High Performance Connectivity Solutions for Embedded and Industrial Applications

Connect Tech delivers high performance computing solutions for embedded and industrial applications. For almost 30 years, Connect Tech has built a solid reputation for expertise in providing professional design services, delivering unsurpassed technical support and developing innovative products that improve design efficiency and cost effectiveness.

Serving customers around the globe...

Tel: 519.836.1291
Toll Free: 800.426.8979 (North America)
Fax: 519.836.4878

sales@connecttech.com
www.connecttech.com

42 Arrow Road, Guelph, ON Canada  N1K 1S6
COM Express® Type 6 Rugged Ultra Lite Carrier is a small carrier board, offering the ultimate durability with locking, rugged pin headers.

Features
- 95mm x 125mm
- Mini-PCIe Expansion
- -40°C to +85°C
- Supports most current processors including 4th Generation Intel® Core™ i7

COM Express® Type 10 Mini Carrier is an extremely small carrier board featuring rugged, locking connectors and offers the ultimate durability.

Features
- Small size, 84mm x 55mm
- Ruggedized latching connectors
- 2 x mini PCIe, mSATA, SATA, 2 x GBE, 6 x USB, LVDS, DisplayPort/HDMI/DVI/VGA, HD Audio, 2 x RS-232/422/485

Qseven Gen 2.0 Carrier Board is a compact ruggedized carrier that integrates with any industry standard Qseven Gen 2 module.

Features
- 170mm x 170mm, NanoITX
- Rugged locking pin header connectors
- MiniPCIe expansion
- -40 to +85 degrees C

COM Express® + GPU Carrier is a small form factor, flexible Type-6 COM Express carrier with on board GPU. Supports 4th Generation Intel® Core™ i7 Processors.

Features
- 200mm x 125mm
- Choose from AMD Radeon E6760 or NVIDIA GeForce GT-745
- 6 total outputs can be used for HDMI, DVI or VGA

COM Express® Type 6 PMC/XMC Ultra Lite Carrier offers dual PMC/XMC and Mini-PCIe expansion.

Features
- Ruggedized, locking pin header connectors
- Small form factor (170mm x 170mm)
- Supports latest processor sets, including 4th Generation Intel® Core i7™ (Haswell)
New Connect Tech Products

Xtreme/GbE Managed Carrier Ethernet Switch provides Carrier Grade Ethernet switching capabilities in an extremely small embedded form factor. Available in models with RJ-45 or Rugged Positive Locking Headers.

Features
- 8 x 10/100/1000 Mbps Port Switch
- Latest Generation 32-bit Switch Engine
- Web GUI or CLI Management
- Carrier Grade Ethernet Switching
- Available with RJ-45 or Rugged Locking connectors
- Extremely Small Form Factor for 8-port switch
- Single Wide Range Input Voltage +9V to 36V
- Extended Temperature Range -40°C to +85°C

CompactPCI® Serial GPU

Connect Tech's GPU solutions bring exceptional desktop-level graphics, outstanding multimedia features, and GPU processing power to the PCIe/104 and CPCI-Serial form factors. Choose from AMD Radeon E6760 or NVIDIA GeForce GT 745M. Ideal for driving multiple displays or with access to the NVIDIA CUDA™ Cores, the GPU can become a parallel computational CPU for non-graphical applications.

Features
- CPCI-Serial
- 6x Dual-Mode Mini DisplayPort
- PCIe x4 Gen 2.1 Compatible
- 3U 8HP Compact PCI Serial

Xtreme/GPU

CompactPCI® Serial GPU

Connect Tech’s GPU solutions bring exceptional desktop-level graphics, outstanding multimedia features, and GPU processing power to the PCIe/104 and CPCI-Serial form factors. Choose from AMD Radeon E6760 or NVIDIA GeForce GT 745M. Ideal for driving multiple displays or with access to the NVIDIA CUDA™ Cores, the GPU can become a parallel computational CPU for non-graphical applications.

Features
- CPCI-Serial
- 6x Dual-Mode Mini DisplayPort
- PCIe x4 Gen 2.1 Compatible
- 3U 8HP Compact PCI Serial

Xtreme/GPU

Features
- PCIe/104
- 4x Dual-Mode Mini DisplayPort
- PCIe x1 Up/Down stack compatible
- PCIe x16 Down stack compatible

Gigabit Ethernet Solutions

Xtreme/GbE Managed Carrier Ethernet Switch

Available in models with RJ-45 or Rugged Positive Locking Headers.

Features
- 8 x 10/100/1000 Mbps Port Switch
- Latest Generation 32-bit Switch Engine
- Web GUI or CLI Management
- Carrier Grade Ethernet Switching
- Available with RJ-45 or Rugged Locking connectors
- Extremely Small Form Factor for 8-port switch
- Single Wide Range Input Voltage +9V to 36V
- Extended Temperature Range -40°C to +85°C

www.connecttech.com
New Connect Tech Products

Power Supplies

Xtreme/PSU-UC

SMART Battery Adapter

SSD/104 SATA 2.5” Drive Carrier

New Connect Tech Products

CONNECT TECH INC.

Xtreme/PSU-UC is a high efficiency, high powered PC/104 form factor power supply featuring Ultracapacitor backup for uninterrupted power supply.

Features
• Wide input range, +8 to 36V DC
• Total power output 115W
• +5V, +12V and +5V Standby
• PC/104 component height requirements

SMART Battery Adapter allows for easy integration of a SMART battery into an existing PC/104 system. Used in combination with the Xtreme/PSU-UPS power supply it provides a complete Power Supply solution with uninterrupted power supply and battery backup functionality.

Features
• Easily integrates SMART battery into a PC/104 Stack

SSD/104 SATA 2.5” Drive Carrier is a complete rugged stackable storage solution that allows any 2.5” SATA hard drive to be installed into any Type II PCIe/104 stack or embedded system.

Features
• Use any 2.5” Hard Drive
• Up to 1 TB of Storage
• Supports all SATA III

Connect Tech’s Engineered Solutions provide rugged systems for the most challenging environments. Designed to MIL-STD-810G ratings for Vibration, Shock, Immersion, Sand & Dust and Acceleration and an operating temperature of -40 to +85 degree C.

Processor Options:
• High Performance Intel Core i3/i5/i7 Series (Including Haswell)
• Low Power Intel Atom Series (Including Baytrail)

Features
• 2 x Gigabit Ethernet (10/100/1000 Ports)
• 4 x USB 2.0 Ports
• 8-Bit GPIO and Analog Audio Input/Output
• Dual miniPCIe/mSATA Expansion (Up to Terabyte SSD storage)

Optional:
• Wide range MIL-STD Input Power +16V to 50V DC
• Transient Protection to MIL-STD-704
• EMI Filtering to MIL-STD-461
COM Express® + GPU Carrier

Connect Tech’s combination COM Express + GPU carrier brings high performance desktop-level graphics, outstanding multimedia features, and GPU processing power into a small embedded footprint.

Choose from AMD Radeon E6760 or NVIDIA GeForce GT-745 for parallel computing along side an Intel® Core™ i7 processor.
EMBEDDED BOARDS

COM Express® + GPU Carrier

COM Express® + GPU Carrier is a small form factor, flexible Type-6 COM Express carrier with on board GPU. Supports 4th Generation Intel® Core™ i7 Processors.

**Features**
- 200mm x 125mm
- Choose from AMD Radeon E6760 or NVIDIA GeForce GT-745
- 6 total outputs can be used for HDMI, DVI or VGA

---

COM Express® Type 6 Rugged Ultra Lite Carrier

COM Express® Type 6 Rugged Ultra Lite Carrier is a small carrier board, offering the ultimate durability with locking, rugged pin headers.

**Features**
- 95mm x 125mm
- Mini-PCIe Expansion
- -40°C to +85°C
- Supports most current processors including 4th Generation Intel® Core™ i7

---

COM Express® Type 6 Ultra Lite Carrier

COM Express® Type 6 Ultra Lite Carrier is ideal for space constrained applications. Supports multiple processor options.

**Features**
- COM Express type 6 compatibility
- Mini-PCIe Expansion
- Supports most current processors including 4th Generation Intel® Core™ i7
- Extended Temperature Range

---

COM Express® Type 10 Mini Carrier

COM Express® Type 10 Mini Carrier is an extremely small carrier board featuring rugged, locking connectors and offers the ultimate durability.

**Features**
- Small size, 84mm x 55mm
- Ruggedized latching connectors
- 2 x mini PCIe, mSATA, SATA, 2 x GBE, 6 x USB, LVDS, DisplayPort/HDMI/DVI/VGA, HD Audio, 2 x RS-232/422/485

---

COM Express® Type 6 PMC/XMC Ultra Lite Carrier

COM Express® Type 6 PMC/XMC Ultra Lite Carrier offers dual PMC/XMC and Mini-PCIe expansion.

**Features**
- Ruggedized, locking pin header connectors
- Small form factor (170mm x 170mm)
- Supports most current processors, including 4th Generation Intel® Core i7™ (Haswell)
COM Express® Type 6 PMC/XMC Carrier

COM Express® Carrier

COM Express® Carrier is a full-featured, compact carrier board that is compatible with COM Express® Type 2 Basic and Compact modules.

Features
- PCI-104 and PCIe/104 expansion capabilities
- COM Express® Type 2 Basic and Compact module compatible
- COM Express® Carrier supports modules from major manufacturers
- Small size

Custom Design Solutions

When close DOESN’T count...

Understanding that every application has its own unique requirements, Connect Tech offers design services to provide an exact fit solution. Use one of our many off-the-shelf carriers for proof of concept and development while we design your custom hardware. Quick turn design, prototypes and manufacturing will ensure you get to market on time and on budget. www.connecttech.com/custom
<table>
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<th>COM Express® Ultra Lite Carrier Type 6</th>
<th>COM Express® Type 6 Rugged Ultra Lite Carrier</th>
<th>COM Express® Carrier Type 10 Mini Carrier</th>
<th>COM Express® PMC/XMC Carrier Type 6</th>
<th>COM Express® Type 6 PMC/XMC Ultra Lite Carrier</th>
<th>COM Express® + GPU Carrier</th>
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</table>

*can be used as HDMI, DVI or VGA via dongle*
COM Express® Carrier Boards
Type 10, Type 6 and Type 2

Off-the-Shelf and Modified COM Express® Solutions

Use Connect Tech’s COM Express® Carrier Boards for instant proof of concept, field deployment, or benefit from our custom design services to create a perfect fit carrier for your application.

Developing a custom carrier board protects your investment of design level IP by separating it from the standard CPU and memory found on the COM Express® module.

As next generation processors become available, your custom carrier stays intact — only your COM Express® module needs to change.

Connect Tech’s GPU solutions bring exceptional desktop-level graphics, outstanding multimedia features, and GPU processing power to the PCIe/104 and CPCI-Serial form factors. Choose from AMD Radeon E6760 or NVIDIA GeForce GT 745M. Ideal for driving multiple displays or with access to the NVIDIA CUDA™ Cores, the GPU can become a parallel computational CPU for non-graphical applications.

Features
- CPCI-Serial
- 6x Dual-Mode Mini DisplayPort
- PCIe x4 Gen 2.1 Compatible
- 3U 8HP Compact PCI Serial

Features
- PCIe/104
- 4x Dual-Mode Mini DisplayPort
- PCIe x1 Up/Down stack compatible
- PCIe x16 Down stack compatible
### Qseven Carrier Boards

<table>
<thead>
<tr>
<th>Qseven Gen 2.0 Carrier Board</th>
<th>PCI-104 Qseven Carrier</th>
<th>PCIe/104 Qseven Carrier</th>
<th>Lite Qseven Carrier</th>
<th>Ultra Lite Qseven Carrier</th>
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<tbody>
<tr>
<td><img src="QCG201" alt="Qseven Gen 2.0 Carrier Board" /></td>
<td><img src="QCG002" alt="PCI-104 Qseven Carrier" /></td>
<td><img src="QCG001" alt="PCle/104 Qseven Carrier" /></td>
<td><img src="QCG006" alt="Lite Qseven Carrier" /></td>
<td><img src="QCG005" alt="Ultra Lite Qseven Carrier" /></td>
</tr>
</tbody>
</table>

#### Qseven Gen 2.0

- **Carrier Board**
  - A compact ruggedized carrier that integrates with any industry standard Qseven Gen 2 module.

#### PCI-104 Qseven Carrier

- **Carrier Board**
  - A small embedded carrier board that allows complete integration with any industry standard Qseven module.
  - **Features**
    - 170mm x 170mm, NanoITX
    - Rugged locking pin header connectors
    - MiniPCIe expansion
    - -40 to +85 degrees C

#### PCIe/104 Qseven Carrier

- **Carrier Board**
  - A small embedded carrier board that allows complete integration with any industry standard Qseven module.
  - **Features**
    - PCI-104 Qseven Carrier Board utilizes the PC/104 form factor and the PCI-104 bus, and allows installation of up to 4 PCI-104 boards
    - Add your choice of x86 Qseven module

#### Lite Qseven Carrier

- **Carrier Board**
  - The low cost, feature-rich Lite Qseven Carrier Board integrates with any industry standard Qseven module.
  - **Features**
    - Choose from AMD, Intel Atom, Freescale i.MX6
    - MiniPCIe and SIM card expansion
    - Custom Solutions

#### Ultra Lite Qseven Carrier

- **Carrier Board** in Pico-ITX form factor, integrates with any industry standard Qseven module.
  - **Features**
    - Choose from AMD, Intel Atom, Freescale i.MX6
    - MiniPCIe and SIM card expansion
    - Custom Solutions
## Qseven Carrier Boards

### Specifications

<table>
<thead>
<tr>
<th>Gen 2.0</th>
<th>Ultra Lite</th>
<th>Lite</th>
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<tr>
<td>QCG201</td>
<td>QCG005</td>
<td>QCG011</td>
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<td><strong>Size</strong></td>
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<td>PicoITX, 72x100mm</td>
<td>PicoITX, 72x100mm</td>
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<td><strong>SIM Card Connector</strong></td>
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<td><strong>Accessories</strong></td>
<td>Optional Cable Kit*</td>
<td>Optional Cable Kit*</td>
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</table>

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**NEW** www.connecttech.com
**FPGAs**

**FreeForm/Express S6**
- IS a reconfigurable Xilinx Spartan-6 LX45T FPGA.
- Features
  - FPGA Mezzanine Card
  - Integrated PCI Express® blocks
  - 3.125 Gbps low-power transceivers, 128MB DDR3 RAM, 2x 10/100/1000 Ethernet, and 1x RS-232 port

**Xtreme I/O Opto**
- IS a 48-bit PCI-104 isolated digital I/O board.
- Features
  - 24 optically isolated inputs
  - 24 optically isolated outputs
  - 3kV of isolation on all I/O
  - +0 to +40V DC voltage range

**FreeForm/PCI-104**
- IS a reconfigurable FPGA development board.
- Features
  - Based on the Xilinx Virtex-5 FPGA (LX30T, LX50T & FX30T)
  - 32-Bit/33MHz PCI-104 interface
  - 8MB Flash, 128MB DDR2-400 memory, 2x 10/100 Ethernet, 2x RS-485, 4x Rocket I/O

**FreeForm/104**
- IS a PC/104 based card that features a reconfigurable FPGA through JTAG or SPI flash (4Mb).
- Features
  - Based on the Xilinx Spartan-3E
  - External 5V power connection
  - Four user configurable LEDs
  - Eight position rotary switch

**FreeForm/104 Daughter Board**
- IS an adapter for Connect Tech’s FreeForm/104 board.
- Features
  - Enables users to capture and process synchronous and asynchronous RS-232 or RS-422/485 serial data with customizable FPGA implementations
# FPGAs

## Custom FPGA Design

Need assistance with a custom FPGA design?

*We can help at any stage of a project!*

Connect Tech’s Engineering Team would be happy to discuss your unique requirements. Our team of highly skilled engineers are dedicated, knowledgeable and experienced. They offer several years of experience in custom FPGA designs and will work with you to implement a solution that will meet your needs.

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<thead>
<tr>
<th>Specifications</th>
<th>FreeForm/Express S6</th>
<th>Xtreme I/O Opto</th>
<th>FreeForm/PCI-104</th>
<th>FreeForm/104</th>
<th>FreeForm/104 Daughter Board</th>
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<tr>
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<td>Actel ProASIC3 (PCI IP Core)</td>
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<td>-</td>
<td>-</td>
<td>TxD, RxD, DTR, RTS, CTS, DCD, TxCk, RxCk</td>
</tr>
<tr>
<td>Power</td>
<td>+3.3V DC and +12V DC</td>
<td>+5V DC</td>
<td>+5V DC</td>
<td>+5V DC (-5%)</td>
<td>-</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40°C to 85°C -40°F to 185°F</td>
<td>-40°C to 85°C -40°F to 185°F</td>
<td>-40°C to 85°C -40°F to 185°F</td>
<td>-40°C to 85°C -40°F to 185°F</td>
<td>-40°C to 85°C -40°F to 185°F</td>
</tr>
<tr>
<td>Dimensions</td>
<td>16.76 x 11.11cm 9.5885 x 9.017cm 9.5885 x 9.0805cm 9.5885 x 9.017cm 9.5885 x 9.017cm</td>
<td>6.6” x 4.375” 3.775” x 3.550” 3.775” x 3.575” 3.775” x 3.55” 3.775” x 3.55”</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**CAN Controller Cards**

- **CANpro/104 Opto**
  - CNG001
  - Features:
    - Industrial Temperature
    - 1 Mbps Operation
    - Fail-Safe Transceivers
    - Optical Isolation
    - Includes two powerful NXP SJA1000 CAN controllers, along with 3kV optical isolation.

- **CANpro/104-Plus Opto**
  - CRG001
  - Features:
    - Industrial Temperature
    - 1 Mbps Operation
    - Fail-Safe Transceivers
    - Optical Isolation
    - CANpro/104-Plus is based on the PC/104-Plus bus and includes two powerful NXP SJA000 CAN controllers, along with 3kV optical isolation.

**RoadWarrior**

- RDG001
- Ideal for rugged mobile, mission-critical and industrial strength applications

**Xtreme/Multi-I/O**

- XMG001
- Ideal for a broad range of applications

**Features**

- 2500V isolation protection
- 2x SJA1000 controllers, 1Mbp/s
- 4x RS-232/1x RS-485/J1708
- 2x MultiTech compatible sockets
- 5x isolated LEDs, 1x USB
- Extended operating temperature

---

**EMBEDDED BOARDS**

**CONNECT TECH INC.**
## Driver Support

Connect Tech's in-house software development team ensures our products support the most current operating systems.

Visit our support section on-line to view the most current drivers for all Connect Tech products.

### Don’t see what you need?

**Contact our technical support team at support@connecttech.com**

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### CAN Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th>CANpro/104 Opto</th>
<th>CANpro/104-Plus Opto</th>
<th>RoadWarrior</th>
<th>Xtreme/Multi-I/O</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part #</strong></td>
<td>CNG001</td>
<td>CRG001</td>
<td>RDG001</td>
<td>SMG001</td>
</tr>
<tr>
<td><strong>Form Factor</strong></td>
<td>PC/104</td>
<td>PCI-104</td>
<td>Wireless Device</td>
<td>PC/104</td>
</tr>
<tr>
<td><strong>CAN Controller</strong> (CAN 2.0B Compliant)</td>
<td>x2 NXP SJA1000</td>
<td>x2 NXP SJA1000</td>
<td>PIC32</td>
<td>x2 NXP SJA1000 J1708</td>
</tr>
<tr>
<td><strong>BasicCAN &amp; Pelican Modes (SJA1000)</strong></td>
<td>✓</td>
<td>✓</td>
<td>N/A</td>
<td>✓</td>
</tr>
<tr>
<td><strong>SJA1000 Input Clock</strong></td>
<td>16MHz</td>
<td>16MHz</td>
<td>–</td>
<td>16 or 24MHz</td>
</tr>
<tr>
<td><strong>Isolated CAN Interface</strong></td>
<td>3kV TI1501050</td>
<td>3kV TI SN65HVD251</td>
<td>TI1501050 Dominant State Timeout</td>
<td>ADM3053</td>
</tr>
<tr>
<td><strong>Memory Mapped Addressing</strong></td>
<td>–</td>
<td>✓</td>
<td>N/A</td>
<td>✓ Jumperless</td>
</tr>
<tr>
<td><strong>General Purpose I/O</strong></td>
<td>–</td>
<td>8-bit 3.3V I/O Header</td>
<td>16 bits 3.3V or 5V bi-directional</td>
<td>–</td>
</tr>
<tr>
<td><strong>Supports 1Mbps Operation</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Operating Temperature</strong></td>
<td>-40°C to 85°C</td>
<td>-40°C to 85°C</td>
<td>-40°C to 85°C</td>
<td>-40°C to 85°C</td>
</tr>
<tr>
<td><strong>I/O &amp; Memory Space Selectable</strong></td>
<td>✓</td>
<td>–</td>
<td>N/A</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Single or Dual Interrupts</strong></td>
<td>✓</td>
<td>–</td>
<td>N/A</td>
<td>✓</td>
</tr>
<tr>
<td><strong>Free Technical Support</strong></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>
**Xtreme/104**

**Xtreme/104** offers four or eight asynchronous RS-232 and/or RS-422/485 serial ports.

<table>
<thead>
<tr>
<th>Ports</th>
<th>4/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>RS-232/422/485</td>
</tr>
</tbody>
</table>
| Control Signals | RS-232: Tx,Rx,RTS,CTS,RD,RI,DCD  
               RS-422/485: Tx0±,Rx0±,CTS±,RTS± |
| Baud       | RS-232: 50 bps to 230 Kbps/Custom  
               RS-422/485: 50 bps to 460.8 Kbps/Custom |
| Temperature| 0°C to 70°C/32°F to 158°F  
               Optional: -40°C to +85°C |
| Dimensions | 9.60 x 10.41 x 1.12cm/3.77" x 4.09" x 0.44" |

**Xtreme/104 RS-232**

**Xtreme/104 RS-232** offers four or eight asynchronous RS-232 serial ports.

<table>
<thead>
<tr>
<th>Ports</th>
<th>4/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>RS-232</td>
</tr>
<tr>
<td>Control Signals</td>
<td>Tx,Rx,RTS,CTS,RD,RI,DCD</td>
</tr>
<tr>
<td>Baud</td>
<td>50 bps to 230 Kbps/Custom</td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to 70°C/32°F to 158°F</td>
</tr>
<tr>
<td>Dimensions</td>
<td>9.60 x 10.41 x 1.12cm/3.77&quot; x 4.09&quot; x 0.44&quot;</td>
</tr>
</tbody>
</table>

**Xtreme/104 Opto**

**Xtreme/104 Opto** offers two or four asynchronous serial ports with 3kV optical isolation on all signals and ports.

<table>
<thead>
<tr>
<th>Ports</th>
<th>2/4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>RS-232/422/485</td>
</tr>
</tbody>
</table>
| Control Signals | RS-232: Tx,Rx,RTS,CTS  
                 RS-422/485: Tx0±,Rx0±,CTS±,RTS± |
| Temperature| 0°C to 70°C/32°F to 158°F  
               Optional: -40°C to +85°C |
| Dimensions | 9.60 x 10.41 x 1.12cm/3.77" x 4.09" x 0.44" |

**ComSync/104**

**ComSync/104** offers two synchronous/asynchronous RS-232, RS-422, RS-449, EIA-530, EIA-530/A, V.35 and X.21 serial channels.

<table>
<thead>
<tr>
<th>Ports</th>
<th>2 Synchronous/Asynchronous Serial Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>RS-232, RS-422, RS-449, EIA-530, EIA-530/A, V.35 &amp; X.21</td>
</tr>
<tr>
<td>Control Signals</td>
<td>Tx±,Rx±,DCD±,RTS±,CTS±,DSR±,DTR±,SYNC±,TRX±,RTX±</td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to 70°C/32°F to 158°F</td>
</tr>
<tr>
<td>Dimensions</td>
<td>9.60 x 10.41 x 1.12cm/3.77&quot; x 4.09&quot; x 0.44&quot;</td>
</tr>
</tbody>
</table>
FreeForm/104 Daughter Board is a FreeForm/104 adapter board that enables users to capture and process synchronous and asynchronous RS-232 or RS-422/485 serial data with customizable FPGA implementations.

Ports: 2
Interface: RS-232, RS-422, RS-449
Control Signals: TxD, RxD, DTR, RTS, CTS, DCD, TxClock, RxClock
Connectors: PC/104 pass-through 2x50 pin connector to connect to FreeForm 2x26 pin header connectors
Temperature: -40ºC to 85ºC/-40ºF to 185ºF

Xtreme/104 Isolated 12 Port is a high density adapter which offers 12 asynchronous serial ports and complies with PC/104 form factor standards. It features eight jumper selectable RS-232/422/485 ports with support for all three RS-485 modes, and includes four dedicated RS-232 ports.

Ports: 12
Control Signals: RS-232: TxD, RxD, RTS, CTS, ISOGND RS-422/485: (TxD, RxD, CTS, RTS, ±ISOGND)
Temperature: -40ºC to 85ºC/-40ºF to 185ºF
Power: +5V DC 500mA (typical), 1A (maximum)

FreeForm/104 is a PC/104 based FPGA development board for digital I/O and control applications.

FPGA: Xilinx Spartan-3E FPGA, 500,000 gates
Connector: 2 x 50 pin headers, 1 x 26 pin header
Frequency: 66 MHz, internally scalable
Temperature: -40°C to 85°C/-40°F to 185°F
Power: +5V DC (+5%)

Xtreme/PSU-UC
- Wide input range, +8 to 36V DC, Total power output 115W (+12V and +5V Standby) Ultracaps for uninterrupted power supply

Xtreme/PSU-UPS
- SMART battery charging for uninterrupted power supply
- 125W+ output power (+5V, +12V, -12V, +3.3V, +5V standby)

Xtreme/PSU-XP
- 160W total output power (+5V @ 10A, +3.3V @10A, +12V @ 5A, -12V @ 1A and +5V standby @ 1A), and +6V to +36V DC input voltage

Xtreme/PSU Isolated
- 195W total output power (+5V @ up to 15A, +3.3V @ up to 20A and +12V @ up to 10A), +9V to +36V DC input voltage, and up to 2.25kV of isolation

Xtreme/PSU Low Cost!
- 115W total output power (+5V @ 10A, +12V @ 5A, and +5V standby @ 1A), and +6V to +36V DC input voltage

Connect Tech’s Power Supplies power all of the PC/104 family expansion buses including PC/104, PC/104-Plus, PCI-104, PCI/104-Express and PCIe/104.
**Xtreme/104-Plus** offers 4 or 8 high speed asynchronous RS-232/422/485 ports, 8 selectable RS-232/422/485/TTL ports, or 2/4 dedicated RS-423 ports.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PC/104-Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ports</td>
<td>2/4/8</td>
</tr>
</tbody>
</table>
| Control Signals | RS-232: TxD, RxD, RTS,CTS, RI, DTR, DSR, DCD and SG  
                   RS-422/485: (TxD, RxD, RTS,CTS)± and SR  
                   RS-423: TxD-, TxDRef, RxD±, RTS-, RTSRef, CTS± |
| Temperature  | -40°C to 85°C/-40°F to 185°F |
| Power        | +5V DC 500mA (maximum) V/I/O of +5V or 3.3V DC |

**Xtreme/104-Plus 16 Port** offers 16 ports of switchable RS-232/422/485 on a single PC/104-Plus card. This provides the highest port density and most flexible PC/104-Plus serial port solution available.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PC/104-Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ports</td>
<td>16</td>
</tr>
<tr>
<td>Interfaces</td>
<td>RS-232/422/485</td>
</tr>
<tr>
<td>Power</td>
<td>5V bus power required. On-board regulator makes its own 3.3V +5V 400mA maximum</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40°C to 85°C/-40°F to 185°F</td>
</tr>
</tbody>
</table>

**Xtreme/104-Plus Opto** provides the added protection of 3kV optical isolation on a rugged and compact form factor for critical embedded applications.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PC/104-Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ports</td>
<td>2/4</td>
</tr>
</tbody>
</table>
| Control Signals | RS-232: TxD, RxD, RTS,CTS and SG  
                   RS-422/485: (TxD, RxD, RTS,CTS)± and SR |
| Temperature  | -40°C to 85°C/-40°F to 185°F |
| Power        | +5V DC (±5%) @ 500mA (maximum) |

**Xtreme I/O Opto** is a 48-bit isolated digital input/output board with 24 optically isolated inputs and 24 optically isolated outputs.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PCI-104 or PC/104-Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connectors</td>
<td>2 x 25 (50 position) 0.1” (DIL) pin headers</td>
</tr>
<tr>
<td>Isolation</td>
<td>3kV isolation on all channels</td>
</tr>
</tbody>
</table>
| Inputs/Outputs | 24 optically isolated I/O (24-bits)  
                   I/O voltage range: +0 up to +40V DC |
| Temperature  | -40°C to 85°C/-40°F to 185°F |

**ALL PCI-104 and PC/104-Plus boards are now available with a 22mm Connector to extend the stack height of your application!**
PCI/104-Express & PCIe/104

**Xtreme/104-Express** is a PCI/104-Express multi-port serial board which provides a PCI-104 pass-through connector. Fully PCI/104-Express compliant.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PCI/104-Express</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ports</td>
<td>8</td>
</tr>
<tr>
<td>Line Interface</td>
<td>RS-232/422/485, RS-232 or RS-422/485</td>
</tr>
<tr>
<td>Control Signals</td>
<td>RS-232: Tx,Rx,CTS,RI,DT,RDR,DSD,D2,R</td>
</tr>
<tr>
<td>Baud</td>
<td>RS-232: 50 bps to 921.6 Kbps, RS-422/485: up to 15.625 Mbps</td>
</tr>
<tr>
<td>UART</td>
<td>Octal PCI Express, 128 Byte FIFO</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40°C to 85°C/-40°F to 185°F</td>
</tr>
</tbody>
</table>

**Xtreme/104-Express Opto** is a PCIe/104 serial card with 3 kV optical isolation for rapid data transfer and high reliability.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PCIe/104</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ports</td>
<td>4/8</td>
</tr>
<tr>
<td>Line Interface</td>
<td>RS-232/422/485, RS-232 or RS-422/485</td>
</tr>
<tr>
<td>Control Signals</td>
<td>RS-232: Tx,Rx,CTS,RI,DT,RDR,DSD,D2,R</td>
</tr>
<tr>
<td>Baud</td>
<td>RS-232: 50 bps to 1 Mbps, RS-422/485: up to 7.8125 Mbps</td>
</tr>
<tr>
<td>UART</td>
<td>Quad/Octal PCI Express, 256 Byte FIFO</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40°C to 85°C/-40°F to 185°F</td>
</tr>
</tbody>
</table>

**PCIe/104 Qseven Carrier Board** is a small embedded carrier board that allows complete integration with any industry standard Qseven module. This carrier board utilizes the PCIe/104 form factor with 4 x 1 PCIe lanes and the PCIe/104 bus.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PCIe/104, 4x PCIe Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interfaces</td>
<td>2x SATA, 4x USB 2.0, 1x Gigabit Ethernet, LVDS &amp; VGA Video, 2x RS-232, 2x RS-422/485</td>
</tr>
<tr>
<td>Power</td>
<td>ATX Supply Input or +5V/+12V only</td>
</tr>
<tr>
<td>Temperature</td>
<td>-20°C to 70°C/-4°F to 158°F</td>
</tr>
</tbody>
</table>

**Xtreme/SBC PCIe/104 Single Board Computer** utilizes the PCIe/104 form factor with 4 x 1 PCIe lanes. Instantly access a variety of features using the SBCs on-board connectors. Embedded processor options include AMD Fusion/G-Series, Intel® Atom™ Z500 & E600, Freescale i.MX51 & i.MX6, Texas Instruments OMAP, NVIDIA Tegra and VIA Nano E-Series.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PCIe/104, 4x PCIe Lanes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interfaces</td>
<td>2x SATA, 4x USB 2.0, 1x Gigabit Ethernet, LVDS &amp; VGA Video, 2x RS-232, 2x RS-422/485</td>
</tr>
<tr>
<td>Power</td>
<td>ATX Supply Input or +5V/+12V only</td>
</tr>
<tr>
<td>Temperature</td>
<td>-20°C to 70°C/-4°F to 158°F</td>
</tr>
</tbody>
</table>

**Xtreme/SBC PCIe/104 Single Board Computer** utilizes the PCIe/104 form factor with 4 x 1 PCIe lanes. Instantly access a variety of features using the SBCs on-board connectors. Embedded processor options include AMD Fusion/G-Series, Intel® Atom™ Z500 & E600, Freescale i.MX51 & i.MX6, Texas Instruments OMAP, NVIDIA Tegra and VIA Nano E-Series.
PCI-104

**Xtreme I/O Opto** is a 48-bit isolated digital input/output board with 24 optically isolated inputs and 24 optically isolated outputs.

- **Form Factor**: PCI-104 or PC/104-Plus
- **Connectors**: 2 x 25 (50 position) 0.1” (DIL) pin headers
- **Isolation**: 3kV isolation on all channels
- **Inputs/Outputs**: 24 optically isolated I/O (24-bits)
  - I/O voltage range: +0 up to +40V DC
- **Temperature**: -40°C to 85°C/-40°F to 185°F

**ComSync/PCI-104** which is based on the PCI bus, is a two-channel, multi-protocol serial adapter which offers high performance, reliable, synchronous or asynchronous serial communications.

- **Form Factor**: PCI-104
- **Interface**: RS-232, RS-422, RS-449, EIA-530, EIA-530/A, V.35 & X.21
- **Modes**: NRZI: NRZI, NRZI/B, NRZI-Mark, NRZI-Space
  - Biphas: Biphas-Space, Biphas Level, Differential Biphas
- **Temperature**: -40°C to 85°C/-40°F to 185°F
- **Power**: 5V DC @ 1 Amp (maximum)

**Xtreme/P-104 Opto 12 Port** offers 12 ports on a PCI-104 card, with the added protection of 1kV optical isolation on a rugged and compact form factor.

- **Form Factor**: PCI-104
- **Interfaces**: RS-232/422/485
- **Temperature**: -40°C to 85°C/-40°F to 185°F
- **Power**: +5V DC 750mA to 950mA
- **Dimensions**: 9.5885 x 9.017 cm/3.775” x 3.550”

**Power Supplies**

**Xtreme/PSU-UC**
- Wide input range, +8 to 36V DC, Total power output 115W (+12V and +5V Standby) Ultracaps for uninterrupted power supply

**Xtreme/PSU-UPS**
- SMART battery charging for uninterrupted power supply
- 125W+ output power (+5V, +12V, -12V, +3.3V, +5V standby)

**Xtreme/PSU-XP**
- 160W total output power (+5V @ 10A, +3.3V @10A, +12V @ 5A, -12V @ 1A and +5V standby @ 1A), and +6V to +36V DC input voltage

**Xtreme/PSU Isolated**
- 195W total output power (+5V @ up to 15A, +3.3V @ up to 20A and +12V @ up to 10A), +9V to +36V DC input voltage, and up to 2.25kV of isolation

**Xtreme/PSU Low Cost!**
- 115W total output power (+5V @ 10A, +12V @ 5A, and +5V standby @ 1A), and +6V to +36V DC input voltage
**Xtreme I/O ADC-DAC** is an analog data acquisition board for the small form factor embedded market place.

- **Form Factor**: PCI-104
- **Analog Inputs**: 32 Single Ended/16 Differential Channels, 12/14/16 bit 100kps, Software-Programmable Input Ranges
- **Analog Outputs**: 4 Channels, 12/14/16 bit resolution, 6 programmable output ranges
- **Digital I/O**: 16 bit Bi-directional I/O
- **Temperature**: -40°C to 85°C/-40°F to 185°F

**FreeForm/PCI-104** is a reconfigurable FPGA development board with high speed digital I/O that combines a user programmable FPGA with a 32-Bit, 33MHz PCI-104 interface.

- **Form Factor**: PCI-104
- **FPGA**: Virtex-5 FPGA options include LX30T, LX50T and FX30T
- **Power**: 5 V DC (+/- 5%). May vary by application.
- **Temperature**: -40°C to 85°C/-40°F to 185°F
- **Dimensions**: PCI-104 1.0 Compliant

**PCI-104 Qseven Carrier Board** is a small embedded carrier board that allows complete integration with any industry standard Qseven module. This carrier board utilizes the PC/104 form factor and the PCI-104 bus, and allows installation of up to 4 PCI-104 boards.

- **Form Factor**: PCI-104
- **Interfaces**: 2x SATA, 4x USB 2.0, 1x Gigabit Ethernet, LVDS & VGA Video, 2x RS-232, 2x RS-422/485
- **Power**: ATX or +5V/+12V only
- **Temperature**: -20°C to 70°C/-4°F to 158°F

**Xtreme/SBC PCI-104 Single Board Computer** utilizes the PCI-104 form factor, supporting four peripheral boards. Instantly access a variety of features using the SBCs on-board connectors. Embedded processor options include AMD Fusion/G-Series, Intel® Atom™ Z500 & E600, Freescale i.MX51 & i.MX6, Texas Instruments OMAP, NVIDIA Tegra and VIA Nano E-Series.

- **Form Factor**: PCI-104
- **Interfaces**: 2x SATA, 4x USB 2.0, 1x Gigabit Ethernet, LVDS & VGA Video, 2x RS-232, 2x RS-422/485
- **Power**: ATX Supply Input or +5V/+12V only
- **Temperature**: -20°C to 70°C/-4°F to 158°F

**FreeForm/PCI-104** is a reconfigurable FPGA development board with high speed digital I/O that combines a user programmable FPGA with a 32-Bit, 33MHz PCI-104 interface.

- **Form Factor**: PCI-104
- **FPGA**: Virtex-5 FPGA options include LX30T, LX50T and FX30T
- **Power**: 5 V DC (+/- 5%). May vary by application.
- **Temperature**: -40°C to 85°C/-40°F to 185°F
- **Dimensions**: PCI-104 1.0 Compliant
PCI/104-Express & PCIe/104

PCI Express to PCIe/104 Adapter allows a PCIe/104 or PCIe/104-Express card to be installed into a standard PCI Express system slot.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>PCIe/104 and PCIe/104-Express compatible</td>
</tr>
<tr>
<td>Features</td>
<td>x1 lane PCI Express card edge for installation in any slot width</td>
</tr>
<tr>
<td>Connector</td>
<td>PCIe/104 156-pin / PCI-104 120-pin</td>
</tr>
<tr>
<td>Dimensions</td>
<td>11.11 x 10.29 cm/4.375” x 4.050”</td>
</tr>
</tbody>
</table>

PCI Express to PCIe/104 Adapter - Top Stacking model allows a PCIe Express card to be installed into a PCIe/104 or PCIe/104-Express single board computer system in a stack up configuration.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>PCIe/104 and PCIe/104-Express compatible</td>
</tr>
<tr>
<td>Features</td>
<td>x16 lane vertical PCI Express card edge (supports x1, x4, x8 or x16)</td>
</tr>
<tr>
<td>Connector</td>
<td>156 pin PCIe/104 top connector; footprint for 2x USB Type B connector</td>
</tr>
<tr>
<td>Dimensions</td>
<td>9.5885 x 9.017cm/3.775” x 3.550”</td>
</tr>
</tbody>
</table>

PCI/104 to PCI Express Adapter - Bottom Stacking model allows a PCI Express card to be installed into a PCI/104 or PCI/104-Express single board computer system in a stack down configuration.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus</td>
<td>PCIe/104 and PCIe/104-Express compatible</td>
</tr>
<tr>
<td>Features</td>
<td>x16 lane vertical PCI Express card edge (supports x1, x4, x8 or x16)</td>
</tr>
<tr>
<td>Connector</td>
<td>156 pin PCIe/104 top connector; footprint for 2x USB Type B connector</td>
</tr>
<tr>
<td>Dimensions</td>
<td>19.3 x 15.2cm/7.6” x 6”</td>
</tr>
</tbody>
</table>

PCI/104 to PCI Express Adapter

Power Supplies

Xtreme/PSU-UC
- Wide input range, +8 to 36V DC, Total power output 115W (+12V and +5V Standby) Ultracaps for uninterrupted power supply

Xtreme/PSU-UPS
- SMART battery charging for uninterrupted power supply
- 125W+ output power (+5V, +12V, -12V, +3.3V, +5V standby)

Xtreme/PSU-XP
- 160W total output power (+5V @ 10A, +3.3V @10A, +12V @ 5A, -12V @ 1A and +5V standby @ 1A), and +6V to +36V DC input voltage

Xtreme/PSU Isolated
- 195W total output power (+5V @ up to 15A, +3.3V @ up to 20A and +12V @ up to 10A), +9V to +36V DC input voltage, and up to 2.25kV of isolation

Xtreme/PSU Low Cost!
- 115W total output power (+5V @ 10A, +12V @ 5A, and
Single Board Computers

## Xtreme/SBC PCIe/104

Xtreme/SBC PCIe/104Single Board Computer utilizes the PCIe/104 form factor with 4 x1 PCIe lanes.

## Xtreme/SBC PCI-104

Xtreme/SBC PCI-104Single Board Computer utilizes the PCI-104 form factor, supporting four peripheral boards.

### Features
- 2x SATA, 1x Gigabit Ethernet, 4x USB 2.0, LVDS and VGA Video,
- 2x RS-232 and 2x RS-422/485 serial ports
- Choose from a variety of processors including AMD, Intel® Atom™, Freescale i.MX6
- Requires Qseven module

## Off-the-Shelf and Modified Solutions

### Multiple Processor Options!

Xtreme/SBC products are ideal off-the-shelf solutions for a broad range of applications. Achieve rapid proof of concept and deploy systems for field trials with off-the-shelf hardware.

Through our engineering services, customers will benefit from our modified designs. The Connect Tech engineering team is skilled at creating customer-specific products that ensure both time to market and price targets are met.
**Blue Heat/Net Sync** offers a synchronous Ethernet-to-serial solution for data communications.

<table>
<thead>
<tr>
<th><strong>Ports</strong></th>
<th>4 Synchronous/Asynchronous Serial Ports</th>
</tr>
</thead>
</table>
| **Control Signals** | Single ended: TxD, RxD, RTS, CTS, RI, DTR, DSR, DCD, RxClock, TxClock  
Differential: (TxD, RxD, CTS, RTS, DTR, DCD, DSR)±, RxClock, TxClock |
| **LAN Interface** | Auto sensing 10Base-T, 100Base-TX |
| **Line Interface** | V.28, V.10, V.11, V.35, EIA-530, V.36 |
| **Protocols** | SDLC, HDLC, MonoSync, BiSync, Transparent BiSync, Async  
Ethernet Protocols: IP, TCP, UDP, ARP, RARP, TFTP, DHCP, BootP, HTTP, Telnet, ICMP, PPP |
| **Temperature** | 0°C to 60°C/32°F to 140°F |
| **Dimensions** | 11.56 x 11.68 x 3.43cm/4.55" x 4.50" x 1.35" |
| **Power** | 5V DC (2.5A) - 28V DC (450 mA) |

**Blue Heat/Net 2** is a compact Ethernet-to-serial device which offers 2 software selectable RS-232/422/485 serial ports, and allows connection of any RS-232 or RS-422/485 serial device to an Ethernet LAN.

<table>
<thead>
<tr>
<th><strong>Ports</strong></th>
<th>2</th>
</tr>
</thead>
</table>
| **Control Signals** | RS-232: TxD, RxD, RTS, DTR, CTS, DSR  
RS-422/485: (TxD, RxD, CTS, RTS)±, SR |
| **Baud** | 50 bps to 460.8 Kbps/Custom |
| **Dimensions** | 11.56 x 11.68 x 3.43cm/4.55" x 4.50" x 1.35" |
| **Power** | Multi-mode power adapter, 5V - 30V DC, 500 mA  
PoE model: 30 mA@ 48V DC  
Screw Terminal Connector model: 36V-56V DC |
| **Temperature** | -40°C to 85°C/ -40°F to 185°F  
PoE: -40°C to 74°C/ -40°F to 165°F |

**Xtreme/GbE Managed Carrier Ethernet Switch** provides Carrier Grade Ethernet switching capabilities in an extremely small embedded form factor. Available in models with RJ-45 or Rugged Positive Locking Headers.

**Features**
- 8 x 10/100/1000 Mbps Port Switch  
- Latest Generation 32-bit Switch Engine  
- Web GUI or CLI Management  
- Carrier Grade Ethernet Switching  
- Available with RJ-45 or Rugged Locking connectors  
- Extremely Small Form Factor for 8-port switch  
- Single Wide Range Input Voltage: +9V to 36V  
- Extended Temperature Range: -40°C to +85°C
Blue Heat/Net 4 or 8 RJ-45 is an Ethernet-to-serial device which offers 4 or 8 RS-232 serial ports.

**Ports**: 4/8

**Control Signals**
- RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
- RS-422/485: (Tx,Rx,Rx,CTS)±,SR

**LAN Interface**: Auto sensing 10Base-T, 100Base-TX

**Line Interface**: RS-232

**Baud**: 50 bps to 230.4 Kbps/Custom

**Dimensions**: 18.42 x 13.34 x 3.43 cm (7.25" x 5.25" x 1.35"

**Temperature**: 0°C to 70°C/32°F to 158°F

Blue Heat/Net 4 or 8 DB-9 is an Ethernet-to-serial device which offers 4 or 8 RS-232 or software selectable RS-232/422/485 serial ports over Ethernet LAN.

**Ports**: 4/8

**Control Signals**
- RS-232: TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
- RS-422/485: (Tx,Rx,Rx,CTS)±,SR

**LAN Interface**: Auto sensing 10Base-T, 100Base-TX

**Line Interface**: RS-232

**Baud**: 50 bps to 460.8 Kbps/Custom

**Dimensions**: 24.41 x 13.34 x 4.29 cm (9.61" x 5.25" x 1.69"

**Temperature**: 0°C to 70°C/32°F to 158°F

Blue Heat/Net 16 is an Ethernet-to-serial device which allows serial devices to connect directly to an Ethernet LAN via 16 software selectable RS-232/422/485 ports.

**Ports**: 16

**Control Signals**
- RS-232: DTR, DSR, RTS, CTS, TxD, RxD, RI, GND
- RS-422/485: (TxD,Rx,Rx,CTS)±,SR

**LAN Interface**: Auto sensing 10Base-T, 100Base-TX

**Line Interface**: RS-232/422/485

**Protocols**: IP, TCP, UDP, ARP, RARP, TFTP, DHCP, BootP, HTTP, Telnet, ICMP, ISSP

**Temperature**: -40°C to 60°C/-40°F to 140°F

**Baud**: 50 bps to 460.8 Kbps/Custom

**Dimensions**: 43.7 x 16 x 4.4 cm (17.25" x 6.25" x 1.74"

**Power**: 110/240V AC, 50/60 Hz, 24-56 V DC

**FREE! Blue Heat/Net Software Development Kit!**

Connect Tech's Ethernet to Serial products are built on a Linux platform and are available in 2, 4, 8 or 16 serial ports.

Visit our web site at [http://devel.connecttech.com](http://devel.connecttech.com) for your **FREE** Blue Heat/Net Software Development Kit!
BlueStorm/SP is a high-speed multi-port adapter which offers 8 ports of RS-232/422/485 connectivity.

<table>
<thead>
<tr>
<th>Ports</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Interface</td>
<td>RS-232/422/485</td>
</tr>
</tbody>
</table>
| Control Signals | RS-232: Tx,Rx,CTS,RI,DTR,DSR,GND  
| | RS-422/485: (Tx,Rx,CTS,RTS)±,GND |
| Baud | RS-232: 50 bps to 921.6 Kbps  
| | RS-422/485: 50 bps to 1.8432 Mbps |
| UART | Octal, 64 Byte FIFO |
| Temperature | 0°C to 70°C/32°F to 158°F |
| Dimensions | 14.702 x 10.605cm/5.788 x 4.175" |

BlueStorm/SP RJ-11 is a high-speed multi-port adapter which offers 8 independently configurable RS-232 ports, along with +5 VDC or +12 VDC power on 6 RJ-11 ports.

<table>
<thead>
<tr>
<th>Ports</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Interface</td>
<td>RS-232, 6 RJ-11 connectors/2x10 pin headers</td>
</tr>
</tbody>
</table>
| Control Signals | Tx,Rx,CTS,DTR,GND,DC Power  
| | 10 Pin Header: Tx,Rx,CTS,DTR,GND,DC,R,SG |
| Baud | 50 bps to 921.6 Kbps |
| UART | Octal, 64 Byte FIFO |
| Temperature | 0°C to 70°C/32°F to 158°F |
| Dimensions | 12.129 x 10.668cm/4.775" x 4.2" |

BlueStorm/SP Opto is a high-speed multi-port adapter which offers 4 ports of RS-232/422/485 connectivity, along with 3kV optical isolation.

<table>
<thead>
<tr>
<th>Ports</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Interface</td>
<td>RS-232/422/485, 3kV optical isolation</td>
</tr>
</tbody>
</table>
| Control Signals | RS-232: Tx,Rx,CTS,GND  
| | RS-422/485: TxD±,Rx±,CTS±,GND |
| Baud | RS-232: 50 bps to 921.6 Kbps  
| | RS-422/485: 50 bps to 1.8432 Mbps |
| UART | Dual, 64 Byte FIFO |
| Temperature | 0°C to 70°C/32°F to 158°F |
| Dimensions | 14.702 x 10.605 cm/5.788" x 4.175" |
BlueStorm/LP RS-232 & RS-422/485

BlueStorm/LP is a high-speed multi-port Universal PCI adapter designed for low profile and standard height PCI computers.

Features
- Available in 2, 4 and 8 port RS-232 serial interface models, and 1 plus 1, 2 plus 2, and 4 plus 4 RS-232 plus RS-422/485 serial interface models.

<table>
<thead>
<tr>
<th>Ports</th>
<th>Line Interface</th>
<th>Control Signal</th>
<th>Baud</th>
<th>UART</th>
</tr>
</thead>
<tbody>
<tr>
<td>BlueStorm/LP RS-232*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>RS-232</td>
<td>Tx,Rx,RTS,CTS,RI,DTR,DSR,DCD,GND</td>
<td>50 bps to 921.6 Kbps/Custom</td>
<td>Dual/Quad/Octal 64 Byte FIFO</td>
</tr>
<tr>
<td>4</td>
<td>RS-232</td>
<td>Tx,Rx,RTS,CTS,RI,DTR,DSR,DCD,GND</td>
<td>50 bps to 921.6 Kbps/Custom</td>
<td>Dual/Quad/Octal 64 Byte FIFO</td>
</tr>
<tr>
<td>8</td>
<td>RS-232</td>
<td>Tx,Rx,RTS,CTS,RI,DTR,DSR,DCD,GND</td>
<td>50 bps to 921.6 Kbps/Custom</td>
<td>Dual/Quad/Octal 64 Byte FIFO</td>
</tr>
<tr>
<td>BlueStorm/LP RS-422/485*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>RS-422/485</td>
<td>TxD±,RxD±,RTS±,CTS±,GND</td>
<td>50 bps to 1.8432 Mbps/Custom</td>
<td>Dual/Quad/Octal 64 Byte FIFO</td>
</tr>
<tr>
<td>4</td>
<td>RS-422/485</td>
<td>TxD±,RxD±,RTS±,CTS±,GND</td>
<td>50 bps to 1.8432 Mbps/Custom</td>
<td>Dual/Quad/Octal 64 Byte FIFO</td>
</tr>
<tr>
<td>8</td>
<td>RS-422/485</td>
<td>TxD±,RxD±,RTS±,CTS±,GND</td>
<td>50 bps to 1.8432 Mbps/Custom</td>
<td>Dual/Quad/Octal 64 Byte FIFO</td>
</tr>
</tbody>
</table>

*Low profile models are available with standard height brackets.

Ports 2/4/8
Temperature 0°C to 70°C/32°F to 158°F
Dimensions 12.72 x 1.5 x 6.44 cm/5.01" x .59" x 2.54"
PCI Express Serial

BlueStorm/Express is a standard profile PCI Express serial card available in 2, 4, 8 or 16 ports of RS-232/422/485 connectivity.

### Ports Control Signal Baud UART
2 RS-232: Tx,Rx,RTS,CTS,RI,DTR,DSR,DCD,GND RS-232: 1 Mbps Quad PCIe 256 Byte TX and RX FIFOs
  RS-422/485: (Tx,Rx,CTS,RTS)±,GND RS-422/485: 7.8 Mbps 256 Byte TX and RX FIFOs

4 RS-232: Tx,Rx,RTS,CTS,RI,DTR,DSR,DCD,GND RS-232: 921.6 Kbps Octal PCI 64 Byte TX and RX FIFOs
  RS-422/485: (Tx,Rx,CTS,RTS)±,GND RS-422/485: 1.843 Mbps 2x Octal PCI 64 Byte TX and RX FIFOs

8 RS-232: Tx,Rx,RTS,CTS,RI,DTR,DSR,DCD,GND RS-232: 921.6 Kbps Octal PCI 64 Byte TX and RX FIFOs
  RS-422/485: (Tx,Rx,CTS,RTS)±,GND RS-422/485: 1.843 Mbps 2x Octal PCI 64 Byte TX and RX FIFOs

16 RS-232: Tx,Rx,RTS,CTS,RI,DTR,DSR,DCD,GND RS-232: 921.6 Kbps Octal PCI 64 Byte TX and RX FIFOs
  RS-422/485: (Tx,Rx,CTS,RTS)±,GND RS-422/485: 1.843 Mbps 2x Octal PCI 64 Byte TX and RX FIFOs

BlueStorm/Express 8/16 Port RS-232 is a standard profile PCI Express serial card which offers 8 or 16 ports of RS-232 connectivity, and is compatible with any PCI Express slot.

### Ports Line Interface Baud UART Temperature Dimensions
8/16 8/16 RS-232 50 bps to 1 Mbps -40ºC to 85ºC/-40ºF to 185ºF 14 x 10.7 cm/5.5” x 4.2”

BlueStorm/Express Opto is a standard profile PCI Express serial card which offers 4 ports of RS-232/422/485 connectivity, and 3kV optical isolation. These x1 lane cards are compatible with x1, x4, x8, x16 lane PCI Express slots.

### Ports Isolation Line Interface Control Signals Baud UART Temperature Dimensions
4 4 8/16 RS-232/422/485 RS-232: Tx,Rx,RTS,CTS,GND RS-232: 921.6 Kbps 2x Dual PCI, 64 Byte TX and RX FIFOs 0ºC to 70ºC/32ºF to 158ºF 14.699 x 11.049 cm/5.787” x 4.350”

BlueStorm/Express Opto 4/8 Port RS-232 is a standard profile PCI Express serial card which offers 4 or 8 ports of RS-232 connectivity, and is compatible with any PCI Express slot.

### Ports Line Interface Control Signals Baud UART Temperature Dimensions
4/8 4/8 RS-232 RS-232: Tx,Rx,RTS,CTS,GND RS-232: 921.6 Kbps 2x Dual PCI, 64 Byte TX and RX FIFOs 0ºC to 70ºC/32ºF to 158ºF 14.699 x 11.049 cm/5.787” x 4.350”
BlueStorm/Express Opto (1kV)

BlueStorm/Express Opto (1kV) is a standard profile PCI Express serial card which offers 8 ports of RS-232/422/485 connectivity, and 1kV optical isolation on 4 of 8 ports.

<table>
<thead>
<tr>
<th>Ports</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolation</td>
<td>1kV (4 Ports)</td>
</tr>
<tr>
<td>Line Interface</td>
<td>RS-232/422/485</td>
</tr>
<tr>
<td>Control Signals</td>
<td>RS-232: Isolated: Tx,Rx,RTS,CTS,GND  Non-Isolated: Tx,Rx,RTS,CTS,RI,DTR,DSR,DCD,GND</td>
</tr>
<tr>
<td>Baud</td>
<td>RS-232: 921.6 Kbps</td>
</tr>
<tr>
<td>UART</td>
<td>Octal PCI, 64 Byte TX and RX FIFOs</td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to 70°C/32°F to 158°F</td>
</tr>
<tr>
<td>Dimensions</td>
<td>14.702 x 10.605cm/5.788&quot;  x 4.175&quot;</td>
</tr>
</tbody>
</table>

BlueStorm/Express Isolated

BlueStorm/Express Isolated is a standard profile PCI Express serial card which offers 8 ports of RS-232 connectivity, and 2kV optical isolation on all 8 ports.

<table>
<thead>
<tr>
<th>Ports</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isolation</td>
<td>2kV isolation, 3kV on board</td>
</tr>
<tr>
<td>Line Interface</td>
<td>RS-232</td>
</tr>
<tr>
<td>Control Signals</td>
<td>Tx,Rx,RTS,CTS,DCD,DTR</td>
</tr>
<tr>
<td>Baud</td>
<td>RS-232: 1 Mbps</td>
</tr>
<tr>
<td>UART</td>
<td>Octal PCI, 256 Byte TX and RX FIFOs</td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to 70°C/32°F to 158°F</td>
</tr>
<tr>
<td>Dimensions</td>
<td>14.699 x 11.049cm/5.787” x 4.350”</td>
</tr>
</tbody>
</table>

BlueStorm/Express LP

BlueStorm/Express LP is a low profile PCI Express serial card which offers 8 ports of RS-232/422/485 connectivity.

<table>
<thead>
<tr>
<th>Ports</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Interface</td>
<td>RS-232/422/485</td>
</tr>
<tr>
<td>Control Signals</td>
<td>RS-232: Tx,Rx,RTS,CTS,Ri,DTR,DSR,DCD,GND  RS-422/485: (Tx ±,Rx ±,CTS±,RTS±),GND</td>
</tr>
<tr>
<td>Baud</td>
<td>RS-232: 1 Mbps, RS-422/485: 7.8 Mbps</td>
</tr>
<tr>
<td>UART</td>
<td>Octal PCI, 64 Byte TX and RX FIFOs</td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to 70°C/32°F to 158°F</td>
</tr>
<tr>
<td>Dimensions</td>
<td>14.699 x 6.891cm/5.787” x 2.713”</td>
</tr>
</tbody>
</table>

BlueStorm/Express LP Opto

BlueStorm/Express LP Opto is a low profile PCI Express serial card which offers 2 ports of RS-232/422/485 connectivity, along with 3kV optical isolation on both ports.

<table>
<thead>
<tr>
<th>Ports</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Line Interface</td>
<td>RS-232/422/485</td>
</tr>
<tr>
<td>Control Signals</td>
<td>RS-232: Tx,Rx,RTS,CTS,GND  RS-422/485: (Tx,Rx,CTS,RTS),GND</td>
</tr>
<tr>
<td>Baud</td>
<td>RS-232: 1 Mbps, RS-422/485: 7.8 Mbps</td>
</tr>
<tr>
<td>UART</td>
<td>Dual PCIe, 265 Byte TX and RX FIFOs</td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to 70°C/32°F to 158°F</td>
</tr>
<tr>
<td>Dimensions</td>
<td>15.7 x 6.9cm/6.2” x 2.7”</td>
</tr>
</tbody>
</table>
### ComSync/104

**ComSync/104** offers two synchronous/asynchronous RS-232, RS-422, RS-449, EIA-530, EIA-530/A, V.35 and X.21 serial channels.

<table>
<thead>
<tr>
<th>Ports</th>
<th>2 Synchronous/Asynchronous Serial Channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>RS-232, RS-422, RS-449, EIA-530, EIA-530/A, V.35 and X.21</td>
</tr>
<tr>
<td>Control Signals</td>
<td>Tx±, Rx±, DCD±, RTS±, CTS±, DSR±, DTR±, SYNC±, TRxC±, RTxC±</td>
</tr>
<tr>
<td>Temperature</td>
<td>0°C to 70°C/32°F to 158°F</td>
</tr>
<tr>
<td>Dimensions</td>
<td>PC/104 v.2.3 Compliant</td>
</tr>
</tbody>
</table>

### ComSync/PCI-104

**ComSync/PCI-104** is a two-channel, multi-protocol serial adapter which offers synchronous or asynchronous serial communications.

<table>
<thead>
<tr>
<th>Form Factor</th>
<th>PCI-104</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface</td>
<td>RS-232, RS-422, RS-449, EIA-530, EIA-530/A, V.35 and X.21</td>
</tr>
<tr>
<td>Modes</td>
<td>NRXI: NRZI, NRZIB, NRZI-Mark, NRZI-Space, Biphase: BiPhase-Space, BiPhase Level, Differential BiPhase</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40°C to 85°C/-40°F to 185°F</td>
</tr>
<tr>
<td>Power</td>
<td>5V DC @ 1 Amp (maximum)</td>
</tr>
</tbody>
</table>

### ComSync/PCI-104 Gen 3

**ComSync/PCI-104 Gen 3** features the Zilog ESCC 85230 allowing for an extended temperature operating range of -40 to +85 degrees C. Support for multiple electrical interfaces.

**Features**
- DMA support
- Software selectable electrical interfaces including RS-232, RS-422, RS-449, EIA-530, EIA-530/A, V.35 and X.21

### Blue Heat/Net Sync

**Blue Heat/Net Sync** offers an Ethernet to synchronous serial solution for data communications.

<table>
<thead>
<tr>
<th>Ports</th>
<th>4 Synchronous/Asynchronous Serial Ports</th>
</tr>
</thead>
</table>
| Control Signals| Single ended: TxD, RxD, RTS, CTS, RI, DTR, DSR, DCD, RxClock, TxClock
                   Differential: (TxD, RxD, RTS, CTS, DTR, DCD, DSR)±, RxClock, TxClock |
| LAN Interface  | Auto sensing 10Base-T, 100Base-TX Ethernet |
| Line Interface | V.28, V.10, V.11, V.35, EIA-530, V.36 |
| Protocols      | SDLC, HDLC, MonoSync, BiSync, Transparent BiSync, Async Ethernet Protocols: IP, TCP, UDP, ARP, RARP, TFTP, DHCP, BootP, HTTP, Telnet, ICMP, PPP |
| Temperature    | 0°C to 60°C/32°F to 140°F               |
| Dimensions     | 11.56 x 11.68 x 3.43cm/4.55" x 4.50" x 1.35" |
| Power          | 5V DC (2.5A) – 28V DC (450 mA)           |
I/O

Multi-I/O

- All-in-one PC/104 communication solution for CANbus, serial port, wired and wireless communication
- High voltage port isolation reduces noise and improves system protection
- Advanced CANbus functionality reduces development time, cost, and installation
- Jumperless configuration
- Extended operating temperature for outstanding performance and reliability in harsh environments

Xtreme/Multi-I/O is a high density, all-in-one PC/104 communication board for CANbus, serial port, wired and wireless communication.

Features
- 2500V isolation protection
- 2x SJA1000 controllers, 1Mbp/s
- 4x RS-232/1x RS-485/J1708
- 2x MultiTech compatible sockets
- 5x isolated LEDs, 1x USB
- Extended operating temperature

Analog I/O

Analog Input & Output Model

Xtreme I/O ADC-DAC

Analog Input & Output Model only

Analog Inputs
- Channels: 32 SE/16 Differential
- Resolution: 16-bit/12-bit
- Sampling Rate: 100 kbps
- Input Ranges: 0-5V, 0-10V, ±5V, ±10V

Analog Outputs
- Channels: 4
- Resolution: 16-bit
- Output Ranges:
  - Unipolar: 0V to 5V, 0V to 10V
  - Bipolar: ±5V, ±10V, ±2.5V, -2.5V to 7.5V

Digital I/O
- 16-bit bidirectional I/O
- Input/Output Ranges: ±3.3V or ±5V (TTL/CMOS)
- High Current: 24mA

Temperature
- -40°C to 85°C/-40°F to 185°F

Ideal for data acquisition, measurement and control applications

Xtreme I/O ADC-DAC is an analog and digital peripheral board for the PCI-104, PCIe/104 and PCI/104-Express small form factor embedded market place.

Xtreme I/O ADC-DAC Analog Input & Output Model offers 32 single ended/16 differential channels of 16 bit analog input, 4 channels 16 bit analog output, 16 bit GPIO

Xtreme I/O ADC-DAC Analog Input Model offers 32 single ended/16 differential channels of 16/12 bit analog input, 16 bit GPIO

PCI-104, PCIe/104 & PCI/104-Express

DAG003 / DAG004

DAG005

XMG001-01

www.connecttech.com
## Digital I/O

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Xtreme I/O ADC-DAC</td>
<td>is an analog and digital peripheral board.</td>
</tr>
<tr>
<td>Analog Inputs:</td>
<td>32 Single Ended/16 Differential Channels, 16/14/12 bit 100kps, Software-Programmable Input Ranges</td>
</tr>
<tr>
<td>Analog Outputs:</td>
<td>4 Channels, 16/14/12 bit resolution, 6 programmable output ranges</td>
</tr>
<tr>
<td>Digital I/O:</td>
<td>16 bit bi-directional I/O</td>
</tr>
<tr>
<td>Xtreme I/O Opto</td>
<td>is a 48-bit isolated digital input/output board.</td>
</tr>
<tr>
<td>Connectors:</td>
<td>2 x 25 (50 position) 0.1&quot; (DIL) pin headers</td>
</tr>
<tr>
<td>Isolation:</td>
<td>3kV isolation</td>
</tr>
<tr>
<td>Inputs:</td>
<td>24 optically isolated inputs (24-bits), input voltage range +0 up to +40V DC</td>
</tr>
<tr>
<td>Outputs:</td>
<td>24 optically isolated outputs (24-bits), output voltage range +0 up to +40V DC</td>
</tr>
<tr>
<td>FreeForm/104</td>
<td>is a PC/104 card that features a reconfigurable FPGA for digital I/O and control applications.</td>
</tr>
<tr>
<td>FPGA:</td>
<td>Xilinx Spartan-3E, 500,000 gates, 360K RAM</td>
</tr>
<tr>
<td>Standard:</td>
<td>96 digital I/O</td>
</tr>
<tr>
<td>Programmable I/O:</td>
<td>96 high current TTL/CMOS (48 per 50 pin connector), 6 TTL (26 pin connector)</td>
</tr>
<tr>
<td>Fixed I/O:</td>
<td>12 TTL inputs (26 pin connector)</td>
</tr>
<tr>
<td>Power</td>
<td>+9 to +30V DC with reverse polarity protection</td>
</tr>
</tbody>
</table>

## Remote I/O

<table>
<thead>
<tr>
<th>Product</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RoadWarrior</td>
<td>enables remote monitoring, controlling and collecting of data from multiple I/O interfaces through a wireless cellular data link or Low Earth Orbit (LEO) satellite.</td>
</tr>
<tr>
<td>Connectors:</td>
<td>2x RS-232, 2x RS-485</td>
</tr>
<tr>
<td>Cell Networks:</td>
<td>HSPA/EV-DO/UMTS/EDGE/GPRS/CDMA</td>
</tr>
<tr>
<td>Satellite:</td>
<td>LEO Satellite</td>
</tr>
<tr>
<td>Features:</td>
<td>CAN, GPS, Bi-directional GPIO, Isolated GPIO and ADCs</td>
</tr>
<tr>
<td>Power</td>
<td>+9 to +30V DC with reverse polarity protection</td>
</tr>
</tbody>
</table>

### SMART Battery Adapter

- **Size:** 3.55” x 3.775”
- **Connector:** SMART Battery connector (5787428-1)
- **Features:**
  - Easily integrates SMART battery into a PC/104 Stack
  - Use with Xtreme/PSU-UPS (SCG001)
### Adapters and Development Tools

<table>
<thead>
<tr>
<th>Adapter Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PCIe/104 to PCIe-104 Adapter</strong></td>
<td>Enables users to add four PCIe-104 compatible boards into either a stack up or stack down configuration.</td>
</tr>
<tr>
<td><strong>COM Express Bus Extender</strong></td>
<td>Allows full Type 2 or Type 6 COM Express functionality without compromising the testing process.</td>
</tr>
<tr>
<td><strong>PCI/PCIe to PMC/XMC Adapter</strong></td>
<td>Link a PCIe card to a XMC Carrier, or a PCI card to a PMC Carrier.</td>
</tr>
<tr>
<td><strong>Qseven to COM Express Adapter</strong></td>
<td>Install a Qseven module into any COM Express® Carrier Board.</td>
</tr>
<tr>
<td><strong>PCI-104 to PC/104 Adapter</strong></td>
<td>Enables testing and development of PC/104 (ISA) devices in a PCI-104 (PCI) only system.</td>
</tr>
</tbody>
</table>

#### PCI Express
- **Features:**
  - Use of PCI-104 Boards in PCIe/104 Stack
  - Up/Down Stack Compatible
  - PCIe/104 Compliant

- **Connectors:**
  - COM Express
  - COM Express Type 2/Type 6
  - Supports Compact and Basic COM Express Modules
  - Impedance Controlled Design

- **Features:**
  - Single or double row COM Express Module Connectors
  - Qseven connector
  - BUSMODE LEDs with Jumper Selection for Testing

- **Size:**
  - Compact: 95x95 mm
  - Basic: 95x125 mm

- **Connectors:**
  - XMC, PMC, PCIe (x16 Card accepted, x8 Compatible), PCI (32-bit)

- **Features:**
  - PCI Memory and IO interface to operate, control, and monitor peripherals on the PC/104 (ISA) bus
  - PCI driven interrupt controller monitors and relays triggered IRQ lines on the PC/104 bus
## PCIe/104-Express (PCI/104-Express)
Integrate a Mini-PCIe (PCI Express Mini Card) into a PCIe/104 (PCI/104-Express) system.

**Connector:** PCIe/104-Express  
**Features:**  
- 3.3V (at 3A) and 1.5V (at 1A) DC power  
- Half-Mini and Full-Mini PCIe card supported  
- SIM card support, USB, and PCI bus pass-through (all optional)

## PCIe/104 (PCI/104-Express)
Integrate 2 Mini-PCIe (PCI Express Mini Cards) into a PCIe/104 (PCI/104-Express) system.

**Connector:** PCIe/104-Express  
**Features:**  
- 3.3V (at 3A) and 1.5V (at 1A) DC power  
- Half-Mini and Full-Mini PCIe card supported  
- SIM card support, USB, and PCI bus pass-through (all optional)

## PCI-104
Enables integration of a Mini-PCIe (PCI Express Mini) card into a PCI-104 system.

**Connector:** PCI-104 x 1  
**Features:**  
- 3.3V and 1.5V DC power  
- SIM card, Half-Mini and Full-Mini PCIe cards supported  
- 3 Mini-PCIe status LEDs  
- Optional PCI Express Mini-Card Specification Revision 2.0 which adds a DisplayPort connection

## PCI-104 & PCI-104-Express
Integrate a PCIe/104 or PCI/104-Express card into a SUMIT-104 system.

**Connector:**  
- SUMIT A and B, PCIe/104 x 1  
**Features:**  
- 2 x USB (from SUMIT) via Mini USB connectors

## PCIe/104 Bus Extender
Allows one additional card height spacing between peripherals in a PCIe/104 or PCI/104-Express stack.

**Size:**  
9.02 x 1.4605cm/3.55” x .575”  
**Connector:**  
- 156 pin PCIe/104 bottom connector  
**Features:**  
- PCIe/104 x 16 bus connector
PCIe/104 to PCI Express Adapter - Bottom Stacking

Install a PCI Express card into a PCIe/104 or PCI/104-Express single board computer system in a stack down configuration.

Size: 19.3 x 15.2cm/6” x 7.6”

Connector:
• 156 pin PCIe/104 top connector; footprint for 2x USB Type B connector

Features:
• x16 lane vertical PCI Express card edge (supports x1, x4, x8 or x16)

---

PCIe/104 to PCI Express Adapter - Top Stacking

Install a PCI Express card into a PCIe/104 or PCI/104-Express single board computer system in a stack up configuration.

Size: 9.5885 x 9.017cm/3.775” x 3.550”

Connector:
• 156 pin PCIe/104 bottom connector

Features:
• x16 lane vertical PCI Express card edge (supports x1, x4, x8 or x16)

---

PCIe/104 to PCI Express Cable Adapter

Provides an interface from the PCIe/104 (PCI/104-Express) bus to a PCI Express cable connection.

Connector:
• PCIe cable connector, PCI-104/Express 156 pin top and bottom connectors

Features:
• x1 PCIe/104 lanes connected via PCI Express cable

---

PCI Express to PCI-104 Express Adapter

Install a PCIe/104 or PCI-104-Express card into a standard PCI Express slot.

Size: 11.11 x 10.29cm/4.375” x 4.050”

Connector:
• PCIe/104 156-pin / PCI-104 120-pin

Features:
• x1 lane PCI Express card edge for installation in any slot width

---

PCI to PC/104-Plus Adapter

Install a PCI-104 or PC/104-Plus serial card into a standard Universal PCI slot.

Size: 10.69 x 12.48cm/4.2” x 4.913”

Connector:
• PCI-104, 120 pin and PC/104, 64 and 40 pin stack-through connectors

Features:
• Compatible with standard Universal 3.3V or 5V slot

---

Adapters and Development Tools

www.connecttech.com
Adapters and Development Tools

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISA to PC/104 Adapter</td>
<td>Install an 8 or 16-bit PC/104 card into a standard ISA system. Size: 15.62 x 10.68 cm/6.145” x 4.2” Features: 16x11 (.100” grid) breadboarding area for assembly and testing</td>
</tr>
<tr>
<td>PC/104-Plus to Mini PCI Adapter</td>
<td>Install a Mini PCI card into a standard PCI/104-Plus stack. Connector: PC/104-Plus, 120 pin and PC/104, 64 and 40 pin stack-through connectors Features: 3.3V regulator delivers 2 watts of power to the Mini PCI card</td>
</tr>
<tr>
<td>PCI-104 to PMC Adapter</td>
<td>Easily install a PMC card into a PCI-104 or PC/104-Plus stack. Size: 9.02 x 16.58 cm/3.550” x 6.526” Connector: PCI-104 120 pin stack-through, 2x64 pin passive PMC connectors Features: Operates multiple PMC cards in a PCI-104 stack with multiple adapters</td>
</tr>
<tr>
<td>PCI to CompactPCI Bus Adapter</td>
<td>Install a CompactPCI card into a standard Universal PCI system. Size: 12.00 x 6.40 cm/4.721” x 2.525” Connector: CompactPCI 110 pin male A connector for connection to host system Features: 16x11 (.100” grid) breadboarding area for assembly and testing</td>
</tr>
</tbody>
</table>

**Simplify and Accelerate the Development Process**

Incorporate various form factors into your PC/104 stack, including MiniPCI, MiniPCIe and mSATA...

...or use PC/104 in a desktop ISA, PCI or PCI Express slot with an adapter board from our extensive line of development tools and adapters.
**PCI Dump Switch Card**

Universal PCI

- Allows debugging during system hang-ups.

**Size:**
11.99 x 6.44cm/4.72” x 2.54”

**Connector:**
- Transparent PCI to PCI bridge

**Features:**
- Universal 32-bit PCI card (PCI 2.3 compliant)

---

**PCI Express Dump Switch Card**

**Universal PCI**

- Allows debugging during system hang-ups.

**Size:**
6.7 x 6.8cm/2.64” x 2.68”

**Connector:**
- Transparent PCIe to PCI bridge

**Features:**
- x1 lane PCIe (PCI Express 1.0 compliant)

---

**PCI Express Burn-in Rack Adapter**

**Universal PCI**

- Allows debugging during system hang-ups.

**Size:**
31.5 x 13.97cm/12.4” x 5.5”

**Connector:**
- ATX power supply connectors to power common components

**Features:**
- Quick verification of power conditions and lane widths via on board LEDs

---

**SSD/104 SATA**

**Universal PCI**

- Allows debugging during system hang-ups.

**Size:**
6.7 x 6.8cm/2.64” x 2.68”

**Connector:**
- Transparent PCIe to PCI bridge

**Features:**
- x1 lane PCIe (PCI Express 1.0 compliant)

---

**SSD/104 SATA 2.5” Drive Carrier**

**Universal PCI**

- Allows debugging during system hang-ups.

**Size:**
31.5 x 13.97cm/12.4” x 5.5”

**Connector:**
- ATX power supply connectors to power common components

**Features:**
- Quick verification of power conditions and lane widths via on board LEDs

---

**SSD/104 SATA**

**Capacity:**
- 4, 8, 16, 32, 64 or 128GB
- Up to 256GB with 2 mSATA modules

**Connector:**
- Standard right angle 7-pin SATA

**Flash:**
- MLC and SLC

**Temperature:**
- -40ºC to 85ºC (-40ºF to 185ºF)

**Power:**
- +3.3V ±5%

**SSD/104 SATA 2.5” Drive Carrier**

**NEW SSD/104 SATA 2.5” Drive Carrier**

- Allows any 2.5” SATA hard drive to be installed into any Type II PCIe/104 stack or embedded system.

**Features:**
- Use any 2.5” Hard Drive
- Up to 1 TB of Storage
- Supports all SATA III

---

**SSD/104 SATA**

**Capacity:**
- 4, 8, 16, 32, 64 or 128GB
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**Power:**
- +3.3V ±5%
## Power Supplies

### Connect Tech Inc.

**SMART Battery Adapter**

**Power Supplies**

**Xtreme/PSU & Xtreme/PSU-XP**

- **Power Supplies** power all of the PC/104 family expansion buses including PC/104, PC/104-Plus, PCI-104, PCI/104-Express and PCIe/104.

- **Xtreme/PSU**: 115W total output power (+5V @ 10A, +12V @ 5A, and +5V standby @ 1A), and +6V to +36V DC input voltage

- **Xtreme/PSU-XP**: 160W total output power (+5V @ 10A, +3.3V @10A, +12V @ 5A, -12V @ 1A and +5V standby @ 1A), and +6V to +36V DC input voltage

- **Xtreme/PSU Isolated**: 195W total output power (+5V @ up to 15A, +3.3V @ up to 20A and 12V @ up to 10A), +9V to +36V DC input voltage, and up to 2.25kV isolation

- **Xtreme/PSU-UPS**: SMART battery charging for uninterrupted power supply
  - 125W+ output power (+5V, +12V, -12V, +3.3V, +5V standby)

### Xtreme/PSU-UC

- A high efficiency, high powered PC/104 form factor power supply featuring Ultracapacitor backup for uninterrupted power supply.

- **Size**: 90mm x 96mm/3.55” x 3.775”

- **Connector**: ATX power supply connectors to power common components

- **Features**: Ultracapacitor backup for uninterrupted power supply

### Xtreme/PS-UPS

- SMART Battery Adapter

- Allows for easy integration of a SMART battery into an existing PC/104 system.

- **Size**: 3.55” x 3.775”

- **Connector**: SMART Battery connector (S787428-1)

- **Features**: Easily integrates SMART battery into a PC/104 Stack
Connect Tech on the Road

Connect Tech is regularly on the road at industry events around the globe. Visit our website at www.connecttech.com to find out where you can see us next!

Connect Tech, Small Form Factor Experts!

Drop by to discuss your application; we’d be happy to share our small form factor experiences in order to assist you in planning your next design. Whether you have an interest in PC/104, COM Express, Qseven, Pico-ITX, Nano-ITX or other our sales and engineering staff can explain the differences between form factors and help identify which will be best for your needs. Whether you can use one of our many off-the-shelf solutions or need custom design services, we’re here to help.
Technical Support

Connect Tech upholds its reputation for providing exceptional customer service and support.

Our highly trained technical support team is dedicated, knowledgeable and experienced. They are up to date on the latest in hardware and software technologies.

We offer free technical support worldwide and are accessible Monday to Friday, 8:30 am to 5:00 pm EST by telephone, fax and email. Visit our web site for current product manuals, installation guides and software drivers.

support@connecttech.com

Connect Tech supports the most popular operating systems, including:

- QNX
- VxWorks
- Ardence (a Citrix Company)
- Linux
- Windows 8
- Windows 8.1
- Android
- SCO
- Solaris

Conformal Coating

Connect Tech recognizes the harsh reality that many embedded systems find themselves operating in unusually hostile environments. When conformal coating is required to protect your application against substantial moisture, dust, chemicals or temperature extremes, we can help.

Standard Conformal Coating Options

**Protect your circuitry when exposure to unique environmental circumstances is inevitable.**

**Humiseal 1B31:** A fast air drying, single component, acrylic coating that provides excellent moisture and environmental protection for printed circuit assemblies.

**Dymax 9-20557 LV:** Multi-Cure 9-20557-LV is excellent for encapsulating, potting, sealing and bonding. Coating resists yellowing, vibration, impact and thermal shock. The coating exhibits excellent adhesion to most solder masks, and fluoresces for easy in-line quality control.

**Dow Corning 1-2620:** Protective coating for rigid and flexible circuit boards. These one-part, self-priming coatings cure to flexible, transparent elastoplastic coatings ideally suited for electronic printed wiring board (PWB) applications, particularly those requiring toughness and abrasion resistance.

Contact a sales representative for more information or to inquire about additional conformal coating options.
Connect Tech Satisfaction Guarantee

The key to our success:
We're driven by the belief that customer satisfaction is as important as quality products.
We build solid relationships with our customers by providing quality products around the world, backed by exceptional customer support.

Quality Assurance

All Connect Tech products undergo critical testing and inspection processes to ensure product quality, performance and reliability. Connect Tech’s commitment to quality is recognized globally through our ISO 9001:2008 certification. Visit our website to view our FCC, CE and UL approved products.

Lifetime Warranty

Connect Tech warrants each product to be in good working order for the products life cycle, many products being covered by our Lifetime Warranty. Visit our website at www.connecttech.com for more details.

Connect Tech Inc. - ISO 9001:2008 Certified