Industrial Automation Products

**Product Lineup**

We provide wide array of models to meet your desired bus specifications.

### Bus Extension Type Expansion Adapter & Chassis

**Standard Bus extension**

This bus extension externally expands PCI bus and transmits signals directly between the expansion chassis and host PC. It is best suited for use in an environment where the measurement control is conducted in close proximity to the host PC.

- The expansion adapters to be inserted in the PC and expansion chassis are connected with a 1m-long connection cable.

![Diagram of expansion adapter and chassis](image)

### StarFabric-compliant Type Expansion Adapter & Chassis

**StarFabric-compliant extension**

With this style extension, you can conduct StarFabric-compliant high-speed serial transfer (2.5Gbps). The expansion adapters to be inserted into the PC and expansion chassis are connected using Category 5e cable creating easy wiring and installation. The included cable can be extended up to 12m, making it an optimal choice where measure / control is conducted at a distance from the host PC. PCI bus compliant, it allows you to construct a system without changing existing boards or software. The power supply of the expansion chassis can be controlled in synchronization with the host PC power supply.

![Diagram of expansion adapter and chassis](image)

**Caution:**

Please note that the following expansion boards cannot be used inside an expansion chassis.

- Video boards
- Additional PCI bus expansion boards
- Boards with the disclaimer "Cannot be used with PCI-to-PCI Bridge"
- Please note that even when a board is compatible with PCI bus specifications, it may not operate due to specification limitations.

* For further details, please check the manual or visit our web site.

An expansion adapter is an adapter that connects a host PC to an expansion chassis for the purpose of extending high-speed signal transmission. It is not possible to link one expansion chassis to another expansion chassis due to resultant signal degradation. When using more than one expansion chassis, you must allocate an open slot to each chassis for a parallel connection.
### Expansion Unit / Bus Adapter

#### Bus Extension Type Expansion Adapter & Chassis

**Expansion Adapter**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAD-BE-LPE</td>
<td>PCI Express (for Low Profile PCI Bus slot)</td>
</tr>
<tr>
<td>EAD-LPC(BE)</td>
<td>PCI (for Low Profile PCI Bus slot)</td>
</tr>
<tr>
<td>EAD(PC)BE</td>
<td>PCI</td>
</tr>
<tr>
<td>EAD(C)BE-N</td>
<td>CardBus</td>
</tr>
</tbody>
</table>

**PCI Bus Expansion Chassis**

<table>
<thead>
<tr>
<th>Name</th>
<th>Installation Type</th>
<th>Slots</th>
<th>Installable Board</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Desktop</td>
<td>Rack Mount</td>
<td>Wall Mount</td>
</tr>
<tr>
<td>ECH(PC)BE-H2B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(PC)BE-H4B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(PC)BE-F2B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(PC)BE-F4B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(PC)BE-H4A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(PC)BE-H7A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(PC)BE-H13A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(PC)BE-F7A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(PC)BE-F13A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### StarFabric-compliant Type Expansion Adapter & Chassis

**Expansion Adapter**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAD-SF-LPE</td>
<td>PCI Express (for Low Profile PCI Bus slot)</td>
</tr>
<tr>
<td>EAD(LPC)SF</td>
<td>PCI (for Low Profile PCI Bus slot)</td>
</tr>
<tr>
<td>EAD(C)BSF</td>
<td>CardBus</td>
</tr>
</tbody>
</table>

**PCI Bus Expansion Chassis**

<table>
<thead>
<tr>
<th>Name</th>
<th>Installation Type</th>
<th>Slots</th>
<th>Installable Board</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Desktop</td>
<td>Rack Mount</td>
<td>Wall Mount</td>
</tr>
<tr>
<td>ECH(P)SF-H2B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(P)SF-H4B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(P)SF-F2B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(P)SF-F4B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(P)SF-H4A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(P)SF-H7A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(P)SF-H13A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(P)SF-F7A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECH(P)SF-F13A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### ISA Bus Expansion Unit (Backplane included)

<table>
<thead>
<tr>
<th>Name</th>
<th>Installation Type</th>
<th>Drive</th>
<th>Slots</th>
<th>Installable Board</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Desktop</td>
<td>Rack Mount</td>
<td>Wall Mount</td>
<td>Full</td>
</tr>
<tr>
<td>FA-PAC(PC)M4D</td>
<td></td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>FA-PAC(PC)F4DRV</td>
<td></td>
<td></td>
<td></td>
<td>14***</td>
</tr>
</tbody>
</table>

1) Maximum board length is 220mm.
2) Expansion bus adapter occupies 1 slot from available slot.

#### Bus Expansion Adapter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Backplane</th>
<th>Installable Unit of PCI Bus Expansion Adapter (FA-UNIT-***)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUF(PC)</td>
<td>PCI to PCI (7 slot)</td>
<td>Included</td>
<td>F8DR, F8DR-M, F11RFV, M11RFV</td>
</tr>
<tr>
<td>BUF(PC)13</td>
<td>PCI to PCI (13 slot)</td>
<td>Included</td>
<td>F8DR, F8DR-M</td>
</tr>
<tr>
<td>BUF(PC)E</td>
<td>ISA to ISA</td>
<td>--</td>
<td>--</td>
</tr>
</tbody>
</table>

#### Bus Converter Adapter

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUF-Card(PC)/P</td>
<td>PC Card to ISA</td>
</tr>
<tr>
<td>PC-Card(PC)/H</td>
<td>ISA to PC Card</td>
</tr>
</tbody>
</table>

### Pictograms

**PCI Express**
- Product is PCI Express standard compliant and can be used in the computer equipped with PCI Express bus expansion slot.
- Product supports Cardbus that is a 32-bit PC card standard bus.

**Board Size**
- Low Profile: Product is PCI standard/Low Profile compliant. A bracket for standard-size PCI slots is provided.

**Expansion Chassis**
- Maximum number of boards that can be installed
- Maximum board size that can be installed
- Expansion chassis is equipped with built-in power supply.
- Includes AC adapter. The expansion chassis has no built-in power source.
### Bus Extension Type

**Selecting Optimal Expansion Adapter and Expansion Chassis**

Bus Extension is best suited for use in an environment where the control is conducted in close proximity to the PC unit. If the expansion unit needs to be further away (up to 12m - max), select from the StarFabric-compliant system - list on.

CONTEC offers 32 different configurations based on the type of host PC, needed number and lengths of PCI slots.

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#### Expansion Adapter

- **PC** equipped with CardBus-compliant card slot

- **Expansion adapter for CardBus slot (PC side)** EAD(CB)BE

- A dedicated B62 connection cable (1m) is included.

- **Expansion adapter for PCI Express-compliant Low Profile PCI bus slot (host PC)** EAD-BE-LPE

- A dedicated connection cable (1m) and standard PCI bus bracket are included.

- **Expansion adapter for PCI bus slot (host PC)** EAD(PCI)BE

- A dedicated connection cable (1m) is included.

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#### Expansion Chassis

- **Stylish compact black chassis**
  - **PCI expansion chassis (includes AC adapter)**
  - ECH(PCI)BE-H2B
    - 2 Slots Short Size AC adapter O-05
  - ECH(PCI)BE-H4B
    - 4 Slots Short Size AC adapter O-05
  - ECH(PCI)BE-F2B
    - 2 Slots Long Size Short Size AC adapter O-05
  - ECH(PCI)BE-F4B
    - 4 Slots Long Size Short Size AC adapter O-05

- **Solid steel industrial chassis**
  - **PCI bus expansion chassis (Built-in power supply)**
  - ECH(PCI)BE-H4A
    - 4 Slots Short Size Built-in Power O-06
  - ECH(PCI)BE-H7A
    - 7 Slots Short Size Built-in Power O-06
  - ECH(PCI)BE-H13A
    - 13 Slots Short Size Built-in Power O-06
  - ECH(PCI)BE-F7A
    - 7 Slots Long Size Short Size Built-in Power O-07
  - ECH(PCI)BE-F13A
    - 13 Slots Long Size Short Size Built-in Power O-07

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**Note to customers using the CONTEC’s conventional expansion units [FA-PAC(PCI) and NOTE-PAC(PCI) Series]**

When replacing conventional expansion units with expansion chassis and adapters, please refer to the following table so that you can purchase a complete unit with the same specifications as those of the conventional models.

<table>
<thead>
<tr>
<th>PCI bus expansion system</th>
<th>Expansion adapter</th>
<th>Expansion chassis</th>
</tr>
</thead>
<tbody>
<tr>
<td>FA-PAC(PCI)H4</td>
<td>EAD(PCI)BE</td>
<td>EAD(PCI)BE-H4A</td>
</tr>
<tr>
<td>FA-PAC(PCI)F7</td>
<td>EAD(PCI)BE</td>
<td>EAD(PCI)BE-F7A</td>
</tr>
<tr>
<td>FA-PAC(PCI)F13</td>
<td>EAD(PCI)BE</td>
<td>EAD(PCI)BE-F13A</td>
</tr>
<tr>
<td>Cardbus to PCI bus expansion system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOTE-PAC(PCI)H2</td>
<td>EAD(CB)BE-N</td>
<td>EAD(CB)BE-H2B</td>
</tr>
<tr>
<td>NOTE-PAC(PCI)H4</td>
<td>EAD(CB)BE-N</td>
<td>EAD(CB)BE-H4A</td>
</tr>
</tbody>
</table>

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**Global Portal**: www.contec.com
**PCI Express**

Bus Extender
PCI Express bus slot Expansion Adapter (Host PC)

**EAD-BE-LPE**
- PCI bus (5V/32bit 33MHz) can be added using one PCI Express slot of the host PC.
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board.
- The expansion chassis power supply can be turned on & off with the host PC power supply.
- Both Low Profile and Standard PCI slots are supported by using the included bracket.

**PCI**

Bus Extender
LPCI bus slot Expansion Adapter (Host PC)

**EAD(LPCI)BE**
- PCI bus (5V/32bit 33MHz) can be added using one Low Profile or Standard PCI slot of the host PC.
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board.
- The expansion chassis power supply can be turned on & off with the host PC power supply.
- Both Low Profile and Standard PCI slots are supported by using the included bracket.

**PCI**

Bus Extender
PCI bus slot Expansion Adapter (Host PC)

**EAD(PCI)BE**
- PCI bus (5V/32bit 33MHz) can be added using one PCI slot of the host PC.
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board.
- The expansion chassis power supply can be turned on & off with the host PC power supply.

**CardBus**

Bus Extender
CardBus slot expansion adapter (Host PC)

**EAD(CB)BE-N**
- PCI bus (5V/32bit 33MHz) can be added using one CardBus slot of the host PC.
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board.
- The expansion chassis power supply can be turned on & off with the host PC power supply.

- Windows NT 4.0 and Windows 95 are not supported.

| Model       | EAD-BE-LPE | EAD(LPCI)BE | EAD(PCI)BE | EAD(CB)BE-N *
|-------------|------------|-------------|------------|-------------
| Bus type    | PCI Express Base Specification Rev.1.0a | PCI Local Bus Specification Rev.2.3 (5V / +3.3V) | - | -
| Card slot   | - | - | - | -
| Dimensions (mm) | 121.69(L) x 67.90(H) | 121.69(L) x 63.41(H) | 121.69(L) x 105.68(H) | TYPE II (85.6+54.0+5.0)
| Bus Operating Clock | - | - | - | -
| Power Consumption (Max.) | 3.3VDC 300mA (Max.) | 3.3VDC 200mA (Max.) <JP1 1-2 Short>, 5VDC 200mA (Max.) <JP1 2-3 Short> | 3.3VDC 200mA (Max.) | -
| Operating Conditions | 0-50°C, 10-90%RH (no condensation) | - | - | -
| Attached cable | CB-CB6/96 (cable length: 1m) *1 | CB-BF96 (cable length: 1m) *1 | CB-CB6/96 (cable length: 1m) *1 | CB-BF96 (cable length: 1m) *1

*1: Only the cable included with the unit can be used.
*2: This product can be used with the [ECH](PCI)BE-F7A, F13A, H7A, H13A) expansion chassis under Windows Vista only.
Other operating systems cannot support the combination of EAD(CB)BE-N and [ECH](PCI)BE-F7A, F13A, H7A, H13A).

As shown on the side of product’s images, RoHS compliant is a CONTEC original marking for RoHS-compliant products.

Global Portal: www.contec.com
## Expansion Unit / Bus Adapter

### Bus Extender
PCI bus expansion chassis
- **×2 Short size slots, AC Adapter**
  - **ECH(PCI)BE-H2B**
  - 2x PCI expansion slots
  - Length accommodates short-size PCI add-on boards (5V/32bit)
  - The chassis power supply can be turned on & off with the host PC power supply
  - Equipped with a built-in cooling fan
  - The compact chassis design combines space-saving system configuration with portability
  - Including an AC adapter

- **×2 Long size slots, AC Adapter**
  - **ECH(PCI)BE-F2B**
  - 2x PCI expansion slots
  - Length accommodates long-size PCI add-on boards (5V/32bit)
  - The chassis power supply can be turned on & off with the host PC power supply
  - Equipped with a built-in cooling fan
  - The compact chassis design combines space-saving system configuration with portability
  - Including an AC adapter

### Bus Extender
PCI bus expansion chassis
- **×4 Short size slots, AC Adapter**
  - **ECH(PCI)BE-H4B**
  - 4x PCI expansion slots
  - Length accommodates short-size PCI add-on boards (5V/32bit)
  - The chassis power supply can be turned on & off with the host PC power supply
  - Equipped with a built-in cooling fan
  - The compact chassis design combines space-saving system configuration with portability
  - Including an AC adapter

- **×4 Long size slots, AC Adapter**
  - **ECH(PCI)BE-F4B**
  - 4x PCI expansion slots
  - Length accommodates long-size PCI add-on boards (5V/32bit)
  - The chassis power supply can be turned on & off with the host PC power supply
  - Equipped with a built-in cooling fan
  - The compact chassis design combines space-saving system configuration with portability
  - Including an AC adapter

### Model Specifications

<table>
<thead>
<tr>
<th></th>
<th>ECH(PCI)BE-H2B</th>
<th>ECH(PCI)BE-H4B</th>
<th>ECH(PCI)BE-F2B</th>
<th>ECH(PCI)BE-F4B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bus type</strong></td>
<td>PCI Local Bus Specification Rev2.3 (+5VDC)</td>
<td>PCI Local Bus Specification Rev2.3 (+5VDC)</td>
<td>PCI Local Bus Specification Rev2.3 (+5VDC)</td>
<td>PCI Local Bus Specification Rev2.3 (+5VDC)</td>
</tr>
<tr>
<td><strong>Interrupt Level</strong></td>
<td>INTA-INTD</td>
<td>INTA-INTD</td>
<td>INTA-INTD</td>
<td>INTA-INTD</td>
</tr>
<tr>
<td><strong>User slots</strong></td>
<td>2 (Short-size)</td>
<td>2 (Short-size)</td>
<td>2 (Long-size)</td>
<td>4 (Long-size)</td>
</tr>
<tr>
<td><strong>Bus Clock</strong></td>
<td>33MHz (Max.)</td>
<td>33MHz (Max.)</td>
<td>33MHz (Max.)</td>
<td>33MHz (Max.)</td>
</tr>
<tr>
<td><strong>Installable Board</strong></td>
<td>176.5(L) × 107(H)</td>
<td>176.5(L) × 107(H)</td>
<td>313.8(L) × 107(H)</td>
<td>313.8(L) × 107(H)</td>
</tr>
<tr>
<td><strong>Power supply capacity (Max.)</strong></td>
<td>Output current shall not exceed the following values.</td>
<td>Output current shall not exceed the following values.</td>
<td>Output current shall not exceed the following values.</td>
<td>Output current shall not exceed the following values.</td>
</tr>
<tr>
<td><strong>AC input voltage</strong></td>
<td>100 to 240VAC</td>
<td>100 to 240VAC</td>
<td>100 to 240VAC</td>
<td>100 to 240VAC</td>
</tr>
<tr>
<td><strong>Overal maximum power supply capacity</strong></td>
<td>60W</td>
<td>60W</td>
<td>60W</td>
<td>60W</td>
</tr>
<tr>
<td><strong>Operating Conditions</strong></td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
</tr>
<tr>
<td><strong>Dimensions (mm)</strong></td>
<td>71.0(W) × 222.0(D) × 144.0(H)</td>
<td>112.0(W) × 222.0(D) × 144.0(H)</td>
<td>71.0(W) × 360.0(D) × 144.0(H)</td>
<td>112.0(W) × 360.0(D) × 144.0(H)</td>
</tr>
<tr>
<td><strong>Weight of Chassis</strong></td>
<td>1.2kg</td>
<td>1.5kg</td>
<td>1.6kg</td>
<td>2.0kg</td>
</tr>
<tr>
<td><strong>Weight of AC Adapter</strong></td>
<td>0.9kg</td>
<td>0.9kg</td>
<td>0.9kg</td>
<td>0.9kg</td>
</tr>
</tbody>
</table>

### Dimensions

- **ECH(PCI)BE-H2B**
- **ECH(PCI)BE-H4B**
- **ECH(PCI)BE-F2B**
- **ECH(PCI)BE-F4B**

Global Portal: www.contec.com
Bus Extender
PCI bus Expansion Chassis
(×4 Short size slots, On board Power)
ECH(PCI)BE-H4A

- 4x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

Bus Extender
PCI bus Expansion Chassis
(×7 Short size slots, On board Power)
ECH(PCI)BE-H7A

- 7x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

Bus Extender
PCI bus Expansion Chassis
(×13 Short size slots, On board Power)
ECH(PCI)BE-H13A

- 13x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

<table>
<thead>
<tr>
<th>Model</th>
<th>ECH(PCI)BE-H4A</th>
<th>ECH(PCI)BE-H7A</th>
<th>ECH(PCI)BE-H13A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus type</td>
<td>PCI Local Bus Specification Rev2.3 (×5VDC)</td>
<td>PCI Local Bus Specification Rev2.3 (×5VDC)</td>
<td>PCI Local Bus Specification Rev2.3 (×5VDC)</td>
</tr>
<tr>
<td>Interrupt Level</td>
<td>INTA-INTD</td>
<td>INTA-INTD</td>
<td>INTA-INTD</td>
</tr>
<tr>
<td>Bus Clock</td>
<td>33MHz (Max.)</td>
<td>33MHz (Max.)</td>
<td>33MHz (Max.)</td>
</tr>
<tr>
<td>User slots</td>
<td>4 (short-size)</td>
<td>7 (short-size)</td>
<td>13 (short-size)</td>
</tr>
<tr>
<td>Installable Board (mm)</td>
<td>176.5(L)×107(H)</td>
<td>176.5(L)×107(H)</td>
<td>176.5(L)×107(H)</td>
</tr>
<tr>
<td>Power supply capacity (Max.)</td>
<td>+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A</td>
<td>+5VDC: 18A**, +3.3VDC: 15A**, +12VDC: 9A, -12VDC: 0.8A</td>
<td>+5VDC: 18A**, +3.3VDC: 15A**, +12VDC: 9A, -12VDC: 0.8A</td>
</tr>
<tr>
<td>AC input voltage</td>
<td>115/230VAC (switch selectable)</td>
<td>115/230VAC (switch selectable)</td>
<td>115/230VAC (switch selectable)</td>
</tr>
<tr>
<td>Overall maximum power supply capacity</td>
<td>130W**</td>
<td>130W**</td>
<td>130W**</td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>210.0(W)×235.0(D)×138.0(H)</td>
<td>300.0(W)×138.0(H)×255.0(L)</td>
<td>424.0(W)×156.0(H)×255.0(L)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.5kg</td>
<td>6.4kg</td>
<td>7.0kg</td>
</tr>
</tbody>
</table>

**Note:**
- *1: AC input line voltage range: 90 ~ 132VAC and 180 ~ 250VAC ~ 2*
- *2: The sum of +5VDC and +3.3VDC must not exceed 90W.
- *3: Condition with CE marking: 130W at 40°C.
- *4: Condition with CE marking: 175W at 50°C.
- *5: Condition with CE marking: 3.5kg.

Dimensions (Unit:mm)

ECH(PCI)BE-H4A

ECH(PCI)BE-H7A

ECH(PCI)BE-H13A

Global Portal: www.contec.com
Expansion Unit / Bus Adapter

Bus Extender PCI bus Expansion Chassis
(×7 Long size slots, On board Power)

ECH(PCI)BE-F7A

- 7x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32-bit)
- The chassis power supply can be turned on & off with the host PC power supply

Bus Extender PCI bus Expansion Chassis
(×13 Long size slots, On board Power)

ECH(PCI)BE-F13A

- 13x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32-bit)
- The chassis power supply can be turned on & off with the host PC power supply

### Model Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>ECH(PCI)BE-F7A *4</th>
<th>ECH(PCI)BE-F13A *5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus type</td>
<td>PCI Local Bus Specification Rev2.3 (+5VDC)</td>
<td></td>
</tr>
<tr>
<td>Address Space</td>
<td>Memory: 32-bit addressing, I/O: 32-bit addressing</td>
<td></td>
</tr>
<tr>
<td>Interrupt Level</td>
<td>INTA-INTD</td>
<td></td>
</tr>
<tr>
<td>Bus Clock</td>
<td>33MHz (Max.)</td>
<td></td>
</tr>
<tr>
<td>User slots</td>
<td>7 (Long-size)</td>
<td>13 (Long-size)</td>
</tr>
<tr>
<td>Installable Board (mm)</td>
<td>313.8L×107(H)</td>
<td></td>
</tr>
<tr>
<td>Power supply capacity (Max.)</td>
<td>+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A</td>
<td>+5VDC: 18A<em>2, +3.3VDC: 15A</em>2, +12VDC: 9A, -12VDC: 0.8A</td>
</tr>
<tr>
<td>AC input voltage</td>
<td>115/230VAC (switch selectable)</td>
<td></td>
</tr>
<tr>
<td>Overall maximum power supply capacity *1</td>
<td>130W *2</td>
<td>0<del>30°C: 230W, 30</del>40°C: 205W, 40~50°C: 175W *4</td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
<td></td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>300 (W)×138.0(H)×373.2(L)</td>
<td>424.0(W)×156.0(H)×373.2(L)</td>
</tr>
<tr>
<td>Weight</td>
<td>6.0kg</td>
<td>9.0kg</td>
</tr>
</tbody>
</table>

**Note:**
- *1: AC input line voltage range: 90 ~ 132VAC and 180 ~ 250VAC.
- *2: The sum of +5VDC and +3.3VDC must not exceed 90W.
- *3: Condition with CE marking: 130W at 40°C.
- *4: Condition with CE marking: 175W at 50°C.
- *5: This product cannot be used with the expansion adapter [EAD]CH(BE).

### Dimensions

**ECH(PCI)BE-F7A**

(Unit:mm)

**ECH(PCI)BE-F13A**

(Unit:mm)
StarFabric-compliant
Selecting Optimal Expansion Adapter and Expansion Chassis

A StarFabric-compliant system is best suited for measurement control when distance between host PC and chassis is required. When using an expansion chassis in close proximity to the host PC, select from the Bus Extension list on CONTEC offers 23 different configurations based on the type of host PC, needed number and lengths of PCI slots.

**Expansion Adapter**
- PC equipped with CardBus-compliant card slot
- Expansion adapter for CardBus slot (PC side) EAD(CB)SF
  - 2x (12m) Category 5e STP cables are included.
- PC equipped with standard PCI/Low Profile PCI slot
- Expansion adapter for PCI Express-compliant Low Profile PCI bus slot (host PC) EAD-SF-LPE
  - 2x (12m) Category 5e STP cables and standard PCI bus bracket included.
- Expansion adapter for PCI -compliant Low Profile PCI bus slot (host PC) EAD(LPCI)SF
  - 2x (12m) Category 5e STP cables and standard PCI bus bracket included.

**Expansion Chassis**
- Stylish compact black chassis
  - PCI expansion chassis (Includes AC adapter)
    - ECH(PCl)I)SF-H2B
      - 2 Slots Short Size AC adapter O-10
    - ECH(PCl)I)SF-H4B
      - 4 Slots Short Size AC adapter O-10
    - ECH(PCl)I)SF-F2B
      - 2 Slots Long Size Short Size AC adapter O-10
    - ECH(PCl)I)SF-F4B
      - 4 Slots Long Size Short Size AC adapter O-10
- Solid steel industrial chassis
  - PCI bus expansion chassis (Built-in power supply)
    - ECH(PCl)I)SF-H4A
      - 4 Slots Short Size Built-in Power O-11
    - ECH(PCl)I)SF-H7A
      - 7 Slots Short Size Built-in Power O-11
    - ECH(PCl)I)SF-H13A
      - 13 Slots Short Size Built-in Power O-11
    - ECH(PCl)I)SF-F7A
      - 7 Slots Long Size Built-in Power O-12
    - ECH(PCl)I)SF-F13A
      - 13 Slots Long Size Built-in Power O-12

Short size: A short-size PCI board can be installed
Long size: A long-size PCI board can be installed

* Category 5e twisted-pair cable can be used.
  In high noise environments, shielded cable (STP) is recommended.

Global Portal: www.contec.com
Expansion Unit / Bus Adapter

**PCI Express**

**StarFabric-compliant**

PCI Express bus slot Expansion Adapter (Host PC)

**EAD-SF-LPE**

- PCI bus (5V/32bit 33MHz) can be added using one PCI Express slot of the host PC
- 128 PCI bus expansion and high-speed serial transfer (2.5Gbps) are supported
- PCI-bus compatibility helps users to use PCI bus boards in expansion units without changing existing software
- Uses noise resistant Category 5e STP cable - easy wiring and installation
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Both Low Profile and Standard PCI slots are supported by using the included bracket

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**PCI**

**StarFabric-compliant**

LPCI bus slot Expansion Adapter (Host PC)

**EAD(LPCI)SF**

- PCI bus (5V/32bit 33MHz) can be added using one Low Profile or Standard PCI slot of the host PC
- 128 PCI bus expansion and high-speed serial transfer (2.5Gbps) are supported
- PCI bus-compliant, eliminating any need to change PCI add-on boards or software
- Uses noise resistant Cat 5e STP cable - easy wiring and installation
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board
- Both Low Profile and Standard PCI slots are supported by using the included bracket

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**Card Bus**

**StarFabric-compliant**

CardBus slot Expansion Adapter (Host PC)

**EAD(CB)SF**

- PCI expansion (5V/32bit 33MHz) using CardBus slot of the note PC
- 128 PCI bus expansion and high-speed serial transfer (2.5Gbps) are supported
- Uses noise resistant Cat 5e STP cable - easy wiring and installation
- The expansion chassis power supply can be turned on & off with the host PC power supply
- Expansion chassis can be selected to meet the required number of PCI bus slot and size of add-on board

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**Model** | **EAD-SF-LPE** | **EAD(LPCI)SF** | **EAD(CB)SF**
---|---|---|---
Bus / Size (mm) | PCI Express Base Specification Rev.1.0a / 121.69(L)×67.90(H) | PCI Local Bus Specification Rev.2.2 (5V / 3.3V) / 121.69(L)×63.41(H) | PC Card Standard CardBus-compliant / TYPE I (119.0×54.0×19.0)
Power Consumption (Max.) | 3.3VDC 700mA (Max.) | 3.3VDC 450mA (Max.) | 3.3VDC 450mA (Max.)
Operating Conditions | 0~50°C, 10~90%RH (no condensation) | 0~50°C, 20~80%RH (no condensation) | 0~50°C, 20~80%RH (no condensation)
Attached cable | 5x Category 5e STP cables (12m) |

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Note:

1. Category 5e twisted pair cable can be used. In noisy environments shielded cable (STP) is recommended.
2. This product cannot be used with the expansion chassis [ECDP(CS)-F7A, F13A].
StarFabric-compliant PCI bus Expansion Chassis
(×2 Short size slots, AC Adapter)
ECH(PCI)SF-H2B

- 2x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter

StarFabric-compliant PCI bus Expansion Chassis
(×2 Long size slots, AC Adapter)
ECH(PCI)SF-F2B

- 2x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter

StarFabric-compliant PCI bus Expansion Chassis
(×4 Short size slots, AC Adapter)
ECH(PCI)SF-H4B

- 4x PCI expansion slots
- Length accommodates short-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter

StarFabric-compliant PCI bus Expansion Chassis
(×4 Long size slots, AC Adapter)
ECH(PCI)SF-F4B

- 4x PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply
- Equipped with a built-in cooling fan
- The compact chassis design combines space-saving system configuration with portability
- Including an AC adapter

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**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>ECH(PCI)SF-H2B</th>
<th>ECH(PCI)SF-H4B</th>
<th>ECH(PCI)SF-F2B</th>
<th>ECH(PCI)SF-F4B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus type</td>
<td>PCI Local Bus Specification Rev.2.2 (+5VDC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address Space</td>
<td>Memory: 32-bit addressing, I/O: 32-bit addressing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrupt Level</td>
<td>INTA-INTD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus Clock</td>
<td>33MHz (Max.)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User slots</td>
<td>2 (Short-size)</td>
<td>4 (Short-size)</td>
<td>2 (Long-size)</td>
<td>4 (Long-size)</td>
</tr>
<tr>
<td>Installable Board (mm)</td>
<td>176.5(L) × 107(H)</td>
<td>313.8(L) × 107(H)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply capacity (Max.)</td>
<td>The output current shall not exceed the following values. +5VDC: 7A, +3.3VDC: 3A, +12VDC: 1.5A, -12VDC: 3.3A</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AC input voltage</td>
<td>100 to 240VAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over maximum power supply capacity</td>
<td>60W</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>71.0(W) × 222.0(D) × 144.0(H)</td>
<td>112.0(W) × 222.0(D) × 144.0(H)</td>
<td>71.0(W) × 360.0(D) × 144.0(H)</td>
<td>112.0(W) × 360.0(D) × 144.0(H)</td>
</tr>
<tr>
<td>Weight of Chassis</td>
<td>1.2kg</td>
<td>1.5kg</td>
<td>1.6kg</td>
<td>2.0kg</td>
</tr>
<tr>
<td>Weight of AC Adapter</td>
<td>0.9kg</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

- Dimensions (Unit:mm)
**Expansion Unit / Bus Adapter**

**StarFabric-compliant PCI bus Expansion Chassis**
- **ECH(PCI)SF-H4A** (4 slots, on board power)
  - 4 PCI expansion slots
  - Length accommodates short-size PCI add-on boards (5V/32bit)
  - The chassis power supply can be turned on & off with the host PC power supply
- **ECH(PCI)SF-H7A** (7 slots, on board power)
  - 7 PCI expansion slots
  - Length accommodates short-size PCI add-on boards (5V/32bit)
  - The chassis power supply can be turned on & off with the host PC power supply

**StarFabric-compliant PCI bus Expansion Chassis**
- **ECH(PCI)SF-H13A** (13 slots, on board power)
  - 13 PCI expansion slots
  - Length accommodates short-size PCI add-on boards (5V/32bit)
  - The chassis power supply can be turned on & off with the host PC power supply

**Model**

<table>
<thead>
<tr>
<th>Model</th>
<th>ECH(PCI)SF-H4A</th>
<th>ECH(PCI)SF-H7A</th>
<th>ECH(PCI)SF-H13A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus type</td>
<td>PCI Local Bus Specification Rev.3 (+5VDC)</td>
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</tr>
<tr>
<td>Address Space</td>
<td>Memory: 32-bit addressing, I/O: 32-bit addressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interrupt Level</td>
<td>INTA-INTD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bus Clock</td>
<td>33MHz (Max.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User slots</td>
<td>4 (short-size)</td>
<td>7 (short-size)</td>
<td>13 (short-size)</td>
</tr>
<tr>
<td>Installable Board (mm)</td>
<td>176.5(L)x107(H)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power supply capacity (Max.)</td>
<td>+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A</td>
<td>+5VDC: 18A&lt;sup&gt;4&lt;/sup&gt;, +3.3VDC: 15A&lt;sup&gt;4&lt;/sup&gt;, +12VDC: 9A, -12VDC: 0.8A</td>
<td></td>
</tr>
<tr>
<td>AC input voltage</td>
<td>115/230VAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall maximum power supply capacity&lt;sup&gt;1&lt;/sup&gt;</td>
<td>130W&lt;sup&gt;4&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>0~50°C, 20%~80%RH (no condensation)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>215.0(W)x235.0(D)x138.0(H)</td>
<td>300.0(W)x138.0(H)x255.0(L)</td>
<td>424.0(W)x156.0(H)x255.0(L)</td>
</tr>
<tr>
<td>Weight</td>
<td>3.5kg</td>
<td>5.0kg</td>
<td>7.5kg</td>
</tr>
</tbody>
</table>

**Note:**
- <sup>1</sup> AC input line voltage range: 90~132VAC and 180~250VAC.
- <sup>2</sup> The sum of +5VDC and +3.3VDC must not exceed 90W.
- <sup>3</sup> Condition with CE marking: 130W at 40°C.
- <sup>4</sup> Condition with CE marking: 175W at 50°C.
- <sup>5</sup> This product cannot be used with the expansion adapter (EAD(CB)/BE).

**Dimensions**

<table>
<thead>
<tr>
<th>Model</th>
<th>ECH(PCI)SF-H4A</th>
<th>ECH(PCI)SF-H7A</th>
<th>ECH(PCI)SF-H13A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>215mm</td>
<td>255mm</td>
<td>255mm</td>
</tr>
<tr>
<td>Height</td>
<td>59mm</td>
<td>424mm</td>
<td>50mm</td>
</tr>
</tbody>
</table>

Global Portal: www.contec.com
Expansion Unit / Bus Adapter

StarFabric-compliant PCI bus Expansion Chassis
(×7 Long size slots, On board Power)
ECH(PCI)SF-F7A

- 7× PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

StarFabric-compliant PCI bus Expansion Chassis
(×13 Long size slots, On board Power)
ECH(PCI)SF-F13A

- 13× PCI expansion slots
- Length accommodates long-size PCI add-on boards (5V/32bit)
- The chassis power supply can be turned on & off with the host PC power supply

<table>
<thead>
<tr>
<th>Model</th>
<th>ECH(PCI)SF-F7A</th>
<th>ECH(PCI)SF-F13A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bus type</td>
<td>PCI Local Bus Specification Rev2.3 (+5VDC)</td>
<td>PCI Local Bus Specification Rev2.3 (+5VDC)</td>
</tr>
<tr>
<td>Interrupt Level</td>
<td>INTA-INTD</td>
<td>INTA-INTD</td>
</tr>
<tr>
<td>Bus Clock</td>
<td>32MHz (Max.)</td>
<td>32MHz (Max.)</td>
</tr>
<tr>
<td>User slots</td>
<td>7 (Long-size)</td>
<td>13 (Long-size)</td>
</tr>
<tr>
<td>Installable Board (mm)</td>
<td>313.8(L)x107(H)</td>
<td>13 (Long-size)</td>
</tr>
<tr>
<td>Power supply capacity (Max.)</td>
<td>+5VDC: 11.3A, +3.3VDC: 6A, +12VDC: 3A, -12VDC: 0.7A</td>
<td>+5VDC: 18A*, +3.3VDC: 15A**, +12VDC: 9A, -12VDC: 0.8A</td>
</tr>
<tr>
<td>AC input voltage</td>
<td>115/230VAC (switch selectable)</td>
<td>115/230VAC (switch selectable)</td>
</tr>
<tr>
<td>Overall maximum power supply capacity **</td>
<td>130W*3</td>
<td>0<del>30°C: 230W, 30</del>40°C: 205W, 40~50°C: 175W***</td>
</tr>
<tr>
<td>Operating Conditions</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
<td>0<del>50°C, 20</del>80%RH (no condensation)</td>
</tr>
<tr>
<td>Dimensions (mm)</td>
<td>300(W)x138.0(H)x373.2(L)</td>
<td>424(W)x156.0(H)x373.2(L)</td>
</tr>
<tr>
<td>Weight</td>
<td>6.0kg</td>
<td>9.0kg</td>
</tr>
</tbody>
</table>

Note:
1: AC input line voltage range: 90 ~ 132VAC and 180 ~ 250VAC.
2: The sum of +5VDC and +3.3VDC must not exceed 90W.
3: Condition with CE marking: 130W at 40°C.
4: Condition with CE marking: 175W at 50°C.
5: This product cannot be used with the expansion adapter (EAD/CE/BE).

Dimensions (Unit:mm)

ECH(PCI)SF-F7A

ECH(PCI)SF-F13A

Global Portal : www.contec.com
## Expansion Unit / Bus Adapter

### 4-slots ISA bus Chassis
- (×4 Middle size slots)
- **FA-PAC(PC)M4D**

- 4-slots ISA bus passive backplane
- The FA-PAC series are AT bus chassis that can be used for port expansion of a PC

### 14-slots ISA bus Chassis
- (×10 Full, ×4 Half size slots)
- **FA-PAC(PC)F14DRV**

- 14-slots ISA bus passive backplane
- The FA-PAC series are AT bus chassis that can be used for port expansion of a PC

---

### Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>FA-PAC(PC)M4D</th>
<th>FA-PAC(PC)F14DRV</th>
</tr>
</thead>
<tbody>
<tr>
<td>User slots</td>
<td>4 (Middle size)</td>
<td>14 (×10 Full, ×4 Half size)</td>
</tr>
<tr>
<td>Installable Board (mm)</td>
<td>220(L) x 122(H) Max.</td>
<td>Full size: 340.5(L) x 122(H), Half size: 220(L) x 122(H) Max.</td>
</tr>
<tr>
<td>Power supply capacity (Max.)</td>
<td>+5V 8.0A, -5V 0.3A, +12V 1.5A, -12V 1.0A</td>
<td>+5V 23.0A, -5V 0.1A, +12V 15.0A, -12V 0.5A</td>
</tr>
<tr>
<td>AC input voltage</td>
<td>85 to 250VAC (50 to 60Hz)</td>
<td>90 to 132VAC, 180 to 264VAC (50 to 60Hz)</td>
</tr>
<tr>
<td>Input current</td>
<td>1.5A</td>
<td>7A (115VAC) / 4A (230VAC)</td>
</tr>
<tr>
<td>Rackmount</td>
<td></td>
<td>EA1 19-inch</td>
</tr>
<tr>
<td>Drive bay</td>
<td></td>
<td>2× 6-inch bay, 1× 3.5-inch bay (shadow bay)</td>
</tr>
<tr>
<td>Weight</td>
<td>4.5kg</td>
<td>14.5kg</td>
</tr>
<tr>
<td>Note:</td>
<td>*1: These products can be used for both CPU unit and I/O expansion unit. To use the products as I/O expansion unit, 1 slot is used for I/O bus adapter. I/O bus adapter are purchased separately. *2: Total maximum output electricity is 50W.</td>
<td></td>
</tr>
</tbody>
</table>

---

### Dimensions

#### FA-PAC(PC)M4D

![Diagram](image1.png)

#### FA-PAC(PC)F14DRV

![Diagram](image2.png)

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Global Portal: [www.contec.com](http://www.contec.com)
### Expansion Unit / Bus Adapter

**PCI to PCI Bus Expansion System (7 Slots)**

**BUF(PCI)**

- External backplane expansion slots function as regular PCI slots
- Using ATX power supply, Chassis power supply can be turned on & off with the host PCI power supply.

*It cannot be used in PC-9800 series.

**PCI to PCI Bus Expansion System (13 Slots)**

**BUF(PCI)13**

- External backplane expansion slots function as regular PCI slots
- Using ATX power supply, Chassis power supply can be turned on & off with the host PCI power supply.

*It cannot be used in PC-9800 series.

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<table>
<thead>
<tr>
<th>Model</th>
<th>BUF(PCI)</th>
<th>BUF(PCI)13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bus type</strong></td>
<td>32-bit PCI bus Rev2.1 (+5V)</td>
<td></td>
</tr>
<tr>
<td><strong>Address space</strong></td>
<td>I/O: 32-bit addressing, Memory: 32-bit addressing</td>
<td></td>
</tr>
<tr>
<td><strong>User slots</strong></td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td><strong>Interrupt Level</strong></td>
<td>INTA-INTD</td>
<td></td>
</tr>
<tr>
<td><strong>D/M/A</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accessible I/O space</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accessible Memory</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Bus Clock</strong></td>
<td>33MHz (Max.)</td>
<td></td>
</tr>
<tr>
<td><strong>Power Consumption (Max.)</strong></td>
<td>BUS-PC/PCI (PC side): +5VDC 700mA (Max.) / +5VDC 300mA (typ)</td>
<td>BUS-PC/PCI (PC side): +5VDC 700mA (Max.) / +5VDC 300mA (typ)</td>
</tr>
<tr>
<td></td>
<td>BUS-PAC/PCI (Extension side): +5VDC 700mA (Max.) / +5VDC 300mA (typ)</td>
<td>BUS-PAC/PCI (Extension side): +5VDC 700mA (Max.) / +5VDC 300mA (typ)</td>
</tr>
<tr>
<td><strong>Operating Conditions</strong></td>
<td>0<del>50°C, 30</del>90%RH (no condensation)</td>
<td></td>
</tr>
<tr>
<td><strong>Dimensions (mm)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BUS-PC/PCI (PC side): 122.0(L)×107.0(H)×18.5(D)</td>
<td>BUS-PC/PCI (PC side): 122.0(L)×107.0(H)×18.5(D)</td>
</tr>
<tr>
<td></td>
<td>BUS-PAC/PCI (Extension side): 122.0(L)×107.0(H)×18.5(D)</td>
<td>BUS-PAC/PCI (Extension side): 122.0(L)×107.0(H)×18.5(D)</td>
</tr>
<tr>
<td></td>
<td>PC-MBB/PCI (Back plane): 220.0(L)×185.0(H)×20.0(D)</td>
<td>PC-MBB/PCI (Back plane): 311.5(L)×185.0(H)×20.0(D)</td>
</tr>
<tr>
<td><strong>Attached cable</strong></td>
<td>96-pin shielded cable, 1m</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**

1. Only the Attached cable can be used.
2. This product provides I/O access to ISA bus board. It is subject to software and hardware restrictions. Please contact General Information for details.
# Expansion Unit / Bus Adapter

## PCMCIA to ISA Bus Conversion System
### BUF-CARD(PC)P
- **Bus type**: PCMCIA to ISA Bus expansion
- **Card slot**: JEIDA Ver.4.1 / PCMCIA Rev.2.0 (TYPE II)
- **Accessible Memory**: Not supported
- **Interrupt Level**: One of IRQ 3-7, 9-12, 14 or 15 (jumper selectable)
- **Power Consumption (Max.)**: BUS-CARD/PM/P (PC side): +5VDC 100mA, BUS-CARD/PC (Extension side): +5VDC 500mA
- **Operating Conditions**: 0-50°C, 20-90%RH (no condensation)
- **Dimensions (mm)**: BUS-PC/PCI (PC side): 54.0(L) x 85.6(H) x 5.0(D), BUS-PAC/PCI (Extension side): 160.0(L) x 122.0(H) x 18.5(D)
- **Applicable Models**: AT-compliant PC equipped with a card slot compatible with a JEIDA 4.1 / PCMCIA 2.0 or later/Type II card (should be compatible with Card Service Release 2.0 or later)
- **Attached cable**: 32-pin shielded cable, 1m²
- **Bus / Size (mm)**: -

## ISA to ISA Bus Expansion System
### BUF(PC)E
- **Bus type**: ISA to ISA Bus Expansion
- **Card slot**: ISA to ISA Bus Expansion
- **Accessible I/O space**: IO: 32 consecutive ports can be connected from a PC Card (PCMCIA) slot of host PC.
- **Accessible Memory**: Not supported
- **Interrupt Level**: One of IRQ 3-7, 9-12, 14 or 15 (jumper selectable)
- **Power Consumption (Max.)**: BUS-PC/PCI (PC side): +5VDC 100mA, BUS-PAC/PCI (Extension side): +5VDC 500mA
- **Operating Conditions**: 0-50°C, 20-90%RH (no condensation)
- **Dimensions (mm)**: Both PC & Extension side: 160.0(L) x 122.0(H) x 22.0(D)
- **Applicable Models**: AT-compliant PC equipped with a card slot compatible with a JEIDA 4.1 / PCMCIA 2.0 or later/Type II card (should be compatible with Card Service Release 2.0 or later)
- **Attached cable**: 96 pin shielded cable, 1m²
- **Bus / Size (mm)**: ISA / 160(L) x 107(H)

### Notes
1. There might be boards that cannot be used in some conditions. Please contact General Information for details.
2. Only the Attached cable can be used.
## Parts of Maintenance Exchange

<table>
<thead>
<tr>
<th>Model</th>
<th>Chassis</th>
</tr>
</thead>
<tbody>
<tr>
<td>POW200</td>
<td>FA-PAC/PCIF14DRV, FA-PAC/PCIF14DR, FA-UNIT-F8DRM, FA-UNIT-F8DR</td>
</tr>
<tr>
<td>POW201</td>
<td>FA-PAC/PCIH12RF</td>
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<tr>
<td>POW100</td>
<td>FA-UNIT-F11RFV, FA-UNIT-F16RFV, FA-UNIT-M11RFV, FA-UNIT-F16FV</td>
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<tr>
<td>POW251X</td>
<td>FA-UNIT-H14BE</td>
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<tr>
<td>FAN1238</td>
<td>FA-PAC/PCIF14DRV, FA-UNIT-F6DRM, FA-UNIT-F6DR, FA-UNIT-“RFV series”</td>
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<tr>
<td>FAN0820</td>
<td>FA-PAC/PCIM4D, FA-PAC/PCIH5DR</td>
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<tr>
<td>FAN0925S</td>
<td>FA-UNIT-H14BE</td>
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<tr>
<td>FAN0817</td>
<td>FA-UNIT-H14BE</td>
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<tr>
<td>FLT120</td>
<td>FA-PAC/PCIF14DRV, FA-UNIT-F8DR</td>
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<tr>
<td>FLT91</td>
<td>FA-PAC/PCIF7, ECH/PCBE-H17A, ECH/PCSF-H17A</td>
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<tr>
<td>FLT92</td>
<td>FA-PAC/PCIF13, ECH/PCBE-H17A, ECH/PCSF-H17A</td>
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<tr>
<td>FLT80</td>
<td>FA-PAC/PCIM4D, FA-PAC/PCIH5DR</td>
</tr>
<tr>
<td>FLT81</td>
<td>FA-UNIT-F8BE/2U</td>
</tr>
</tbody>
</table>

*1: Optional parts