

Intel® Pentium® D 820/ 830/840 Intel® Pentium® Extreme Edition 840

Power Supply Considerations
&
Quick Reference Guide for Intel Channel Partners
and Integrators



Power Supply Considerations & Dual Core Processor Quick Reference Guide

	Intel® Pentium® D Processor 820	Intel® Pentium® D Processor 830/840	Intel® Pentium® Processor Extreme Edition 840*
Specification	FMB 05A=95W	FMB 05B = 130W Icc max = 125A	FMB 05B = 130W Icc max = 125A, Icc_reset = <u>132.5A</u>
Key Note	Same requirements as previous processors	Has new Thermal and electrical requirements.	1 - Has new Thermal and electrical requirements.
Power Supply (PS)	No PS change = Same PS as used in 5xx and 6xx based PCs. (13 A Continuous, 16.5 A peak for 10ms, 2x2 connector, 2x12VDC rail)	Change in PS <u>Amps</u> specification: 16 A continuous, 19 A peak for 10ms Keep same 2x2 connector, 2x12VDC rail,	1 -Change in PSU specification: <u>Two</u> 12V rails required to allow system compliance to the safety requirements UL and EN-60950, each rated at: 8 A continuous 11 A peak 2 -Change in PSU <u>connector</u> specification: 2x4 (8 pin) connector is always needed
Board Support (Chipset Spec)	945/955X Chipset	945/955X Chipset	955X Chipset
Chassis Requirement	No Chassis change = Same chassis as used in 5xx and 6xx based PCs. TAC 1.1 (tested with 05A platform)	TAC 1.1 - (05B platform)	TAC 1.1 (05B platform)
ATX FHS	No FHS change = Same FHS as 5xx and 6xx. FCLGA4-A	<u>New</u> FHS solution: FCLGA4-D	<u>New</u> FHS solution: FCLGA4-D
BTX TMA	No FHS change = Same FHS as 5xx and 6xx. FCLGA4-I	(BTX boxed CPU): FCLGA4-B - 3rd party solutions (05B - FCLGA4-B)	(BTX boxed CPU): FCLGA4-B - 3rd party solutions (05B - FCLGA4-B)
EM64T Support	Yes	Yes	Yes

RISKS of using wrong power supply: Customers who use the wrong power supply could damage the power supply. The Pentium® D processor will draw more amperage than power supply can provide. This may cause the power supply to “crowbar” or go into a switched mode. Worst case is damage to power supply and resulting boot failure. Higher quality power supplies may just crowbar, while lower cost units could become damaged.

Be sure to verify the correct amperage is listed for the 12V rails Example:

Look on PSU output for 12 volt rails

OUTPUT						
	+3.3V	+5V	+12V1	+12V2	+5V SB	-12V
Max. Load	32.0A*	40A*	19A	19A	2.0A	1.0A
Min. Load	0.5A	0.5A	0.4A	0.4A	0A	0A
Load Reg.	±3%	±3%	±3%	±3%	±5%	±5%
Ripple V(p-p)	50mV	50mV	120mV	120mV	50mV	120mV

* +5V, +3.3V, +12V1, 12V2 maximum output 530 Watts max.

Compatibility with Chassis: Some variations of power supplies such as EPS12V are larger than a normal ATX12V power supply, and will only fit in larger chassis designed for the increased size.

For details on tested power supplies please check www.intel.com/go/powersupplies

Upgrades from single core Intel® Pentium® 4 processors to Intel® Pentium® D processors: Customers looking to upgrade the processor must be aware of the new platform requirements. You will not be able to simply drop a Intel® Pentium® D processor into an existing Intel® Pentium® 4 processor system.

If the motherboard pulls more current than PSU is rated for, then the Board will not power up.