

## Index

### **1. TOP TEN FREQUENTLY ASKED QUESTIONS ABOUT AMD PROCESSORS**

- 1.1. **How Do I Identify My AMD Athlon XP Processor?**
- 1.2. **Does My Motherboard Support The AMD Athlon XP Processor?**
- 1.3. **Why Does My AMD Athlon XP Processor Not Run At The Expected Frequency?**
- 1.4. **What Is The Maximum Operating Temperature For My AMD Athlon™ XP Processor?**
- 1.5. **Can I Use Windows 95/98/ME/XP/NT/2000/ With The AMD Athlon XP Processors?**
- 1.6. **Do I Have To Reinstall The Operating System In Order To Optimise It To Run On The AMD Athlon XP Processor?**
- 1.7. **Does Microsoft Windows XP Include Drivers For AMD Chipsets?**
- 1.8. **Why Does My Computer Not Recognize The AMD Athlon XP processor?**
- 1.9. **Can I Use The AMD Athlon XP Processor In A Multiprocessor Motherboards?**
- 1.10. **Is My AMD Athlon XP Processor Correctly Identified By My Computer?**

### **2. FREQUENTLY ASKED QUESTIONS CONTINUED**

#### **2.1. Thermal solutions**

- 2.1.a What is the normal operating temperature of my processor?
- 2.1.b What is the maximum operating temperature of my processor?
- 2.1.c What temperature value should be reported by the BIOS?
- 2.1.d I am running a temperature monitoring software, what temperature reading am I expected to see?
- 2.1.e Does AMD recommend the use of heatsinks for their range of processors?
- 2.1.f Does AMD have a heatsink installation guide?

#### **2.2. AMD Processors OPN (Ordering Part Number) & Electrical Specifications**

- 2.2.a What does OPN mean?
- 2.2.b How can I translate the OPN number on the processor die?
- 2.2.c What are the electrical specifications of the AMD Processor - Core voltage, current, power, Bus frequency etc...?

#### **2.3. Processor Performance Information**

- 2.3.a What kind of performance will an AMD Athlon MP processor deliver?

#### **2.4. Front Side Bus Frequency Support (FSB)**

- 2.4.a How do I know what Frontside bus (FSB) frequency my processor supports?
- 2.4.b Why is my 266MHz Frontside bus (FSB) AMD Athlon™ Processor operating at a frequency that is lower than expected?
- 2.4.c Can I install a 266MHz front-side bus AMD Athlon processor in a motherboard that only supports a 200MHz front-side bus (FSB)?

#### **2.5. Software And Hardware Recommendation**

- 2.5.a Does my Motherboard support the AMD Athlon processor?
- 2.5.b Will my favourite software work with the AMD Athlon & Duron™ processors?
- 2.5.c Is the range of AMD processors compatible with my favourite Hardware?
- 2.5.d Can I install a "normal" AMD Athlon socket-A processor in a dual processor motherboard?

#### **2.6. Double Data Rate Memory (DDR)**

- 2.6.a Which DDR memory module should I use with my processor?

#### **2.7. Recommended Memory**

- 2.7.a What are the recommended DDR memory modules for AMD Athlon processors?

#### **2.8. Troubleshooting Tips**

- 2.8.a How do I resolve system stability issues (lockups, blue screens, resets, etc)?

2.8.b Where can I find more information on how to build a reliable system based on AMD processors?

**2.9. Contacting AMD**

2.9.a How can I contact the European Technical Support Center?

## 1. TOP TEN FREQUENTLY ASKED QUESTIONS ABOUT AMD PROCESSORS

### 1.1. How Do I Identify My AMD Athlon XP Processor?

Processors are identified by laser markings on AMD processors known as Ordering Part Number (OPN). The OPN identifies the processor and its specifications.

OPN example for the AMD Athlon XP Processor

#### Example A X1900 D M T 3 C

<b>A</b>	<b>Family/Architecture:</b>	A = AMD Athlon XP Processor Architecture
<b>X</b>	<b>Generation:</b>	X = High-Performance Desktop Processor
<b>1900</b>	<b>Model Number:</b>	1900 operates at 1600MHz,
<b>D</b>	<b>Package Type:</b>	D = Organic Pin Grid Array (OPGA)
<b>M</b>	<b>Operating Voltage:</b>	M = 1.75 V
<b>T</b>	<b>Max Die Temperature:</b>	T = 90°C
<b>3</b>	<b>Size of L2 Cache:</b>	3 = 256 Kbytes
<b>C</b>	<b>FSB:</b>	C = 266 MHz

OPN example for the AMD Athlon Processor

#### Example A 1400 A M S 3 C

<b>A</b>	<b>Family/Architecture:</b>	A = AMD Athlon Processor Architecture
<b>1400</b>	<b>Model Number:</b>	1400 = 1400MHz,
<b>A</b>	<b>Package Type:</b>	A = Ceramic Pin Grid Array (CPGA)
<b>M</b>	<b>Operating Voltage:</b>	M = 1.75V
<b>S</b>	<b>Max Case Temperature:</b>	S = 95°C
<b>3</b>	<b>Size of L2 Cache:</b>	3 = 256 Kbytes
<b>C</b>	<b>FSB:</b>	C = 266 MHz

OPN example for the AMD Duron Processor

#### Example D HD 1200 D M T 3 C

<b>D</b>	<b>Family/Architecture:</b>	D = AMD Duron Processor Architecture
<b>HD</b>	<b>Generation</b>	HD = High Performance Desktop
<b>1200</b>	<b>Speed</b>	1200 = 1200MHz
<b>A</b>	<b>Package Type:</b>	A = Ceramic Pin Grid Array (CPGA)
<b>M</b>	<b>Operating Voltage:</b>	M = 1.75 V
<b>T</b>	<b>Max Case Temperature:</b>	T = 90°C
<b>1</b>	<b>Size of L2 Cache:</b>	1 = 64 Kbytes
<b>B</b>	<b>FSB:</b>	B = 200 MHz

For other OPN examples please refer to the configuration section for AMD Athlon processors available from the AMD Website.

[http://www.amd.com/us-en/Processors/TechnicalResources/0,,30\\_182\\_739\\_3748,00.html](http://www.amd.com/us-en/Processors/TechnicalResources/0,,30_182_739_3748,00.html) provides an easy link to datasheets showing more details on OPN numbers.

[Back to Top](#)

### 1.2. Does My Motherboard Support The AMD Athlon XP Processor?

For a list of motherboards that support the AMD Athlon XP processor please refer to the AMD Athlon XP processor approved motherboard list available from the AMD Website. To view this list, please use the following link: <http://www1.amd.com/athlon/mb1>

### 1.3. Why Does My AMD Athlon XP Processor Not Run At The Expected Frequency?

The AMD Athlon XP processor is identified using model numbers, as opposed to frequency. Model numbers are designed to communicate the relative application performance among the various AMD Athlon XP processors, as well as communicate the architectural superiority over previous models of AMD Athlon processors. Please also see (2.4.b Why is my 266MHz Frontside bus (FSB) AMD Athlon™ Processor operating at a frequency that is lower than expected?)

AMD Athlon XP processor 2100+ operates at a frequency of 1.733GHz.

AMD Athlon XP processor 2000+ operates at a frequency of 1.667GHz.

AMD Athlon XP processor 1900+ operates at a frequency of 1.60GHz.

AMD Athlon XP processor 1800+ operates at a frequency of 1.533GHz.

AMD Athlon XP processor 1700+ operates at a frequency of 1.47GHz.

AMD Athlon XP processor 1600+ operates at a frequency of 1.40GHz.

AMD Athlon XP processor 1500+ operates at a frequency of 1.33GHz.

#### **1.4. What Is The Maximum Operating Temperature For My AMD Athlon™ XP Processor?**

The maximum operating temperature of an AMD Athlon XP processor can be determined by the processor's Ordering Part Number (OPN). The OPN is located on the top of the processors See (2.2.a. What does OPN mean?).

Example: A X1800 D M S 3 C

The temperature is indicated by the third character from the right in the OPN and is denoted by an S or T character. Current data for the AMD Athlon XP processor identifies the maximum operating temperature as: **T = 90°C. S = 95°C.**

#### **1.5. Can I Use Windows 95/98/ME/XP/NT/2000/ With The AMD Athlon XP Processors?**

The AMD Athlon XP Processor is compatible with all current Windows operating systems.

#### **1.6. Do I Have To Reinstall The Operating System In Order To Optimise It To Run On The AMD Athlon XP Processor?**

Yes, you need to re-install the operating system to take advantage of the full features of the AMD Athlon XP processor. The main features include:

- QuantiSpeed™ Architecture
- High Performance, full speed on-chip cache (384Kb total).
- 266 MHz advanced front-side bus
- 3DNow!™ Professional technology (with 51 new instructions)

Further information may be obtained from the following link:

[http://www.amd.com/us-en/Processors/ProductInformation/0,,30\\_118\\_756\\_3734,00.html](http://www.amd.com/us-en/Processors/ProductInformation/0,,30_118_756_3734,00.html)

[Back to Index](#)

#### **1.7. Does Microsoft Windows XP Include Drivers For AMD Chipsets?**

Yes Microsoft Windows XP includes driver support for motherboards that are based on AMD Chipsets.

#### **1.8. Why Does My Computer Not Recognize The AMD Athlon XP processor?**

Failure to recognize the AMD Athlon XP processor is usually related to:

i) The BIOS version on the Motherboard

ACTION - Check with the manufacturer of the motherboard for a BIOS update that correctly identifies the AMD Athlon XP processor.

**NOTE:** Always follow the Motherboard Manufactures guide carefully when upgrading your BIOS.

ii) Hardware that is not approved for the AMD Athlon XP processor.

ACTION - Use the Web-link to see a list of approved hardware for the AMD Athlon XP processor at the AMD system configuration website using the following link: [http://www.amd.com/us-en/Processors/TechnicalResources/0,,30\\_182\\_869\\_1039,00.html](http://www.amd.com/us-en/Processors/TechnicalResources/0,,30_182_869_1039,00.html).

iii) Frontside bus frequency

ACTION - Ensure the Frontside bus (FSB) is set to 133Mhz. Check User's Manual supplied with your motherboard for instructions on how to set the FSB frequency.

#### **1.9. Can I Use The AMD Athlon XP Processor In A Multiprocessor Motherboards?**

The AMD Athlon XP processors are designed to be used in Uni-Processor desktop systems and are not recommended for multiprocessor motherboards. AMD produces a range of AMD Athlon MP processors that are specifically designed to be used in multi-processor Motherboards. Current AMD Athlon MP Processor Models include:- MP 1000, MP 1200, MP 1500+, MP 1600+, MP 1800+ , MP1900+, MP2000+.

#### **1.10. Is My AMD Athlon XP Processor Correctly Identified By My Computer?**

A correctly identified Athlon processor will be indicated by the BIOS during the boot process as shown in figure 1. In figure 2 the operating system is shown correctly identifying the Athlon™ XP processor in the system settings. If the BIOS does not identify the processor correctly the operating system will also not recognise it correctly.

[Back to Index](#)

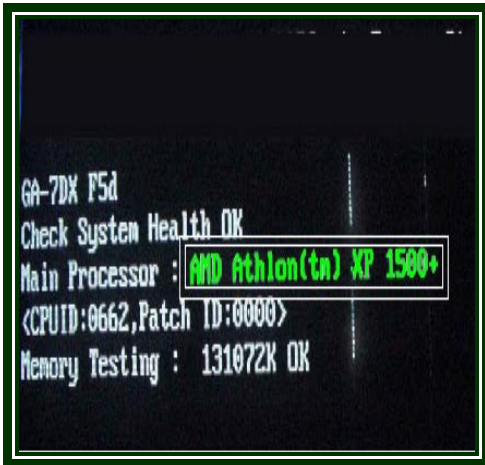


Figure 1. Shows an AMD Athlon™ 1500+ XP processor being correctly identified by the BIOS during power-on phase.

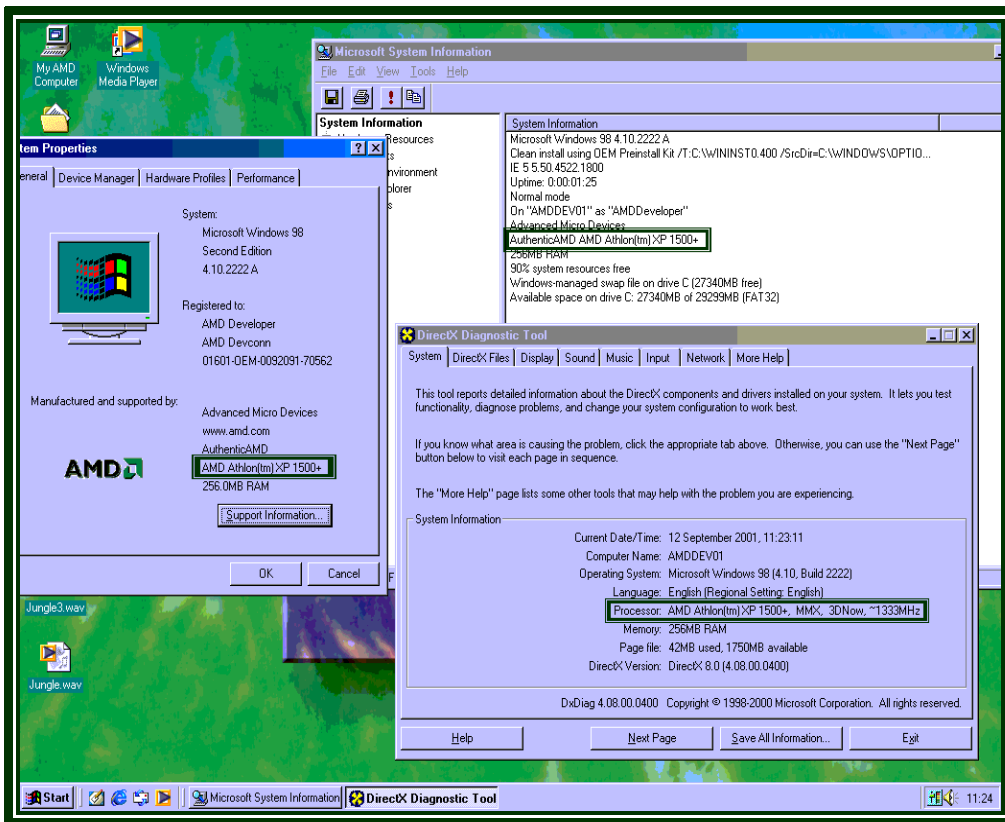


Figure 2: Shows an AMD Athlon™ 1500+ XP processor being correctly identified by the operating system

[Back to Index](#)

## 2. FREQUENTLY ASKED QUESTIONS CONTINUED

### 2.1. Thermal solutions

**2.1.a What is the normal operating temperature of my processor?**

**2.1.b What is the maximum operating temperature of my processor?**

**2.1.c What temperature value should be reported by the BIOS?**

**2.1.d I am running a temperature monitoring software, what temperature reading am I expected to see?**

Answer (Same for all):

Our current AMD processors are specified to have a die temperature of 0°C - 90°C or 0°C -95°C, depending on the CPU model.

These are the temperature ranges we specify our products to. We cannot guarantee any reading you get from the motherboard, using the BIOS or third party monitoring software. As a general guideline, the temperature difference between the die and the bottom of the CPU is about 30°C.

It is worth noting that the maximum temperature of the CPU is reached when running heavy applications such as 3D Games etc... Therefore one should allow an extra 10-15°C for safety if you are reading from the BIOS set up.

An approximation to the typical reading from a BIOS or an external software utility is expected to be around 60°C-65°C or lower.

[Back to Index](#)

**2.1.e Does AMD recommend the use of heatsinks for their range of processors?**

Yes.

**Never** switch on the power to an AMD Athlon or AMD Duron processor without a heatsink and fan installed. The use of an AMD processor without a proper thermal solution will result in permanent and irreversible damage to your CPU.

To help you to selecting a thermal solution for your system AMD provides a list of heatsinks that have been evaluated and recommended by AMD for use with AMD processors.

Note: The list is not intended to show a comprehensive listing for all heatsinks that support AMD processors.

For the list of heatsinks recommended for AMD Processors please visit the AMD website at the following links.

<http://www1.amd.com/products/athlon/thermals>

<http://www1.amd.com/products/duron/thermals>

**2.1.f Does AMD have a heatsink installation guide?**

Yes.

We have compiled an installation document that goes through the heatsink installation process in a methodical manner. We also have a "How to build an AMD Athlon based system guide," both of which can be found on our website.

**IMPORTANT:** We highly recommend you that read the installation guide. This will provide you with useful technical information that will help you to build a professional system. This information is available from the following website: <http://www1.amd.com/athlon/config>.

Improper installation of your heatsink will lead to failure of your AMD processor and **Void** your warranty.

[Back to Index](#)

## 2.2. AMD Processors OPN (Ordering Part Number) & Electrical Specifications

### 2.2.a What does OPN mean?

OPN stands for "Ordering Part Number" and is used to identify the different models of processors manufactured by AMD.

OPN example for the AMD Athlon Processor 1.4 GHz running at 266 MHz FSB

A 1400 A M S 3 C

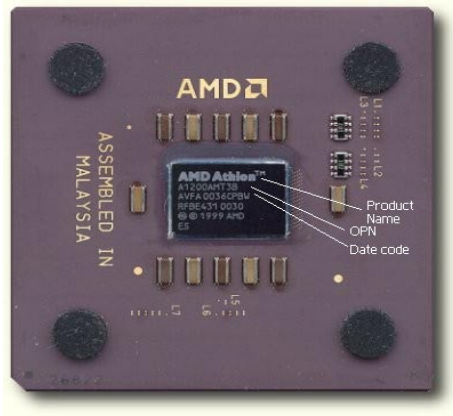


Figure 3. Example of an AMD Processor showing OPN number

[Back to Index](#)

### 2.2.b How can I translate the OPN number on the processor die?

i) OPN example for the AMD Athlon™ Processor

**A 1400 A M S 3 C**

A	Family/Architecture	A = AMD Athlon Processor Architecture
1400	Speed	1400 = 1400MHz,
A	Package Type	A = Ceramic Pin Grid Array (CPGA) socket
M	Operating Voltage	M = 1.75V
S	Case Temperature	S = 95°C
3	Size of L2 Cache	3 = 256 KB
C	FSB	C = 266 MHz

ii) OPN example for the AMD Athlon™ XP Processor

**AX 1800 D M T 3 C**

A	Family/Architecture	A = AMD Athlon XP Processor Architecture
X	Generation	X = High performance Desktop Processor
1800	Speed	1800 = 1800MHz,
D	Package Type	D = Organic Pin Grid Array (OPGA) socket
M	Operating Voltage	M = 1.75V
T	Case Temperature	T = 90°C
3	Size of L2 Cache	3 = 256 KB
C	FSB	C = 266 MHz

[Back to Index](#)

iii) OPN example for the AMD Athlon™ MP Processor

**A HX 1200 A M S 3 C**

A	Family/Architecture	A = AMD Athlon Processor Architecture
HX	Generation	High - Performance Processor for Multiprocessing Systems
1200	Speed	1200 = 1200MHz.
A	Package Type	A = Ceramic Pin Grid Array (CPGA) socket (or D=OPGA-later model)
M	Operating Voltage	P = 1.7V
S	Case Temperature	S = 95°C
3	Size of L2 Cache	3 = 256 KB
C	FSB	C = 266 MHz

[Back to Index](#)

iv) OPN example for the AMD Duron™ Processor

**D HD 1100 A M T 1 B**

D	Family/Architecture	D = AMD Duron Processor Architecture
HD	Generation	HD = High Performance Desktop
1100	Speed	1100 = 1100MHz.
A	Package Type	A = (Ceramic Pin Grid Array) CPGA socket
M	Operating Voltage	M = 1.75V
T	Case Temperature	T = 90°C
1	Size of L2 Cache	1 = 64KB
B	Max FSB	B = 200 MHz

v) OPN example for the AMD Duron™ Processor

**D 950 A U T 1 B**

D	Family/Architecture	D = AMD Duron Processor Architecture
950	Speed	950 = 950MHz.
A	Package Type	A = CPGA (Ceramic Pin Grid Array) socket
U	Operating Voltage	U = 1.6V
T	Case Temperature	T = 90°C
1	Size of L2 Cache	1 = 64KB
B	Max FSB	B= 200 MHz

[Back to Index](#)



### 2.2.c What are the electrical specifications of the AMD Processor - Core voltage, current, power, Bus frequency etc....?

The following table summarizes electrical specifications for Socket-based AMD Processors

[Back to Index](#)

#### AMD Athlon Processor Socket A

Order Part Number (OPN)	Family A=Athlon	Speed in MHz	Package Type A=PGA D=OPGA	Operating Voltage (Core Voltage Range) P = 1.60V-1.80V M = 1.65V-1.85V	Operating Voltage (Nominal Core Voltage) P = 1.70V M = 1.75V	Die Temperature T = 90°C S = 95°C	L2Cache Size 3=256KB	Front Side Bus Frequency(FSB) B=200MHz C=266MHz	Max Thermal Power in watts	Max Current (Icc) in Amperes
AX2100DMT3C	Athlon XP	1733 MHz	OPGA	1.65V - 1.85V	1.75V	0°C-90°C	256KB	266 MHz	72W	41.1A
AX2000DMT3C	Athlon XP	1667 MHz	OPGA	1.65V - 1.85V	1.75V	0°C-90°C	256KB	266 MHz	70W	40A
AX1900DMT3C	Athlon XP	1600 MHz	OPGA	1.65V - 1.85V	1.75V	0°C-90°C	256KB	266 MHz	68.0W	38.9A
AX1800DMT3C	Athlon XP	1533 MHz	OPGA	1.65V - 1.85V	1.75V	0°C-90°C	256KB	266 MHz	66.0W	37.7A
AX1700DMT3C	Athlon XP	1467 MHz	OPGA	1.65V - 1.85V	1.75V	0°C-90°C	256KB	266 MHz	64.0W	36.6A
AX1600DMT3C	Athlon XP	1400 MHz	OPGA	1.65V - 1.85V	1.75V	0°C-90°C	256KB	266 MHz	62.8W	35.9A
AX1500DMT3C	Athlon XP	1333 MHz	OPGA	1.65V - 1.85V	1.75V	0°C-90°C	256KB	266 MHz	60.0W	34.3A
AMP2000DMS3C	Athlon MP	1667 MHz	OPGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	66.0W	34.3A
AMP1900DMS3C	Athlon MP	1600 MHz	OPGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	66.0W	34.3A
AMP1800DMS3C	Athlon MP	1533 MHz	OPGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	66.0W	34.3A
AMP1600DMS3C	Athlon MP	1400 MHz	OPGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	62.8W	35.9A
AMP1500DMS3C	Athlon MP	1333 MHz	OPGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	60.0W	34.3A
AHX1200DMS3C	Athlon MP	1200 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	49.1W	31.3A
AHX1000DMS3C	Athlon MP	1000 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	41.3W	26.3A
A1400AMS3C	Athlon	1400 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	72.0W	41.2A
A1400AMS3B	Athlon	1400 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	200 MHz	72.0W	41.2A
A1333AMS3C	Athlon	1333 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	70.0W	40.0A
A1300AMS3B	Athlon	1300 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	200 MHz	68.0W	39.0A
A1200AMS3C	Athlon	1200 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	66.0W	38.0A
A1200AMS3B	Athlon	1200 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	200 MHz	66.0W	37.5A
A1133AMS3C	Athlon	1133 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	63.0W	35.5A
A1100AMS3B	Athlon	1100 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	200 MHz	60.0W	34.5A
A1000AMS3C	Athlon	1000 MHz	PGA	1.65V-1.85V	1.75V	0°C-95°C	256KB	266 MHz	54.0W	31.5A
A1000AMT3B	Athlon	1000 MHz	PGA	1.65V-1.85V	1.75V	0°C-90°C	256KB	200 MHz	54.0W	31.5A
A1000APT3B	Athlon	1000 MHz	PGA	1.60V-1.80V	1.70V	0°C-90°C	256KB	200 MHz	54.3W	31.5A
A0950APT3B	Athlon	950 MHz	PGA	1.60V-1.80V	1.70V	0°C-90°C	256KB	200 MHz	52.0W	30.3A

Order Part Number (OPN)	Family A=Athlon	Speed in MHz	Package Type A=PGA D=OPGA	Operating Voltage (Core Voltage Range) P=1.60V-1.80V M=1.65V-1.85V	Operating Voltage (Nominal Core Voltage) P=1.70V M=1.75V	Die Temperature T=90°C S=95°C	L2Cache Size 3=256KB	Front Side Bus Frequency(FSB) B=200MHz C=266MHz	Max Thermal Power in watts	Max Current (Icc) in Amperes
A0900APT3B	Athlon	900 MHz	PGA	1.60V-1.80V	1.70V	0°C-90°C	256KB	200 MHz	49.7W	29.2A
A0850APT3B	Athlon	850 MHz	PGA	1.60V-1.80V	1.70V	0°C-90°C	256KB	200 MHz	44.8W	29.4A
A0800APT3B	Athlon	800 MHz	PGA	1.60V-1.80V	1.70V	0°C-90°C	256KB	200 MHz	42.6W	28.0A
A0750APT3B	Athlon	750 MHz	PGA	1.60V-1.80V	1.70V	0°C-90°C	256KB	200 MHz	40.4W	26.6A
A0700APT3B	Athlon	700 MHz	PGA	1.60V-1.80V	1.70V	0°C-90°C	256KB	200 MHz	38.3W	25.2A
A0650APT3B	Athlon	650 MHz	PGA	1.60V-1.80V	1.70V	0°C-90°C	256KB	200 MHz	36.1W	23.8A

### AMD Duron Processor Socket A

Ordering Part Number (OPN)	Family D=Duron	Speed in MHz	Package Type A=PGA	Operating Voltage (Core Voltage Range) U=1.50V-1.70V M=1.65V-1.85V	Operating Voltage (Nominal Core Voltage) U=1.60V M=1.75V	Die Temperature T=90°C	L2 Cache Size 1=64KB	Front Side Bus Frequency (FSB) B=200MHz	Max Thermal Power	Max Current (Icc) in Amperes
DHD1300AMT1B	Duron	1300MHz	PGA	1.65V - 1.85V	1.75V	0°C - 90°C	64KB	200 MHz	60W	34.3A
DHD1200AMT1B	Duron	1200MHz	PGA	1.65V - 1.85V	1.75V	0°C - 90°C	64KB	200 MHz	54.7W	31.3 A
DHD1100AMT1B	Duron	1100MHz	PGA	1.65V - 1.85V	1.75V	0°C - 90°C	64KB	200 MHz	50.3W	28.7 A
DHD1000AMT1B	Duron	1000MHz	PGA	1.65V - 1.85V	1.75V	0°C - 90°C	64KB	200 MHz	46.1W	26.3 A
D0950AUT1B	Duron	950MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	41.5W	25.9 A
D0900AUT1B	Duron	900MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	39.5W	24.7 A
D0850AUT1B	Duron	850MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	37.4W	23.4 A
D0800AUT1B	Duron	800MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	35.4W	22.1 A
D0750AUT1B	Duron	750MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	33.4W	20.9 A
D0700AUT1B	Duron	700MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	31.4W	19.6 A
D0650AUT1B	Duron	650MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	29.4W	18.4 A
D0600AUT1B	Duron	600MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	27.4W	17.1 A
D0550AUT1B	Duron	550MHz	PGA	1.50V - 1.70V	1.60V	0°C - 90°C	64KB	200 MHz	21.1W	15.8 A

[Back to Index](#)

## 2.3. Processor Performance Information

### 2.3.a What kind of performance will an AMD Athlon MP processor deliver?

The AMD Athlon MP processor offers a high level of performance for servers and workstations in the varying system price bands relative to competitive PC processors available on the market. The performance can be measured by using a number of readily available benchmarking tools. Some of these performance data may be seen on the following web-page: <http://www.amd.com/products/cpg/server/athlon/benchmarks.html>.

[Back to Index](#)

## 2.4. Front Side Bus Frequency Support (FSB)

### 2.4.a How do I know what Frontside bus (FSB) frequency my processor supports?

Read the last letter of the OPN as per example given in the above table, the letter B = 200 MHz and C = 266 MHz. The frequencies shown are virtual frequencies and are the effect of transferring data twice per clock cycle instead of once per cycle. As such motherboard manufacturers may specify the base frequency, which is 100MHz and 133MHz respectively instead of this virtual frequency.

### 2.4.b Why is my 266MHz Frontside bus (FSB) AMD Athlon™ Processor operating at a frequency that is lower than expected?

Motherboards that support both a 266MHz and a 200MHz front-side bus (FSB) will typically have a factory-default FSB setting of 200MHz (*100MHz Base Frequency*) to protect a 200MHz FSB processor from being accidentally damaged.

If an AMD Athlon processor that supports a 266MHz FSB is installed on a motherboard that is configured to operate the FSB at 200MHz, it will operate at a lower frequency. This is a result of the processor's multiplier that is fixed for the model of processor. The function of the multiplier is to multiply the bus frequency to derive the processor frequency. A FSB that is set to operate at 200MHz is operating at a frequency lower than expected for an AMD Athlon processor that supports a 266MHz FSB. Consequently, a 266MHz FSB processor will operate at a lower frequency if the FSB is only running at 200MHz.

For example,

A 1000MHz AMD Athlon processor that supports a 266MHz FSB has an associated fixed multiplier and is indicated by the OPN Number, *A 1000 A M S C*. (*The C denotes that the CPU supports a FSB of 266MHz or Base Frequency - 133MHz*)

To determine the processor multiplier, take the processor frequency and divide it by the base frequency:  $1000 / 133 = 7.5$

This gives **fixed processor multiplier of 7.5**, which is a fixed value for that particular processor.

Now use the same processor and **set the FSB to 200MHz** (*Base Freq = 100MHz*)

Processor frequency = Base frequency x Processor Multiplier      *Base Freq = 100MHz,      Processor Multiplier = 7.5*

**The processor will operate at 750MHz (100MHz Base freq x 7.5 multiplier = 750MHz CPU Speed).**

A jumper on the motherboard or a setting in the BIOS usually configures the FSB. Refer to the motherboard manual or contact the motherboard manufacturer for detailed instructions.

[Back to Index](#)

### 2.4.c Can I install a 266MHz front-side bus AMD Athlon processor in a motherboard that only supports a 200MHz front-side bus (FSB)?

Yes, but at a lower frequency.

See (2.4.b Why is my 266MHz Frontside bus (FSB) AMD Athlon™ Processor operating at a frequency that is lower than expected?)

See also (1.10 Is My AMD Athlon XP Processor Correctly Identified By My Computer?)

## 2.5. Software And Hardware Recommendation

### 2.5.a Does my Motherboard support the AMD Athlon processor?

For a list of recommended motherboards that support the AMD Athlon Processor please follow the link to our AMD Athlon configuration Page: [http://www.amd.com/us-en/Processors/TechnicalResources/0,,30\\_182\\_869\\_1039^2338,00.html](http://www.amd.com/us-en/Processors/TechnicalResources/0,,30_182_869_1039^2338,00.html)

For supporting information see also 1.8. Why Does My Computer Not Recognize The AMD Athlon XP processor?

[Back to Index](#)

### 2.5.b Will my favourite software work with the AMD Athlon & Duron™ processors?

The AMD Athlon & Duron processor are both based on the AMD Athlon processor architecture that is designed to work with more than 60,000 software packages i.e. current Microsoft® Windows® operating systems such as, Windows® 98/ME and Windows NT/2000® Windows XP, as well as other leading operating systems such as Unix, Linux, OS/2 Warp, and Novell NetWare.

### **2.5.c Is the range of AMD processors compatible with my favourite Hardware?**

AMD Athlon processors are compatible with virtually all x86 hardware and software. Be sure to contact the product vendor to obtain the latest drivers or patches. To assure maximum performance from any processor, high-quality contemporary hardware is always recommended.

### **2.5.d Can I install a "normal" AMD Athlon socket-A processor in a dual processor motherboard?**

Only AMD Athlon MP processors have been designed to work with dual processor support motherboards featuring the AMD Multiprocessor chipset. AMD has not tested a desktop or mobile Athlon/Duron in a multiprocessor system and therefore will not recommend using other Athlon/Duron versions with Multiprocessor based motherboards.

The use of an AMD processor other than an AMD Athlon MP processor in a multiprocessor motherboard is not recommended. AMD cannot provide technical support for normal AMD Uni processors used in such a configuration.

[Back to Index](#)

## **2.6. Double Data Rate Memory (DDR)**

### **2.6.a Which DDR memory module should I use with my processor?**

The DDR memory module is not dependant on the processor but rather on the chipset in the motherboard. Refer to the motherboard manual for information on what type of memory to use with the motherboard.

## **2.7. Recommended Memory**

### **2.7.a What are the recommended DDR memory modules for AMD Athlon processors?**

The memory to be used in your AMD Athlon system is dependant on the model of motherboard you plan to use. Below are links with details on tested DDR modules for systems designed for this type of memory. For more details, we recommend that you contact the motherboard manufacturer for the correct memory to install.

<http://www.amd.com/devconn/ddrvalid.html> :

<http://www.smartmodulartech.com/>

<http://www.cmtlabs.com/teamddr/searchresults/start.asp>

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[Back to Index](#)

## **2.8. Troubleshooting Tips**

### **2.8.a How do I resolve system stability issues (lockups, blue screens, resets, etc)?**

The cause of system stability issues can be very difficult to diagnose. There are many factors that can cause stability issues in a system from software conflicts to hardware failure. Consequently, pinpointing the problem can be a very time-consuming and challenging task. The following guidelines can make that task much more manageable, saving you time and effort in the process.

Lock-ups, resets, blue screens, as well as other symptoms, can often be traced to thermal issues. For optimal performance, use a heatsink solution evaluated and recommended by AMD. Always follow AMD instructions for proper installation. Improper installation could result in inadequate contact between the heatsink and processor die. A thermal interface material should always be used between the heatsink and processor. Lists of recommended solutions are available on the Thermal Solutions pages for:

The AMD Athlon Processor (<http://www1.amd.com/products/athlon/thermals>).

The AMD Duron Processor (<http://www1.amd.com/products/duron/thermals>).

Efficient heatsink solutions must conform to the heatsink design specifications as outlined in the "AMD Thermal, Mechanical, and Chassis Cooling Design Guide", which can be downloaded from the Technical Documents page (<http://www.amd.com/products/cpg/athlon/techdocs/index.html>) for the AMD Athlon Processor.

Incompatible or defective memory is a common cause of stability issues. Always follow the recommendations of the motherboard manufacturer, since memory compatibility is dependent on the motherboard and chipset. Contact the motherboard manufacturer to determine what types of memory are supported.

An outdated BIOS/driver can result in an unstable system. Consequently, the latest BIOS update and motherboard drivers from the motherboard manufacturer should be used. Many motherboards will not boot if a faster processor is installed until the BIOS update that supports the faster processor has been installed. The latest drivers for all components (i.e. video card, sound card, etc.) should be used as well. Drivers are usually available on the component manufacturer's web site.

If both the system's motherboard and processor are being upgraded, a clean installation on a reformatted hard drive (the partition with the operating system) should be performed. A hard-drive with a preinstalled operating system may contain incorrect system information.

NOTE: Reformatting will erase all data from the hard drive!

Make sure that the correct cables are being used. A mixture of high frequency signals and electronic radio signals surround the data cables inside the case. This could result in data corruption, especially if the cables are long and the frequency of the signal is high. Many motherboards ship with UDMA 33 cables only. If a UDMA 66/100 hard drive is being used, a UDMA 66/100 cable must be used as well.

Initially configure the system as a bare-bone system (install only the motherboard, processor, one memory module, video card and necessary drives). Once the system is stable, add components one at a time. This will make it much easier to identify problem components and resolve any IRQ conflicts.

For a stable OS environment use AMD Recommended Power Supplies with the AMD Athlon Processor (<http://www1.amd.com/athlon/power>) and the AMD Duron Processor (<http://www1.amd.com/duron/power>). Many power supplies currently on the market do not meet the requirements for AMD Athlon or AMD Duron processor-based systems. AMD tests the ability of power supplies to provide the power sequencing and current requirements of AMD processor-based systems. The supplies on AMD's Recommended list are recommended for their capability to supply appropriate power on both the +5-VDC and +3.3-VDC power rails.

To ensure reliable operation, use AMD Recommended Motherboards with the AMD Athlon Processor (<http://www1.amd.com/athlon/mbl>) and the AMD Duron Processor (<http://www1.amd.com/duron/mbl>). AMD evaluates motherboards using an internally developed suite of BIOS, electrical, and software tests. The motherboards on these lists have been tested to ensure compliance with motherboard design guidelines for AMD processors.

### **2.8.b Where can I find more information on how to build a reliable system based on AMD processors?**

We have dedicated time and effort to provide our customers with all necessary documentation drivers and system-building guides in PDF format, which can be either downloaded or read on line. Visit the following links for updated chipset drivers, memory, motherboard, power supply recommendations and much more:

Athlon <http://www1.amd.com/athlon/config>

Duron <http://www1.amd.com/duron/config>

[Back to Index](#)

## **2.9. Contacting AMD**

### **2.9.a How can I contact the European Technical Support Center?**

You can find contact details of how to contact us on this web page:

<http://www.amd.com/eurosupport.html>

[Back to Index](#)

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[Back to Index](#)