and the typical Annual Energy Consumption (AEC), we join the proposal from the preparatory studies for the EU Commission regarding energy using products (e.g. http://www.ecocomputer.org).

Fujitsu Technology Solutions is also taking significant effort to reduce the energy consumption in data centres by providing highest energy efficiency with PRIMERGY servers. To underline these efforts Fujitsu Technology solutions joined the “Green Grid” and “Climate Savers Computing” initiatives and publishes SPECpower benchmark results for PRIMERGY servers.

A. Web page addresses for information on Energy, Environment and End-of-life treatment
Fujitsu Technology Solutions supports important information for energy, environment and End-of-life treatment on basis of European directives and beyond, for:
Energy: http://ts.fujitsu.com/energy
Environment: http://ts.fujitsu.com/environment
End-of-life treatment: http://ts.fujitsu.com/recycling

B. Software to use hardware power management
All Clients are designed to use the hardware power management potential efficiently. The defaults for the power management settings ex factory even exceed the Energy Star shipment requirements.

SETTINGS IN MICROSOFT® WINDOWS® FOR	DESKTOP, NOTEBOOK	NOTEBOOK (BATTERY)
Turn off the display	10 min	5 min
Turn off the hard disc	10 min	5 min
Standby	20 min	15 min
Hibernating	60 min	60 min

DeskView Energy provides additionally the possibility for remote settings of the power management values by an administrator. DeskView Energy is part of the standard software for Clients of Fujitsu.

C. Power Consumption and typical Annual Energy Consumption for Clients

Intel® Core™2 Duo E8600

OPERATIONAL MODES (ENERGY STAR VERSION 4.0 BASED)	MODES USED IN ENERGY STAR CALCULATOR	POWER CONSUMPTION FOR STANDARD CONFIGURATION
CONFIGURATION INFORMATION		**2 X2 GB, HDD, ODD, WINDOWS® 7™**
Related Processor for power consumption		Intel® Core™2 Duo E8600
Power consumtion notes		ACPI S5 power level after 5 minutes
Power consumption: Maximum (S0*, running appl., CD in use) 1)		67 W
Power consumption: Idle (S0, running OS, Idle-mode)		32 W
	On-mode 2)	35.5 W
Power consumption: Standby (S3*, energy saving mode, WOL enabled)	Standby-Modus	1.6 W
Power consumption: Minimum (ACPI status S5*, soft off, WOL enabled)	Off-mode 3)	1.3 W
Power consumption: Minimum (ACPI status S5, soft off, wake up power button)		0.6 W
Typical Annual Energy Consumption (WOL enabled) 4)		82.7 kWh/year
Heat dissipation, WOL enabled (MJ, 1 W = 3.6 kJ/h)		297.6 MJ/year
Heat dissipation, WOL enabled (kBTU, 1 W = 3.4121 BTU/h)		282.1 kBTU/year

Intel® Pentium Dual Core™ E2200

OPERATIONAL MODES (ENERGY STAR VERSION 4.0 BASED)	MODES USED IN ENERGY STAR CALCULATOR	POWER CONSUMPTION FOR STANDARD CONFIGURATION
CONFIGURATION INFORMATION		**2 X2 GB, HDD, ODD, WINDOWS® 7™**
Related Processor for power consumption		Intel® Pentium Dual Core™ E2200
Power consumption notes		ACPI S5 power level after 5 minutes
Power consumption: Maximum (S0*, running appl., CD in use) 1)		62 W
Power consumption: Idle (S0, running OS, Idle-mode)		35 W
	On-mode 2)	37.7 W
Power consumption: Standby (S3, energy saving mode, WOL enabled)	Standby-Modus	1.6 W
Power consumption: Minimum (ACPI status S5*, soft off, WOL enabled)	Off-mode 3)	1.3 W
Power consumption: Minimum (ACPI status S5, soft off, wake up power button)		0.6 W
Typical Annual Energy Consumption (WOL enabled) 4)		87.3 kWh/year
Heat dissipation, WOL enabled (MJ, 1 W = 3.6 kJ/h)		314.1 MJ/year
Heat dissipation, WOL enabled (kBTU, 1 W = 3.4121 BTU/h)		297.7 kBTU/year

The typical Annual Energy Consumption (AEC) is calculated simular to the energy calculator of Energy Star:
www.eu-energystar.org

1) The Maximum Mode is measured according to SYSTEST 32 of Fujitsu for PCs (to be replaced by Energy Star standard benchmarking tool when available).

2) The “On-mode“ is determined by the proposal of the European MEEuP Product Cases Report (2005) based on the MEEuP Methodology Report for the European Commission (2005):
“On-mode” for Home PC is calculated by: 80% Idle, 20% full load / maximum,
“On-mode” for Office PC is calculated by: 90% Idle, 10% full load / maximum.

3) Display power consumption of 0.0 watt in Off-Mode realized either with 0-Watt-Power-Save-Mode on selected SCENICVIEW display models or switched monitor outlet on power supply unit of certain PC models.

4) Power management is set to normal. The choice of use for calculation is Home / Busy Office with the following usage patterns:

Power measurement at: 230 V / 50 Hz

HOURS / DAY	CONSUMER: HOME (300 DAYS/A)	BUSINESS:
On-mode 2)	2	8
Standby-Modus	9	2
Off-mode 3)	13	14

Other day´s per year are calculated in Off-mode; WOL: Wake on LAN
*) ACPI: Advanced Configuration and Power Interface specification, an open industry standard, first released in December 1996
ACPI S0: Working, the normal working state of the computer
ACPI S3: known as Suspend to RAM (STR), Standby in versions of Windows through Windows Vista
ACPI S5: Soft Off - some components remain powered so the computer can “wake up” from input from the keyboard, clock, modem, LAN or USB device

FUJITSU PLATFORM SOLUTIONS

In addition to Fujitsu ESPRIMO C5731 E-Star 5.0, Fujitsu provides a range of platform solutions. They combine reliable Fujitsu products with the best in services, know-how and worldwide partnerships.

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With the Fujitsu Dynamic Infrastructures approach, Fujitsu offers a full portfolio of IT products, solutions and services, ranging from clients to datacenter solutions, Managed Infrastructure and Infrastructure as-a-Service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. This takes IT flexibility and efficiency to the next level.

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Software
www.fujitsu.com/software/

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Learn more about Fujitsu ESPRIMO C5731 E-Star 5.0, please contact your Fujitsu sales representative or Fujitsu Business partner, or visit our website.
http://ts.fujitsu.com/ESPRIMO

FUJITSU GREEN POLICY INNOVATION

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. Please find further information at http://www.fujitsu.com/global/about/environment/



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