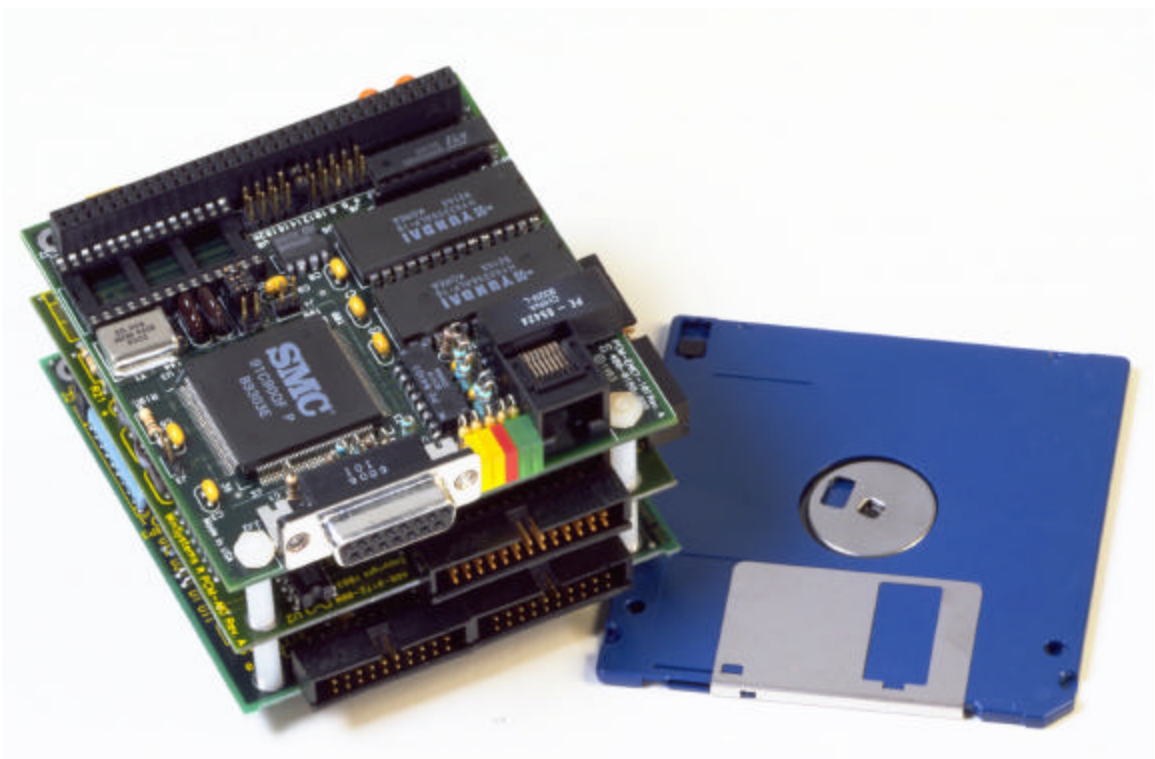




Overview of the
PC/104 and PC/104-Plus bus

What is PC/104 and PC/104-Plus?

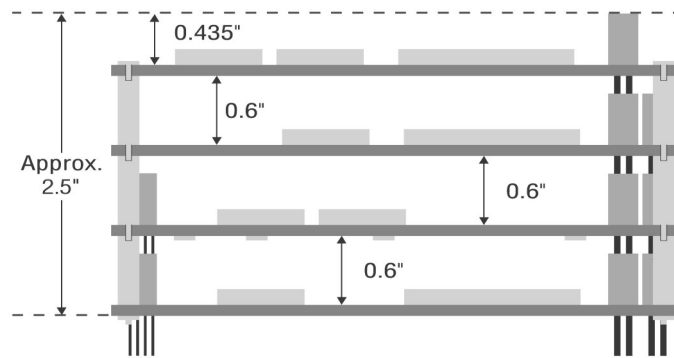
PC/104 is simply the desktop ISA and PCI bus repackaged and hardened for industrial use. PC/104 modules are small, 3.6-in. x 3.8-in. (90mm x 96mm), which are about the size of a 3.5-inch diskette. They stack together to make an embedded PC in a rugged, compact form factor. Yet in this small size are single board computers (SBCs) and I/O cards that allow a designer to build a powerful Pentium®-based industrial computer. Applications of the technology include test equipment, medical instruments, communications devices, transportation systems, military/COTS, data loggers, security, robotics, semiconductor manufacturing instruments, and industrial control systems.



The PC/104 and PC ISA bus signal definitions and timing are the same. PC/104's P1 bus has 64 pins just like the PC-XT and is combined with 40-pins on P2 for full AT-compatibility. The sum of the pins ($64 + 40 = 104$) is the origin of the name PC/104. PC/104-*Plus* is the PCI implementation of PC/104 for I/O functions requiring higher data transfer speeds. It supports a 32-bit multiplexed address/data path operating at PCI local-bus speeds of up to 33 MHz. That yields a peak bandwidth of 132 MB/sec.

One of the cleverest features of PC/104 is its reliable pin-and-socket connector. Each connector is designed in such a way as to allow more than a single module to be stacked. Multiple modules permit more flexibility in a design as well as further expansion capability. PC/104 boards can be standalone single board computers or stacked one on top of another to form a system with larger I/O requirements. They can also be stacked on top of a larger single board computer as a mezzanine bus expansion.

The figure below shows a 4-module PC/104 stack. It demonstrates the cross platform technology of how an 8-bit PC/104 module, a 16-bit PC/104 module, and two 32-bit PC/104-*Plus* expansion modules can plug together in the same stack.



For more information about PC/104 and PC/104-*Plus* technology and vendors, go to www.pc104.org. The PC/104 Embedded Consortium, founded in 1992, is a technical standards body with members worldwide.