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HP Consumer Support

Motherboard Specifications, APX78-BN (Nutmeg)

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Motherboard specifications table

Part / Feature	Specification / Support
Motherboard description	<ul style="list-style-type: none"> Motherboard manufacturer's name: Pegatron APX78-BN HP/Compaq name: Nutmeg-GL6E
CPU/Processor	<ul style="list-style-type: none"> Socket AM2+ supports AM2, and AM2+ processors Memory support is limited to DDR2 modules Supports the following processors: <ul style="list-style-type: none"> AMD Phenom Quad-Core (Agena core) 9xxx series (AM2+) 95W Max AMD Phenom Triple-Core (Toliman core) 8xxx series (AM2+) 95W Max Athlon X2 BE-2xxx (Brisbane core) 95W Max Athlon 64 X2 with Dual Core technology (Windsor core) (AM2) 95W Max Athlon 64 X2 with Dual Core technology (Brisbane core) (AM2) 95W Max Athlon Sempron LE Single Core Processor 1xxx (Sparta core) (AM2) 95W Max
Front-side bus (FSB) (Processor Dependent)	<ul style="list-style-type: none"> Up to 3GHz
Chipset	<ul style="list-style-type: none"> NVIDIA GeForce 9100
BIOS features	<ul style="list-style-type: none"> Keyboard combination used to enter BIOS: F10 System BIOS core brand: Award
Form factor	<ul style="list-style-type: none"> Mini-ITX: 7.5 in x 6.8 in
Memory	<ul style="list-style-type: none"> Dual channel memory architecture Two DDR2 DIMM (240-pin) sockets Supported DIMM types: <ul style="list-style-type: none"> PC2-6400 (800 MHz) PC2-5300 (667 MHz) Non-ECC memory only, unbuffered Supports 2GB DDR2 DIMMs Maximum memory: 4.0 GB total (using two 2.0

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NOTE:*a 64-bit operating PC is required to address a full 4.0 GB of memory

Expansion slots

- One PCI Express x16
- One PCI Express x1
- One PCI Express mini card socket

Video graphics

- Up to 256MB dedicated (dynamic memory as allocated by Vista)
- Integrated graphics using nVidia GeForce 9100
- Also supports PCI Express x16 graphics cards.
- Integrated graphics: concurrent use of the DVI and VGA ports is supported.*

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NOTE:*Either integrated graphics or the PCI Express x16 slot are usable at one time; they are not usable concurrently.

Serial ATA

- Two SATA connectors:
 - Supports 1 SATA-150 or SATA-300 disk drive on each SATA connector
 - Speed up to 3.0Gb/sec or 1.5Gb/sec, complying with SATA 2.0 and SATA 1.0 specifications



NOTE:The faster rate of 3.0Gb/sec requires that both the hard drive and the motherboard support it. If one or the other does not support 3.0 Gb/sec, the PC negotiates down to the slower 1.5 Gb/sec.

Onboard audio

- Audio CODEC: Realtek ALC888S
- High Definition 6 channel audio
- Supports one S/PDIF digital connection

Onboard LAN

- Realtek RTL8211B provides Gigabit Ethernet integrated LAN

Onboard USB

- USB 2.0
- Twelve ports total
 - Four connectors on back panel
 - Four headers on motherboard support eight additional ports/devices



NOTE:Some USB ports may not be available externally for customer use. For more information, see model specifications.

- Type: IEEE 1394a 400Mb/s
- JMICRON - JMB381- LGBZ0A or equivalent controller chip
- One port on back panel

Back panel I/O

Listed in physical order from left to right:

- One PS/2 mouse port (green)
- One PS/2 keyboard port (purple)
- One Coaxial S/PDIF out port
- One VGA port
- One DVI port
- Four USB 2.0
- One IEEE 1394a
- One RJ-45 networking port
- Three Stereo-mini audio jacks for:
 - Line-in (light blue)
 - Microphone-in (pink)
 - Line-out (lime)

Internal connectors

- One 2 x 12 mini power connector
 - Two SATA connectors
 - One S/PDIF digital audio output header
 - One CPU fan connector
 - One 9-pin header for power button, reset button, power LED, and HDD LED
 - One Line input connector
 - 7 USB ports +1 dedicated to MiniCard*
 - Three dual-USB (provides 6 USB ports)
 - One single-USB (provides 1 USB port)
- NOTE: Some USB ports may not be available externally for customer use. For more information, see model specifications.
- One IEEE 1394a connector
 - One 52-pin mini card connector
 - One jumper for resetting BIOS settings
 - One jumper to disable BIOS password checking



NOTE:*MiniCard sockets support both PCIe x1 MiniCards and USB 2.0 MiniCards. Only one card can be installed at a time.



NOTE:Motherboard specifications are subject to change without notice.

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Motherboard layout and photos

Figure 1: layout

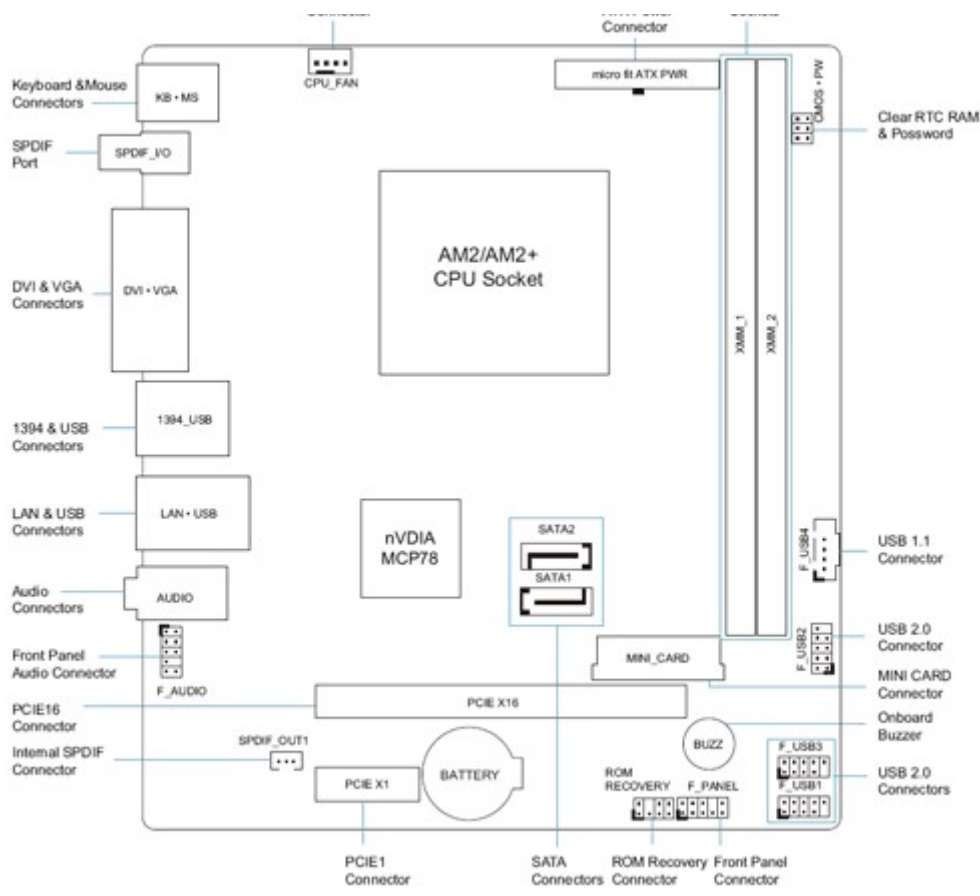


Figure 2: Photograph

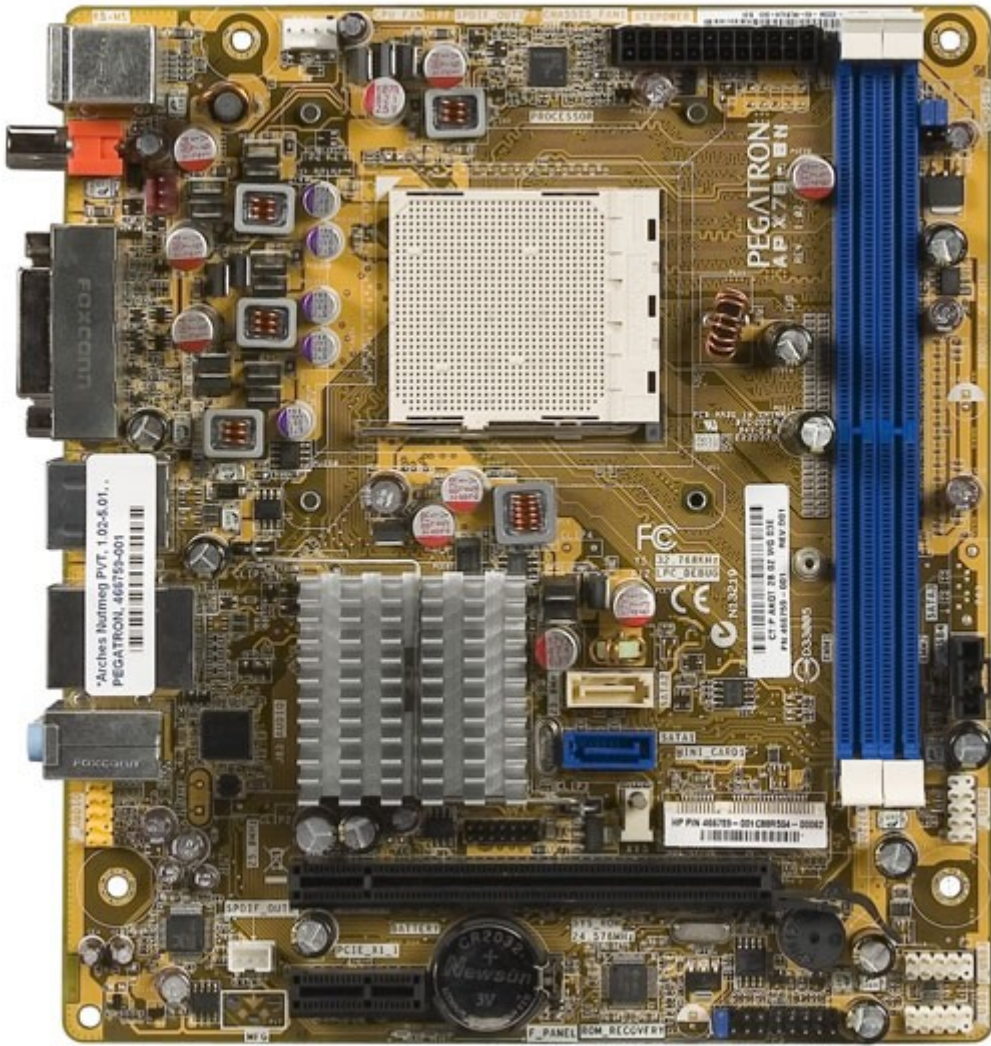
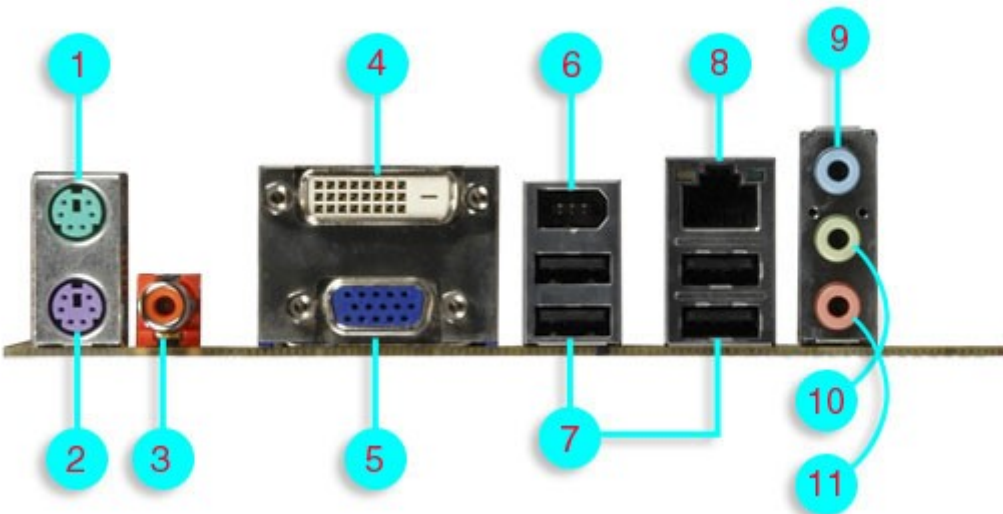


Figure 3: Backplate



- 1 - PS/2 mouse port (green).** This port is for a PS/2 mouse.
- 2 - PS/2 keyboard port (purple).** This port is for a PS/2 keyboard.
- 3 - Coaxial S/PDIF Out port.** This port connects an external audio output device through a coaxial

4 - DVI port. DVI is a standard for connecting computers to digital monitors and provides a pure digital video signal to a digital flat-panel display or projector.

5 - Video Graphics Adapter port. This port is for a VGA monitor or other VGA-compatible devices.

6 - IEEE 1394a port. This 6-pin IEEE 1394a port provides high-speed connectivity for audio/video devices, storage peripherals, PCs, or portable devices.

7 - USB 2.0 ports 1, 2, 3, and 4. These four Universal Serial Bus (USB) ports are available for connecting USB 2.0 devices.

8 - LAN (RJ-45) port. This port allows connection to a Local Area Network (LAN) through a network hub, with speed up to 10/100/1000 Mbps.

9 - Line In port (light blue). This port connects a tape, CD, DVD player, or other audio sources.

10 - Line Out port (lime). This port connects to headphones or a speaker or it can function as Front Speakers Out.

11 - Microphone port (pink). This port connects a microphone.

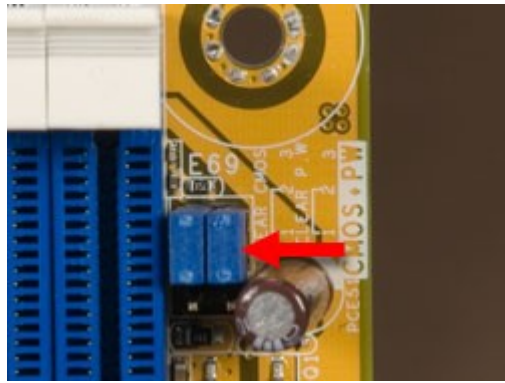
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Clearing the CMOS settings



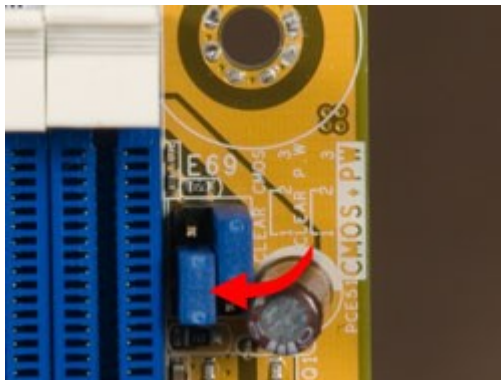
CAUTION: Do not change any jumper setting while the computer is on. Damage to the motherboard can result.

This motherboard has a jumper to clear the Real Time Clock (RTC) RAM in CMOS.



To clear CMOS, follow these steps:

1. Temporarily set jumper CLEAR CMOS to pins 1-2.
2. Wait 5-10 seconds and then return the jumper to pins 2-3.



3. When you start the PC you will need to enter BIOS setup to reset any custom BIOS settings.

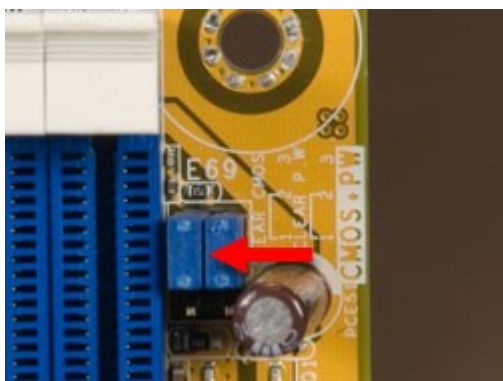
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Clearing the BIOS password

The BIOS password is used to protect BIOS settings from unwanted changes. If you have forgotten your password you may disable password checking.

To erase the BIOS password follow these steps:

2. Locate the jumper labeled CLEAR P.W.

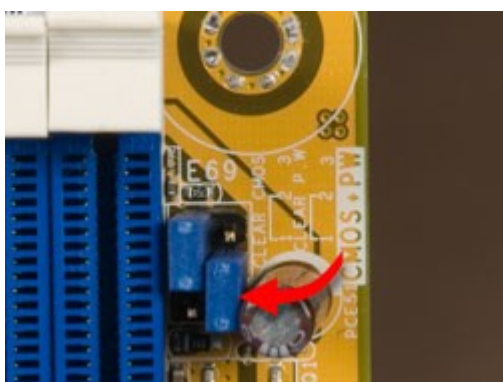


3. Move the jumper CLEAR P.W. to pins 1-2.

4. Plug the power cord and turn ON the computer.

5. Hold down the **F10** key during the startup process and enter BIOS setup to change or clear the password.

6. After changing or clearing the BIOS passwords, remember to reset the jumper to pins 2-3.



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