Produkt-Datenblatt

Technische Daten, Spezifikationen

Kontakt

Technischer und kaufmännischer Vertrieb, Preis-auskünfte, Angebote, Test-Geräte, Beratung vor Ort:

Tel: (0 81 41) 52 71-0
FAX: (0 81 41) 52 71-129

Aus dem Ausland:
Tel: ++49 - 81 41 - 52 71-0
FAX: ++49 - 81 41 - 52 71-129

E-Mail: sales@meilhaus.com

Internet:

www.meilhaus.com
Web-Shop:
www.MEsstechnik24.de | www.MEasurement24.com

Web Kontakt-Formular:

www.meilhaus.de/infos/Kontakt.htm

Per Post:

Meilhaus Electronic GmbH
Am Sonnenlicht 2
D-82239 Alling bei München

MEsstechnik fängt mit ME an.

www.meilhaus.com

ME MEILHAUS ELECTRONIC

4865B

GPIB-to-LAN Instrument Interface

DESCRIPTION

ICS's 4865B is a GPIB-to-LAN Instrument Interface that enables most instruments with an Ethernet interface to be controlled from a GPIB Bus. Using the 4865B, GPIB applications can transparently interface to a LAN-based instrument just as if it were a GPIB Instrument. The 4865B handles both VXI-11 compatible instruments and instruments that use raw socket protocol.

Applications include replacing obsolete or failed GPIB instruments with a newer instrument that may not have a GPIB interface or just adding a new LAN instrument to a GPIB bus system.

The 4865B solves the problem of how to interface an instrument with an Ethernet interface to the GPIB bus. The 4865B adds an IEEE-488.2 interface to VXI-11.3 compatible instruments that do not have a GPIB interface. IEEE-488 compatibility for LXI and raw socket instruments is determined by the instrument's capability.

VXI-11 Instruments

For VXI-11 compatible instruments, the 4865B converts 488.1 GPIB commands into the equivalent VXI-11 RPC and sends them to the instrument. Device messages are transparently sent to the instrument and instrument replies are returned to the GPIB Controller, just like a GPIB instrument.

Linking to the Instrument

The 4865B can automatically find the instrument if the instrument is either VXI-11 compatible, or is a LXI instrument or is an instrument that can perform the LXI 'VXI-11 Discovery' process. AutoFind can be used with a 'Static' IP or with

4865B GPIB-to-LAN Interface

the 'DHCP with AutoIP' setting when the 4865B is directly connected to the instrument. If the 4865B is set to DHCP with AutoIP and no server is present, it defaults to its AutoIP address of 169.254.48.65.

If AutoFind is enabled, the 4865B starts the instrument discovery process as soon as it completes its power turn-on and self-test sequence. When the 4865B finds an instrument that responds to the VXI-11 Discovery process, the 4865B uses that IP address for the instrument.

If the 4865B has been given a specific instrument's IP address, the 4865B only looks for an instrument at that address. Fixed IP addresses are recommended when the 4865B to instrument connection is over the company network, when multiple instruments may respond to the 4865B or for raw socket communication.

Raw Socket Instruments

For instruments that use raw socket protocol, the 4865B transparently transmits GPIB device messages to the instrument. Instrument responses are received from the instrument and outputted to the GPIB

- Adapts LAN instruments for GPIB Test Systems.
  Expands the number of instruments that will work in your GPIB test system.

- Transparently passes all commands to the companion LAN instrument.
  Runs from any GPIB system.

- AutoFind feature simplifies instrument linkage.
  Eliminates hunting and setting/changing IP addresses.

- Supports VXI-11 and raw socket communication.
  Works with most LAN instruments.

- Saves instrument replacement costs and helps reuse existing test software.
  Passes GPIB commands onto the LAN instrument.

- Easy configuration from any web browser
  Internal webserver with Welcome and Configuration pages

- Drop-in replacement for the original 4865.
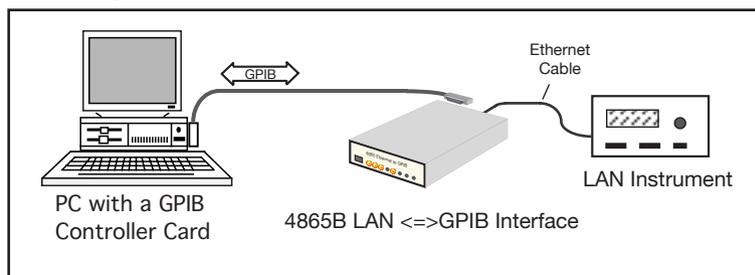 *Faster data transfer with faster processor.*

CE Approved

☑ RoHS Construction

Figure 1   4865B connects a LAN Instrument to the GPIB Bus

ICS ELECTRONICS
division of Systems West Inc.

Controller when the 4865B is addressed to talk. The 4865B can be set to use a specific raw socket port number, to recognize an EOS character to terminate the instrument responses and to test the instrument's IDN response. If the instrument supports the VXI-11 Discovery method, the 4865B can AutoFind it. The 4865B can also convert IEEE-488.1 GPIB Commands such as GET, SDC, etc. and GPIB events such as IFC or local/remote into a user specified strings which are sent to the instrument to replace the GPIB command or event. If SRQs and Serial Polls are enabled, the 4865B performs a background check of the instrument's Status Register with the *STB? query to create a virtual Status Byte Register and asserts an SRQ on the GPIB bus is a Service Request is detected.

Minimal Programming Changes

In most cases, existing programs that can control the instrument in its LAN environment or that ran the older version of the instrument through its GPIB interface can be used with the 4865B and the new instrument. The only requirement is that the new instrument must understand the existing commands. The 4865B works with any IEEE-488.2 compatible GPIB controller and can be used with LabVIEW, VEE, Visual Basic and C language programs. The 4865B and VXI-11.3 instruments support most 488.1 GPIB commands except for Remote with Lockout and Local with Lockout.

When used with a raw socket instrument, the combination will have reduced GPIB capability that can be augmented when configuring the 4865B. Depending upon the instrument's capability, the user can enable AutoFind, IDN queries, IDN confirmation, SRQ generation and Serial Polling. The 4865B can also be set to send the instrument substitute command strings for Device Trigger, Device Clear, GTL, Local/Remote, IFC received and power turn-on or reset.

Connections

While the 4865B is normally used in a back-to-back connection with its companion instrument as shown in Figure 1, it can be connected to the instrument in other ways. Figure 2 shows the 4865B connected to the instrument through a hub or switch. This is a typical lab bench connection. It lets user configure the 4865B through the hub while developing the GPIB program.

The 4865B instrument connection can be expanded to across the company network as shown in Figure 3 or further if the instrument is VXI-11 compatible. The 4865B provides standard GPIB control over a the instrument no matter where it is located.
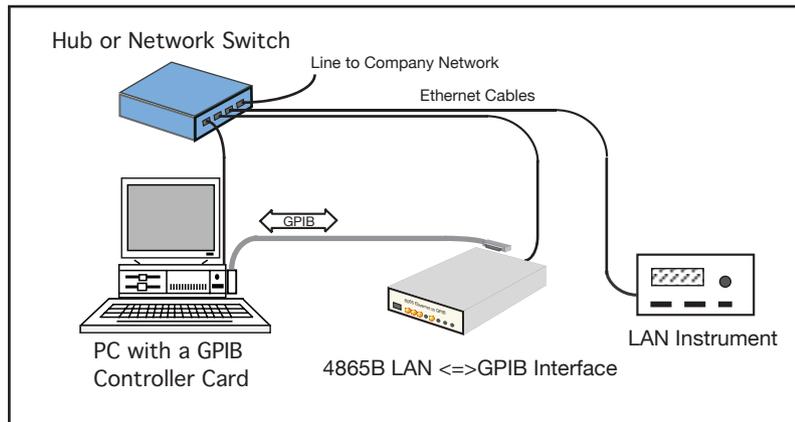

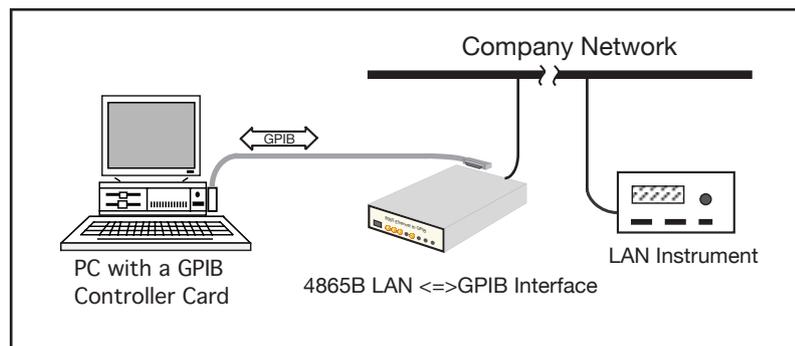**Figure 2   4865B Instrument Hub Connection**

Figure 3   4865B Instrument Network Connection

Setup & Installation

The 4865B is very easy to install. Plug the 4865B into a network access point adjacent to your computer as shown in Figure 2 or use an Ethernet cable to connect the 4865B directly to a PC's network port. Launch a web browser and point it to the 4865B's default AutoIP address of 169.254.48.65. The 4865B's Welcome page provides all of the information about the 4865B's current settings. If the 4865B is being used with a VXI-11 compatible instrument that has an AutoIP address, no configuration is required.

Else, select the Configuration Page where you can select a static IP address or DHCP with AutoIP, change the 4865B's GPIB address, enable AutoFind or set a fixed IP address for the companion instrument, and select the instrument protocol (VXI-11 or raw socket). For raw socket instruments, you can enter strings that the 4865B will send to the instrument in place of GPIB Commands or events. Set the remaining parameters, save the settings, reboot and the 4865B is ready to be connected to the instrument and to the GPIB bus.

A rear panel LAN Reset button is provided to reset the 4865B's network settings to the factory default settings in case the 4865B's configuration needs to be reset.

4865B Differences

The 4865B has a faster processor and faster Ethernet interface than the original 4865. In addition, the 4865B adds support for raw socket instruments. The result is a 2.5x to 10x faster interface depending upon the command, the protocol and the companion instrument.

4865B SPECIFICATIONS

Supported Standards

IEEE 488.1 Capabilities:

The 4865B's IEEE-488.1 capabilities are determined by the communication link to the instrument. For VXI-11 instruments they are:

AH1, SH1, T6, L4, SR1, RL2, PP0, DC1, DT1, C0 and E2

E2 Drivers incorporate power up/down protection.

4865B Address   0 to 30 [4]

488 Bus Performance

Long term GPIB transfer rates are limited by the LAN data transfer rate, the Client-computer performance, the GPIB controller and the LAN instrument or device. Internal delays vary with the amount of data transferred and 4865B's activity when the message was received.

Short term transfer rates:

GPIB to 4865B   >260 kbyte/sec
4865B to GPIB   >180 kbyte/sec

Command times:
*IDN? query   17 ms typical (VXI-11)
*IDN? query   3 ms typical (raw socket)
*CLS command 8.5 ms typical (VXI-11)

Supported GPIB (IEEE-488.1) Commands

Either converted into the equivalent VXI-11 rpc or replaced by a user designated string.

Device Clear
Device Trigger
Local
Remote
Serial Poll

VXI-11 Capabilities

Fully VXI-11.3 compliant
VXI-11.3   Client side
Channel types   Data channel
Instrument links 64 max
Locking   By instrument link

RPC Protocol

Conforms to ONC RPC Version 2

Ethernet Interface

Type   IEEE 802.3 compliant
                  Auto-MDIX
Speeds   10BaseT (10 Mb/s)
                  100BaseT(100 Mb/s)
IP Address   Static or DHCP (AutoIP)
Factory setting   DHCP with AutoIP.
                  Defaults to 169.254.48.65 if
                  no DHCP server response.
Net Mask   255.255.0.0
Interface name   inst0

Companion Instrument

The 4865B supports a single instrument that is VXI-11.3 compatible or that uses raw sockets.

System Requirements

Computer with an IEEE-488.2 GPIB Controller. Device messages must be terminated with the IEEE-488.2 new line terminator (linefeed with EOI asserted) or with just EOI asserted if the LAN instrument does not require a terminator.

Computer with an IEEE 802.3 LAN interface and a web browser for configuring the 4865B.

Internal WebServer

The internal WebServer provides HTML web pages for viewing and setting the 4865B's configuration.

Controls and Indicators

CONTROLS

Power   Front-panel switch
LAN Reset   Rear-panel push-button

LEDs

PWR   Power on
LAN   Unit connected to an active network or network device.
ACT   Transferring messages to/from the network.
RDY   Blinks when looking for an instrument. Steady on when linked to an instrument
TALK   4865B is addressed to talk
LSTN   4865B is addressed to listen
SRQ   4865B asserting SRQ on the GPIB bus.
ERR   Unit has detected an error

Physical

Size 7.45" L x 5.57" W x 1.52" H
      (18.92 cm L x 14.15 cm W x 3.86 cm H)

Weight
  Module   1.6 lbs. (0.73 kg.)
  Shipping   3 lbs. (1.4 kg)

Construction   RoHS Compliant

Temperature
  Operating   -10 °C to +65 °C
  Storage   -40 °C to + 70 °C

Humidity   0-90% RH non-condensing

Shock/Vibration   Normal handling

Connectors
  GPIB   GPIB 24 pin ribbon with metric studs.
  Ethernet   RJ-45

Power   9 to 32 Vdc @ 4 VA

RFI/EMI   CE Certified

EEC Standards EN 55024:2010 and EN 55022:2010

Firmware   Field upgradable

Included Accessories

Instruction Manual
CD-ROM with support information.
LAN Crossover Cable.
UL/CSA/VDE approved AC power Adapters provided for:
 US - 115±10% Vac, 60 Hz (std.)
 -U - 115/230 ±10% with plugs for US, UK, Europe, Japan, Australia and China

The VXI-11 Specification is available from the VXI Consortium at http://www.vxibus.org/specs.html?q=node/206 or from ICS's website at http://www.icselect.com/vxi_spec.html

ORDERING INFORMATION

	Part Number
Ethernet - GPIB Controller with 115 VAC adapter, Manual and CD-ROM	4865B
Ethernet - GPIB Controller with 115/230 VAC adapter, universal plug set, Manual and CD-ROM	4865B-U
GPIB Accessary Cables	See separate data sheet
Rack Mounting Kits (holds one or two 4865Bs). See separate data sheet	Single - 114210, Dual - 114211