# Table of Contents

## Power Architecture 405 Family
- 405EP ................................................................. 7
- 405EX ............................................................... 8
- 405EXr ............................................................. 9
- 405GPr ............................................................ 10

## Power Architecture 440 Family
- 440EP ................................................................. 13
- 440EPx ............................................................ 14
- 440GP .............................................................. 15
- 440GX ............................................................ 16
- 440SP .............................................................. 17
- 440SPr ............................................................ 18

## Power Architecture 460 Family
- 460EX ................................................................. 21
- 460EXr ............................................................ 22
- 460GT .............................................................. 23
- 460GTx ........................................................... 24
- 460SX ............................................................ 25
Connecting the Technology that Connects Us All

- Network Convergence
- Digital Content Storage
- Triple-Play Applications
AppliedMicro Power Architecture Product Roadmap

**PRE-2004**

- **440GX**
  - 533-667 MHz
  - (2) 10/100 1000 Mbit/s
  - PCI-X, DDR, I2O
  - L1 Cache 32K/32K
  - 256K Cache/SRAM

**2004**

- **440GP**
  - 333-466 MHz
  - (2) 10/100 1000 Mbit/s
  - PCI-X, DDR, L1 Cache 32K/32K
  - 8K SRAM

- **405GPr**
  - 26-400 MHz
  - (1) 10/100 1000 Mbit/s
  - UARTs, PCI, SDRAM
  - L1 Cache 16K/16K
  - 4K SRAM

- **405EP**
  - 133-333 MHz
  - (2) 10/100 1000 Mbit/s
  - UARTs, PCI, SDRAM
  - L1 Cache 16K/16K

- **405EX**
  - 400-600 MHz
  - (2) 10/100 1G Enet
  - PCI Express DDR1/2, USB2.0, Security
  - L1 Cache 16K/16K

- **405EXr**
  - 333-533 MHz
  - (2) 10/100 1G Enet
  - PCI Express DDR1/2, Security
  - L1 Cache 16K/16K

**2005**

- **440SP**
  - 533-667 MHz
  - (2) 10/100 1000 Mbit/s
  - PCI-X, DDR, USB 1.1 and USB 2.0
  - L1 Cache 32K/32K

- **440EP**
  - 533-800 MHz
  - 3 PCI-Express
  - 64-bit PCI-X
  - L1 Cache 32K/32K

- **440GP**
  - 333-466 MHz
  - (2) 10/100 1000 Mbit/s
  - PCI, DDR
  - L1 Cache 32K/32K

**2006**

- **440EPx**
  - 400-667 MHz
  - (2) 10/100 1G Enet
  - Security, PCI, DDR1/2
  - USB 2.0
  - L1 Cache 32K/32K

**2007**

- **460EX**
  - 600 MHz-1000 MHz
  - (2) 10/100 1G Enet
  - PCI, SATA, PCI
  - L1 Cache 32K/32K
  - 256K L2 Cache

- **460GT**
  - 600 MHz-1000 MHz
  - (4) 10/100 1G Enet
  - PCI-E, PCI, Security
  - FPU, DDR1/2
  - L1 Cache 32K/32K
  - 256K L2 Cache

**2008**

- **460EXr**
  - 600 MHz-1000 MHz
  - (2) 10/100 1G Enet
  - PCI-E, SATA, PCI
  - Security
  - FPU, DDR2, USB 2.0
  - L1 Cache 32K/32K
  - 256K L2 Cache

- **460GTx**
  - 833 MHz-1200 MHz
  - (4) 10/100 1G Enet
  - PCI-E, RMA 5/6
  - Security
  - DDR2
  - L1 Cache 32K/32K
  - 512K L2 Cache

**2009**

- **460Sx**
  - 833 MHz-1200 MHz
  - (4) 10/100 1G Enet
  - PCI-E, RMA 5/6
  - Security
  - DDR2
  - L1 Cache 32K/32K
  - 512K L2 Cache

**2010+**

- **Future Products**

**G-Series:** Control Plane, Networking and Wireless Infrastructure Applications

**E-Series:** Imaging, Wireless Access and Industrial Control Applications

**S-Series:** Storage and I/O Applications
Power Architecture Products

405EP
405EX
405EXr
405GPr

Power Architecture 405 Family
# Power Architecture 405 Family at a Glance

<table>
<thead>
<tr>
<th></th>
<th>405EP</th>
<th>405EX</th>
<th>405EXr</th>
<th>405GPr</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Complex</strong></td>
<td>Up to 333 MHz/506 DMIPS</td>
<td>Up to 600 MHz/912 DMIPS</td>
<td>Up to 533 MHz/810 DMIPS</td>
<td>Up to 400 MHz/608 DMIPS</td>
</tr>
<tr>
<td></td>
<td>16KB I-cache/16KB D-cache</td>
<td>16KB I-cache/16KB D-cache</td>
<td>16KB I-cache/16KB D-cache</td>
<td>16KB I-cache/16KB D-cache</td>
</tr>
<tr>
<td><strong>Memory and Bus Architecture</strong></td>
<td>4KB SRAM</td>
<td>DDR1/2 SDRAM controller</td>
<td>DDR1/2 SDRAM controller</td>
<td>SDRAM controller</td>
</tr>
<tr>
<td></td>
<td>SDRAM controller</td>
<td>External Bus Master Interface</td>
<td>External Bus Master Interface</td>
<td>4KB SRAM</td>
</tr>
<tr>
<td></td>
<td>External Bus controller</td>
<td>External Bus controller</td>
<td>External Bus controller</td>
<td>External Bus controller</td>
</tr>
<tr>
<td></td>
<td>NAND/NOR Flash controller</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>System Resources</strong></td>
<td>Up to 32 GP I/Os</td>
<td>Interrupt controller</td>
<td>Interrupt controller</td>
<td>Up to 24 GP I/Os</td>
</tr>
<tr>
<td></td>
<td>DMA controller</td>
<td>Up to 32 GP I/Os</td>
<td>Up to 32 GP I/Os</td>
<td>DMA controller</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DMA controller</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>High Speed and Inter-Chip Connectivity</strong></td>
<td>32-bit PCI controller</td>
<td>2 PCI Express 1-Lane</td>
<td>PCI Express 1-Lane</td>
<td>32-bit PCI controller</td>
</tr>
<tr>
<td></td>
<td>IIC controller</td>
<td></td>
<td></td>
<td>IIC controller</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Network Connectivity</strong></td>
<td>2 10/100</td>
<td>2 10/100/1G</td>
<td>10/100/1G</td>
<td>10/100</td>
</tr>
<tr>
<td></td>
<td>2 UARTs</td>
<td>USB 2.0 On-the-Go port</td>
<td>USB 2.0 On-the-Go port</td>
<td>2 UARTs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 UARTs</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Special Functionality</strong></td>
<td>Turbo Security Engine</td>
<td>Turbo Security Engine</td>
<td>Turbo Security Engine</td>
<td></td>
</tr>
<tr>
<td><strong>Typical Power</strong></td>
<td>0.72W @ 266 MHz</td>
<td>&lt;1.5W @ 400 MHz</td>
<td>&lt;1.3W @ 400 MHz</td>
<td>0.72W @ 266 MHz</td>
</tr>
</tbody>
</table>
Specifications

CPU Complex
- Power Architecture 405 processor core
- Up to 333 MHz/506 DMIPS
- 16KB I-cache/16KB D-cache

Memory and Bus Architecture
- On-chip 4KB SRAM with single-cycle access
- SDRAM controller
- On-chip external bus controller

System Resources
- Up to 32 general purpose I/Os
- DMA controller

High Speed and Inter-Chip Connectivity
- 32-bit PCI controller, 66 MHz (PCI v2.2 compliant)
- Master and slave IIC controller

Network Connectivity
- Two on-chip Ethernet MACs
- Two UARTs

Power
- 0.72W typical power @ 266 MHz

Target Applications
- High-density designs where connectivity is at a premium, including: Wireless LAN access points, Edge routers, and Broadband modems
Specifications

CPU Complex
- Power Architecture 405 processor core
- Up to 600 MHz/912 DMIPS
- 16KB I-cache/16KB D-cache

Memory and Bus Architecture
- 32-bit DDR1/2 SDRAM controller with ECC, supports both x16 or x32, up to 2GB memory bank
- External Bus Master Interface (EBMI)
- 8/16/32-bit External Peripheral Bus Controller
- NAND Flash controller

System Resources
- Universal Interrupt Controller: 10 external interrupts
- Up to 32 general purpose I/Os
- DMA Controller with four independent channels

High Speed and Inter-Chip Connectivity
- Two PCI Express 1-Lane Interfaces, each with separate controller and SERDES, up to 2.5Gbps per lane

Network Connectivity
- Two 10/100/1G Ethernet MACs
- USB2.0 On-the-Go port, both host and device mode supported
- Two UARTs

Special Functionality
- Turbo Security Engine: Optional on-chip IPSec/SSL/bulk data security acceleration engine (Crypto Engine)

Power
- <1.5W est. typical power @ 400 MHz CPU
- Extended Temperature Range: 533 MHz part can operate at case temperature up to +95°C provided that speed is limited to 400 MHz or slower

Target Applications

- WLAN Access – 802.11n WAP applications for Enterprise and high-end SOHO
- WiMAX base stations, either fixed or mobile
- General Networking
- General Purpose processing
Specifications

CPU Complex
- Power Architecture 405 processor core
- Up to 533 MHz/810 DMIPS
- 16KB I-cache/16KB D-cache

Memory and Bus Architecture
- 32-bit DDR1/2 SDRAM controller with ECC, supports both x16 or x32, up to 2GB memory bank
- External Bus Master Interface (EBMI)
- 8/16/32-bit External Peripheral Bus Controller
- NAND Flash controller

System Resources
- Universal Interrupt Controller: 10 external interrupts
- Up to 32 general purpose I/Os
- DMA Controller with four independent channels

High Speed and Inter-Chip Connectivity
- One PCI Express 1-Lane Interface with controller and SERDES, up to 2.5Gbps

Network Connectivity
- One 10/100/1G Ethernet MAC
- USB2.0 On-the-Go port, both host and device mode supported
- Two UARTs

Special Functionality
- Turbo Security Engine: Optional on-chip IPSec/SSL/bulk data security acceleration engine (Crypto Engine)

Power
- <1.3W est. typical power @ 400 MHz CPU
- Extended Temperature Range: 533 MHz part can operate at case temperature up to +95°C provided that speed is limited to 400 MHz or slower

Target Applications

- WLAN Access—802.11n WAP applications for small or medium businesses, IP-STBs or residential gateways, and high-end SOHO
- WiMAX CPE, either fixed or mobile
- General Networking
- General Purpose processing

Power Architecture Products
**Specifications**

**CPU Complex**
- Power Architecture 405 processor core
- Up to 400 MHz/608 DMIPS
- 16KB I-cache/16KB D-cache

**Memory and Bus Architecture**
- SDRAM controller
- On-chip 4KB SRAM
- External bus controller

**System Resources**
- Up to 24 general purpose I/Os
- DMA controller

**High Speed and Inter-Chip Connectivity**
- 32-bit PCI controller, 66 MHz (PCI v2.2 compliant)
- Master and slave IIC controller

**Network Connectivity**
- 10/100 Ethernet MAC
- Two UARTs

**Power**
- 0.72W typical power @ 266 MHz
- Extended Temperature Range: 333 MHz part can operate at case temperature up to +105°C provided that speed is limited to 266 MHz or slower

**Target Applications**
- Internet and communications
- Wide variety of embedded networking applications

---

**Package Type** | **Part Number**
---|---
35mm leaded EPBGA | PPC405GPr-3BB266
35mm leaded EPBGA | PPC405GPr-3BB400
35mm lead free EPBGA | PPC405GPr-3JB266
35mm lead free EPBGA | PPC405GPr-3JB333
35mm lead free EPBGA | PPC405GPr-3JB400
27mm leaded EPBGA | PPC405GPr-3DB266
27mm leaded EPBGA | PPC405GPr-3DB400
27mm lead free EPBGA | PPC405GPr-3KB266
27mm lead free EPBGA | PPC405GPr-3KB333
27mm lead free EPBGA | PPC405GPr-3KB400
440EP
440EPx
440GP
440GX
440SP
440SPe

Power Architecture 440 Family
# Power Architecture 440 Family at a Glance

<table>
<thead>
<tr>
<th></th>
<th>440EP</th>
<th>440EPx</th>
<th>440GP</th>
<th>440GX</th>
<th>440SP</th>
<th>440SPe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Complex</strong></td>
<td>• Up to 667 MHz/1334 DMIPS</td>
<td>• Up to 667 MHz/1334 DMIPS</td>
<td>• Up to 466 MHz</td>
<td>• Up to 667 MHz/1334 DMIPS</td>
<td>• Up to 667 MHz/1334 DMIPS</td>
<td>• Up to 667 MHz/1600 DMIPS</td>
</tr>
<tr>
<td></td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
</tr>
<tr>
<td></td>
<td>• FPU</td>
<td>• FPU</td>
<td>• FPU</td>
<td>• FPU</td>
<td>• FPU</td>
<td>• FPU</td>
</tr>
<tr>
<td><strong>Memory and Bus Architecture</strong></td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
</tr>
<tr>
<td></td>
<td>• DDR1 SDRAM controller</td>
<td>• DDR1/2 SDRAM controller</td>
<td>• DDR SDRAM controller</td>
<td>• DDR SDRAM controller</td>
<td>• DDR1/2 SDRAM controller</td>
<td>• DDR1/2 SDRAM controller</td>
</tr>
<tr>
<td></td>
<td>• NAND Flash controller</td>
<td>• NAND Flash controller</td>
<td>• NAND Flash controller</td>
<td>• NAND Flash controller</td>
<td>• NAND Flash controller</td>
<td>• NAND Flash controller</td>
</tr>
<tr>
<td><strong>System Resources</strong></td>
<td>• Up to 64 GP I/Os</td>
<td>• Up to 64 GP I/Os</td>
<td>• Up to 32 GP I/Os</td>
<td>• Up to 32 GP I/Os</td>
<td>• Up to 32 GP I/Os</td>
<td>• Up to 32 GP I/Os</td>
</tr>
<tr>
<td></td>
<td>• Interrupt controller</td>
<td>• Interrupt controller</td>
<td>• Interrupt controller</td>
<td>• Interrupt controller</td>
<td>• Interrupt controller</td>
<td>• Interrupt controller</td>
</tr>
<tr>
<td></td>
<td>• DMA controller</td>
<td>• DMA controller</td>
<td>• DMA controller</td>
<td>• DMA controller</td>
<td>• DMA controller</td>
<td>• DMA controller</td>
</tr>
<tr>
<td><strong>High Speed and Inter-Chip Connectivity</strong></td>
<td>• PCI controller</td>
<td>• PCI controller</td>
<td>• PCI-X controller</td>
<td>• PCI-X controller</td>
<td>• PCI-X controller</td>
<td>• PCI-X controller</td>
</tr>
<tr>
<td></td>
<td>• 2 IIC controllers</td>
<td>• 2 IIC controllers</td>
<td>• 2 IIC controllers</td>
<td>• 2 IIC controllers</td>
<td>• 2 64b PCI-X, 1 32b PCI-X</td>
<td>• 2 IIC controllers</td>
</tr>
<tr>
<td></td>
<td>• SPI</td>
<td>• SPI</td>
<td>• SPI</td>
<td>• SPI</td>
<td>• 2 IIC controllers</td>
<td>• SPI</td>
</tr>
<tr>
<td><strong>Network Connectivity</strong></td>
<td>• 2 10/100</td>
<td>• 2 10/100</td>
<td>• 2 10/100</td>
<td>• 2 10/100</td>
<td>• 10/100/1G (GMII/MII)</td>
<td>• 10/100/1G (GMII/MII)</td>
</tr>
<tr>
<td></td>
<td>• 4 UARTs</td>
<td>• 4 UARTs</td>
<td>• 2 UARTs</td>
<td>• 2 UARTs</td>
<td>• 3 UARTs</td>
<td>• 3 UARTs</td>
</tr>
<tr>
<td></td>
<td>• USB 1.1 Host and Device</td>
<td>• USB 2.0 Host</td>
<td>• TCP/IP Hardware Assist</td>
<td>• TCP/IP Hardware Assist</td>
<td>• RAID 5 XOR</td>
<td>• RAID 5 XOR</td>
</tr>
<tr>
<td></td>
<td>• USB 2.0 Device</td>
<td>• USB 2.0 Device</td>
<td>• 2 UARTs</td>
<td>• 2 UARTs</td>
<td>• Optional RAID 6 XOR</td>
<td>• Optional RAID 6 XOR</td>
</tr>
<tr>
<td><strong>Special/Optional Functionality</strong></td>
<td>• Turbo Security Engine</td>
<td>• Turbo Security Engine</td>
<td>• RAID 5 XOR</td>
<td>• RAID 5 XOR</td>
<td>• Kasumi engine</td>
<td>• Kasumi engine</td>
</tr>
<tr>
<td></td>
<td>• Kasumi engine</td>
<td>• Kasumi engine</td>
<td>• Optional RAID 6 XOR</td>
<td>• Optional RAID 6 XOR</td>
<td>• RAID 5 XOR</td>
<td>• Optional RAID 6 XOR</td>
</tr>
<tr>
<td><strong>Typical Power</strong></td>
<td>&lt;3W @ 533 MHz</td>
<td>&lt;3W @ 533 MHz</td>
<td>&lt;4W @ 466 MHz</td>
<td>&lt;4W @ 533 MHz</td>
<td>&lt;6W @ 533 MHz</td>
<td>&lt;6W @ 533 MHz</td>
</tr>
</tbody>
</table>
Specifications

CPU Complex
- Power Architecture 440 processor core
- Up to 667 MHz/1334 DMIPS
- 32KB I-cache/D-cache with parity
- 5 Stage FPU with 2.0 MFLOPS/MHz

Memory and Bus Architecture
- External Bus Controller—16-bit data, 30-bit address, 50-66 MHz, 6 chip selectors
- 32-bit DDR1 SDRAM controller for DDR200/266 operation
- NAND Flash controller supporting 1 to 4 banks of NAND Flash memory devices; Boot-from-NAND supported

System Resources
- Up to 64 general purpose I/Os
- Universal programmable interrupt controller
- SPI serial interface 4-channel DMA

High Speed and Inter-Chip Connectivity
- 32-bit PCI controller, 66 MHz (PCI v2.2 compliant)
- Master and slave IIC controller
- One SPI Serial Communications Port (SCP)

Network Connectivity
- Two 10/100 Ethernet MACs
- USB 1.1 Host and Device Controllers and PHYs
- USB 2.0 Device Controller
- Four UARTs

Power
- <3W typical power @ 533 MHz

Target Applications
- Imaging
- Industrial Control
- Networking

Package Type | Part Number
--- | ---
35mm leaded EPBGA | PPC440EP-3BC400C
35mm lead free EPBGA | PPC440EP-3JC333C
35mm lead free EPBGA | PPC440EP-3JC400C
35mm lead free EPBGA | PPC440EP-3JC533C
35mm lead free EPBGA | PPC440EP-3JC667C
**Specifications**

**CPU Complex**
- Power Architecture 440 processor core
- Up to 667 MHz/1334 DMIPS
- 32KB I-cache/D-cache with parity
- 5 stage FPU with 2.0 MFLOPS/MHz

**Memory and Bus Architecture**
- 32-bit, 83 MHz On-chip Peripheral Bus
- 32/64-bit DDR1/2 SDRAM controller with ECC support
- 32/16/8-bit data, 30-bit address external bus controller supporting ROM, EPROM, SRAM, Flash, and Slave peripheral I/O banks including support for NAND Flash
- 16KB On-Chip Memory (OCM)

**System Resources**
- Up to 64 general purpose I/Os
- Programmable interrupt controller with 10 external inputs
- DMA Controller

**High Speed and Inter-Chip Connectivity**
- 32-bit PCI controller, 66 MHz (PCI v2.2 compliant)
- Two IIC controllers
- One SPI Serial Communications Port (SCP)

**Network Connectivity**
- USB 2.0 Host and Device Controllers with on-board PHY
- Two 10/100/1G Ethernet MACs
- Four UARTs

**Special Functionality**
- Turbo Security Engine: Optional on-chip IPSec/SSL/bulk data security acceleration engine (Crypto Engine)
- Kasumi encryption/decryption engine

**Power**
- <3W typical power @ 533 MHz

---

**Target Applications**

- Imaging
- Industrial Control
- Networking

---

**Package Type**   | **Part Number**   | **Features**  
--------------------|-------------------|--------------
35mm leaded TE-EPBGA | PPC440EPx-STA400T | security  
35mm leaded TE-EPBGA | PPC440EPx-NTA667T | no security  
35mm lead free TE-EPBGA | PPC440EPx-SUA400T | security  
35mm lead free TE-EPBGA | PPC440EPx-SUA533T | security  
35mm lead free TE-EPBGA | PPC440EPx-SUA667T | security  
35mm lead free TE-EPBGA | PPC440EPx-NUA400T | no security  
35mm lead free TE-EPBGA | PPC440EPx-NUA667T | no security  

---

**AppliedMicro Product Selector Guide**
Power Architecture 440GP processor

Specifications
- 440 processor core with 32K instruction cache/32K data cache
- Up to 466MHz performance
- Up to 932 DMIPS
- Two 10/100 Ethernet MACs
- 32-bit PCI V2.2 compatible PCI controller
- On-chip 8KB SRAM
- 32/64-bit DDR200/266 SDRAM controller with ECC
- DMA Controller and external peripheral controller
- Universal Programmable Interrupt Controller with 13 external interrupts and 45 internal interrupts

System Resources
- Two serial ports
- Master and slave IIC controller
- Up to 32 general purpose I/Os

Power
- <4W estimated typical power dissipation at 466MHz

Target Applications
- Storage
- Networking
- Other high-density and power-conscious embedded applications

Package Type | Part Number
--- | ---
25mm leaded FC-PBGA | PPC440GP-3FC400C
25mm leaded FC-PBGA | PPC440GP-3FC466C
Specifications

CPU Complex
- Power Architecture 440 processor core
- Up to 667 MHz/1334 DMIPS
- 32KB I-cache/D-cache with parity
- 256KB on-chip memory or L2 Cache

Memory and Bus Architecture
- 32-bit, 83 MHz external bus controller
- 32/64-bit DDR333 SDRAM controller with ECC

System Resources
- Up to 32 general purpose I/Os
- Universal programmable interrupt controller
- DMA controller

High Speed and Inter-Chip Connectivity
- 32/64-bit PCI-X controller, 133 MHz (PCI v2.2 compliant)
- Master and slave IIC controller

Network Connectivity
- Two 10/100/1G Ethernet MACs
- Two 10/100 Ethernet MACs
- TCP/IP hardware assist
- 2 UARTs

Power
- <4W typical power @ 533 MHz

Target Applications
- Control plane applications
- RAID controllers
- iSCSI processing
- Storage Area Networking (SAN)

<table>
<thead>
<tr>
<th>Package Type</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>25mm leaded CBGA</td>
<td>PPC440GX-3CF533C</td>
</tr>
<tr>
<td>25mm leaded CBGA</td>
<td>PPC440GX-3CF667C</td>
</tr>
<tr>
<td>25mm lead reduced CBGA</td>
<td>PPC440GX-3RF533C</td>
</tr>
<tr>
<td>25mm lead reduced CBGA</td>
<td>PPC440GX-3RF667C</td>
</tr>
<tr>
<td>25mm leaded FC-PBGA</td>
<td>PPC440GX-3FF667C</td>
</tr>
<tr>
<td>25mm lead free FC-PBGA</td>
<td>PPC440GX-3NF533C</td>
</tr>
<tr>
<td>25mm lead free FC-PBGA</td>
<td>PPC440GX-3NF667C</td>
</tr>
</tbody>
</table>
Power Architecture 440SP processor

Specifications

CPU Complex
- Power Architecture 440 processor core
- Up to 667 MHz/1334 DMIPS
- 32KB I-cache/D-cache with parity
- 256KB L2 cache, may also be used as on-chip SRAM

Memory and Bus Architecture
- High-speed Processor Local Bus (PLB) with 2-way crossbar supports 10.4 GB/s peak bandwidth
- 8-bit, 83 MHz external bus controller
- Dual-ported 32/64-bit SDRAM memory controller, interfaced to both PLB slave segments, supporting 166/333 MHz DDR1 and 333/667 MHz DDR2

System Resources
- Up to 32 general purpose I/Os
- Universal programmable interrupt controller
- Two-channel DMA included with I2O
- DMA controller with XOR

High Speed and Inter-Chip Connectivity
- PCI-X v2.0 DDR compatible (266 MHz) bridge with two 64-bit and one 32-bit PCI-X interfaces
- Opaque PCI-X to PCI-X bridge functionality
- Master and slave IIC controller

Network Connectivity
- 10/100/1G Ethernet MAC (GMII/MII)
- Three UARTs

Special Functionality
- RAID 5 and RAID 6 acceleration hardware
- RAID XOR function with one-channel DMA for parity generation and checking

Power
- <6W typical power @ 533 MHz

Target Applications

- RAID controllers
- Storage Area Networking (SAN) equipment
- Network Attached Storage (NAS)
- Disk/tape backup storage equipment

Package Type | Part Number | Features
--- | --- | ---
29mm leaded FC-PBGA | PPC440SP-AFC533C | No RAID6
29mm leaded FC-PBGA | PPC440SP-AFC667C | No RAID6
29mm lead free FC-PBGA | PPC440SP-ANC667C | No RAID6
29mm lead free FC-PBGA | PPC440SP-RNC533C | RAID6
**Specifications**

**CPU Complex**
- Power Architecture 440 processor core
- Up to 800 MHz/1600 DMIPS
- 32KB I-cache/D-cache with parity
- 256KB L2 cache, may also be used as on-chip SRAM

**Memory and Bus Architecture**
- 128-bit, 166 MHz, 2-way Crossbar Processor Local Bus supporting 10.4GB/sec. peak bandwidth
- Dual-ported 32/64-bit SDRAM memory controller, interfaced to both PLB slave segments, supporting 166/333 MHz DDR1 and 333/667 MHz DDR2
- 32-bit, 83 MHz external bus controller

**System Resources**
- Up to 32 general purpose I/Os
- Two-channel DMA included with I2O; One-channel DMA with XOR

**High Speed and Inter-Chip Connectivity**
- PCI-Express ports—one “x8” lane and two “x4” lane
- PCI-X interface supporting DDR Operation
- Master and slave IIC controller

**Network Connectivity**
- 10/100/1G Ethernet MAC (GMII/MII)
- Three UARTs

**Power**
- <6W typical power @ 533 MHz

---

**Target Applications**

- RAID controllers
- Storage Area Networking (SAN) equipment
- Network Attached Storage (NAS)
- Disk/tape backup storage equipment

---

**Package Type**

<table>
<thead>
<tr>
<th>Package Type</th>
<th>Part Number</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>27mm leaded FC-PBGA</td>
<td>PPC440SPE-AGB533C</td>
<td>No RAID6</td>
</tr>
<tr>
<td>27mm lead free FC-PBGA</td>
<td>PPC440SPE-ANB533C</td>
<td>No RAID6</td>
</tr>
<tr>
<td>27mm lead free FC-PBGA</td>
<td>PPC440SPE-ANB667C</td>
<td>No RAID6</td>
</tr>
<tr>
<td>27mm lead free FC-PBGA</td>
<td>PPC440SPE-ANB800C</td>
<td>No RAID6</td>
</tr>
<tr>
<td>27mm lead free FC-PBGA</td>
<td>PPC440SPE-RNB533C</td>
<td>RAID6</td>
</tr>
<tr>
<td>27mm lead free FC-PBGA</td>
<td>PPC440SPE-RNB800C</td>
<td>RAID6</td>
</tr>
</tbody>
</table>
460EX
460EXr
460GT
460GTx
460SX

Power Architecture 460 Family
## Power Architecture 460 Family at a Glance

<table>
<thead>
<tr>
<th></th>
<th>460EX</th>
<th>460EXr</th>
<th>460GT</th>
<th>460GTx</th>
<th>460SX</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CPU Complex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Up to 1000 MHz/2000 DMIPS</td>
<td>• Up to 1000 MHz/2000 DMIPS</td>
<td>• Up to 1000 MHz/2000 DMIPS</td>
<td>• Up to 1200 MHz/2400 DMIPS</td>
<td>• Up to 1200 MHz/2400 DMIPS</td>
</tr>
<tr>
<td></td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
<td>• 32KB I-cache/32KB D-cache</td>
</tr>
<tr>
<td></td>
<td>• 256KB L2 Cache/SRAM FPU</td>
<td>• 256KB L2 Cache/SRAM FPU</td>
<td>• 256KB L2 Cache/SRAM FPU</td>
<td>• 512KB L2 Cache/SRAM FPU</td>
<td>• 512KB L2 Cache/SRAM FPU</td>
</tr>
<tr>
<td><strong>Memory and Bus Architecture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
<td>• External Peripheral controller</td>
</tr>
<tr>
<td></td>
<td>• DDR1/2 SDRAM controller 64KB SRAM</td>
<td>• DDR2 SDRAM controller 64KB SRAM</td>
<td>• DDR1/2 SDRAM controller 64KB SRAM</td>
<td>• DDR2 SDRAM controller NAND Flash controller 32KB SRAM</td>
<td>• DDR2 SDRAM controller NAND Flash controller 32KB SRAM</td>
</tr>
<tr>
<td><strong>System Resources</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Up to 64 GP I/Os Interrupt controller High Speed DMA controller 4-channel DMA controller</td>
<td>• Up to 64 GP I/Os Interrupt controller High Speed DMA controller 4-channel DMA controller</td>
<td>• Up to 64 GP I/Os Interrupt controller High Speed DMA controller 4-channel DMA controller</td>
<td>• Up to 32 GP I/Os Interrupt controller 3-channel Enhanced DMA engine 4-channel DMA controller</td>
<td>• Up to 32 GP I/Os Interrupt controller 3-channel Enhanced DMA engine 4-channel DMA controller</td>
</tr>
<tr>
<td><strong>High Speed and Inter-Chip Connectivity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• PCI controller PCI x4 Lane PCI x1 Lane or SATA x1 Lane 2 IIC controllers SPI</td>
<td>• PCI controller PCI x4 Lane PCI x1 Lane or SATA x1 Lane 2 IIC controllers SPI</td>
<td>• PCI controller PCI x4 Lane PCI x4 Lane or Serial RapidIO x4 Lane 2 IIC controllers SPI</td>
<td>• 1 PCIe x8 Lane or 2 PCIe x4 Lane 2 IIC controllers</td>
<td>• 1 PCIe x8 Lane or 2 PCIe x4 Lane 2 IIC controllers</td>
</tr>
<tr>
<td><strong>Network Connectivity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 2 10/100/1G TCP/IP Hardware Assist USB 2.0 OTG, USB 2.0 Host 4 UARTs</td>
<td>• 2 10/100/1G TCP/IP Hardware Assist USB 2.0 OTG, USB 2.0 Host 4 UARTs</td>
<td>• 4 10/100/1G TCP/IP Hardware Assist 4 UARTs</td>
<td>• 4 10/100/1G TCP/IP Hardware Assist 2 UARTs</td>
<td>• 4 10/100/1G TCP/IP Hardware Assist 2 UARTs</td>
</tr>
<tr>
<td><strong>Special/Optional Functionality</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Typical Power</strong></td>
<td>&lt;3.9W @ 1 GHz</td>
<td>3.5W @ 1 GHz</td>
<td>&lt;3.9W @ 1 GHz</td>
<td>10.5W @ 1 GHz</td>
<td>10.5W @ 1 GHz</td>
</tr>
</tbody>
</table>
Specifications

CPU Complex
- Power Architecture 440 processor core
- Up to 1000 MHz/2000 DMIPS
- 32KB I-cache/D-cache with parity
- 256KB L2 cache with parity
- FPU (2Mflops/MHz Single and Double Precision)

Memory and Bus Architecture
- On-chip Peripheral Bus—32-bit, 100 MHz
- External Bus Controller—32-bit data/27-bit address 100 MHz
- 32/64-bit DDR1/2 up to DDR400 with optional ECC (up to 8GB)
- 64KB of on-chip SRAM (OCM)

System Resources
- Up to 64 general purpose I/Os
- Interrupt Controller with 16 external interrupts
- 4-channel DMA controller

High Speed and Inter-Chip Connectivity
- High Speed DMA controller (HSDMA) for high bandwidth applications
- PCI-Express ports—one “x4” lane and one “x1” lane
- PCI v2.3 compliant, 32-bit, 66 MHz
- 2 IIC with bootstrap controller
- SPI

Network Connectivity
- Two 10/100/1G Ethernet MACs, both with SGMII
- TCP/IP hardware assist and QoS
- USB 2.0 OTG and Host with ULPI Interfaces
- Four UARTs

Special Functionality
- RAID 5 acceleration
- Turbo Security Engine: Optional on-chip IPSec/SSL/bulk data security acceleration engine (Crypto Engine)
- Kasumi encryption/decryption engine
- SATA II single port (mux’d with 2nd PCI-e port)

Power
- <3.9W typical power @ 1 GHz

Target Applications
- Multi-Function Printers
- Industrial Control
- General purpose embedded applications
- Networking
Specifications

CPU Complex
- Power Architecture 440 processor core
- Up to 1000 MHz/2000 DMIPS
- 32KB I-cache/D-cache with parity
- 256KB L2 cache with parity
- FPU (2Mflops/MHz Single and Double Precision)

Memory and Bus Architecture
- On-chip Peripheral Bus—32-bit, 100 MHz
- External Bus Controller—32-bit data/27-bit address 100 MHz
- 32/64-bit DDR2 up to DDR400 with optional ECC (up to 8GB)
- 64KB of on-chip SRAM (OCM)

System Resources
- Up to 64 general purpose I/Os
- Interrupt Controller with 16 external interrupts
- 4-channel DMA controller

High Speed and Inter-Chip Connectivity
- High Speed DMA controller (HSDMA) for high bandwidth applications
- PCI-Express ports—one “x4” lane and one “x1” lane
- 2 IIC with bootstrap controller
- SPI

Network Connectivity
- Two 10/100/1G Ethernet MACs
- TCP/IP hardware assist and QoS
- USB 2.0 OTG and Host with ULPI Interfaces
- Four UARTs

Special Functionality
- RAID 5 acceleration (RAID 6 optional)
- Turbo Security Engine: Optional on-chip IPSec/SSL/bulk data security acceleration engine (Crypto Engine)
- Kasumi encryption/decryption engine
- SATA II single port (mux’d with 2nd PCI-e port)

Power
- 3.5W typical power @ 1 GHz

Target Applications
- Multi-Function Printers
- Industrial Control
- General purpose embedded applications
- Networking

Power Architecture 460EXr processor
Specifications

CPU Complex
- Power Architecture 440 processor core
- Up to 1000 MHz/2000 DMIPS
- 32KB I-cache/D-cache with parity
- 256KB L2 cache with parity
- FPU (2Mflops/MHz Single and Double Precision)

Memory and Bus Architecture
- On-chip Peripheral Bus—32-bit, 100 MHz
- External Bus Controller—32-bit data/27-bit address 100 MHz
- 64KB of on-chip SRAM (OCM)
- 32/64-bit DDR1/2 up to DDR400 with optional ECC (up to 8GB)

System Resources
- 4-channel DMA controller;
- High Speed DMA controller (HSDMA) for high bandwidth applications
- Interrupt Controller with 16 external interrupts

High Speed and Inter-Chip Connectivity
- PCI-Express ports—one “x4” lane and one “x1” lane
- PCI v2.3 compliant, 32-bit, 66 MHz
- 1 SPI, 2 IIC with bootstrap controller
- Serial RapidIO port (HSS shared with PCIe x4 port)

Network Connectivity
- Four 10/100/1G Ethernet MACs, three with SGMII
- TCP/IP hardware assist and QoS on two ports
- Four UART serial ports

Special Functionality
- Turbo Security Engine: Optional on-chip IPSec/SSL/bulk data security acceleration engine
  (Crypto Engine)
- Kasumi encryption/decryption engine

Power
- <3.9W typical power @ 1 GHz

Target Applications
- Wireless Infrastructure
- Control plane applications
- Wide variety of embedded networking applications
Power Architecture 460GTx processor

Specifications

CPU Complex
- Power Architecture 464 processor core
- Up to 1.2 GHz/2400 DMIPS
- 32KB I-cache/D-cache with parity
- 512KB L2 cache with parity

Memory and Bus Architecture
- 128-bit, 200 MHz, 2-way Crossbar Local Bus
  - High bandwidth and Low Latency segments
  - 12.8GB/s combined peak bandwidth
- Second HB Bus, 6.4GB/s
- DDR SDRAM Controller with ECC
  - 32/64-bit DDR2 up to DDR800
- 512KB L2 Cache may also be used as SRAM
- 32-bit, 100-MHz On-chip Peripheral Bus (OPB)
- External Bus Controller
  - Interface to Flash ROM, Boot, or other devices (4 total)

System Resources
- High Bandwidth DMA engine

High Speed and Inter-Chip Connectivity
- Gen2 PCI Express (5 Gb/s per Lane)
  - (1) PCI-E 8-Lane Root/End point, ver2.0 or
  - (2) x4 PCI-E, 4-Lanes Root/End point, ver2.0
- 2 IIC, 32 GPIOs, Interrupt Controller

Network Connectivity
- Four 10/100/1G Ethernet ports, two with TCP/IP
  assist hardware and QoS
  - Jumbo frame, interrupt coalescence, CRC32, segmentation
- Two UART serial ports

Special Functionality
- IPSec/SSL Turbo Security Engine (optional)
- IEEE1588 v2 Clock Synchronization (one port)

Power
- 10.5W typical power @ 1 GHz

Target Applications

- Wireless Infrastructure
- Networking
- General Purpose Control Applications
Specifications

CPU Complex
- Power Architecture 464 processor core
- Up to 1.2 GHz/2400 DMIPS
- 32KB I-cache/D-cache with parity
- 512KB L2 cache with parity

Memory and Bus Architecture
- 128-bit, 200 MHz, 2-way Crossbar Local Bus
  - High bandwidth and Low Latency segments
  - 12.8GB/s combined peak bandwidth
- Second HB Bus, 6.4GB/s, for RAID 5, RAID 6, and Security
- DDR SDRAM Controller with ECC
  - 32/64-bit DDR2 up to DDR800
  - Data Saver, for data or power saving, sustains memory refresh with battery backup
- 512KB L2 Cache may also be used as SRAM
- 32-bit, 100-MHz On-chip Peripheral Bus (OPB)
- External Bus Controller
  - Interface to Flash ROM, Boot, or other devices (4 total)

System Resources
- High Bandwidth 3-channel DMA engine

High Speed and Inter-Chip Connectivity
- Gen2 PCI Express Multiport Bridge (5 Gb/s per Lane)
  - (1) PCI-E, 8-Lane Root/End point, ver2.0
  - (2) PCI-E, 4-Lanes Root/End point, ver2.0 or (1) PCI-E 8-Lane Root/End point, ver2.0
- 2 IIC, 32 GPIOs, Interrupt Controller

Network Connectivity
- Four 10/100/1G Ethernet Ports, two with TCP/IP assist hardware and QoS
  - Jumbo frame, interrupt coalescence, CRC 32
- Two UART serial ports

Special Functionality
- RAID 5 and RAID 6 Acceleration Hardware
- Network IPSec/SSL Turbo Security Engine

Power
- 10.5W typical power @ 1 GHz

Target Applications
- RAID controllers
- Storage Area Networking (SAN)
- iSCSI
- Network Attached Storage (NAS)
- Other embedded storage and networking applications
<table>
<thead>
<tr>
<th>Part Number</th>
<th>Host OS</th>
<th>Product Description</th>
<th>Board Name</th>
<th>Support</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>EV-405EP-KIT-01</td>
<td>Windows / Linux</td>
<td>405EP Evaluation Kit, Windows and Linux Hosts, tools CDs</td>
<td>Taihu</td>
<td><a href="mailto:taihusupport@amcc.com">taihusupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-405EX-KIT-05</td>
<td>Windows / Linux</td>
<td>405EX Evaluation Kit, Windows and Linux Hosts, tools CDs</td>
<td>Kilauea</td>
<td><a href="mailto:kilaueasupport@amcc.com">kilaueasupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-405GPR-WIN-00</td>
<td>Windows</td>
<td>405GPr Evaluation Board, Windows Host</td>
<td>Sycamore</td>
<td><a href="mailto:support@amcc.com">support@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-440EP-KIT-01</td>
<td>Windows / Linux</td>
<td>440EP Evaluation Kit, Windows and Linux Hosts, tools CDs</td>
<td>Yosemite</td>
<td><a href="mailto:yosemitesupport@amcc.com">yosemitesupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-440EPx-KIT-01</td>
<td>Windows / Linux</td>
<td>440EPx Evaluation Kit, Windows and Linux Hosts, tools CDs</td>
<td>Sequoia</td>
<td><a href="mailto:sequoiasupport@amcc.com">sequoiasupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-440GX-KIT-01</td>
<td>Windows / Linux</td>
<td>440GX Evaluation Kit, Windows and Linux Hosts, tools CDs</td>
<td>Taishan</td>
<td><a href="mailto:taishansupport@amcc.com">taishansupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-440SP-MX-02</td>
<td>Windows</td>
<td>440SP Evaluation Board, Windows Host</td>
<td>Luan</td>
<td><a href="mailto:support@amcc.com">support@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-460EX-KIT-05</td>
<td>Windows / Linux</td>
<td>460EX Evaluation Kit, Windows and Linux Hosts, tools CDs</td>
<td>Canyonlands</td>
<td><a href="mailto:canyonlandssupport@amcc.com">canyonlandssupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-460GT-KIT-04</td>
<td>Windows / Linux</td>
<td>460GT Evaluation Kit, Windows and Linux Hosts, tools CDs</td>
<td>Glacier</td>
<td><a href="mailto:glaciersupport@amcc.com">glaciersupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>RD-460GT-AMC-01</td>
<td>Windows / Linux</td>
<td>Dual-460GT AMC Card Reference Design Kit</td>
<td>Arches</td>
<td><a href="mailto:archessupport@amcc.com">archessupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>EV-460SX-KIT-01</td>
<td>Windows / Linux</td>
<td>460SX Evaluation Kit, Windows and Linux Hosts, Tools CDs</td>
<td>Eiger</td>
<td><a href="mailto:eigersupport@amcc.com">eigersupport@amcc.com</a></td>
<td>Now</td>
</tr>
<tr>
<td>Accelerated Technology</td>
<td>405EP</td>
<td>405EX</td>
<td>405EXr</td>
<td>405GPr</td>
<td>440EP</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>-------</td>
<td>-------</td>
<td>--------</td>
<td>--------</td>
<td>-------</td>
</tr>
<tr>
<td>Aonix</td>
<td>Java</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>AppliedMicro</td>
<td>Linux</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Denx Software Engineering</td>
<td>Linux</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Embedded Brains</td>
<td>RTEMS</td>
<td></td>
<td></td>
<td></td>
<td>•</td>
</tr>
<tr>
<td>Enea</td>
<td>OSE Delta</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Express Logic</td>
<td>ThreadX</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Green Hills Software</td>
<td>Integrity</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>KADAK Products Ltd.</td>
<td>AMX</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>LynuxWorks</td>
<td>BlueCat Linux</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>LynuxWorks</td>
<td>LynxOS</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>LynuxWorks</td>
<td>LynxOS-178</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Mentor Graphics</td>
<td>Nucleus</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Micro Digital</td>
<td>Smx</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Monta Vista</td>
<td>Professional</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Monta Vista</td>
<td>Carrier Grade</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>MOX Embedded</td>
<td>MOX</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>QNX Software Systems</td>
<td>Neutrino</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Quadros</td>
<td>RTXC</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>SYSGO AG</td>
<td>Linux</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>TimeSys</td>
<td>Linux</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Wasabi</td>
<td>NetBSD</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Wind River</td>
<td>VxWorks</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Wind River</td>
<td>Linux</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>
## Hardware and Software Development Tools

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Abatron</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Altium</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Aonix</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Apogee</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Code Sourcery Inc.</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>DENX Software Engineering</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>EmuTec Inc.</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Green Hills Software</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>International Test Technologies</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>iSystem AG</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Klocwork Inc.</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Kozio Inc.</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Lauterbach</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>LynuxWorks</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Macraigor Systems LLC</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Mentor Graphics</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Microcross, Inc.</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Monta Vista</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>MOX Embedded</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>NuDesign Team, Inc.</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Quadros</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>QNX Software Systems</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>SYSGO AG</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Theobroma Systems</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>TimeSys</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Viosoft Corporation</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Virutech</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Wasabi</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Wind River</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>
For technical questions regarding AppliedMicro’s products, please contact our product support group at 1.800.840.6055 or email support@appliedmicro.com.