Dynamic Engineering

PC104p Product Line

Complete product data and manuals are available on our website.

http://www.dyneng.com/pc104.html

Dynamic Engineering enjoys a sterling reputation as a result of providing quality products and excellent service for over 20 years.

Dynamic Engineering is the Embedded Solution Center. We specialize in providing embedded solutions to integrators and designers. Dynamic Engineering is an expert with mezzanine modules (cPCI, custom, IndustryPack, PCI-104, PClexpress, PCI, PMC, VME). System engineers can mix and match different functions under different system architectures.

System designers can port solutions between different architectures quickly and easily with mezzanine designs and modular software.

Solutions offered include Custom Design, Analog I/O, Digital I/O, Serial I/O, Control, Bus Interface, Robotics, Telephony, Networking and more.
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PC104p Product Line

Linux and Windows® driver(s) available for many Dynamic Engineering products

PC/104p Carrier / Adapter Cards

PC104p-4IP

Install up to 4 IndustryPack’s in 1 PC104p Slot
http://www.dyneng.com/pc104p4ip.html
Use the PC/104p-4IP for embedded control and your favorite IP modules when you need 4 in a PC/104p stack.

The PC/104p-4IP is a special mechanical card with 4 IP module slots. The PC/104p connector placement is standard. The overall dimensions are larger than standard PC/104p. The IP modules have independent clock selection (8/32 MHz), interrupt, bus error timer, and full support for IO, ID, Mem and Int accesses. The slots can be used for a double wide IP. FAST® technology provides an integrated PC/104p to IP bus interface. The integrated interface features automatic 32 bit PCI conversion to 16 bit IP module. LEDs are provided on the IP power levels, IP acknowledge, and an additional 8 under user control. An 8 position dip-switch is provided for board identification and other user purposes. Fused filtered power for each IP module. The 50 pin header connectors provide IO and cable options for discrete or ribbon cable wiring. The PC/104p-4IP is easy to use and has an engineering kit available to speed your integration to success.

PC104p-IP

Install an IndustryPack into your Stack
http://www.dyneng.com/pc104p_ip.html
With the direct PCI to IP Bridge design featured in the PC104pIP standard accesses to your hardware happens faster than in competing designs.

A single slot IP carrier for PC/104p. The IP module has clock selection (8/32 MHz), interrupt, bus error timer, and full support for IO, ID, Mem and Int accesses. FAST® technology provides an integrated PC/104p to IP bus interface. The integrated interface features automatic 32-bit PCI conversion to 16 bit IP module. LEDs are provided on the IP power levels, IP acknowledge, and an additional 8 under user control. An 8-position dip-switch is provided for board identification and other user purposes. Fused filtered power for the IP module. The 50 pin header connector provides IO and cable options for discrete or ribbon cable wiring. The PC/104p-4IP is easy to use and has an engineering kit available to speed your integration to success.

PC104p2PMC

Mount a PMC Card into a PC104p Stack
http://www.dyneng.com/pci1042pmc.html
The PCI-104 to PMC adapter/crrier converter card provides the ability to install a PMC card into a standard PCI-104 slot.

Suitable for 32 bits with 33 or 66 MHz bus operation. The PMC front panel connector is mounted though the PCI mounting bracket. With the PC104p2PMC direct connect to the PCI bus the latency to the PMC is optimized. Your data will move quickly and reliably through the PCI bus to and from your hardware.
**PC104p Product Line**

**PCI2PC104p**  
**PCI to PC104 Adapter Card, Test & Production Options**  
Save money with the PCI2PC104p... If you need to get your product to market fast, think about reusing existing PC104p and PCI-104 designs in PCI applications.

For small production runs it will be less expensive without paying for a new design and layout. For new PC104p and PCI-104 designs the PCI2PC104p can decrease your time to market by allowing your engineers to debug in a PC, instead of the target hardware, until the design is mature. A PC will provide better tools and visibility into the hardware. Two slots to choose from. Mount a PC/104p card in a PCI slot with component side up for debugging or down for production. PCI2PC/104p shown in production mode with PC/104p BiSerial III Connected.

**PCIBPC104pET**  
**PCI to PC104 Extended Temp. Bridged Carrier, Test/Production Options**  
For new PC104p and PCI-104 designs the PCIBPC104pET can decrease your time to market by allowing your engineers to debug in a PC. A PC will provide better tools and visibility into the hardware.

PCIBPC104pET adapter/carrier converter card provides the ability to install 1-4 PC104p or PCI-104 cards into a standard PCI slot. PCIBPC104pET has a PC104p and PCI-104 compatible stack position mounted to a universal voltage shorter than 1/2 length PCI card. The PC104p position is stackable with all 4 active positions usable. Additional non-PCI cards can also be added. PCI power is routed to the PC104p stack with heavy planes allowing enough current to cover the PC104p specification. Interrupts are routed to the PCI connector. Request and Grant lines are handled by the bridge locally and back to the host on the PCI bus to allow for bus master operation. The design is robust with extended temperature components, impedance controlled, PCI compliant routing, heavy power planes with decoupling for the PC104p voltages, and more.

With the PCIBPC104pET (PCI Bridge PC104p/PCI-104 Extended Temperature) all you have to do is install your PC104p onto the adapter, and plug into the PCI slot. PCIBPC104pET is compatible with 32 bit PCI slots. The PC104p positions can be programmed to use 3.3 or 5V for VIO. The bridge provides plug and play operation. PCI2PC104p shown with the PC/104p Biserial III Connected.

**PC104p BaseBoard**  
**Rugged Power Dist, OptoISO, Arinc 429, ADC, DAC, UART**  
The BaseBoard is used to integrate a PCI-104 or PC/104p stack with the power supply.

Part of the PC/104 Module family of modular I/O components by Dynamic Engineering, Features: 35 Optocoupled Inputs, 37 Optocoupled Outputs, 2 UART - RS-485 ports, 2 ARINC 429 - TX/RX, 4 ADC Ports, and 4 DAC Ports comprise the onboard feature set of the BaseBoard design. The Right hand PC104 slot is designed to be occupied by the Power Supply module which accepts 28V and supplies the standard PC104 voltages on the ISA connector. The left hand slot in the figure above is used to add a PCI-104 or PC/104p stack. The stack will include the system CPU. The BaseBoard occupies slot position 0. BaseBoard shown mounted to rear mounting plate.
PC/104p Bus Interface

**PC104p-SpaceWire**

**PC104p to SpaceWire: 4 SpaceWire Ports with DMA**

http://www.dyneng.com/pc104p_SpaceWire.html

Implement SpaceWire in a convenient PCI-104 or PC104p format. The four SpaceWire connectors fit within the defined connector space. Independent DMA capable SpaceWire channels. User programmable transmit frequency for each channel. Separate Data and packet FIFO’s for each channel with optional 128k x 32 additional FIFO in the data path. “Channelized DMA”™ included in the design for efficient data transfer with the host system.

In the SpaceWire implementation the channels pass tokens between two independent state-machines to provide the proper protocol. The SpaceWire protocol is advanced with link testing, error handling, command and data protocols built in. The SpaceWire electrical interface is point-to-point. With the SpaceWire protocol, it is easy to build either a hierarchical architecture system with routers or a “home-run” wired system. Equipment can interact with any other node in the system. Channel based DMA offloads your CPU and increases performance in your system. Time Code support provides a complete solution.

PC/104p Chassis

**PC104p Chassis**

**PC104, PC104p, PCI-104 Compatible**

http://www.dyneng.com/pc104_chassis.html

Dynamic Engineering is pleased to announce the PC104p-Chassis. Suitable for PC104, PC104p and PCI-104 applications. The chassis is based on an extruded aluminum outer housing with machined end caps. The internal card cage is isolated with bumper pads from the external housing to provide vibration and shock absorption. A heat sink is built into the internal and external walls of the chassis on three sides to aid in heat transfer. The bottom surface is extended to create a mounting flange which can also be used for cooling in conductive cooled systems. The end caps are machined to include a gasket for water tight operation. An EMI gasket is available.

1-11 modules, and custom lengths, 12 and 28V power supplies, custom machining and silk screening are available options.

PC/104p Rugged Power Supplies

**PC104pPWR12**

**Energize all of the Rails in your Design with a Single 12V Power Supply**

http://www.dyneng.com/pc104_pwr12.html

Energize all of the rails in your design with a single power supply.

The PC104pPWR12 power supply provides for the +5, +3.3, +12, minus 12 and minus 5 from a 12V wall mount transformer supply, battery etc. Each rail is fuse protected. The supply uses switching technology to provide high efficiency coupled with low pass filtering to provide low noise and fast response to transient loads.

The PCI VIO is programmable allowing 5V or 3.3V PC104p cards to be used. Many PC104p and PCI-104 cards are universal and can work with 3.3 or 5V PCI definitions. A shunt is provided for the user to select 5V or 3V operation.
Energize all of the Rails in your Design with a Single 28V Power Supply

Energize all of the rails in your design with a single power supply.

The PC104pPWR28 power supply provides for the +5, +3.3, +12, minus 12 and minus 5 from a 28V supply, battery etc. Each rail is fuse protected. The supply uses switching technology to provide high efficiency coupled with low pass filtering to provide low noise and fast response to transient loads.

Aircraft and other systems use 28V power to operate equipment. The PC104pPWR28 has a wide input range to operate with 14 - 34 V power. It is possible to operate at voltages between 12 and 14, however in this range the PC104pPWR12 is recommended. The reference power is converted to 12VDC. The 12VDC is fuse protected and tied to the PC104 stack connection. The pre fuse 12V power is also connected to the 5V, 3.3V, -5V and -12V power supplies. All rails are transorb and fuse protected on the output side of the supply.

PC/104p General Purpose Cards

PC/104p-BiSerial-III Great for Custom State Machine Driven IO

The PCI-104 / PC104p BiSerial III is optimized for interfacing requirements.

A standard PC/104p sized card. Large internal "BLOCK RAM" for FIFO or Dual Port RAM. PCI interface w/DMA & state-machines contained within Spartan III. 16 - 40 MHz 485 buffers w/programmable termination & direction configurable to your systems requirements. Expanded faster FPGA will implement the most complex state-machines Standard 33 MHz. PCI operation with 32 bit operation. Independent DMA support for each TX and RX channel available. 40 MHz RS485 signaling supported IO speeds. LVDS transceivers rated at 200 MHz. Xilinx may limit the top rate, 200 KHz ADC, 200 KHz DAC, TTL is Xilinx driven. The base design has a PLL, oscillator position, and PCI clocks to choose from for a variety of clocking options. The PLL can be used to create custom frequencies. The PLL is programmable via I2C bus. The driver supports programming the PLL. Completely isolated FIFOs w/32 bit ports for increased adaptability and performance are available. Custom oscillator frequencies can be installed when an exact frequency is required. Options include LVDS, DAC ADC channels, and much much more. Many of the designs implemented for the PMC and IP versions can be ported to the PC/104p. Windows XP Driver available.
BiDirectional Serial Data Interface

http://www.dyneng.com/pc104p_biserial3.html

32 bit PC104p Module support. Increased adaptability and performance. Expanded faster FPGA will implement the most complex state-machines. The PC/104p-BiSerial is easy to use and has an engineering kit available to speed your integration to success.

The Biserial family is an ideal application solution for: telemetry, Manchester encoding/decoding, command & control, interface simulation, “glue” between incompatible systems, radar systems, industrial interfaces, inventory, optical recognition, airborne, ground based, and ship based. The BiSerial can be used to simulate a target system like an airplane, missile or other vehicle to interact with the equipment that would be connected to the target systems. Many times having a computer-based interface is more convenient than having the actual target application. Test, debugging, diagnostics etc. can be computer driven using the BiSerial much more easily than the “real” system in many cases. Consider the BiSerial family for your interfacing and support requirements.

The Biserial features include: 2 fully independent and highly programmable RS-485 / RS-422 IO channels. The two channels can have the same or different protocols. Manchester encoding and decoding, standard serial [UART], control, command, instrumentation, and custom protocols can be implemented. Each channel has a separate FIFO with 16Kbytes standard up to 512Kbytes as an option. 16 transceivers, Eight TTL IO, programmable PLL, oscillator position, and PCI clocks to choose from for a variety of clocking options. The driver supports programming the PLL. Board options also include: LVDS, DAC and ADC channels. There are 4 DAC, and 4 ADC channels, which can be populated with 200 KHz. 16 bit devices. The analog and TTL IO can use the external FIFOs or the internal Block RAM when smaller FIFOs are needed. The 50 pin header connectors provide IO & cable options for discrete or ribbon cable wiring.

Embedded Solutions featuring IndustryPack®

Embedded Solutions from Dynamic Engineering are available in PCI, PMC and IndustryPack® platforms, all usable within the PC/104 platform.

**PC104-BiSerial**

General Purpose TTL Programmable Serial RS485

http://www.dyneng.com/industrypack.html#ipbiserial

Available in many IO and build options to meet your specific requirements. In general the IP Biserial board provides bi-directional serial IO at rates up to 10 Mhz. Separate highly programmable send and receive state machines and memories. IndustryPack compatible with 8 or 32 Mhz. bus operation. Drivers available in Windows and Linux.

**PC104-Xilinx**

User Programmable Xilinx Based Module

http://www.dyneng.com/industrypack.html#ipbiserial

Order IP-Xilinx if you want to do your own development. A stock IP-Biserial board will be shipped with a blank PROM for the Xilinx. Purchase the IP-Xilinx-Kit to support your efforts. The standard Xilinx device is a spartan30-4 - plenty of room for your custom project.

**PC104-OctalSerial**

Multiple Channel State-Machine Applications

http://www.dyneng.com/ip-octalserial.html

8 FIFO supported differential IO channels and a large programmable Xilinx FPGA to support custom state-machine implementations. Up to 40 MHz IO.
### PC104-Pulse

4 Programmable Pulse Generators TTL or 422

http://www.dyneng.com/ip_pulse.html

4 programmable pulse generators. TTL or RS422 / RS485 compatible outputs. Programmable pulse - nS to seconds. Programmable count or free running.

### PC104-Parallel

Multiple TTL and Differential Programmable IO Available


Provides 48 programmable TTL IO or 24 - RS422 / RS485 compatible differential pairs. 5 mixed combinations available. Filtered or direct input. Programmable interrupt from each IO [TTL or differential]. 2 counter timers. Waveform generator.

### PC104-QuadUART

Serial IO – UART Capabilities RS232 RS422

http://www.dyneng.com/ip-quaduart.html

The IndustryPack compatible IP-QuadUART design integrates a quad UART onto an IndustryPack module. The UART (16C854) features 128 byte FIFOs for RX and TX ports on each channel. The UART is supported by an advanced IP module interface implemented within a Xilinx FPGA.

### PC104-QuadUART-485

Serial IO – UART Capabilities RS232 RS485


The IndustryPack compatible IP-QuadUART-485 design integrates a quad UART onto an IndustryPack module. The UART (16C854) features 128 byte FIFOs for RX and TX ports on each channel. The UART is supported by an advanced IP module interface implemented within a Xilinx FPGA.

The UART is a character based interface [8 bits]. The IndustryPack interface has several features which optimize performance. Words can be written to the IP-QuadUART-485 and the data will be converted to bytes before being sent to the UART. The IP interface will latch the data allowing the host computer to be released while the data is being moved to the UART. The early release allows pipelined operation and increased performance. When the IP-QuarterUART-485 is mounted to a carrier which supports 32 bit operations the effect can be enhanced.

### PC104-OptoISO-16

Optically Isolated HV Output Module


The IP-OptoISO-16 is an IndustryPack Module with 16 optically controlled FETs [switch]. Each FET acts as a single pole normally open photovoltaic relay. The solid state approach has several advantages including bounce free operation, low on resistance, long life, fast switching, and higher reliability when compared to relays.

The design utilizes a Xilinx FPGA to provide the IP interface - IDPROM, Bus interface, registers, and control for the FETs. Each optical switch has a separate bit in the control register to allow for independent operation.

### PC104-CF

Compact FLASH Adapter

http://www.dyneng.com/ip_cf.html

Converts between the IP Module bus and the IDE bus used for FLASH memory modules and other PC Card compatible designs. The IP-CF acts as an adapter, converter, carrier, or bridge between the IP bus and your PC Card hardware. The IP-CF comes with a 256 Mb CompactFLASH card.
PC104p Product Line

PC104 -429

Connect to your Avionics up to 8 RX and 4 TX ARINC 429 Channels

http://www.dyneng.com/ip429.html

ARINC 429 is robust featuring Manchester encoding and enough voltage swing to provide excellent noise immunity and reasonable throughput rates. ARINC 429 is the interface of choice for critical applications; for example aircraft instrumentation and control. There are many devices supporting the 429 bus - printers, instrumentation, sensors and more. IP-429 makes it easy to gain access to the ARINC 429 bus. Just connect; program a few registers and then use like an IO device. The IP-429 is currently supported with the Dynamic Engineering Carrier software drivers for Linux and Windows® via the generic interface.

PC104-1553

1553 Single and Dual Redundant BC, RT & Monitor Capabilities

http://www.dyneng.com/ip_1553.html

MIL-STD-1553 is robust featuring Manchester encoding and enough voltage swing to provide excellent noise immunity and reasonable throughput rates. MIL-STD-1553 is the interface of choice for critical applications; for example aircraft instrumentation and control. There are many devices supporting the 1553 bus - navigation devices, instrumentation, sensors and more. IP-1553 makes it easy to gain access to the MIL-STD-1553 bus. Just connect; program a few registers and then use like an IO device. IP-1553 is currently supported with the Dynamic Engineering Carrier software drivers for Linux and Windows®. Use an existing IP slot within your chassis or combine with a carrier to make PCI-1553, PC104p-1553, VME-1553 or cPCI-1553.

PC104-CAN

2 CAN (Controller Area Network) Channels Isolation or Direct Coupled

http://www.dyneng.com/ip_can.html

Now you can talk to your car and other CAN compatible network devices using the IP-CAN. Two channels with Isolation or direct coupled, on board termination or cable based, 8 or 32 MHz IP operation, up to 1 MHz CAN bus operation, and an industry standard CAN bus controller. IP-CAN is currently supported with the Dynamic Engineering Carrier software drivers for Linux and Windows®. Use an existing IP slot within your chassis or combine with a carrier to make PCI-CAN, PC104p-CAN, VME-CAN or cPCI-CAN.

PC104-Crypto

KYK – 13 Interface Adapter

http://www.dyneng.com/ip_crypto.shtml

A special version of the IP-Parallel-HV. The basic design features are retained and an interface to a KYK-13 is provided. The original KYK-13 interface uses the 6.5V reference output, a transfer request output, and 3 inputs for clock, data and switch. The outputs for the general purpose section are reduced to 23 in number. The inputs are all available through the filter or after processing by the KYK-13 interface.

cPCI-Crypto-Tape

Interconnect an IP-Crypto & IP-Tape from the Carrier to the PCI

http://www.dyneng.com/cable_assem_crypto_tape.html

Interconnecting to the outside world can be an issue. The Cable Assembly Crypto / Tape provides a method of interconnecting the IP-Crypto and IP-Tape from the carrier to the PCI Bezel [rear IO] when installed into a PCI machine. Most IP Carriers have 50 pin headers suitable for ribbon cable in use for the IP Module IO. The headers are located on the carrier and internal to the chassis.
Embedded Solutions featuring PMC

Embedded Solutions from Dynamic Engineering are available in PCI, PMC and IndustryPack® platforms, all usable within the PC/104 platform.

PC104-Biserial-III-Trans

Conduction Cooled Transformer Coupled Spartan III based Design

http://www.dyneng.com PMC_biserial_III_trans.html

The PMC BiSerial family has been updated to include a conduction cooled version with transformer coupling. The PMC-BiSerial-III-TRANS has 8 channels, each fully programmable and capable of operating independently or in concert with the other IO. The BiSerial III features completely isolated FIFOs with 32 bit ports for increased adaptability and performance. Half-Duplex, Full-Duplex, serial and parallel systems can be configured with software and VHDL. The denser, faster FPGA will implement the most complex state-machines. The components are rated for the industrial extended temperature range. Conformal coating is available.

PC104-Parallel-TTL

64 Independently Programmable Digital IO w/ FIFO’s & DMA

http://www.dyneng.com PMC_parallel_ttl.html

The PMC compatible PMC-Parallel-TTL has 64 independent digital IO. The high density makes efficient use of precious PMC slot resources. The IO is available for system connection both through the front panel and via the rear [Pn4] connector. A high density 68 pin SCSI III front panel connector provides the front panel IO. The rear panel IO has a PIM and PIM Carrier available for rear panel wiring options. The HDEterm68 can be used as a breakout for the front or rear panel IO. The HDEcabl68 provides a convenient cable. The pin definitions are consistent with the PMC Parallel IO card to enable users of the PMC Parallel IO to migrate to the PMC Parallel TTL quickly and easily.

PC104-Parallel-IO

64 Independent IO in one PMC Slot

http://www.dyneng.com PMC_parallel_IO.html

The PMC compatible PMC-Parallel-IO has 64 independent digital IO. The high density makes efficient use of precious PMC slot resources. The IO is available for system connection both through the front panel and via the rear [Pn4] connector. A high density 68 pin SCSI III front panel connector provides the front panel IO. The rear panel IO has a PIM and PIM Carrier available for rear panel wiring options. The HDEterm68 can be used as a breakout for the front or rear panel IO. The HDEcabl68 provides a convenient cable.

PC104-Parallel-485

32 Independent RS485 IO up to 34 Differential IO in 1 Card

http://www.dyneng.com PMC_parallel_485.html

A simple point and shoot interface makes it easy to add up to 34 differential IO to your system with the PMC Parallel 485. The PMC compatible PMC-Parallel-485 design adds 32 [RS-485 / RS-422/LVDS] differential IO lines to one slot of your carrier board. 2 additional differential pairs are available for a clock & clock enable. The signals can be used to capture data with an external reference or programmed to be references for the rest of the system. Many standard features and ease of VHDL updating make PMC Parallel 485 a versatile design.
PC104p Product Line

PC104-Serial  Sync/ Async Serial Protocols, UART and SCC

http://www.dyneng.com/pmc_serial.html

The PMC-Serial is capable of providing multiple serial protocols, both synchronous and asynchronous with a wide range of baud rates. The PMC-Serial has up to 8 UART channels, and two SCC channels. The protocol processors are complemented with a variety of IO which can be selected as a build option. RS-232, RS-485, RS-422, and RS-423 are supported. Two enhanced hysteresis MIL STD 188-114A receivers, and two open drain active low output drivers are also provided. The PMC-Serial also has a wide range of IO drivers and receivers to interface with. The SCC and UART IO are tied to the Xilinx and then back to the IO to allow for programmable options and ease of customerization.

PC104-SpaceWire  PMC Compatible SpaceWire Interface ECSS-E-ST-50-12C Spec

http://www.dyneng.com/pmc_SpaceWire.html

Utilize SpaceWire to communicate with the European Space Agency and NASA equipment utilizing the ECSS-E-ST-50-12C specification. SpaceWire is configured using routers to create a hierarchical point-to-point system with high speed parallel paths. PMC SpaceWire implements SpaceWire in a convenient PMC format. With PMC you can install the adapter into PCI [PCIBPMC], cPCI [cPCI2PMC], or processor board PMC slots. The SpaceWire specification calls for LVDS signaling and a specific 9 pin micro-D connector. You can connect the PMC-SpaceWire to other SpaceWire compliant devices without electrical interface issues.

PC104-Wizard  Ultra High Speed Bidirectional P2P Transmission System

http://www.dyneng.com/pmc_wizard.html

The PMC-Wizard is intended for use in ultra high-speed bidirectional point-to-point data transmission systems. The primary application is to provide very high-speed I/O data channels for point-to-point baseband data transmission over controlled impedance media of approximately 50 Ω. The maximum rate and distance of data transfer is dependent upon the attenuation characteristics of the media, and the noise coupling to the environment. PMC-Wizard can also be used to replace parallel data transmission architectures by providing a reduction in the number of traces, connector terminals, and transmit / receive terminals.

PC104-XM  User Programmable w/ Virtex FPGA & Transition Module Position

http://www.dyneng.com/pmc_xm.html

The PMC-XM is intended for use in situations where the user wants to control the design. PMC-XM has two FPGA devices built in. The first device takes care of the PCI interface, DMA etc. The second device [Virtex XC4VSX35-10] is for the user application. The Transition Module [XM] is attached to the Virtex device. The Virtex is further supported by a 1M x 36 QDR SRAM, PLL, Digital Temperature Sensor, and connections to the PMC Pn4 connector. Four LEDs are supplied to the Virtex to provide design status, debugging support and other user purposes.
Embedded Solutions featuring PCI

Embedded Solutions from Dynamic Engineering are available in PCI, PMC and IndustryPack® platforms, all usable within the PC/104 platform.

PC104-Altera 485/LVDS
Load your own Altera Program 20K400 or Other Footprint
http://www.dyneng.com/pci_altera_485.html
The PCI-Altera design is for the advanced user who wants to implement their Altera design. PCI_Altera_485 comes with everything you need to easily load your Altera program into the 20K400E. Fantastic for development, simulation, special purpose interfaces, multiple serial and / or parallel channels. Larger Altera parts are available with the same footprint allowing an upgrade path should one be necessary. The design comes with basic features built-in and the specific features ready for you.

PC104-Altera PLUS
Load your own Altera Program 20K600 or Other Footprint
http://www.dyneng.com/pci_altera_485.html
New version now available - Use the Plus Size version to do your more intense designs. 20K600, double density intermediate FIFO’s and larger Block RAM in the Xilinx add-up to more gates and more throughput for "more faster" operation.

PC104-ECL
High Speed DMA Supported ECL IO 20 Output 12 TTL
http://www.dyneng.com/pci_serial_ecl.html
Differential ECL / NECL is still the interface of choice for high speed in noisy environments. PCI-ECL is a general purpose design with ECL IO and a high speed Xilinx Virtex II Pro to control it. The ECL IO is carefully routed to provide 100 ohm differential impedance and matched length from the pin edge on the D100 connector to the Xilinx [BGA] Ball. All of the TX and RX are matched to allow for high speed designs with tight timing requirements. Customizable for NECL and/or PECL.