



# Appendix A

## Specifications

The information listed in this section is for reference only. It is subject to change at the manufacturer's discretion and without notice.

Unless otherwise indicated, none of the components and/or subsystems can be modified or upgraded.

A

# Specifications



## Warning

*The CPU is not user-upgradable. Do not try to upgrade the CPU yourself as doing so will violate the warranty. Upgrading requires additional system adjustments. Any upgrade procedure must be performed by authorized service personnel only.*

## CPU & CHIPSET

### CPU

IMM package (MMC-2 with AGP):

Deschutes: 233 ~ 300MHz (1.6V)

Dixon-256: 266 ~ 366MHz (1.6V)

Celeron (Dixon-128): 300MHz (1.6V)

\* all CPU options include MMX™ Technology

### CHIPSET

Core Logic:

Intel Mobile Module  
440BX AGPset

BIOS

Phoenix (256KB Flash  
ROM, PnP 1.0a, APM  
1.2, LBA)



## More on CPUs

### VOLTAGE, SPEED & POWER SAVINGS

Generally, higher voltage or faster CPUs use more power and run “hotter”.

So of these options, a 233MHz Deschutes running at 1.7V is the most energy efficient, though the slowest. However, actual power consumption also depends on the amount of “work” the CPU must perform.

### PACKAGING

The IMM (Intel Mobile Module) package combines the Intel Mobile Pentium® II CPU, L2 cache, and primary chipset on a single, upgradeable daughterboard.



## MEMORY

### **L1 cache** (in CPU):

16KB code + 16KB data

### **L2 cache:**

Deschutes: 512KB Pipeline Burst SRAM (on module)

Dixon: 256KB Pipeline Burst SRAM (on die)

Celeron: 128KB Pipeline Bust SRAM (on die)

**RAM (base):** 0MB EDO/SDRAM (3.3V)

**RAM (expansion)\*:** 256MB maximum using one or both sockets

Socket 1 & Socket 2 requirements:

- 16MB, 32MB, 64MB or 128MB modules
- 144 pins
- 3.3-volt
- TSOP package
- EDO or SDRAM DIMMs
- Rated at 10ns or faster
- Small outline

\* User upgradable

# Specifications

## VIDEO

<b>VGA Controller</b>	ATI Rage LT Pro (with 3D, AGP & ZV support/proprietary driver)
<b>Display Memory</b>	8MB, 3.3V SGRAM (non-upgradable)
<b>Video Bandwidth</b>	128bit
<b>LCD options</b>	TFT: 13.3"/14.1"
<b>Ports</b>	CRT: 15pin VGA TV-out (NTSC/PAL S-connector support)

## AUDIO

<b>Controller</b>	ESS Maestro 2E (proprietary driver) PnP, 64-voice dual-audio engine, 20-bit ADC/DAC audio resolution
<b>Compatibility</b>	Sound Blaster Pro™ legacy audio, I²S/Zoomed video, MS Windows Sound System™
<b>Built-in</b>	2 speakers, microphone, 0.5watt stereo amp.
<b>Ports</b>	Line-in, Mic-in, Head phone/speakers-out



### More on Video Standards

Depending on the OS, the *ATI Rage LT Pro Controller* supports these resolutions (in pixels).

- NTSC 640 x 400 NTSC TV
- VGA 640 x 480 all LCDs and monitors
- SVGA 800 x 600 LCDs, monitors & PAL TVs
- XGA 1024 x 768 LCDs & monitors
- SXGA 1280 x 1024 monitors

Colors /Resolution*	VGA	SVGA	XGA	SXGA
Single Display				
256†	✓	✓	✓	✓
16 bit (HiColor)	✓	✓	✓	✓
24 bit (TrueColor)	✓	✓	✓	✓
32 bit (TrueColor)	✓	✓	✓	✓
Dual Display (LCD+Monitor only)				
256†	✓	✓	✓	✓
16 bit (HiColor)	✓	✓	✓	✓
24 bit (TrueColor)	✓	✓	✓	
32 bit (TrueColor)	✓	✓	✓	

✓ resolutions available with 8MB of video RAM.



## DRIVES

**Factory-Installed Modules** 24X or faster CD-ROM or 2X DVD

**HDD Bay Module** 2.5", 12.7mm (or 9.5mm) removable 3GB or larger

**Drive Bay Modules**

- 3.5" 1.44MB FDD (3-mode)
- switchable with ZIP module (option)
- switchable with LS-120 module (option)
- switchable with 2<sup>nd</sup> battery (option)

**Power Bay Module** battery  
**Parallel I/O** alternate FDD interface

## I/O

**USB** 12MB/s bandwidth, 5V PCI-to-USB, (PC97 spec)  
complies with Open HCI 1.0, USB 1.0 & PCI 2.1

**Parallel/Printer** 25-pin, output only, bi-directional, EPP v1.7/1.9,  
ECP v1.7/alternate FDD interface

**Serial 1** 9-pin, 16C550 compatible

**Serial 2** IrDA v1.1 FIR, ASK

**TV-out** mini-din

**PS/2** 6-pin mini-din, mouse or keyboard

**PC Card** 2x Type II or 1x Type III PC Card (with ZV support)

**Expansion** proprietary docking station<sup>†</sup> (176 pin, PCI local bus)

<sup>†</sup>Not immediately available

# Specifications



## Recharge timing

To calculate how long it will take your battery to recharge, first check its capacity (e.g. 4000mA) then divide by the appropriate speed.

For example, a 4000mA Ni-MH\* battery should take about 2 hours to fully recharge with the system off, and 5 hours with the system running. However, your time may be faster since under most conditions your battery is rarely completely empty (there's usually a small "reserve" charge left).

\*NiMH batteries charge at a constant rate. Li-Ion batteries' charge rate slows for about the last 25%.

## POWER (MINIMUM REQUIREMENTS)

**Power input:** 20VDC, 55W

**AC Adapter output:** 20VDC, 2.5A

**AC Adapter input**  
100~240VAC, full range, autosensing

**Battery (form)**  
36S (Ni-MH) or 202 (Li-Ion)  
"smart" or "dumb"

**Battery Charging\***  
Fast (system off) 2000mA  $\pm$  200mA/hr  
Slow (system on) 400mA  $\pm$  50mA/hr  
"Trickle" <100mA/hr

\* See the sidebar for an explanation of limitations.

**Estimated Battery Life<sup>†</sup>**  
"max. battery life": 3h 30m (NiMH)  
4h 10m (Li-Ion)  
"disabled": 2h 28m (NiMH)  
2h 43m (Li-Ion)

<sup>†</sup> These numbers are very rough guides for two Setup default configurations.  
See the sidebar for an explanation of limitations.



## More on Charging

Your system doesn't require a proprietary battery, so to accommodate the widest range of batteries on the market, and still be safe, we've taken a lot of factors into consideration:

### TYPE

Different batteries accept charge at different rates. If the system charges faster than the battery can accept, it may damage the battery.

### ENVIRONMENT

Removeable batteries' contacts can be contaminated (oils, smoke, etc.), inhibiting current flow.

### TEMPERATURE

This is the most important safety consideration. If the temperature gets too high, the system automatically slows the recharging process to reduce heat generation. Too much heat, and your battery could explode!

### CONDITION

This is a huge catch-all, which includes the amount of charge already present and how worn your battery is. If the system senses the battery is almost full, it slows the charging so it doesn't overload the battery.



## ***OTHER FEATURES***

TouchPad	built-in PS/2 pointing device by Logitech (with proprietary supplemental drivers)
Kensington Lock	standard security interface

## ***ENVIRONMENT***

<b>Operating Temperature</b>	0°C to 35°C	(32°F to 95°F)
<b>Storage Temperature</b>	-10°C to 65°C	(14°F to 149°F)
<b>Operating Humidity</b>	40% to 80% non-condensing	
<b>Storage Humidity</b>	10% to 90% non-condensing	

## ***DIMENSIONS***

<b>Height</b>	52mm	(2.04")
<b>Width</b>	324mm	(12.75")
<b>Depth</b>	258mm	(10.15")
<b>Weight</b>	3.6KG	(7.92lbs)
	with battery, FDD, HDD & CD-ROM	

## Specifications

### *ACCESSORIES/OPTIONS<sup>†</sup>*

56Kbps v.34 Fax Modem module<sup>††</sup>

24X CD-ROM or DVD-ROM module<sup>††</sup>

2<sup>nd</sup> battery module switchable with FDD

ZIP module<sup>†</sup> switchable with FDD

LS-120 module<sup>†</sup> switchable with FDD

Drivers/Utilities

Expansion DRAM module(s): 16MB, 32MB 64MB, or 128MB

Battery pack: 36S (Ni-MH) or 202 (Li-Ion)

176 pin mini-docking station

Car adapter

Carrying Bag

<sup>†</sup> Options may not be immediately available and/or may be standard accessories depending on your package.

<sup>†</sup> Optional Factory Installed Modules