High Speed & Function IEEE-488.2 I/F Board for PCI
GP-IB(PCI)F

High Speed IEEE-488.2 I/F Board for PCI
GP-IB(PCI)FL

High Speed & Function IEEE-488.2 I/F Board for Low Profile PCI
GP-IB(LPCI)F

High Speed IEEE-488.2 I/F Board for Low Profile PCI
GP-IB(LPCI)FL

with Driver Library [API-PAC(W32)]

This product is a PCI bus compatible interface board with support for bus master operation and which complies with IEEE-488.1 and IEEE-488.2. The card can be used in a PC to control communications with devices that support the GPIB interface and perform GPIB bus line data analysis.

You can use the supplied driver library to develop application software using any programming language that supports the Win32 API routines (such as Visual Basic or Visual C/C++), or using LabVIEW.

Features

Complies with the IEEE-488.2 standard
- As the card complies with the IEEE-488.2 standard, you can control any external device that supports this standard.

Data transfer speed 1.5Mbyte/sec max.
- The maximum data transfer speed for communications is 1.5Mbyte/sec.

Supports bus master operation
- The bus master data transfer function enables large quantities of data to be transferred between the board and PC without loading the CPU.

Internal 2Kbyte FIFO buffers for send and receive
- The board has separate 2Kbyte FIFO buffers for sending and receiving data, allowing both small and large volumes of data to be transferred at high speed.
- Interface messages also use a FIFO to enable high-speed transmission.

Built-in GPIB bus analyzer function
- The board features a bus analyzer function. [GP-IB(PCI)F, GP-IB(LPCI)F]
  This not only allows the signals on the GPIB bus to analyzed, but also permits signal analysis to be performed while the board is performing GPIB communications

Built-in SPAS event function
- In addition to the functions of the earlier GPIB controller (μPD7210), the board also supports the SPAS event generated when a serial poll occurs. This gives you a high level of flexibility in constructing your system.

Internal high-precision timer
- The board includes a high-precision application timer to allow accurate time monitoring to be performed under Windows.

Long term availability
- As the board uses a high-speed GPIB controller developed by CONTEC (upwardly compatible with the μPD7210), reliable long term availability is ensured.

Diagnostic program
- A diagnostic program is supplied to support system development. The diagnostic program can be used to check hardware operation (interrupts and I/O addresses) and to perform simple communication tests with connected devices.

Other
- A function is provided to read all control lines and data lines. This enables various operations to be performed from the application. [Includes control line latch function. Data lines are only supported on the GP-IB(PCI)F and GP-IB(LPCI)F.]
- Supports both Low Profile PCI slots and standard PCI slots (use the supplied bracket as an adaptor). [GP-IB(LPCI)F, GP-IB(LPCI)FL]
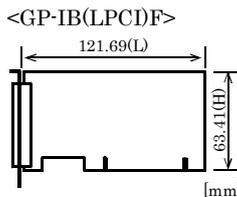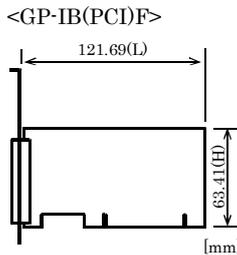
specification

■ GP-IB(PCI)F, GP-IB(LPCI)F

Item	Specifications
GPIB	
Number of channel	1 channel Conforms to IEEE-488.1, 488.2(GPIB)standards
Transfer format	8-bit parallel, 3-wire handshake system
Transfer rate	1.5Mbyte/sec
Data buffer size	2Kbyte send, 2Kbyte receive
Signal logic	Negative logic L level : 0.8V or less, H level : 2.0V or more
Cable length between device	4m or less *1
Total cable length	20m or less
Connectable number of device	15 devices (Max.)
Analyzer buffer size	64K data points (1 data point: Control signals + DIO1 to 8)
Bus master section	
DMA channels	2 channels
Transfer bus width	32-bit
Transfer data length	8 PCI Words length (Max.)
Transfer rate	80Mbyte/sec
Scatter/Gather function	64Mbyte/ch
Common section	
I/O address	Any 128-byte boundary
Interrupt	1 level use
Consumed current	5VDC 400mA (Max.)
Operating conditions	0 - 50°C, 10 - 90%RH (No condensation)
PCI bus specification	32-bit, 33MHz, Universal key shapes supported *2
External dimensions(mm)	121.69(L) x 63.41(H)
Weight	110g

*1   For details, see item (2) in Chapter3, "Connecting Cables".
*2   This board requires power supply at +5 V from an expansion slot (it does not work on a machine with a +3.3 V power supply alone).

■ Board Dimensions

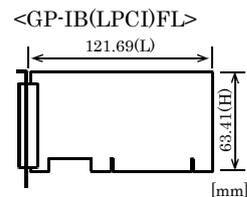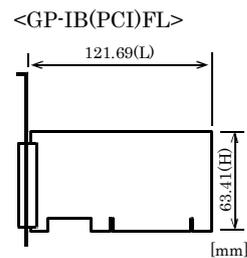<GP-IB(PCI)F>

<GP-IB(LPCI)F>

The standard outside dimension (L) is the distance from the end of the board to the outer surface of the slot cover.

■ GP-IB(PCI)FL, GP-IB(LPCI)FL

Item	Specifications
GPIB	
Number of channel	1 channel Conforms to IEEE-488.1, 488.2(GPIB)standards
Transfer format	8-bit parallel, 3-wire handshake system
Transfer rate	1.5Mbyte/sec
Data buffer size	2Kbyte send, 2Kbyte receive
Signal logic	Negative logic L level : 0.8V or less, H level : 2.0V or more
Cable length between device	4m or less *1
Total cable length	20m or less
Connectable number of device	15 devices (Max.)
Bus master section	
DMA channels	2 channels
Transfer bus width	32-bit
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■ Board Dimensions

<GP-IB(PCI)FL>

<GP-IB(LPCI)FL>

The standard outside dimension (L) is the distance from the end of the board to the outer surface of the slot cover.

Support Software

You should use CONTEC support software according to your purpose and development environment.

▼NOTE:
  This hardware does not support Windows 95 and Windows NT4.0/3.51.

■ Driver Library API-PAC(W32) (Bundled)

API-PAC(W32) is the library software that provides the commands for CONTEC hardware products in the form of Windows standard Win32 API functions (DLL). It makes it easy to create high-speed application software taking advantage of the CONTEC hardware using various programming languages that support Win32 API functions, such as Visual Basic and Visual C/C++.
It can also be used by the installed diagnosis program to check hardware operations.
CONTEC provides download services (at http://www.contec.com/apipac/) to supply the updated drivers and differential files.
For details, read Help on the bundled CD-ROM or visit the CONTEC's Web site.

< Operating environment >
OS   Windows XP, 2000, Me, 98, etc..
Adaptation language   Visual C++, Borland C++, Visual Basic, Delphi, Builder, etc..

■ API-GPLV(W32) library supporting LabVIEW (Bundled)

API-GPLV(W32) is a driver created according to the National Instruments Corporation's GPIB function style. The driver is software to control the CONTEC GPIB board using a LabVIEW-based GPIB system or existing application program.
It can also be used by the installed diagnosis program to check hardware operations.
CONTEC provides download services (at http://www.contec.com/gplv/) to supply the updated drivers and differential files.
For details, read Help on the bundled CD-ROM or visit the CONTEC's Web site.

< Operating environment >
OS   Windows XP, 2000, Me, 98, etc..
Adaptation language   LabVIEW, Visual C++, Borland C++, Visual Basic, etc..

Cable & Connector

■ Cable & Connector (Option)

GPIB cable (2m)   : PCN-T02
GPIB cable (4m)   : PCN-T04
GPIB Connector   : CN-GP/C

Effective when the cable being plugged into the board interfere with the PC's main unit. See the troubleshooting section at the end of Chapter 2. (Included with GP-IB(LPCI)F and GP-IB(LPCI)FL)

Product Configuration List

■ GP-IB(PCI)F, or GP-IB(PCI)FL

- Board(One of the following)
   [GP-IB(PCI)F, or GP-IB(PCI)FL]
- First step guide ... 1
- CD-ROM *1 [API-PAC(W32)] ... 1
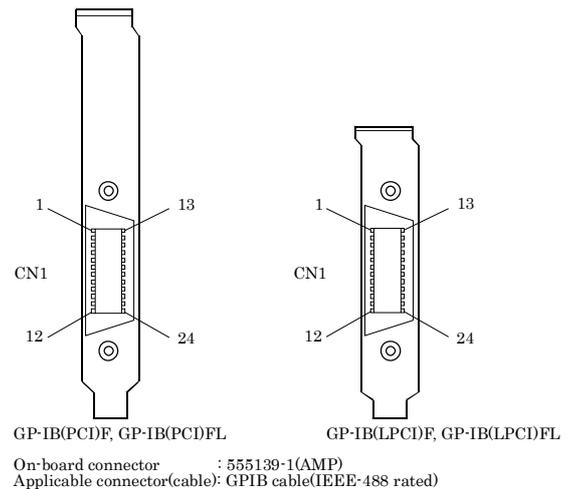
■ GP-IB(LPCI)F, or GP-IB(LPCI)FL

- Board(One of the following)
   [GP-IB(LPCI)F, or GP-IB(LPCI)FL]
- First step guide ... 1
- CD-ROM *1 [API-PAC(W32)] ... 1
- GPIB Connector [CN-GP/C] ... 1
- Bracket for PCI ... 1

*1 The CD-ROM contains the driver software and User's Guide (this guide)

Using the On-board Connectors

◆ Connecting a Device to a Connector

To connect an external device to this board, plug the cable from the device into the interface connector (CN1) shown below.

GP-IB(PCI)F, GP-IB(PCI)FL   GP-IB(LPCI)F, GP-IB(LPCI)FL

On-board connector   : 555139-1(AMP)
Applicable connector(cable): GPIB cable(IEEE-488 rated)

◆ Connector Pin Assignment

Data bus DIO1	1	13 DIO5 Data bus
Data bus DIO2	2	14 DIO6 Data bus
Data bus DIO3	3	15 DIO7 Data bus
Data bus DIO4	4	16 DIO8 Data bus
Management bus(End or Identify) EOI	5	17 REN(Remote Enable) Management bus
(Data Valid) DAV	6	18 GND (Ground)
Handshake bus (Not Ready for Data) NRFD	7	19 GND (Ground)
(Not Data Accepted) NDAC	8	20 GND (Ground)
(Interface Clear) IFC	9	21 GND (Ground)
Management bus (Service Request) SRQ	10	22 GND (Ground)
(Attention) ATN	11	23 GND (Ground)
(Ground) GND	12	24 Logic GND

CN1

The specification, color, and design of a product may be changed without a preliminary announcement.