

PCI Express-compliant  
High speed GPIB (Low Profile)  
**GPIB-F-LPE, GPIB-FL-LPE**



Model	Name	Bus analyzer function
GPIB-F-LPE	High speed Multi function GPIB	O
GPIB-FL-LPE	High speed GPIB	None

\* Specifications, color and design of the products are subject to change without notice.

**Features**

**Complies with the IEEE-488.2 standard**

As the board 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 [only GPIB-F-LPE]**

The board features a bus analyzer function. This not only allows the signals on the GPIB bus to be analyzed, but also permits signal analysis to be performed while this product is performing GPIB communications

**Built-in SPAS event function**

In addition to the functions of the earlier GPIB controller ( $\mu$ PD7210), 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 (compatible with the  $\mu$ PD7210 register), reliable long term availability is ensured.

**Diagnosis program**

A diagnosis 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.

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

The GPIB-F-LPE can also analyze the signal on the GPIB bus using the built-in memory (GPIB bus analyzer function).

This product supports a low-profile size slot and, if replaced with the supplied bracket, supports a standard size slot, too. 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++), or using LabVIEW.

**Other**

You can read the data from the application using all control lines (with the latch function) and data lines. [Data lines are only supported on the GPIB-F-LPE.]

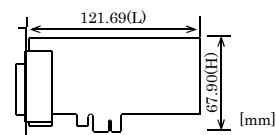
Supports both Low Profile size slots and standard size slots (use the supplied bracket as an adaptor).

**Specification**

Item	GPIB-F-LPE	GPIB-FL-LPE
<b>GPIB</b>		
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	
Analyzer buffer size	64K data points (1 data point : Control signals + DIO1 - 8)	None
<b>Bus master section</b>		
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	
<b>Common section</b>		
I/O address	Any 128-byte boundary	
Interrupt	1 level use	
Consumed current (Max.)	3.3VDC 600mA	
Operating conditions	0 - 50°C, 10 - 90%RH (No condensation)	
Bus specification	PCI Express Base Specification Rev. 1.0a x1	
Physical dimensions (mm)	121.69(L) x 67.90(H)	
Connector used	Micro ribbon connector (24-pin) 5555139-1 [made by AMP] or equivalent	
Weight	80g	
Certification	RoHS,CE,VCCI	

\*1 For details, see item (2) in Chapter3, "Connecting Cables" in the manual.

**Board dimensions <GPIB-F-LPE, GPIB-FL-LPE>**



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

## Support Software

### 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++.

It can also be used by the installed diagnosis program to check hardware operations.

See <http://www.contec.com/apipac/> for details and download of API-PAC(W32).

### API-GLPV(W32) library supporting LabVIEW (Supplied: Stored on the API-PAC(W32) Disk)

API-GLPV(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 (PC Cards) 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 Disk or visit the CONTEC's Web site.

### Linux version of general-purpose count driver: API-GPIB(LNX)

#### (Supplied: Stored on the API-PAC(W32) Disk)

This driver is used to control CONTEC GPIB boards (PC Cards) from within Linux.

You can control CONTEC GPIB boards easily using the shared library called from the user application, the device driver (module) for each kernel version, and the board (PC Cards) configuration program (config).

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 Disk or visit the CONTEC's Web site.

## Cable & Connector

### Cable (Option)

GPIB cable (2m) : PCN-T02  
GPIB cable (4m) : PCN-T04

### Connector (Option)

GPIB Connector : CN-GP/C \*1  
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.

\*1 The GPIB connector adapter [CN-GP/C] is bundled with this product as a standard feature.  
\* Check the CONTEC's Web site for more information on these options.

## Packing List

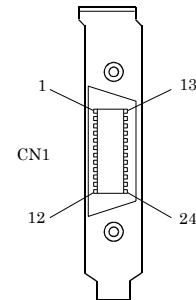
Board (One of the following)  
[GPIB-F-LPE, or GPIB-FL-LPE]...1  
First step guide ...1  
Disk \*1 [API-PAC(W32)] ...1  
GPIB connector adapter [CN-GP/C] ...1  
Standard-sized bracket ...1  
Serial number label...1  
Product Registration Card & Warranty Certificate...1

\*1 The Disk contains the driver software and User's Guide.

## How to connect the 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.



On-board connector : 5555139-1(AMP)  
Compatible connector(cable): GPIB cable(IEEE-488 rated)

\* Please refer to page 2 for more information on the supported cable and accessories.

### Connector Pin Assignment

#### Pin Assignment of CN1

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	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)
(Service Request)	SRQ	10	22	GND (Ground)
(Attention)	ATN	11	23	GND (Ground)
(Ground)	GND	12	24	Logic GND