F GPIB

F -02

GPIB

[Lineup]

●PCI Bus / Low Profile PCI Bus

Name	IEEE-488.2	Speed [bps]	Bus Master Transmision Function	FIFO Memory	Bus Analyzer Function	Software		Page
						ACX-PAC(W32)	API-PAC(W32)	
High performance F Series for PCI / Low Profile PCI slot								
GP-IB(LPCI)F	Y	1.5Mbyte/sec (Max.)	Y	Sender:2Kbyte Receiver:2Kbyte	Y	Y	Attached	F-05
High performance F Series for PCI Bus								
GP-IB(PCI)F	Y	1.5Mbyte/sec (Max.)	Y	Sender:2Kbyte Receiver:2Kbyte	Y	Y	Attached	F-05
GP-IB(PCI)FL	Y	1.5Mbyte/sec (Max.)	Y	Sender:2Kbyte Receiver:2Kbyte	N	Y	Attached	F-05
Standard Series for PCI Bus								
GP-IB(PCI)	Y	1.2Mbyte/sec (Max.)	N	Sender:2Kbyte Receiver:2Kbyte	Y	Y	Attached	F-07
GP-IB(PCI)L	Y	120Kbyte/sec (Max.)	N	N	N	Y	Attached	F-07

●Compact PCI Bus

Name	IEEE-488.2	Speed [bps]	Bus Master Transmision Function	FIFO Memory	Bus Analyzer Function	Software		Page
						ACX-PAC(W32)	API-PAC(W32)	
High performance F Series								
GP-IB(CPCI)F	Y	1.5Mbyte/sec (Max.)	Y	Sender:2Kbyte Receiver:2Kbyte	Y	Y	Attached	F-06

●PC Card

Name	IEEE-488.2	Speed [bps]	Bus Master Transmision Function	FIFO Memory	Bus Analyzer Function	Software		Page
						ACX-PAC(W32)	API-PAC(W32)	
High performance F Series								
GP-IB(CB)F	Y	1.5Mbyte/sec (Max.)	Y	Sender:2Kbyte Receiver:2Kbyte	Y	Y	Attached	F-06
Standard Series								
GP-IB(PM)	Y	50Kbyte/sec (Max.)	N	N	N	Y	Attached	F-07

●ISA Bus

Name	IEEE-488.1	IEEE-488.2	Speed [bps]	Bus Master Transmision Function	FIFO Memory	Bus Analyzer Function	Software		Page
							ACX-PAC(W32)	API-PAC(W32)	
Standard Series									
GP-IB(PC)F	Y	Y	Using FIFO: 1Mbyte/sec (Receiver) 700Kbyte/sec (Sender)	N	Y	N	Y	Y	F-08
GP-IB(PC)L	Y	Y	FIFO: 120Kbyte/sec (Max.) DMA: 400Kbyte/sec (Max.)	N	N	N	Y	Y	F-08
GP-IB(PC)	Y	N	DMA: 300Kbyte/sec (Max.)	N	N	N	Y	Y	F-08

●Media Converter

Name	Interface Type	Channels	Page
GPIB Media Converter			
RP-GPIB(FIT)GY	GPIB⇔Ethernet (Wire LAN)	1	

Lineup / Basic Knowledge

Product Lineup /Basic Knowledge

Features

Low Profile PCI

PCI

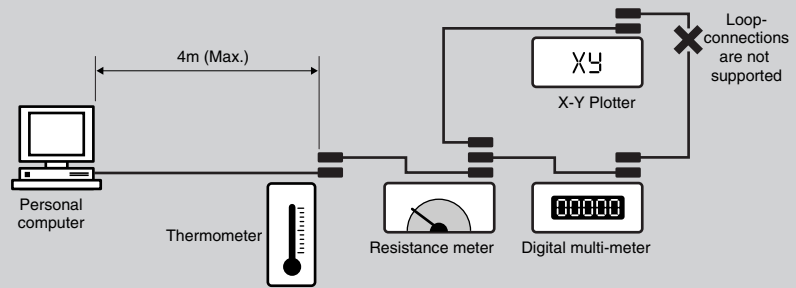Compact PCI

PC Card

Standard
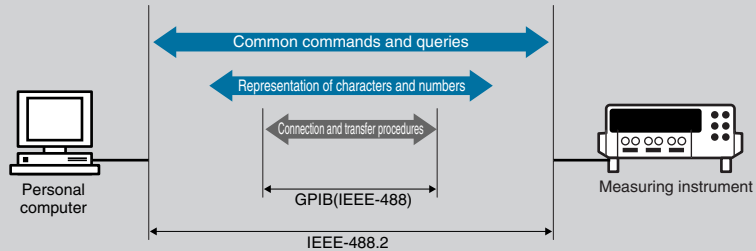
PCI

PC Card

ISA

1. GPIB communication standards

GPIB (IEEE-488)

GPIB (General Purpose Interface Bus) was originally developed by Hewlett Packard as an in-house communication standard for use as an interface between computers and measurement devices. HP-IB, as it was known, was later approved by IEEE (Institute of Electrical and Electronic Engineers) and became a global communications standard. It is also referred to as IEEE-488, IEEE-IB and IEC625, but all are primarily the same as HP-IB.

4m (Max.)

Loop-connections are not supported

X-Y Plotter

Personal computer

Thermometer

Resistance meter

Digital multi-meter

IEEE-488.2

IEEE-488.2 is a host protocol of IEEE-488.1, and provides additional rules concerning character data grammar and numeric representation. It also provides common commands and queries that can be used as supplements to the transfer procedure stipulated in IEEE-488.1. IEEE 488.2-compliant interface boards are backwards compatible and satisfy all standard communication requirements of IEEE-488.1.

Common commands and queries

Representation of characters and numbers

Connection and transfer procedures

Personal computer

GPIB(IEEE-488)

Measuring instrument
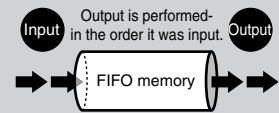
IEEE-488.2

Functions

Bus analyzer
Provides analysis of the data flowing on the line and monitors the status of each signal.

FIFO memory
FIFO - "First In, First Out"
A board equipped with FIFO memory is capable of transmitting and receiving bulk data at high speeds.

Input   Output is performed-in the order it was input.   Output

FIFO memory

F-03

GPIB

Product Lineup / Basic Knowledge

High-Performance F Series

Features

Low Profile PCI

PCI

Compact PCI

PC Card

Standard

PCI

PC Card

ISA

F-04

GPIB

[GPIB] Features of GPIB F Series – High-grade / High-speed

CONTEC's new series of GPIB communication boards are IEEE-488.2 compliant and have a number of features including bus master high-speed data transmission and GPIB bus line analysis.

....

● Low Profile PCI   : GP-IB(LPCI)F
● PCI   : GP-IB(PCI)F, GP-IB(PCI)FL
● Compact PCI   : GP-IB(CPCI)F
● PC Card (CardBus)   : GP-IB(CB)F

The major features and functions of this series include:

1. IEEE-488.2 - compliant
Compliant with IEEE-488.2, they are capable of controlling a variety of external devices that satisfy the standard.

2. 1.5Mbyte/sec - Maximum transfer speed
CONTEC's GPIB F Series are capable of communicating at a maximum transfer speed of 1.5Mbyte/sec.

3. Bus master transfer
Bus master transfer allows bulk data to be transferred between the computer and board without placing any additional load on the CPU.

4. 2Kbyte FIFO for transmitting and receiving
2Kbyte FIFO is provided for handling transmissions and receptions, allowing high-speed transmission of small to large size data. High-speed transmission is also possible by using interface message with FIFO.

5. GPIB bus analyzer
F Series boards (excluding GPIB (PCI)FL), are capable of not only analyzing the signals that run along the GPIB bus but also of conducting a signal analysis while GPIB communication is in progress.

6. SPAS event (slave mode)
In addition to the conventional GPIB controller (μPD7210), event (SPAS) is also provided at the time of serial poll, offering a highly flexible system configuration.

7. High-precision timer
A high-precision application timer is built-in enabling precise time monitoring under Windows.

8. Reliable, long-term availability
These boards feature a high-speed GPIB controller (μPD7210 & up compatible) developed by CONTEC assuring reliable long-term availability.

9. Diagnosis program
System configuration support is provided by a diagnosis program. This program can conduct hardware operation checks (interrupt / I/O access) and basic communication tests (between PC & external device).

10. API-PAC(W32) Driver library
These drivers allow you to create Windows application software using various languages or programs that support Win32API functions (Visual Basic, Visual C/C++, LabVIEW).

11. Additional functions

● **Line monitoring**
These boards (excluding GP-IB(PCI)FL) can read the status of all control lines (IFC, ATN, SRQ, REN, EOI, DAV, NRFD and NDAC) and latch data as well as the status of data lines (DIO1 to DIO8).

● **FIFO communication**
FIFO memory can be used for transmission and reception. With control coming from the board side, high-speed communication is provided even with slower CPUs. The actual communication speed is equal to that of the slowest device utilizing the GPIB communication standard.

● **Analyzer**
With on-board memory, F Series boards (excluding GP-IB(PCI)FL) can analyze the status change for all lines on the GPIB cable (64K data-max). This can determine the point at which a failure occurred or check the data on the line. Accessed via analyzer utility (analyzer.exe).
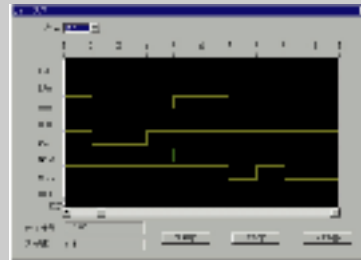
Cable & Accessories

GPIB Cable

PCN-T02   **2m**
PCN-T04   **4m**

Double Shield   UL

GPIB - compliant dedicated connection cable.
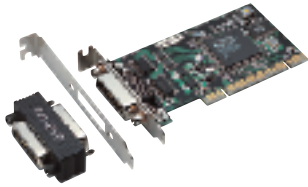
Highly reliable and noise-resistant

GPIB Connector Adapter
CN-GP/C

Convenient connector adapter for use when the PC slot has an extended depth or when there is interference with the cable from a neighboring board.

For options please see Page I-01 (Software).
Please see page 2-1 for PCI bus specifications.

Standard PCI / Low Profile PCI
High performance IEEE488.2/GPIB
GP-IB(LPCI)F

`PCI` `GPIB` `Bus Master` `C€`

Includes CN-GP/C [GPIB Connector Adapter]

Includes API-PAC(W32) [API Function Library]

FEATURES
- IEEE-488.1 / IEEE-488.2 -compliant
- 1.5Mbyte/sec transmission speed (max)
- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- GPIB Bus Analyzer function
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability.

F-05

GPIB

■ SPECIFICATIONS

Interface type	IEEE-488.1, IEEE-488.2
Number of channels	1
Access Speed	1.5Mbyte/sec (max)
Data type	8 parallel, 3 handshake lines
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more
Interrupts	1 interrupt request signal as INTA
I/O address	Any 128-byte boundary
Wiring Distance	4m (max)
Total cable length	20m (max)
Connectable devices	15 (max)

Power consumption	5VDC 400mA (max)
Connector	24-pin ribbon connector 555139-1 [AMP] or equivalent
PCI Bus / Dimensions (mm)	32bit, 33MHz, 5V or 3.3V*1 / 121.69(L) x 63.41(H)
Options	
Software	-
Accessories	CN-GP/C
Cables / Connector	PCN-T02, PCN-T04

*1: +5V power must be supplied from PCI bus slot.

High performance IEEE488.2 / GPIB
GP-IB(PCI)F

`PCI` `GPIB` `Bus Master` `C€`

Includes API-PAC(W32) [API Function Library]

FEATURES
- IEEE-488.1 / IEEE-488.2 -compliant
- 1.5Mbyte/sec transmission speed (max)
- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- GPIB Bus Analyzer function
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability.

■ SPECIFICATIONS

Interface type	IEEE-488.1, IEEE-488.2
Number of channels	1
Access Speed	1.5Mbyte/sec (max)
Data type	8 parallel, 3 handshake lines
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more
Interrupts	1 interrupt request signal as INTA
I/O address	Any 128-byte boundary
Wiring distance	4m (max)
Total cable length	20m (max)
Connectable devices	15 (max)

Power consumption	5VDC 400mA (max)
Connector	24-pin Ribbon Connector 555139-1 [AMP] or equivalent
PCI Bus / Dimensions (mm)	32bit, 33MHz, 5V or 3.3V*1 / 121.69(L) x 63.41(H)
Options	
Software	-
Accessories	CN-GP/C
Cables / Connector	PCN-T02, PCN-T04

*1: +5V power must be supplied from PCI bus slot.

Low cost High performance IEEE488.2 / GPIB
GP-IB(PCI)FL

`PCI` `GPIB` `Bus Master` `C€`

Includes API-PAC(W32) [API Function Library]

FEATURES
- IEEE-488.1 / IEEE-488.2 -compliant
- 1.5Mbyte/sec transmission speed (max)
- Bus Master provides high-speed transfer of bulk data without applying any additional load on the CPU
- 2Kbyte I/O (transmission and reception) FIFO
- Equipped with GPIB controller developed by CONTEC assuring reliable long-term availability.

■ SPECIFICATIONS

Interface type	IEEE-488.1, IEEE-488.2
Number of channels	1
Access Speed	1.5Mbyte/sec (max)
Data type	8 parallel, 3 handshake lines
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more
Interrupts	1 interrupt request signal as INTA
I/O address	Any 128-byte boundary
Wiring distance	4m (max)
Total cable length	20m (max)
Connectable devices	15 (max)

Power consumption	5VDC 400mA (max)
Connector	24-pin Ribbon Connector 555139-1 [AMP] or equivalent
PCI Bus / Dimensions (mm)	32bit, 33MHz, 5V or 3.3V*1 / 121.69(L) x 63.41(H)
Options	
Software	-
Accessories	CN-GP/C
Cables / Connector	PCN-T02, PCN-T04

*1: +5V power must be supplied from PCI bus slot.

For options, please see Page I-01 (Software).

High performance IEEE488.2 / GPIB
GP-IB(CPCI)F

NEW Compact **PCI** **GPIB** **Bus Master**

Includes API-PAC(W32) [API Function Library]

● IEEE-488.1 / IEEE-488.2 -compliant
● 1.5Mbyte/sec transmission speed (max)
● Bus Master provides transfer of bulk data with no additional load on the CPU
● 2Kbyte I/O (transmission and reception) FIFO
● GPIB Bus Analyzer function
● Equipped with GPIB controller developed by CONTEC assuring reliable, long-term availability

■ SPECIFICATIONS

Interface type	IEEE-488.1, IEEE-488.2
Number of channels	1
Access Speed	1.5Mbyte/sec (max)
Data type	8 parallel, 3 handshake lines
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more
Interrupts	1 interrupt request signal as INTA
I/O address	Any 128-byte boundary
Wiring distance	4m (max)
Total cable length	20m (max)
Connectable devices	15 (max)

Power consumption	5VDC 400mA (max)
Connector	24-pin Ribbon Connector
PCI Bus	555139-1 [AMP] or equivalent CompactPCI/3U x 4HP
Options	
Software	-
Accessories	CN-GP/C
Cables / Connectors	PCN-T02, PCN-T04

CardBus High performance IEEE488.2 / GPIB
GP-IB(CB)F

Card Bus **GPIB** **Bus Master** **CE**

Includes API-PAC(W32) [API Function Library]

● IEEE-488.1 / IEEE-488.2 -compliant
● 1.5Mbyte/sec transmission speed (max)
● Bus Master provides transfer of bulk data with no additional load on the CPU
● 2Kbyte I/O (transmission and reception) FIFO
● GPIB Bus Analyzer function
● Equipped with GPIB controller developed by CONTEC assuring reliable, long-term availability

■ SPECIFICATIONS

Interface type	IEEE-488.1, IEEE-488.2
Number of channels	1
Access Speed	1.5Mbyte/sec (max)
Data type	8 parallel lines, 3 handshake lines
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more
Interrupts	1 interrupt request signal as INTA
I/O address	Any 128-byte boundary
Wiring distance	4m (max)
Total cable length	20m (max)
Connectable devices	15 (max)

Power consumption	5VDC 400mA (max)
Length of an attached cable	2.0m
Card type	PC Card Standard CardBus Type II
Weight	250g (including cables)
Options	
Software	-
Accessories	CN-GP/C
Cables / Connectors	PCN-T02, PCN-T04

Media Converter
● Provides protocol conversion from GPIB (IEEE-488.1/IEEE-488.2) communication to Ethernet.
● With the included drivers installed on a Windows environment PC, devices can be remotely controlled as easy as if they were local
● Supported operating systems: Windows XP, 2000, Me, 98SE, 98

GPIB Communication Media Converter

GPIB ⇔ Ethernet (Wired LAN)
RP-GPIB(FIT)GY

NEW

■ SPECIFICATIONS

GPIB	
GPIB standard	IEEE-488.1, IEEE-488.2
GPIB mode	Master mode only
Number of channels	1
Access Speed	Sender: 18Kbyte/sec (max) Receiver: 10Kbyte/sec (max)
Data type	8 parallel, 3 handshake lines
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more

Wired LAN	
Ethernet Standard	IEEE802.3
Data Transmission Speed	10Mbps
Access Method	CSMA/CD
Transmission Format	Half Duplex / Full Duplex
Number of available ports	1 (10BASE-T)
Power Supply	DC5V±5%(attached AC Adapter)
Power consumption	0.6A (max)
Dimensions (mm)	50.4(W) x 64.7(D) x 94.0(H) (Exclusive of any protrusion)
Weight	190g

For options, please see Page I-01 (Software).
Please see page 2-1 for the PCI bus specifications.

IEEE488.2 / GPIB
GP-IB(PCI)

PCI GPIB Memory on board CE

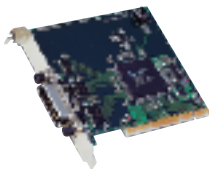Includes API-PAC(W32) [API Function Library]

FEATURES
● 1MB I/O FIFO provided to attain 1.2MB communication rate (max)
● IEEE-488.1 / IEEE-488.2 - compliant
● GPIB Bus Analyzer function can monitor bus line data
  Requires use of API-PAC(W32)
● Equipped with GPIB controller developed by CONTEC assuring
  reliable, long-term availability

■ SPECIFICATIONS

Interface type	IEEE-488.1, IEEE-488.2	Power consumption	5VDC 970mA (max)
Number of channels	1	Connector	24-pin Ribbon Connector 555139-1 [AMP] or equivalent
Access Speed	1.5Mbyte/sec (max)	PCI Bus /	32bit, 33MHz, 5V /
Data type	8 parallel, 3 handshake lines	Dimensions (mm)	121.69(L) x 106.68(H)
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more	Options	
Interrupts	1 interrupt request signal as INTA	Software	ACX-PAC(W32)BP
I/O address	Any 16-byte boundary	Accessories	CN-GP/C
Wiring Distance	4m (max)	Cables / Connectors	PCN-T02, PCN-T04
Total cable length	20m (max)		
Connectable devices	15 (max)		

IEEE488.2 / GPIB
GP-IB(PCI)L

PCI GPIB CE

Includes API-PAC(W32) [API Function Library]

FEATURES
● IEEE-488.1 / IEEE-488.2 - compliant
● Equipped with GPIB controller developed by CONTEC assuring
  reliable, long-term availability
● GPIB control timer enables high-precision time management
● Monitors GPIB bus line supporting IFC (latch function provided),
  SRQ and ATN

■ SPECIFICATIONS

Interface type	IEEE-488.1, IEEE-488.2	Power consumption	5VDC 300mA (max)
Number of channels	1	Connector	24-pin Ribbon Connector 555139-1 [AMP] or equivalent
Access Speed	120Kbyte/sec (Max.)	PCI Bus /	32bit, 33MHz, 5V /
Data type	8 parallel, 3 handshake lines	Dimensions (mm)	121.69(L) x 106.68(H)
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more	Options	
Controller Chip	CONTEC original FPGA (μPD7210C compatible)	Software	ACX-PAC(W32)BP Ver.2.(& up)
Interrupts	1 interrupt request signal as INTA		
I/O Address	Any 32-byte boundary	Accessories	CN-GP/C
Wiring distance	4m (max)	Cables / Connectors	PCN-T02, PCN-T04
Total cable length	20m (max)		
Connectable devices	15 (max)		

IEEE488.2 / GPIB
GP-IB(PCI)L

PC Card GPIB CE

Includes API-PAC(W32) [API Function Library]

FEATURES
● IEEE-488.1 and IEEE-488.2 - compliant
● Equipped with GPIB controller developed by CONTEC assuring
  reliable, long-term availability

■ SPECIFICATIONS

Correspondent PC	IBM PC/AT series and Compatible Computer (ISA), DOS/V Correspondent Computer	I/O address	Any 16-byte boundary
Number of channels	1	Power consumption	5VDC 100mA (max)
Interface type	IEEE-488.1, IEEE-488.2	Operating Conditions	0~50℃, 20~90%RH (no condensation)
Data type	8 parallel, 3 handshake lines	Length of an attached cable	2m
Access Speed	50Kbyte/sec (max)	Card type	Type II of PCMCIA Rel.2.0/JEIDA 4.1 upper
Signal logic	Negative Logic: <Low Level> 0.8V or less <High level> 2.0V or more	Weight	30g (including cables, total 70g)
Wiring distance	20m (max)	Options	
Cable length between devices	4m (max)	Software	ACX-PAC(W32)BP
Connectable devices	15 (max)	Accessories	CN-GP/C
Interrupts	One of IRQ3~7, 9~12, 14 or 15	Cables / Connectors	PCN-T02, PCN-T04

[GPIB | Standard] ISA

For options, please see Page I-01 (Software).

ISA	IEEE-488.2 GPIB Interface GP-IB(PC)L	IEEE-488.2 High speed GPIB Interface GP-IB(PC)F	DMA GPIB Interface GP-IB(PC)

SPECIFICATIONS

Interface type	IEEE488.1, IEEE488.2		IEEE-488.1
Channels	1		
Access Speed	[DMA mode] 400Kbyte/sec (Max.)	[DMA]Sender/Receiver: 60Kbyte/sec, [FIFO]Sender:700Kbyte/sec, Receiver:1Mbyte/sec	[DMA]Sender/Receiver: 300Kbyte/sec
Data type	8 parallel, 3 handshake lines		
Signal logic	Low level: 0.8V or less, High level: 2.0V or more (Negative logic)	TTL-level (Negative logic)	
DMA channels	CH1~CH3 (software selectable)	CH1~CH3 (jumper selectable)	
Controller chip	CONTEC original FPGA (μPD7210C compatible)	μPD7210 or equivalent	
Interrupts	1 interrupt request signal as INTA (software selectable)	One of IRQ 3~7, 9~12, 14 or 15 (rotary SW selectable)	One of IRQ 3~7, 9 (jumper selectable)
I/O address	Any 2-byte boundary	Any 17-byte boundary	Any 9-byte boundary
Wiring distance	4m (max)		
Total cable length	20m (max)		
Connectable devices	15 (max)		
Power consumption	5VDC 350mA (max)	5VDC 750mA (max)	5VDC 400mA (max)
Connector	555139-2(AMP)	57LE-20240-77C0D35G [DDK] or equivalent	
Bus / Dimension (mm)	AT Bus / 163.0(L) x 107.0(H)	AT Bus / 163.0(L) x 122.0(H)	XT Bus / 116.0(L) x 107.0(H)
Options	Software	ACX-PAC(W32)BP, API-PAC(W32)		
	Accessories	CN-GP/C		
	Cables / Connectors	PCN-T02, PCN-T04		
CE mark	○	○	○