

# FOUNDATION Fieldbus Hardware and Software

## NI USB-8486, NI PCI-FBUS/2, NI PCMCIA-FBUS Series **NEW!**

- H1 (31.25 kbits/s) interface
- 1 or 2 ports
- Embedded FOUNDATION Fieldbus communications-stack software
- Transformer-isolated Fieldbus connection
- Plug-and-play feature (USB-8486 and PCI-FBUS/2)

### Operating Systems

- Windows Vista (32-bit)/XP/2000

### Recommended Software

- LabVIEW
- NI-FBUS Configurator
- NI-FBUS Monitor
- Lookout

### Other Compatible Software

- C/C++
- Visual Basic

### Driver Software (included)

- NI-FBUS Communications Manager



## PC Host Interfaces

NI USB-8486, PCI-FBUS/2, and PCMCIA-FBUS devices are H1 (31.25 kbits/s) interfaces that connect FOUNDATION Fieldbus devices to standard desktop, industrial, and notebook PCs. The USB-8486 is available in a one-port configuration, the PCMCIA-FBUS is available in one- and two-port configurations, and the PCI-FBUS/2 is available in a two-port configuration. With the PCI-FBUS/2, a desktop industrial computer can act as the host in a FOUNDATION Fieldbus system. Applications for the USB-8486 and PCMCIA-FBUS include portable data logging and in-the-field configuration and maintenance of devices and networks.

The connection to the Fieldbus network is transformer isolated. The USB-8486 and PCI-FBUS/2 use a standard DB-9 male D-Sub connector to attach to the Fieldbus network. The PCMCIA-FBUS connects to the Fieldbus network using a cable that provides two connectors—DB-9 male D-Sub connector and COMBICON-style pluggable screw terminals.

## NI-FBUS Software

The NI-FBUS Communications Manager (CM) handles communication between the communication stack and the user application without requiring in-depth knowledge of lower-level Fieldbus protocols. You can use this interface-independent software in human machine interface (HMI) and distributed control system (DCS) applications for data collection and control on the Fieldbus, including multiple processes and multithreaded applications. The NI-FBUS CM works with NI LabVIEW graphical programming and Lookout application software, as well as programming environments such as Microsoft Visual C++

and Visual Basic. With the NI-FBUS OPC server, you can connect to a broad range of application software packages including LabVIEW and Lookout as well as other HMI/SCADA applications with OPC client interfaces. NI-FBUS CM, included with each NI Fieldbus interface, features EDDL improvements and DDS 5.1.2 support.

The NI-FBUS Configurator is a stand-alone application that provides complete configuration tools for FOUNDATION Fieldbus segments. An easy-to-use, multiwindow interface guides you through all aspects of Fieldbus configuration, such as device tag configuration, function block linkages, loops, and execution schedules. The NI-FBUS Configurator dynamically detects devices connected to the Fieldbus, displays all its available function blocks, and automatically assigns tags. These function blocks are linked by graphically connecting the parameters of one block to another, with online error checking and device descriptions along the way. Plus, the Configurator generates the optimal execution schedule for function blocks and communication between function blocks, which you can then manually adjust to meet your specific control requirements.

The NI-FBUS Monitor is a stand-alone application used to monitor, debug, and analyze Fieldbus data packets. The NI-FBUS Monitor detects communication on the bus, capturing data packets that are passed between Fieldbus devices. These packets are timestamped and displayed in real time in active packet view of the NI-FBUS Monitor. The NI-FBUS Monitor can display data packets in decoded format or in hexadecimal format. It can also filter out unwanted data packets at three levels: the Fieldbus Data Link layer (FDL), the Fieldbus Messaging Specification layer (FMS), and Fieldbus addresses.

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## Specifications

### Power Requirements

Interface Card	Typical Current	Maximum Current
USB-8486	180 mA	300 mA
PCMCIA-FBUS	500 mA	750 mA
PCMCIA-FBUS/2	500 mA	750 mA
PCI-FBUS/2	820 mA	1 A

### Physical

#### Dimensions

USB	7.87 by 6.35 by 2.54 cm (3.1 by 2.5 by 1.0 in.)
PCI	10.7 by 17.5 cm (4.2 by 6.9 in.)
PCMCIA	8.56 by 5.40 by 0.5 cm (3.4 by 2.1 by 0.2 in.)

#### I/O connector

USB, PCI	DB-9 male per Fieldbus link
PCMCIA	DB-9 male and COMBICON terminal per Fieldbus link (cable included)

### Operating Environment

Ambient temperature	0 to 55 °C
Relative humidity	10 to 90%, noncondensing

### Storage Environment

Ambient temperature	-20 to 70 °C
Relative humidity	5 to 95%, noncondensing

### Noise Emission

USB, PCI, PCMCIA	FCC Class A Certified
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### Safety

This product meets the requirements of the following standards of safety for electrical equipment for measurement, control, and laboratory use:

- IEC 60950-1, EN 60950-1
- UL 60950-1, CSA 60950-1

### Electromagnetic Compatibility

This product meets the requirements of the following EMC standards for electrical equipment for measurement, control, and laboratory use:

- EN 61326 (IEC 61326): Class A emissions; Basic immunity
- EN 55011 (CISPR 11): Group 1, Class A emissions
- AS/NZS CISPR 11: Group 1, Class A emissions
- FCC 47 CFR Part 15B: Class A emissions
- ICES-001: Class A emissions

### CE Compliance

This product meets the essential requirements of applicable European Directives as follows:

- 2006/95/EC; Low-Voltage Directive (safety)
- 2004/108/EC; Electromagnetic Compatibility Directive (EMC)

### Online Product Certification

Refer to the product Declaration of Conformity (DoC) for additional regulatory compliance information. To obtain product certifications and the DoC for this product, visit [ni.com/certification](http://ni.com/certification), search by model number or product line, and click the appropriate link in the Certification column.

### Ordering Information

NI USB-8486	781160-01
NI PCI-FBUS/2	778573-01
NI PCMCIA-FBUS	777282-01
NI PCMCIA-FBUS/2	777282-02

### Accessories

Fieldbus Benchtop Power Supply Kit	777335-01
Cable for USB-8486	199566-02
Cable for PCMCIA-FBUS	183809-01
Cable for PCMCIA-FBUS/2	183904-01

### BUY NOW

For complete product specifications, pricing, and accessory information, call 800 813 3693 (U.S.) or go to [ni.com/fieldbus](http://ni.com/fieldbus).

# NI Services and Support



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## Hardware Services

### System Assurance Programs

NI system assurance programs are designed to make it even easier for you to own an NI system. These programs include configuration and deployment services for your NI PXI, CompactRIO, or Compact FieldPoint system. The NI Basic System Assurance Program provides a simple integration test and ensures that your system is delivered completely assembled in one box. When you configure your system with the NI Standard System Assurance Program, you can select from available NI system driver sets and application development environments to create customized, reorderable software configurations. Your system arrives fully assembled and tested in one box with your software preinstalled. When you order your system with the standard program, you also receive system-specific documentation including a bill of materials, an integration test report, a recommended maintenance plan, and frequently asked question documents. Finally, the standard program reduces the total cost of owning an NI system by providing three years of warranty coverage and calibration service. Use the online product advisors at [ni.com/advisor](http://ni.com/advisor) to find a system assurance program to meet your needs.

### Calibration Services

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