Arcom is a pioneer in the design and manufacture of embedded processor and I/O boards for industrial and OEM applications. They are perfect for anyone wanting advanced processing or display capabilities for their next generation of products, where 24/7 reliability and guaranteed longevity-of-supply are paramount.

As well as generous on-board features, most can also be expanded with additional functionality such as isolated digital and analogue I/O via the PC/104 expansion bus. This, coupled with out-of-the-box operating system support and Arcom’s comprehensive backup and 3-year warranty, all assures a carefree embedded solution.

Kick-start your embedded project in 3 easy steps!

Step 1: Pick an embedded processor board...

<table>
<thead>
<tr>
<th>Technical Feature</th>
<th>PEGASUS</th>
<th>VIPER</th>
<th>VULCAN</th>
<th>SEC-GX1</th>
<th>APOLLO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architecture</td>
<td>x86</td>
<td>ARM/XScale</td>
<td>ARM/XScale</td>
<td>x86</td>
<td>x86</td>
</tr>
<tr>
<td>CPU</td>
<td>AMD 6600</td>
<td>Intel PXA255</td>
<td>Intel EF805</td>
<td>AMD 6600</td>
<td>AMD 6600</td>
</tr>
<tr>
<td>RAM</td>
<td>32MB</td>
<td>256MB</td>
<td>256MB</td>
<td>512MB</td>
<td></td>
</tr>
<tr>
<td>MultiCo-Processor</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>CPU Clock Speed</td>
<td>133MHz</td>
<td>400MHz</td>
<td>533MHz</td>
<td>800MHz</td>
<td>1.6GHz</td>
</tr>
<tr>
<td>Battery-backed SRAM</td>
<td>128KB</td>
<td>256KB</td>
<td>256KB</td>
<td>512KB</td>
<td></td>
</tr>
<tr>
<td>Onboard Flash</td>
<td>512MB</td>
<td>1MB</td>
<td>2MB</td>
<td>4MB</td>
<td></td>
</tr>
<tr>
<td>CompactFlash (disag)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>CompactFlash (CF+)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>P/S2 Keyboard/Mouse</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Fuzzy Bit Smoke</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>IDE</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Parallel Port</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>RS232 / RS-442</td>
<td>9600</td>
<td>9600</td>
<td>48000</td>
<td>48000</td>
<td></td>
</tr>
<tr>
<td>Max Baud Rate</td>
<td>115.2Kb</td>
<td>230.4Kb</td>
<td>481.92Kb</td>
<td>115.2Kb</td>
<td>92.16Kb</td>
</tr>
<tr>
<td>LAN Interface(100 Base-T)</td>
<td>1000/10BaseT</td>
<td>100/10BaseT</td>
<td>10/100BaseT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>USB 1.1</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>USB 2.0</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Firewire (IEEE 1394)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Audio Out/Line in</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Video Component</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Video Output</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Max Frame Size</td>
<td>1440 x 900</td>
<td>1200 x 1024</td>
<td>1280 x 1024</td>
<td>1280 x 1024</td>
<td></td>
</tr>
<tr>
<td>Real Time Clock (RTC)</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>WatchDog Timer</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>PCI/104 Expansion</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>PCI Expansion</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Ram Temperature</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>PC/104</td>
<td>PC/104</td>
<td>PC/104</td>
<td>PC/104</td>
<td></td>
</tr>
<tr>
<td>Dimensions</td>
<td>90 x 22mm</td>
<td>90 x 22mm</td>
<td>90 x 22mm</td>
<td>90 x 22mm</td>
<td></td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>5V DC</td>
<td>5V DC</td>
<td>5V DC</td>
<td>5V DC</td>
<td>5V DC</td>
</tr>
<tr>
<td>Max Power Consumption</td>
<td>1W</td>
<td>1W</td>
<td>1W</td>
<td>1W</td>
<td>1W</td>
</tr>
<tr>
<td>Cooling</td>
<td>Passive</td>
<td>Passive</td>
<td>Passive</td>
<td>Passive</td>
<td>Passive</td>
</tr>
<tr>
<td>Operating Temp</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td></td>
</tr>
<tr>
<td>Frame Factor</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td></td>
</tr>
<tr>
<td>Operating Voltage</td>
<td>5V DC</td>
<td>5V DC</td>
<td>5V DC</td>
<td>5V DC</td>
<td>5V DC</td>
</tr>
<tr>
<td>Max Power Consumption</td>
<td>1W</td>
<td>1W</td>
<td>1W</td>
<td>1W</td>
<td>1W</td>
</tr>
<tr>
<td>Cooling</td>
<td>Passive</td>
<td>Passive</td>
<td>Passive</td>
<td>Passive</td>
<td>Passive</td>
</tr>
<tr>
<td>Operational Temp</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td>-20 to +70°C</td>
<td></td>
</tr>
<tr>
<td>Form Factor</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td></td>
</tr>
<tr>
<td>Frame Factor</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td></td>
</tr>
<tr>
<td>Frame Factor</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td>3.0 x 104</td>
<td></td>
</tr>
<tr>
<td>Embedded Linux</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Windows CE</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Windows XP Embedded</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
</tbody>
</table>

(1) Conversion from onboard TFT output to CRT or LVDS is possible via an external module.
(2) The Parallel Port can be used to provide an additional 8 x TTL General Purpose digital I/O.
(3) DVI and TV-out can be provided via additional plug-in modules.

Note: 3 year warranty is operated by Arcom.
Please telephone 01223 411200 or e-mail: repairs@arcom.com for warranty or technical support queries.

Think Embedded. Think Arcom.
Step 2: Choose your operating system...

NB: Due to their unique hardware requirements, not every operating system is available for every embedded processor board.

Windows XP Embedded

Windows XP Embedded is a componentised version of Windows XP Professional, specifically designed with features to suit operating from solid-state Flash memory, as opposed to a mechanical hard drive. Compared with Windows XP Professional, Windows XP Embedded provides a compact operating system with enhanced reliability and a reduced licence cost. It’s ideal if you already have an application written for a desktop PC, or if your project relies on third-party hardware where only Windows XP drivers exist. Windows XP Embedded allows you to utilise the full power of Windows XP Professional in a more focused form, to rapidly create advanced and reliable embedded devices, without the learning curve often associated with a new operating system.

Windows CE 5.0

Windows CE is the choice for those requiring a small, reliable ‘real-time’ operating system, yet one which can still provide a rich set of multi-media features. Windows CE is perfect for creating optimised, cost-sensitive devices, when the developer has full control over the application code to be deployed. Windows CE requires different application executables to those intended for standard ‘desktop’ Windows, although the same Microsoft Visual Studio .NET Professional development tools can be used to create them. Supporting the .NET Compact Framework, Windows CE allows you to rapidly develop your device application in a familiar environment using either embedded Visual C/C++, Visual Basic .NET or Visual C# .NET.

Embedded Linux

Embedded Linux is a size optimised version of Linux based on a 2.6 kernel distribution designed specifically for embedded devices. Its value lies in the ability to rapidly create a wide range of embedded devices, with the added benefit of an almost unlimited amount of open-source software and resources. Embedded Linux has been used in devices such as mobile phones, PDAs, media players and other consumer electronics products, although its main forte is in the creation of robust network-oriented communication or data acquisition devices. The accepted Linux GUN C/C++ software tools are included in the Development Kit, ensuring application development is simple and consistent with desktop Linux. Its highly stable, secure and most of all configurable nature, mean the only real limitation of embedded Linux is in the developer's ability.

Step 3: Get yourself a Development Kit...

If you’re after an embedded processor board for your next project, then an Arcom Development Kit should be your first purchase. A Development Kit is a one-stop solution, providing your chosen operating system pre-installed onto your chosen embedded processor board, allowing you to rapidly develop your device and reduce your product’s time-to-market. The Development Kit includes the processor board, touchscreen TFT display (optional), operating system licence, power supply, associated cables, easy to follow documentation and a CD-ROM containing additional technical information and supporting source-code. Using the utilities provided, you can then simply clone all your development work onto any future embedded processor boards required. Purchasing a Development Kit also entitles you to unlimited after-sales technical support from Arcom, ensuring your foray into the embedded processor world is carefree.

Embedded Processor Bare Boards

These are intended for production runs, when additional processor boards are required further to that supplied in the Development Kit. They come with no manual or required development tools, as these are included with the initial Development Kit.

Embedded Processor Cable Kits

These cable kits break out the embedded processor boards functionality to industry standard connectors. They are not required with Development Kit purchases.

Note: 3 year warranty is operated by Arcom. Please telephone 01223 411200 or e-mail: repairs@arcom.com for warranty or technical support queries.
One of the great aspects about the PC/104 standard is its versatility. The PC/104 expansion bus allows for extra functionality to be added to the embedded processor board by simply plugging in additional I/O modules. Up to eight PC/104 I/O modules can be securely bolted together to create an embedded system of unsurpassed reliability and robustness.

Operating system drivers and example source code for all these I/O modules are included in the Development Kits for the Arcom embedded processor boards. Alternatively, for use with a non-Arcom product, the drivers can be downloaded from www.arcom.co.uk

### Enhance your embedded processor board's functionality...

1. **Digital Input & Relay Output Module**
   - 8 isolated digital inputs
   - 10 - 30V input switching voltage
   - 8 relays, NC and NO contacts at I/O connector
   - 1A / 60V switching capability per relay

2. **TTL Digital I/O Module**
   - 32 TTL compatible digital I/O channels
   - Bit-programmable for inputs or outputs
   - Outputs configurable on power-up or reset
   - Sink capability 24mA, Source current 500µA
   - Module access LED

3. **Digital Input Module**
   - 16 opto-isolated digital inputs
   - 10 - 30V input switching voltage
   - Reverse protection diodes on all inputs
   - 10ms input debounce filters (link-selectable)
   - 1500V input-to-output isolation

4. **Digital Output Module**
   - 16 opto-isolated Darlington digital outputs
   - 30V max load operating voltage
   - 40kHz max output frequency
   - Protection catch diodes on all outputs
   - 1500V input-to-output isolation

5. **Digital Input & ADC Module**
   - 8 isolated digital inputs
   - 10 - 30V input switching voltage
   - 8/16 differential 12-bit analogue inputs
   - 500Hz max. acquisition rate
   - 1000V input-to-output isolation

6. **Digital Input & DAC Module**
   - 8 isolated digital inputs
   - 10 - 30V input switching voltage
   - 8/16 (differential/single-ended) 12-bit analogue inputs
   - 500Hz max. acquisition rate
   - 2 x 12-bit isolated analogue outputs
   - 10µsec settling time to 12-bit accuracy

7. **CAN Interface Module**
   - Single channel Philips SJA1000 CAN controller
   - Supports CAN ISO11898 (CAN 1.1 and 2.0a)
   - Up to 1Mbit baud rate
   - 3 bi-colour diagnostic LEDs
   - 128byte serial EEPROM for parameter storage

8. **TTL Digital I/O Module**
   - 32 x TTL compatible digital I/O channels
   - Bit-programmable for inputs or outputs
   - Outputs configurable on power-up or reset
   - Sink capability 24mA, Source current 500µA
   - Module access LED

9. **Multi RS232 Module**
   - 8 RS232 ports
   - Supports rates up to 115.2k baud
   - Supports shared interrupts (IRQs)
   - Full modem control lines for each port
   - Rx and Tx activity LEDs for each port

10. **Digital Input & ADC/DAC Module**
    - 8 isolated digital inputs
    - 10 - 30V input switching voltage
    - 8/16 (differential/single-ended) 12-bit analogue inputs
    - 500Hz max. acquisition rate
    - 2 x 12-bit isolated analogue outputs
    - 10µsec settling time to 12-bit accuracy
    - 1500V input-to-output isolation

11. **Digital Input & Relay Output Module**
    - 8 isolated digital inputs
    - 10 - 30V input switching voltage
    - 8 relays, NC and NO contacts at I/O connector
    - 1A / 60V switching capability per relay

### PC/104 I/O Module Breakout Cables

1. **5-way IDC to 2 x 25-way D-type socket (male)**
   - 7000-06521-001-101
   - £19.99 / Ex

2. **5-way IDC to 2 x 5-way D-type socket (male)**
   - 7000-13477-000-000
   - £6.75 / Ex

3. **5-way IDC to 2 x 5-way D-type socket (male)**
   - 7000-10831-000-000
   - £9.99 / Ex

4. **25-way IDC to 1 x 25-way D-type socket (male)**
   - 7000-06521-000-000
   - £3.99 / Ex

---

* 32 is the combined total of inputs and outputs available

---

**Note:** 3 year warranty is operated by Arcom.

Please telephone 01223 411200 or e-mail: repairs@arcom.com for warranty or technical support queries.
Most standard PC's are unsuitable for monitoring or control applications, due to their lack of external I/O. This range of PCI expansion cards offer a range of features which make interfacing your PC to the 'real-world' very simple. With a selection of isolated digital and analogue inputs and outputs, as well as relay outputs and counter-timers, should guarantee there is a card here to suit any monitoring, control or data acquisition requirement.

Adding 'real-world' I/O to your PC couldn't be easier.

- All I/O boards come with Windows 2000/NT/XP drivers and example Visual C/C++ and Visual Basic source code
- CE-compliant board designs
- Integrated signal conditioning
- Single industry standard 50-way D-type I/O connector
- 3 year warranty

1. Digital Input & ADC/DAC Card (Differential)
   - 8 x differential 12-bit analogue inputs
   - 0 to ±5V, 0 to ±10V, bi-polar selectable input ranges
   - 100kHz max sample rate (across channels)
   - 2 x 12-bit isolated DAC outputs
   - 0 to ±5V, 0 to ±10V, bi-polar selectable output ranges
   - 100kHz max conversion rate (across channels)
   - 16 x TTL digital I/O channels
   - 3 x Timers (1 x ADC, 1 x interrupt, 1 x general purpose)

2. Digital Input & ADC/DAC Card (Single-Ended)
   - 8 x single-ended 12-bit analogue inputs
   - 0 to ±5V, 0 to ±10V, bi-polar selectable input ranges
   - 100kHz max sample rate (across channels)
   - 2 x 12-bit isolated DAC outputs
   - 0 to ±5V, 0 to ±10V, bi-polar selectable output ranges
   - 100kHz max conversion rate (across channels)
   - 16 x TTL digital I/O channels
   - 3 x Timers (1 x ADC, 1 x interrupt, 1 x general purpose)

3. Digital Input & Relay Output Card
   - 8 x opto-isolated digital inputs
   - 10 - 30V input switching voltage
   - 8 x changeover relays
   - NC and NO contacts at I/O connector
   - 1A / 48V switching capability per relay

4. Digital Input & ADC/DAC Card (Single-Ended)
   - 8 x single-ended 12-bit analogue inputs
   - 0 to ±5V, 0 to ±10V, bi-polar selectable input ranges
   - 100kHz max sample rate (across channels)
   - 2 x 12-bit isolated DAC outputs
   - 0 to ±5V, 0 to ±10V, bi-polar selectable output ranges
   - 100kHz max conversion rate (across channels)
   - 16 x TTL digital I/O channels
   - 3 x Timers (1 x ADC, 1 x interrupt, 1 x general purpose)

5. Digital Input & ADC/DAC Card (Differential)
   - 8 x differential 12-bit analogue inputs
   - 0 to ±5V, 0 to ±10V, bi-polar selectable input ranges
   - 100kHz max sample rate (across channels)
   - 2 x 12-bit isolated DAC outputs
   - 0 to ±5V, 0 to ±10V, bi-polar selectable output ranges
   - 100kHz max conversion rate (across channels)
   - 16 x TTL digital I/O channels
   - 3 x Timers (1 x ADC, 1 x interrupt, 1 x general purpose)

6. Digital Input & Relay Output Card
   - 8 x opto-isolated digital inputs
   - 10 - 30V input switching voltage
   - 8 x changeover relays
   - NC and NO contacts at I/O connector
   - 1A / 48V switching capability per relay

7. PCI I/O Card Assembly
   - 50-way ribbon cable
   - 2m long with 50-way D-plug connector at one end for connection to the Arcom range of PCI bus I/O cards
   - Supplied 50-way ribbon cable header should be fitted by the user and allows the terminated cable length to be set to suit the application

8. Screw Terminal I/O Breakout Board
   - Provides easy screw terminal access to the PCI I/O card's functionality
   - Ideal for testing and prototype use
   - For use in conjunction with PCI I/O Card Cable Assembly

9. 1U 19" Rack Mount Industrial PC
   - Cool running Pentium M 1.6GHz (2.4GHz Pentium 4 performance)
   - Rugged design
   - 512MB DDR RAM
   - 2 x PCI slots
   - Dual Ethernet
   - Front panel access to USB2 & FireWire ports
   - Standard I/O connections from rear panel
   - Customisable LCD status display and User LED's
   - Just 14" (350mm) deep
   - Lid tamper detect switch
   - Min. 80GB HDD & CDR/DVD drive
   - Auto-ranging 90 - 264V AC
   - Only 40W typical power consumption!

Note: 3 year warranty is operated by Arcom. Please telephone 01223 411200 or e-mail: repairs@arcom.com for warranty or technical support queries.