

Keysight N8262A P-Series Modular Power Meter

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For warranty service or repair, this product must be returned to a service facility designated by Keysight. For products returned to Keysight for warranty service, the Buyer shall prepay shipping charges to Keysight and Keysight shall pay shipping charges to return the product to the Buyer. However, the Buyer shall pay all shipping charges, duties, and taxes for products returned to Keysight from another country.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate maintenance by the Buyer, Buyer-supplied products or interfacing, unauthorized modification or misuse, operation outside of the environmental specifications for the product, or improper site preparation or maintenance.

The design and implementation of any circuit on this product is the sole responsibility of the Buyer. Keysight does not warrant the Buyer's circuitry or malfunctions of Keysight products that result from the Buyer's circuitry. In addition, Keysight does not warrant any damage that occurs as a result of the Buyer's circuit or any defects that result from Buyer-supplied products.

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









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Safety Symbols

The following symbols on the instrument and in the documentation indicate precautions which must be taken to maintain safe operation of the instrument.

	Direct current (DC).		Alternating current (AC).
	Off (mains supply).		On (mains supply).
	Caution, risk of electric shock.		Caution, risk of danger (refer to this manual for specific Warning or Caution information).
	Earth (ground) terminal.		Frame or chassis (ground) terminal.
	Protective earth (ground) terminal.		Equipment protected throughout by double insulation or reinforced insulation.
	Both direct and alternating current.		Out position of a bi-stable push control.
	Caution, hot surface.		In position of a bi-stable push control.
	This symbol indicates the operating switch for 'Stand-by' mode. Note, the instrument is NOT isolated from the mains when the switch is pressed. To isolate the instrument, the mains coupler (mains input cord) should be removed from the power supply.		Three-phase alternating current.
	Equipotentiality.		

Safety Considerations

Read the information below before using this instrument.

The following general safety precautions must be observed during all phases of operation, service, and repair of this instrument. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards for design, manufacture, and intended use of the instrument. Keysight Technologies assumes no liability for the customer's failure to comply with these requirements.

General Safety Information

This is a Safety Class I instrument (provided with a protective earthing ground, incorporated in the power cord). The mains plug shall only be inserted in a socket outlet provided with a protective earth contact. Any interruption of the protective conductor inside or outside of the instrument is likely to make the instrument dangerous. Intentional interruption is prohibited.

WARNING

- DO NOT operate the product in an explosive atmosphere or in the presence of flammable gases or fumes.
 - DO NOT use repaired fuses or short-circuited fuseholders: For continued protection against fire, replace the line fuse(s) only with fuse(s) of the same voltage and current rating and type.
 - DO NOT perform procedures involving cover or shield removal unless you are qualified to do so: Operating personnel must not remove equipment covers or shields. Procedures involving the removal of covers and shields are for use by service-trained personnel only.
 - DO NOT service or adjust alone: Under certain conditions, dangerous voltages may exist even with the equipment switched off. To avoid dangerous electrical shock, service personnel must not attempt internal service or adjustment unless another person, capable of rendering first aid and resuscitation, is present.
 - DO NOT operate damaged equipment: Whenever it is possible that the safety protection features built into this product have been impaired, either through physical damage, excessive moisture, or any other reason, REMOVE POWER and do not use the product until safe operation can be verified by service-trained personnel. If necessary, return the product to a Keysight Technologies Sales and Service Office for service and repair to ensure the safety features are maintained.
 - DO NOT substitute parts or modify equipment: Because of the danger of introducing additional hazards, do not install substitute parts or perform any unauthorized modification to the product. Return the product to a Keysight Technologies Sales and Service Office for service and repair to ensure the safety features are maintained.
-

CAUTION

- Applying excessive voltage or overloading the device will cause irreversible damage to the circuitry.
 - Use the device with the cables provided.
-

General Specifications

Environmental conditions


The N8262A is designed for indoor use and in an area with low condensation. The table below shows the general environmental requirements for this instrument.

Environmental condition	Requirement
Temperature	Operating condition
	– 0 °C to 55 °C
	Storage condition
	– –20 °C to 70 °C
Humidity	Up to 95% relative humidity RH to +40°C
Altitude	3000 m (9,840 ft.)
Pollution degree	2
EMC	Meets EN55011: 1991 (Group 1, Class A)

Physical specifications

Net weight	≤ 3.5 kg (7.7 lb) approximately
Shipping weight	≤ 7.7 kg (17.0 lb) approximately
Dimensions	44.2 mm H x 212.6 mm W x 420.3 mm D (1.75 in x 8.5 in x 19.63 in)

Power requirements

	Line power	Input voltage range	100 – 120 V \pm 10% 220 – 240 V \pm 10%
		Input frequency range	50 – 60 Hz \pm 10% (all voltages) 400 – 440 Hz (100 – 120 V only)
		Power requirement	50 VA (30 Watts) (not exceeding 75 VA (50 Watts))

Cooling Requirements

To provide adequate cooling, and air gap of approximately 75mm (3ins) should be maintained around the vented sections of the instrument.

Use

This instrument is designed for indoor use only.

WARNING

- Appliance coupler (mains input power cord) is the power disconnect device. Do not position the instrument such that access to the coupler is impaired.
- For continue protection against fire hazard, replace the line fuse only with the same type and line rating (250V, F3.15A, 20mm fast blow fuse with high breaking capacity, Keysight Part Number 2110-0957). The use of other fuses or materials is prohibited.
- No operator serviceable parts inside. Refer servicing to qualified personnel. To prevent electrical shock do not remove covers
- If this instrument is not used as specified, the protection provided by the equipment could be impaired. This instrument must be used in a normal condition only (in which all means for protection are intact).

CAUTION

This instrument is designed for use in Installation Category II and Pollution Degree 2 per IEC61010 and 60664 respectively.

Compliance and Markings

Electromagnetic Compatibility (EMC)

This product complies with the essential requirements of the following applicable European Directives, and carries the CE marking accordingly:

- Low Voltage Directive (73/23/EEC, amended by 93/68/EEC)
- EMC Directive (89/336/EEC, amended by 93/68/EEC)

This product conforms with the following product standards:

EMC Standard	Limit
IEC 61326-1:1997+A1:1998/EN 61326-1:1997+A1:1998CISPR 11:1990/EN 55011:1991	Class A, Group 1

The conformity assessment requirements have been met using the technical construction file route to compliance, using EMC test specifications EN 55011:1991 (Group 1, Class A). In order to preserve the EMC performance of the product, any cable which becomes worn or damaged must be replaced with the same type and specification.

The product also meets the following EMC standards:




- Australia/New Zealand: AS/NZS 2064.1
- Canada: ICES-001:1998

Safety

This product conforms to the requirements of the following safety standards:

- EN61010-1: 2001 / IEC 61010-1:2001
- Canada: CSA C22.2 No. 61010-1:2004
- USA: UL: 61010-1:2004

Regulatory Markings

 <p>The CSA mark is a registered trademark of the Canadian Standards Association.</p>	<p>ICES/NMB-001</p> <p>ICES/NMB-001 indicates that this ISM device complies with the Canadian ICES-001. Cet appareil ISM est conforme a la norme NMB-001 du Canada.</p>
 <p>This instrument complies with the WEEE Directive (2002/96/EC) marking requirement. This affixed product label indicates that you must not discard this electrical or electronic product in domestic household waste.</p>	 <p>The RCM mark is a registered trademark of the Australian Communications and Media Authority.</p>

Regulatory Information

Sound Emission

Herstellerbescheinigung

Diese Information steht im Zusammenhang mit den Anforderungen der Maschinenlarminformationsverordnung vom 18 Januar 1991.

Sound Pressure LpA < 70 dB.

Am Arbeitsplatz.

Normaler Betrieb.

Nach DIN 45635 T. 19 (Typprüfung).

Manufacturers Declaration

This statement is provided to comply with the requirements of the German Sound DIN 45635 T. 19 (Typprüfung).

Sound Pressure LpA < 70 dB.

At operator position.

Normal operation.

According to ISO 7779 (Type Test).

Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC

This instrument complies with the WEEE Directive (2002/96/EC) marking requirement. This affixed product label indicates that you must not discard this electrical or electronic product in domestic household waste.

Product category:

With reference to the equipment types in the WEEE directive Annex 1, this instrument is classified as a “Monitoring and Control Instrument” product.

The affixed product label is as shown below.



Do not dispose in domestic household waste.

To return this unwanted instrument, contact your nearest Keysight Service Center, or visit <http://about.keysight.com/en/companyinfo/environment/takeback.shtml> for more information.

Sales and Technical Support

To contact Keysight for sales and technical support, refer to the support links on the following Keysight websites:

- www.keysight.com/find/N8262A
(product-specific information and support, software and documentation updates)
- www.keysight.com/find/assist
(worldwide contact information for repair and service)

Responsibilities of the Customer

The customer shall provide:

- Access to the products during the specified periods of coverage to perform maintenance
- Adequate working space around the products for servicing by Keysight personnel.
- Access to and use of all information and facilities determined necessary by Keysight to service and/or maintain the products. (Insofar as these items may contain proprietary or classified information, the customer shall assume full responsibility for safeguarding and protection from wrongful use.)
- Routine operator maintenance and cleaning as specified in the Keysight Operating and Service Manuals.
- Consumables such as replacement fuses, etc.

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This chapter will take you through the process of installing the required software and drivers, configuring the LAN Interface as well as connecting to the N8262A P-Series modular power meter.

Welcome

Welcome to the Keysight Technologies P-Series modular power meter's Installation Guide. This guide shows you how to:

- physically check the modular power meter
- installing the software and instrument drivers
- switch on the power meter
- connect it to P-Series power sensor
- connect it to 8480 or E- Series power sensor
- perform a zero and calibration routine on 8480 or E-Series power sensor
- make connection to the rear panel
- make connection to the front panel
- configuring the modular power meter
- use the Keysight IO Libraries Suite to configure the remote programming interface
- use Web browser to configure the remote programming interface
- attach the rack mounting kit (part number N8262A-908 and N8262A-909)

Documentation Information

This guide is only part of the information supplied. The documentation consists of:

- The Installation Guide (this book) – Shows you how to check your modular power meter, install software and instrument drivers, configure it, switch it on, connect it to a Keysight power sensor and connect it using Power Meter GUI application. This information is presented in English and Japanese.
- The User's Guide – Shows you how to operate your modular power meter from the soft front panel to make measurements using the Keysight P-Series, E-Series E9300, E-Series E4400, and 8480 Series power sensors. You can find the User's Guide as an Adobe acrobat PDF (Portable Document Format) file on the supplied CD-ROM in English and Japanese.
- The Programming Guide – Shows you how to operate your modular power meter using the remote interfaces. You can find the Programming Guide as an Adobe Acrobat PDF file on the supplied CD-ROM. This guide is supplied in English language only.

Printed Guides are available by ordering the following options:

- English language User's Guide –ABA.
- Japanese language User's Guide –ABJ.

NOTE

- A printed Programming Guide is also supplied with Option ABJ but in English language only. For Option ABA, the printed Programming Guide is available only by ordering Option OBF.
 - *Connectivity Guide* is supplied as an Adobe Acrobat PDF file on the *Keysight IO Libraries Suite* CD-ROM. This is to help you configure your P-Series modular power meter using the LAN remote connections.
-

What You will Find in this Guide

This guide is divided into the following sections:

- Installation Steps:
 - Step 1. Unpacking the P-Series Modular Power Meter 35
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For more detailed operating information, refer to the *Keysight N8262A P-Series Modular Power Meter User's Guide* and *Keysight N8262A P-Series Modular Power Meter Programming Guide*.

Networking Terms

The definitions below will help you become familiar with their usage in “[Step 4. Remote Interface Configuration](#)” on page 51.

Local Area Network (LAN)

A LAN is a network of devices connected to each other using LAN cables and network switches.

Network switch

A network switch is used to connect several devices together to form a LAN. It has several LAN ports that LAN cables can be connected to.

Router

A router can be used to transfer messages between two (or more) networks. Routers are often used to connect a private network to a larger network (for example, a company network, or the internet)

Internet Protocol address (IP address)

An IP address is a unique number assigned to the device which is used to send or receive data to and from other devices.

The most common IP Address are IP version 4. These addresses are usually written as 4 numbers (from 1 to 255) separated by periods. 192.168.1.1, 169.254.12.34 and 141.121.84.241 are all IP addresses.

A device's IP address can be assigned to it manually (See [Static IP address](#)), assigned to it by another computer (See [Dynamic Host Configuration Protocol \(DHCP\)](#)) or can be self-determined (See [Auto-IP](#))

IP address conflict

An IP address conflict occurs when two devices attempt to join the same network with the same IP address. When this happens, it may become impossible to communicate with either instrument over the LAN. Using dynamically assigned addresses can help to avoid this problem. (See [Dynamic Host Configuration Protocol \(DHCP\)](#) or [Auto-IP](#))

Static IP address

We say that a device uses a static IP address when it always attempts to use the same IP address everytime it turned on. Using a static IP address can be useful if you always want to communicate with the instrument using the same IP address every time it is turned on. However, using a static IP address can lead to IP address conflict, if two instruments are given the same static IP address.

Dynamic Host Configuration Protocol (DHCP)

In order to avoid **IP address conflicts**, and to simplify the process of connecting devices to network, larger networks will sometimes use DHCP to assign IP addresses to devices.

When a device is configured to use DHCP, it attempts to communicate with the DHCP server when it is powered on. If it is able to communicate with the server, it ask the server for the correct network settings (including **IP Address**, **Subnet Mask**, **Gateway**, and so on) to communicate on the network. if the device is unable to communicate with the DHCP server, it will either go into a failure mode, or (if configured to do so) it will attempt to assign itself an IP address. (See [Auto-IP](#))

Because the IP address assigned to an instrument can be different every time it is powered on, you cannot remember the IP address and expect to always be able to use that address to communicate with the instrument. However, network using DHCP will often also use **DNS**, which can allow you to communicate with a device using a hostname that will stay the same, even if the device's IP address has changed.

DHCP server

The DHCP server respond to device's requests for network settings. it is responsible for ensuring that no two devices attempt to use the same IP address.

Hostname

A hostname is a unique name that can be used to communicate with a device on a network. Hostnames are commonly used in situations where devices have their addresses assigned to them using **DHCP**.

Hostname can only be found if there is some way that the network can keep track of which hostname corresponds to an instrument. This is usually done using **DNS**.

Network without DNS have no way to associate a hostname with a device. This is often true of small private networks (for example, a network consisting of two devices connected via a **cross-over cable**, or through a simple router). In these cases, it is probably easiest to use **static IP address**.

Domain Name Server (DNS)

A domain name server allows someone to communicate with a device using the device's hostname. When a device joins a network, it tells the domain name server its hostname and its IP address. When a hostname is used, the domain name server is asked which IP address the name correspond to, and that address is then used to communicate with the instrument.

If the IP address of the device changes, it can request that its entry in the domain name server be updated. Any following requests that use the same hostname as before, will be sent to the new address.

Auto-IP

Auto-IP is a method used by a device to self select an IP address. When a device is using Auto-IP, it randomly selects an address of the form 169.254.X.X. If another device is already using that address, it selects another random address, and continues to select new addresses until it finds one that is not being used by any other instrument.

Cross-over cable

A cross-over cable can be used to connect two devices directly to each other, without a **network switch** or any other hardware in-between. It is common to use static IP address when devices are connected using a cross-over cable, because there is no **DNS**, and there are no other devices on the network that could cause an **IP address conflict**.

Private network

All of the devices on a private network use IP addresses that have been reserved for private use.

The most common private network IP addresses are of the form 192.168.X.X and 169.254.X.X. Devices which have been assigned a private network IP address cannot generally communicate with other devices outside of their private network. Many devices can use the same IP address (for example, 192.168.1.1) as long as they each belong to different private networks.

Subnetwork (Subnet)

A subnet is a group of devices which is a subset of a larger group of devices. Breaking a large network down into many smaller subnets can make the network easier to manage, and can decrease the amount of traffic that gets sent between devices.

One thing a device on a network can do is send a message to all of the other devices on its subnet. If a network consists of only a single subnet, then that message would have to be sent to every device on the network. However, if the network has been broken down into subnets, then the message would only be sent to other devices on the same subnet as the device is sending message.

Subnet mask

A subnet mask is used to specify how a network is broken down into subnets. Subnet mask look like IP addresses; they are of the form x.x.x.x. Common subnet masks include 255.0.0.0, 255.255.0.0 (use this for private networks), and 255.255.255.0.

When written in binary, subnet masks usually become several 1s followed by several 0s.

For example:

255.255.0.0

would become

11111111.11111111.00000000.00000000.

The subnet mask can be used with a device's IP address to determine the address of the subnet that the device is on. To do this, you perform a logical AND of the subnet mask and the IP address. (A logical AND combines two binary numbers into a single number. The new number contains 1s in positions where both numbers had 1s, and 0s everywhere else.)

For example, if a device has an IP address of 192.168.12.34 and the subnet mask 255.255.255.0 then:

192. 168. 12. 34 = 11000000. 10101000. 00001100. 00100010

255. 255. 255. 0 = 11111111. 11111111. 11111111. 00000000

Subnet Address = 11000000. 10101000. 00001100. 00000000

192 168 12 00

The device is on the subnet with the 192.168.12.0 address.

A device with the IP address 192.168.12.100 is on the same subnet as the above device with the IP address 192.168.12.34 (the 192.168.12.0 subnet), but a device with an IP address of 192.168.100.34 is on a different subnet (the 192.168.100.0 subnet).

Default gateway

The default gateway is used by a device to communicate with devices that have IP addresses that are on different subnets. This would usually be the IP address of the router that connects the device's subnet to the rest of the network.

Determining your PCs Configuration Settings

From a DOS window

- 1 From the Windows Desktop, select **Start > Run**.
- 2 At the Open prompt, type **CMD** and click **Enter** to open a DOS window.
- 3 At the command prompt, type **ipconfig/all** to display the PCs network configurations details.

Or,

From the PCs Control Panel

- 1 From the Windows Desktop, select **Start > Settings > Control Panel > Network Connections**.
- 2 From the **Network Connections** window, double-click the **local area connection** listing.
- 3 In the **Local Area Connection Status** dialog, select **Support > Details** to display the PCs network connections details.

These settings include:

- Physical Address
- DHCP status, enabled or disabled (displayed when using the DOS window, ipconfig command only)
- Auto configuration enabled or disabled (displayed when using DOS window, ipconfig command only)
- IP address
- Subnet Mask
- Default Gateway
- DHCP server address
- Primary Win server
- Secondary Win server

Resetting the LAN Configuration

On the instrument's front panel, near the power switch, is a recessed button labeled **LAN RST**. This button enables you to put the LAN configuration of the instrument into a known default state.

When you press this button (a straightened paper clip will do the job) the following settings are made and the system reboots.

- The default IP Address is 192.168.X.X after resetting by pressing the front panel recessed button, where X.X is the last two digit of MAC address. This is designed to prevent multiple instruments from using the same default IP address (refer to the instrument label).
- Subnet Mask is set to 255.255.0.0
- DHCP is set to on
- Auto IP is set to on
- The instrument hostname is set to A-N82XXA-NNNNN, where N82XXA is the instrument model number (such as N8262A) and NNNNN represents the last five digits of the instrument serial number.

NOTE

If you had manually configured LAN settings before, you may have to reconfigure your instrument to reset DHCP and Auto IP to OFF. Refer to “**Static mode (configuring the LAN manually)**” on page 60.

If the instrument is in an environment with a DHCP server, it is assigned an IP address through DHCP. The IP address can be found by using the instrument hostname as the URL in a web browser.

Without DHCP, the instrument will use Auto IP and acquire a 192.168.X.X address. If no DHCP is present, but the instrument is set to use DHCP (the default), the instrument will wait two minutes for its DHCP request to time out. In this case, there is a time delay of approximately three minutes between when the instrument is powered on and when it is usable.

NOTE

Resetting the LAN configuration will reset the password for accessing the instrument's webpage browser as well. The default password is “keysight”.

Power Meter and Sensor Capability

Your P-Series modular power meter is compatible with Keysight P-Series, E-Series E9300, E-Series E4410 and the 8480 Series power sensors. However, not all sensor and meter combinations have the same features or capabilities. The main differences are as below:

Features	P-Series N1920	E-Series E9300	E-Series E4410	8480 Series
Average power of CW signal	*	*	*	*
Average power of modulated signal	*	*		*
Peak power	*			
Cal factors stored on EEPROM	*	*	*	
≥200 readings/sec	*	*	*	
Peak/burst average power	*			
Time gated measurements	*			
Rising edge trigger	*			
Falling edge trigger	*			

NOTE

The E-Series and 8480 Series power sensors require N1917A/B/C/D cables when connecting to the P-Series modular power meters.

Specifications

The specifications for the power meter are listed in the *N8262A P-Series Modular Power Meter User's Guide*.

Step 1. Unpacking the P-Series Modular Power Meter

- 1 Inspect the shipping container for damage. Signs of damage may include a dented or torn shipping container or cushioning material that shows signs of unusual stress or compacting.
- 2 Carefully remove the contents from the shipping container and verify that your order is complete.

NOTE

If the shipping container or packaging material is damaged, it should be kept until the contents have been checked mechanically and electrically. If there is mechanical damage, notify the nearest Keysight Technologies office. Keep the damaged shipping materials (if any) for inspection by the carrier and Keysight representative. If required, you can find a list of Keysight Sales and Service Offices on the last page of this guide.

NOTE

Ensure you have read and understand the preceding safety information before proceed.

Accessories shipped with the instrument

The following items are shipped standard with each power meter:

- instrument drivers, and documentation CD-ROM
- three-prong AC power cord specific to geographic location

Verify that any options ordered are included with the shipment by checking the packing literature included with the shipment.

NOTE

The serial number label on the power meter only verifies hardware/firmware options. The packing literature verifies all items shipped.

Minimum PC requirements

- 1 GHz Intel Pentium processor
- Microsoft Windows XP Professional or Home Edition (Service Pack 1 or 2), Windows 2000 (Service Pack 2)
- 512 MB of RAM
- Up to 40 MB of available hard-disk space
- Microsoft Internet Explorer 6.0 (or higher)

Step 2. Installing the Software and Instrument Drivers

The following software and instrument drivers are required to operate the P-Series modular power meter.

- Keysight IO Libraries Suite 14.2
- Power Meter GUI

NOTE

Make sure you have installed the Power Meter GUI and IO Libraries 14.2 before operating the P-Series modular power meter.

1. Installing the Keysight IO Libraries

Communication and control of the N8262A P-Series modular power meter from Microsoft® programming environment is provided through the following software that is included with the N8262A instrument:

- Keysight IO Libraries Suite 14.2
- Keysight N8262A product reference CD

Installing the Keysight IO Libraries

The Keysight IO Libraries Suite must be installed first followed by the N8262A instrument drivers that are located on the product reference CD. The IO Libraries are contained on the Keysight automation-ready CD included with the instrument, for more information or to download IO Libraries, go to www.keysight.com/find/iosuite.

2. Installing the Power Meter GUI

- 1 Insert the *Keysight N8262A P-Series modular power meter product reference CD* in the CD-ROM drive.
- 2 Follow the installation instruction to finish the installation.

NOTE

Installing Power Meter GUI will prompt to open the P-Series soft front panel. This soft front panel is used as a communication interface between user and instrument once the P-Series modular power meter is configured. See “**Step 4. Remote Interface Configuration**” on page 51.

Using Interactive IO

The Interactive IO feature of Keysight Connection Expert allows you to interact with the instruments by sending commands and seeing the instruments' responses. Interactive IO can help you:

- troubleshoot communication problems
- learn the instrument's command set
- prototype commands and check the instrument's responses before writing code

With Interactive IO, you can choose from a menu of commands (*IDN?, *RST, *TST?), or execute commands from the instrument's command set

Figure 1-1 shows how Interactive IO is started from Keysight Connection Expert.

NOTE

For more information on Interactive IO, refer to the *Keysight IO Libraries Suite Getting Started Guide*. The guide is available on-line by clicking on the Keysight IO Control icon and then selecting **Documentation > IO Libraries Suite Getting Started**.

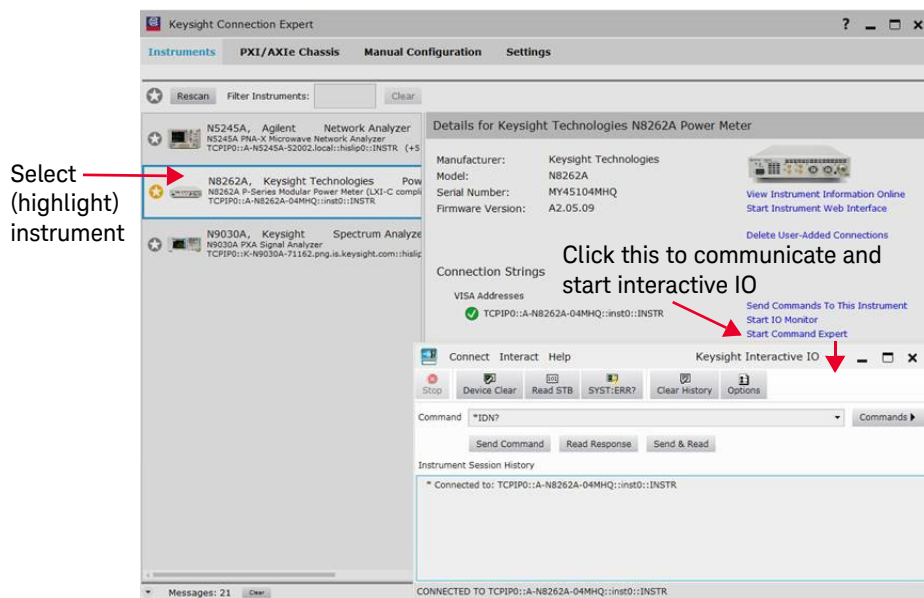


Figure 1-1 Selecting an instrument and start Interactive IO

Identifying the instrument

P-Series modular power meter comprised of the carrier where command is used to query the parameter.

- *IDN? *(returns the carrier serial number and firmware revision)

This command can be executed from the **Interactive IO** window. Example of the information returned by the command is as below:

***IDN?**

Keysight Technologies, N8262A, MY46120006,X2.1.86

product

**carrier serial
number**

**carrier firmware
revision**

Using the instrument web browser

P-Series modular power meter can be programmed using its web-based interface (web browser). The web browser functions as a virtual front panel which can also be used for:

- interactive IO
- familiarization with instrument capabilities
- determining/changing instrument configuration
- troubleshooting and debugging

Comprehensive on-line help providing web browser usage information is available with each Web window.

The instrument's web browser can be opened from Keysight Connection Expert as shown in [Figure 1-2](#).

NOTE

Alternatively, the instrument's web-based interface can also be opened directly from a web browser by entering the instrument's IP address or hostname in the browser's 'address' window.

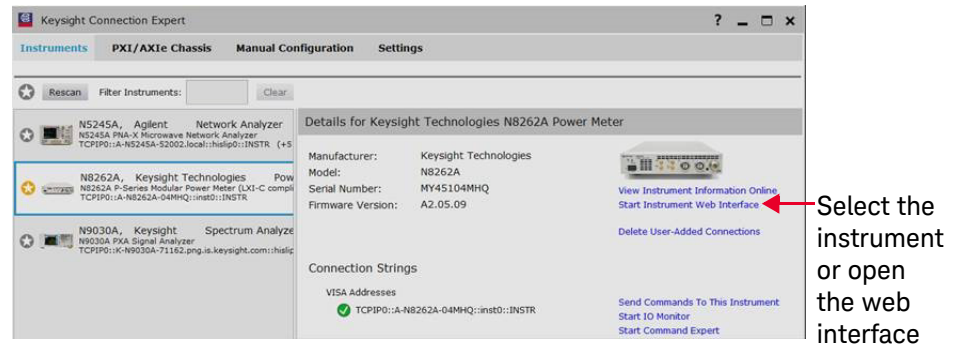


Figure 1-2 Opening the instrument web interface

An example of the web browser is shown in [Figure 1-3](#).

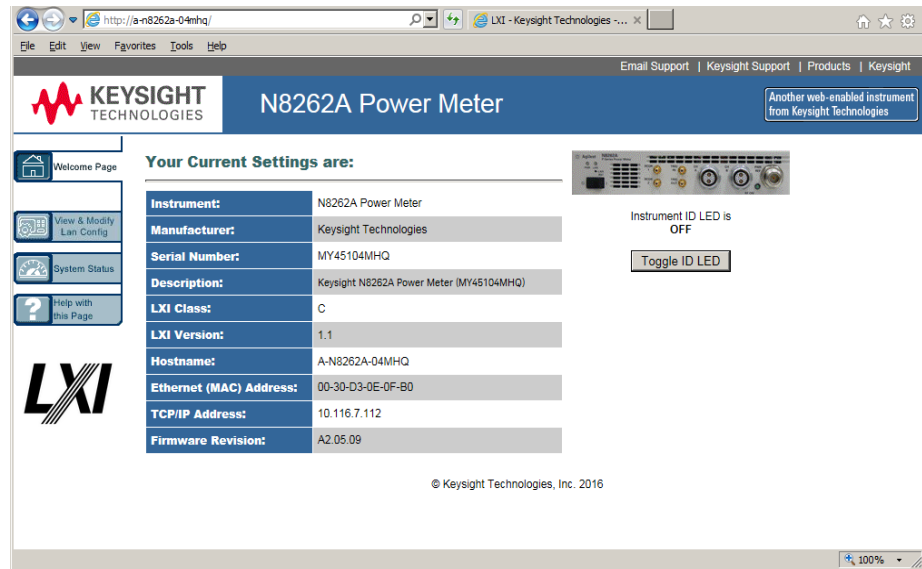


Figure 1-3 N8262A P-Series modular power meter web browser (Welcome Page)

NOTE

Instrument on the network can be physically identified by selecting **Toggle ID LED** within the web interface. This causes the instrument's front panel **LAN LED** to flash continually until **Toggle ID LED** is selected again.

Editing the instrument's LAN settings

Once communication path to the instrument has been opened, the instrument's LAN configuration can be viewed and modified using the web browser.

On the Welcome Page, click **View and Modify Configuration**. This opens the configuration window shown in [Figure 1-4](#).

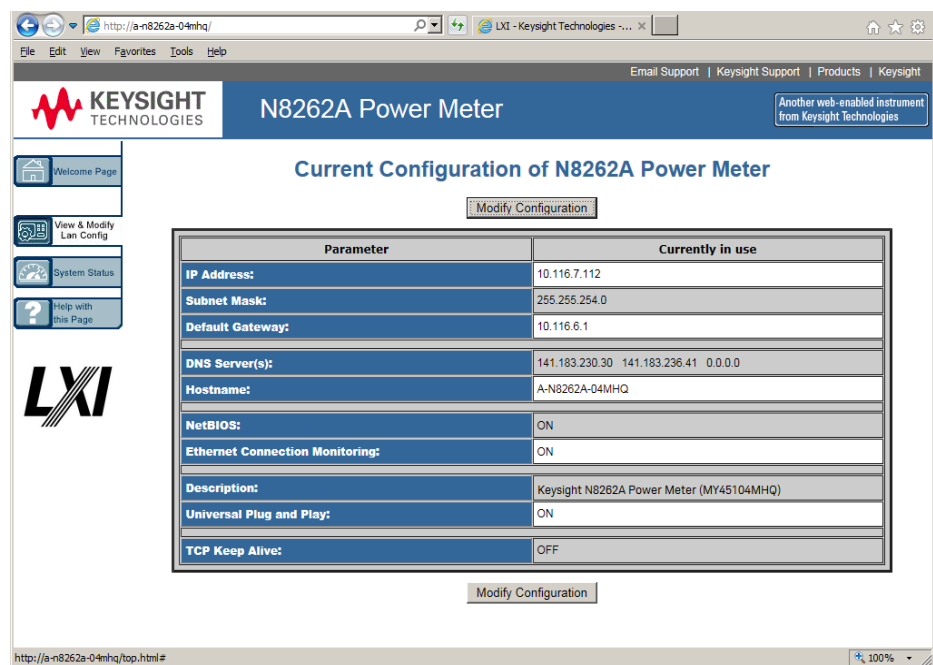


Figure 1-4 Viewing LAN configuration settings from the web interface

To edit parameters shown, click **Modify Configuration**. The window opens as shown in [Figure 1-5](#).

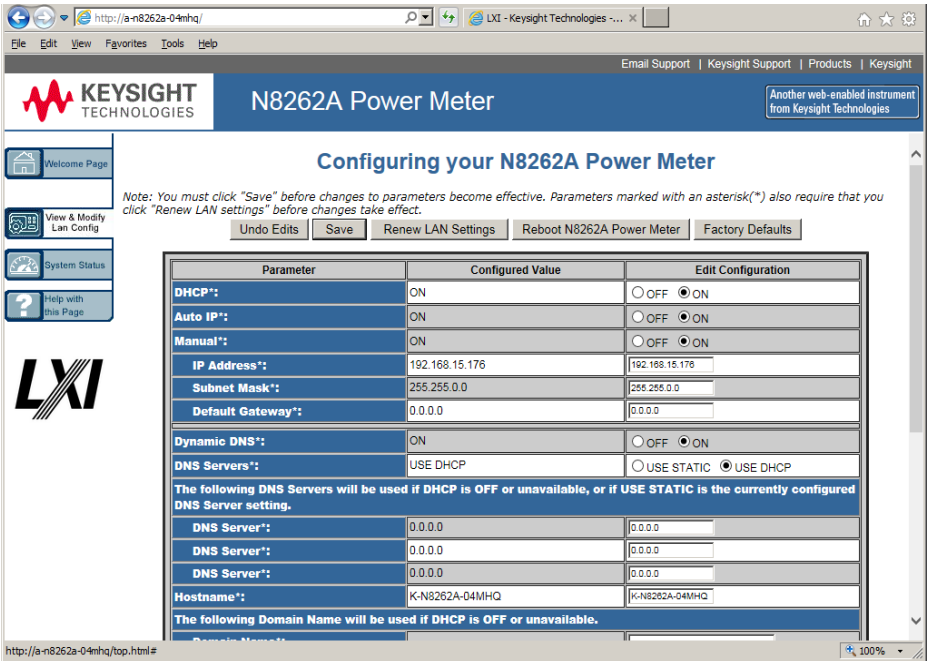


Figure 1-5 Changing the instrument LAN interface configuration

NOTE Selecting **Help with this Page** on any web browser provides information on the use of the current web browser page. Selecting **Help with this Page** on the **Browser Web Control** page provides a listing of the help contents.

Step 3. Turning the Power Meter On

You can power on the power meter without connecting a power sensor or power sensor cable.

CAUTION

The instrument has an autoranging power supply. Ensure the supply voltage is within the range 90 VAC to 264 VAC and 47 Hz to 63 Hz and 440 Hz.

- 1 Connect the power cord.



Figure 1-6 Connecting the power cord

- 2 Check that the **PWR** LED is solid orange.



Figure 1-7 PWR LED before power on

- 3 Power on the power meter and confirm that the **PWR** LED is solid green. This takes about 30 seconds.



Figure 1-8 PWR LED after power on

- 4 The power meter is now ready to use.

NOTE

The N8262A P-Series modular power meter is remotely controlled using P-Series soft front panel. Make sure you have installed the pre-requisite software and configured the LAN interface before you start using the P-Series soft front panel. Also see “[Step 2. Installing the Software and Instrument Drivers](#)” on page 37 and “[Step 4. Remote Interface Configuration](#)” on page 51.

Rear panel connections

The following connections are available on the rear panel. To setup the remote interfaces, refer to “[Step 4. Remote Interface Configuration](#)” on page 51.





LAN connection



Figure 1-9 Connecting the LAN cable

Front panel connections

The following connections are available on the front panel.

Connector	Function
	The power reference is a 1 mW (0 dBm) 50 MHz signal available from a 50 W type-N connector. It is used for calibrating an 8480 or E-Series power sensor and meter system. The Green LED beside the connector is lit when the calibrator is turned on.
	The sensor input connectors.
	Trigger input (TRIG IN) and output (TRIG OUT) connections are made via SMB connectors.
	Recorder outputs (RCDR 1 and RCDR 2) connections are made via SMB connectors.

Connecting a power sensor

NOTE

Make sure you have connected to the P-Series soft front panel before you proceed. See **“Step 5. Connecting to the P-Series Modular Power Meter using Power Meter GUI application”** on page 63 for details.

P-Series sensor

P-Series sensor are supplied with a permanently connected sensor cable.

- 1 Connect the P-Series power sensor cable to the Channel A (**CH A**) or Channel B (**CH B**) input connector.



Figure 1-10 Connecting the P-Series power sensor

- 2 Confirm a **Reading Sensor** pop-up message appears briefly on the soft front panel.



Figure 1-11 Reading Sensor pop-up window

- 3 Confirm the display has changed to a measurement reading.

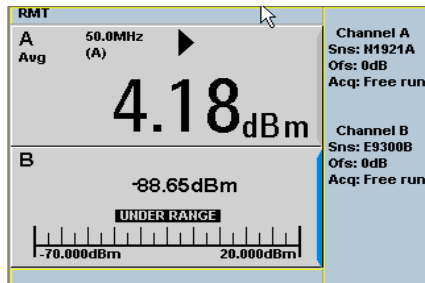


Figure 1-12 Measurement display

E-Series and 8480 Sensor models

Using the N1917A/B/C/D cable, any Keysight 8480 or E-Series power sensor can be connected to the N8262A P-Series modular power meters.

The following shows the procedure for power meter configured with front panel mounted **PWR REF** and channel A (**CH A**) connectors. Also, you should repeat the procedure for the channel B (**CH B**) sensor.

- 1 Connect the sensor to a Keysight N1917A cable.



Figure 1-13 Connecting E-Series power sensor to a Keysight N1917A cable

- 2 Connect the other end of the N1917A cable to the Channel A (**CH A**) or Channel B (**CH B**) input connector.



Figure 1-14 Connecting power sensor to **CH A** input connector

- 3 Confirm a **Reading Sensor** pop-up message appears briefly on the P-Series soft front panel.



This message does not appear when connecting an 8480 Series power sensor.

Figure 1-15 Reading sensor pop-up window

- 4 Confirm the display has changed to a measurement reading.

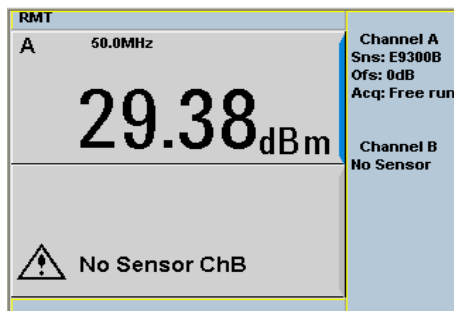


Figure 1-16 Measurement display

- 5 Connect the sensor to the **PWR REF** connector.

- 6 When the sensor is connected to the **PWR REF**, you can zero and calibrate the measurement path quickly by clicking **Zero + Cal** on the P-Series soft front panel. Click **Zero + Cal A** or **Zero + Cal B** as required.

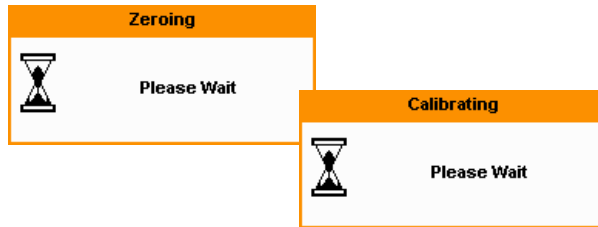


Figure 1-17 Zeroing and Calibrating pop-up window

The **Zeroing** pop-up is displayed during the zeroing process, the **Calibrating** pop-up during calibration. The meter-sensor measurement path is calibrated when the **Calibrating** pop-up disappears.

Step 4. Remote Interface Configuration

The P-Series modular power meter is remotely controlled by LAN. This section shows you how to set the interface configurations.

NOTE

- To connect the power meter to your PC, configure and verify your connection, you can use the Keysight IO Libraries Suite or an equivalent.
- For more information on configuring the remote interface connectivity, refer to the *Keysight Technologies LAN Interfaces Connectivity Guide*. From the IO Libraries Suite, you can access the *Connectivity Guide* via the Keysight IO Libraries Control icon. Alternatively, you can access the *Connectivity Guide* via the Web at www.keysight.com/find/connectivity.

The power meter has three LAN operating modes which can be configured:

- Dynamic IP (Dynamic Host Configuration Protocol or DHCP)
- Auto IP (Local PC Control or isolated (non-site) LAN)
- Static IP (Manual mode)

The IP Address, Subnet Mask, and Default Gateway will be changed remotely during configuration.

The IP address, Subnet Mask, and Default Gateway values are stored in non-volatile memory and are not part of the save-recall function in the P-Series soft front panel.

IP addresses and host name

Dynamic Host Configuration Protocol (DHCP) and Automatic IP are enabled on P-Series modular power meter shipped from Keysight. This allows the instrument to automatically obtain an address on the network. If there is a DHCP server on the network, the server will assign the address to the instrument.

If there is no DHCP server on the network, the P-Series modular power meter will automatically determine an address to use. The address will be in the range of **169.254.XXX.XXX**.

Host names

Every P-Series modular power meter has a default host name. The format of the host name is:

A-N8262A-XXXXX

where “XXXXX” are the last five digits of the instrument serial number.

The instrument host name is reported by Keysight Connection Expert for network servers that support DNS. For network servers that support Dynamic DNS, only the IP address is reported.

Instrument addressing

During programming, P-Series modular power meter is accessed through its address string which consists of an IP address or host name. For example:

TCPIP0::192.168.1.221::inst0::instr

The P-Series modular power meter can also be accessed using a hostname as part of the address string. For example:

TCPIP0::a-n8262a-20006.mys.keysight.com::inst0::instr

NOTE

The P-Series modular power meter can be restored to its default configuration by pressing the recessed button on its front panel. See “[Resetting the LAN Configuration](#)” on page 33.

PC configuration

Most PCs used for instrument/system control are configured for LAN and internet access. Before starting Keysight Connection Expert to locate and configure the instrument, verify that your computer is able to connect to the network that will include the instrument. To check your PC configuration, see “[Determining your PCs Configuration Settings](#)” on page 32.

Verifying connectivity

Below are some ways to test the connectivity between your PC and the instrument.

- Verify that the **LAN** LED on the instrument’s front panel is solid green. If this LED turns red this also indicates a problem with your LAN connection.

- Ping the instrument from your PC.

1 From the Windows Desktop, select **Start > Run**.

2 At the Open prompt, type **CMD** and press Enter to open a DOS window.

At the command prompt, type Ping + the instrument's IP address. For example, **Ping 141.183.171.192**. Or, type Ping + the instruments hostname. For example, **Ping a-n8262a-20006**.

If your connection is successful, a reply will be sent from your instrument to the PC. If unsuccessful, the message, "Request Timed Out" will be displayed. Refer to "[Troubleshooting Connectivity Problems](#)" on page 67.

A web browser is used to open web interfaces to the P-Series modular power meter (See "[Using the instrument web browser](#)" on page 40). In some network configurations, a proxy server cannot be used to access the instrument IP addresses. In these situations, the browser must be set to disable the proxy for the instrument address.

Opening Keysight Connection Expert

With the P-Series modular power meter turned on and connected to a private or site LAN network, start Keysight Connection Expert utility by clicking on the Keysight IO Control icon and selecting **Connection Expert** from the pop-up menu.

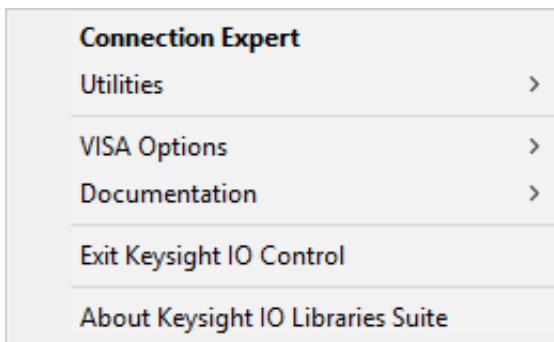


Figure 1-18 IO Libraries pop-up menu

NOTE

The procedure for using Keysight Connection Expert to locate and configure P-Series modular power meter is independent of the type of network you are using (private or site) and the network devices present (switches or routers).

For more information on the Interactive IO, refer to the *Keysight IO Libraries Suite Getting Started Guide*. The guide is available on-line by clicking on the Keysight IO Control icon and then select **Documentation > IO Libraries Suite Getting Started**.

Selecting the LAN network type

- 1** You can connect and configure your power meter for site LAN or isolated (non-site) LAN.
 - A site LAN network is defined as a local area network (LAN) in which computers and LAN-enabled instruments are connected to a site LAN (workgroup LAN, Intranet, or enterprise LAN) via optional routers, hubs, and/or switches.
 - A private (non-site) LAN network is defined as a local area network (LAN) in which computers and LAN-enabled instruments are not connected to a site LAN.
- 2** Select the LAN network type you will use to connect the power meter to your computer. Then follow the procedure that corresponds to your selected LAN network type.

Connecting the LAN cables

LAN cables are connected to the LAN terminal on the instrument, the computer, and to the router or switch if they are part of your network.

Private network connections

Figure 1-19 shows typical LAN cable connections for a private network.

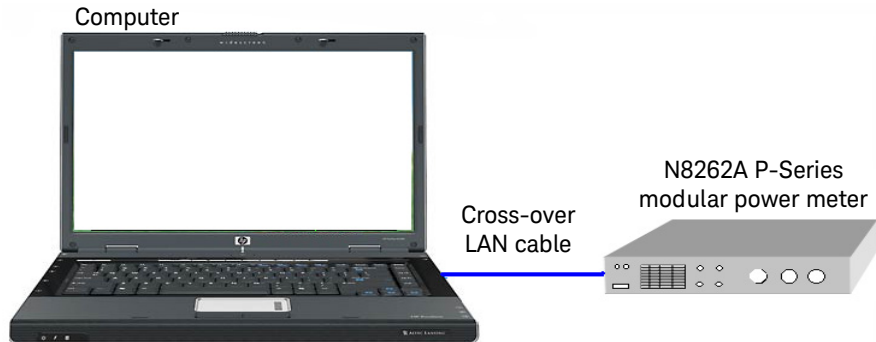


Figure 1-19 Typical private LAN network connections.

When making a direct connection between the P-Series modular power meter and the PC, use the yellow supports Auto-MDIX or contains a LAN card with gigabit data transfer rates, the (yellow) cross-over cable is not required. A standard LAN cable can be used instead.

For private LAN networks that include a switch or router, use standard LAN cables for network connections. Do not use the cross-over cable.

Once the LAN cable is connected, power on the P-Series modular power meter.

Site network connections

Figure 1-20 shows typical LAN cable connections for a site network.

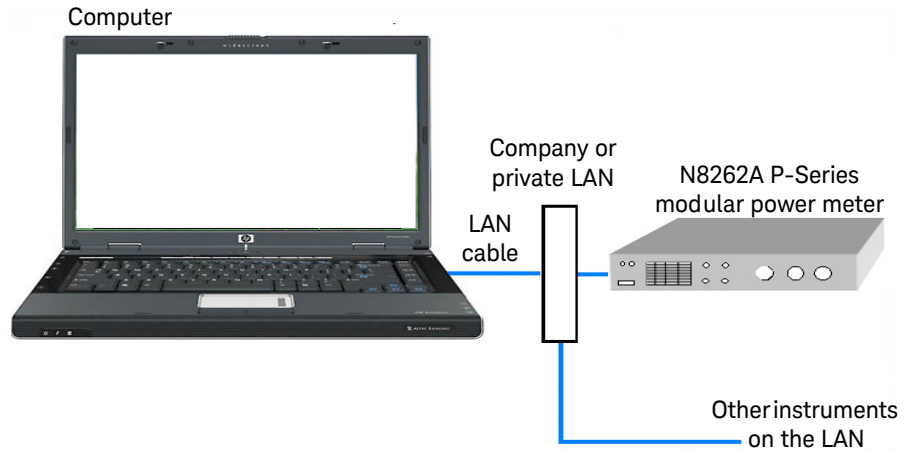


Figure 1-20 Typical site LAN network connections

On site networks, the P-Series modular power meter and the computer are connected directly to site LAN ports, or are connected to the site LAN through a switch. In each site network configuration, standard LAN cables are used.

Once LAN cables are connected, power on the P-Series modular power meter.

Dynamic mode

In dynamic mode the IP Address, Subnet Mask, and Default Gateway values are obtained from a DHCP server. When you use DHCP operation you cannot configure the IP Address, Subnet Mask, and Default Gateway values from the instrument.

If you do not have DHCP, you will have to configure your LAN settings manually. You can also manually configure your LAN settings in a network with DHCP, however it is recommended you do so with the assistance of your network administrator. Refer to “Resetting the LAN Configuration” on page 33 and “Static mode (configuring the LAN manually)” on page 60 for more information.

Using this Dynamic Mode does not require a detailed knowledge of your network configuration.

NOTE

If the DHCP server cannot be found on your network, the power meter returns to the AutoIP mode, then static mode.

- 1 Using a standard LAN cable, connect both the computer and the power meter to LAN outlets (Site Network Connection).
- 2 Power on the power meter and wait until the LAN LED turns solid green. This takes about 30 seconds.
- 3 Use the Connection Expert utility of the IO Libraries Suite to add the power meter and verify a connection.


NOTE

If users wish to change settings after connection has been established, they can do it via the P-Series modular soft front panel.

Configure modular power meter after connection

NOTE

Make sure you have connected to the P-Series soft front panel before you proceed.

- 4 Click , **Remote Interfaces** to display the remote interface settings. Ensure that **DHCP** to **ON** (**ON** is the factory default state).
- 5 To enable DHCP operation using the arrow and **Select** softkeys to highlight and check **DHCP** is checked.

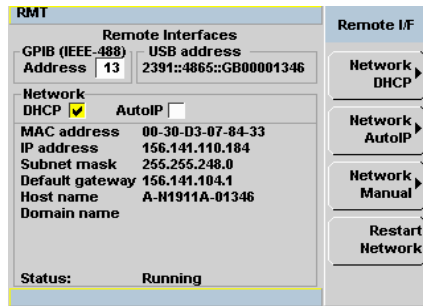


Figure 1-21 Typical LAN remote interface

NOTE

If your LAN does not support DHCP, refer to the *Connectivity Guide*.

6 Click **Network DHCP** if you need to set any optional settings.

7 Click **Restart Network**.

A pop-up appears for 5 seconds (see Figure 1-22). Monitor the **Status** at the bottom of the display to see when the server has assigned an address.

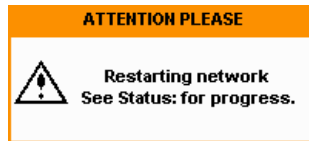



Figure 1-22 LAN network restart pop-up

8 Click , to return to a measurement screen.

9 Use the Connection Expert utility of the IO Libraries Suite to add the power meter and verify a connection. When identifying the instrument, it is easiest to use the IP address that you noted in [step 5](#) above.

NOTE

Refer to **Documentation** that accompanies the IO Libraries software for more details.

- 10** You can also use various programming environments to control the power meter. For an overview about programming instruments via LAN, refer to the *Connectivity Guide*.

Auto IP mode


Use this procedure if you require local PC Control or you are working in an private (non-site) LAN.

- 1** Connect PC to the power meter.
- 2** Power on the power meter and wait until the **LAN** LED turns solid green. This takes about 30 seconds.


Configure modular power meter after connection

NOTE

Make sure you have connected to the P-Series soft front panel before you proceed.

- 1** Click , **Remote Interfaces** to display the remote interface settings (See [Figure 1-21](#)). Ensure that **AutoIP** is checked.
- 2** Click **Network AutoIP** if you need to set any optional settings.
- 3** Click **Restart Network**.

A pop-up appears for 5 seconds (See [Figure 1-22](#)). Monitor the Status at the bottom of the display to see when the server has assigned an address.

- 4** Click , to return to a measurement screen.
- 5** Use the Connection Expert utility of the IO Libraries Suite to add the power meter and verify a connection.

NOTE

Refer to **Documentation** that accompanies the IO Libraries software for more details.

- 6 You can use various programming environments to control the power meter. For an overview about programming instruments via LAN, refer to the *Connectivity Guide*.

Static mode (configuring the LAN manually)

In static mode you must set up the IP Address, Subnet Mask, and Default Gateway that is compatible with your network infrastructure (PC configuration). If it is not correctly setup, the power meter is not be visible on your network.

- 1 Connect PC to the power meter.
- 2 Power on your PC.
- 3 Power on the power meter and wait until the **LAN** LED turns solid green. This takes about 30 seconds.
- 4 Use the Connection Expert utility of the IO Libraries Suite to open the N8262A web browser. From the **Edit and Modify Configuration** menu, change the **DHCP** and **Auto-IP** buttons to **Off**. Change the **IP address**, **Subnet Mask**, and **Default Gateway** values to meet your network requirements.
- 5 Click **Save** to save the new settings. Parameters marked with an asterisk (*) also require that you click **Renew LAN settings** before the changes take effect.

NOTE

For the new settings to become effective, you may first power cycle the instrument and then power cycle the PC.

Configure modular power meter after connection

NOTE


Make sure you have connected to the P-Series soft front panel before you proceed.

NOTE

If you configure an invalid IP Address or an IP address that is used by another device or host, an error message is generated. This error can be read by clicking

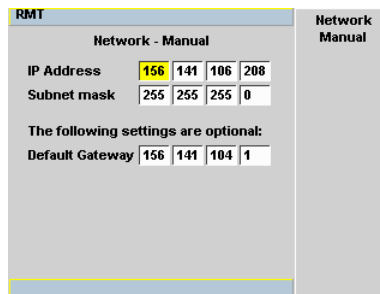


, **Error List** or by using the `SYSTem:ERRor?` command.

- 1 Click , **Remote Interfaces** to display the remote interfaces settings (See [Figure 1-21](#)).
- 2 Click **Network Manual** to set the IP address, Subnet Mask. The Default Gateway value is an optional setting.


To individually specify the settings use the arrow softkeys, **Select** softkey, and use the numeric softkeys followed by **Enter** softkeys to enter the required IP address, Subnet Mask, and Default Gateway.

The values can range between 0.0.0.0 and 255.255.255.255.




RMT				
Network - Manual				
IP Address	156	141	106	208
Subnet mask	255	255	255	0
The following settings are optional:				
Default Gateway	156	141	104	1

Figure 1-23 Typical manual entry for LAN network interface

- 3 Click , to return to the remote interfaces settings.
- 4 Click **Restart Network**.

A pop-up appears for 5 seconds (See [Figure 1-22](#)). Monitor the **Status** at the bottom of the remote interfaces settings to see when the server has assigned an address.

- 5 Click , to return to a measurement screen.
- 6 Use the Connection Expert utility of the IO Libraries Suite to add the power meter and verify a connection.

NOTE

Refer to **Documentation** that accompanies the IO Libraries software for more details.

- 7 You can use various programming environments to control the power meter. For an overview about programming instruments via LAN, refer to the *Connectivity Guide*.

Configuring the LAN remotely using Skippy command

To automatically configure the LAN settings enable DHCP operation using the **SYSTem:COMMunicate:LAN:DHCP[:STATe]** command.

- To individually specify the settings use the following commands:
SYSTem:COMMunicate:LAN:ADDReSS
- **SYSTem:COMMunicate:LAN:SMASk**
- **SYSTem:COMMunicate:LAN:DGATeway**
- **SYSTem:COMMunicate:LAN:AIP[:STATe]**
- **SYSTem:COMMunicate:LAN:REStArt**

Step 5. Connecting to the P-Series Modular Power Meter using Power Meter GUI application

- 1 Power on the power meter.
- 2 Perform one of the following:
 - a connect power meter through the local area network (LAN), go to “[Site network connections](#)” on page 56.
 - b connect power meter through the cross-over LAN cable, go to “[Private network connections](#)” on page 55.

NOTE

- Your Keysight N8262A P-Series modular power meter has been shipped with a default IP address. You may reset the instrument which enable you to put the LAN configuration of the instrument into a known default state. See “[Resetting the LAN Configuration](#)” on page 33.
- If the power meter is in an environment with the Dynamic Host Configuration protocol (DHCP) server, it will be assigned an IP address through DHCP. For more information, refer to the “[Resetting the LAN Configuration](#)” on page 33.
- Without DHCP, the default address can be typed into the web browser to access the instrument. In this case, you should click the button labeled View & Modify LAN Config to change the IP address to one that meets your particular requirement. For more information about setting a static IP address, refer to “[Static mode \(configuring the LAN manually\)](#)” on page 60.

Connecting the power meter using site Local Area Network (LAN)

NOTE

Before configuring the new power meter to operate on LAN, you may first need to communicate directly between the power meter and your PC. For more information about connecting directly to your PC (not through a LAN hub), refer to “[Private network connections](#)” on page 55.

- 1 Connect a LAN cable from the LAN connector on your PC to an empty connector on your internal local area network or LAN hub.
- 2 Power on your PC.

- 3 Power on the power meter and wait till you see the **LAN** LED on the front panel turns solid green.
- 4 Configure the modular power meter. Refer to “**Step 4. Remote Interface Configuration**” on page 51.
- 5 Select **Copy VISA Address to clipboard (IP Address)** or **Copy VISA Address to Clipboard (Hostname)**.
- 6 From the Windows Desktop, select **Start > All programs > Keysight SI Tools > Power Meter GUI**.
- 7 The P-Series soft front panel appears.

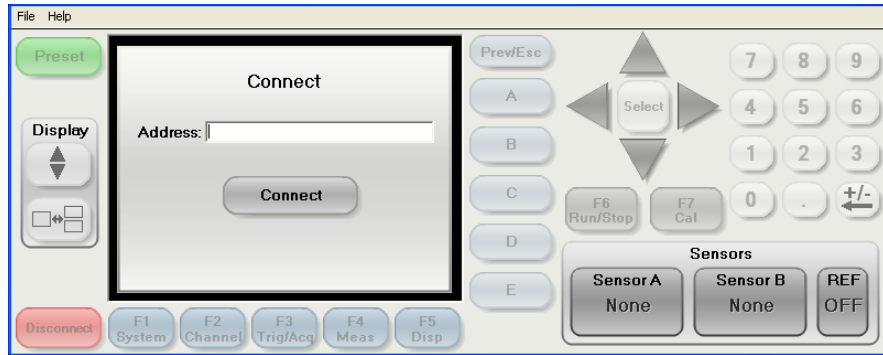


Figure 1-24 P-Series soft front panel

- 8 Paste the VISA address to the Address box
- 9 Select **Connect** button to open the P-Series soft front panel.
- 10 You are successfully connected to the N8262A P-Series modular power meter using a local area network (LAN).

NOTE

Alternatively, you may get the VISA address when connecting to Keysight Connection Expert.

Connecting the power meter using a private network

- 1 Connect a cross-over LAN cable from the LAN connector on your PC to the LAN connector on the rear panel of the power meter.
- 2 Power on your PC.

- 3 Power on the power meter and wait till you see the **LAN** LED on the front panel turns solid green.
- 4 Change your PC's **TCP/IP properties** under **LAN properties** by providing IP address, subnet mask and default gateway.
 - a From the Windows Desktop, select **Start > Control Panel > Network connections**.
 - b Double-click **Local Area Connection** to open the **Local Area Network Properties** window. From the **General** tab, select **Internet Protocol (TCP/IP)**.

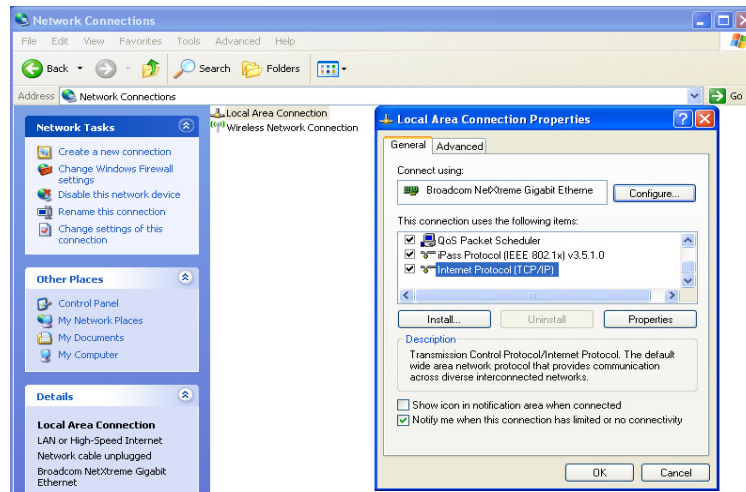


Figure 1-25 Open Local Area Network to change the internet protocol settings

- c Click **Properties**. Select **Use the following IP address** and enter the **IP address**, **Subnet mask** and **Default gateway**.

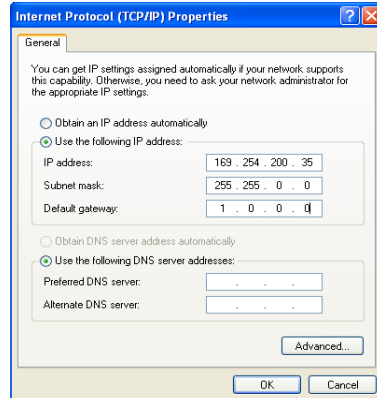


Figure 1-26 Enter PC's network settings in **Internet Protocol (TCP/IP) Properties** window

- 5 Configure your P-Series modular power meter using the Static Mode. Refer to the **"Static mode (configuring the LAN manually)"** on page 60.
- 6 From the SI Finder window, right-click N8262A and select **Copy VISA Address to Clipboard (IP Address)** or **Copy VISA Address to Clipboard (Hostname)**.
- 7 From the Windows Desktop, select **Start > All programs > Keysight SI Tools > Power Meter GUI**.
- 8 The P-Series soft front panel appears (See **Figure 1-24**)
- 9 Paste the VISA address to the Address bar.
- 10 Click **Connect** to open the P-Series soft front panel.
- 11 You are successfully connected to the N8262A P-Series modular power meter using a cross-over LAN cable.

NOTE

Alternatively, you may get the VISA address when connecting to Keysight Connection Expert.

Troubleshooting Connectivity Problems

The instrument was unable to join the LAN

The LAN LED is red.

Possible cause	Possible solution
The instrument is not connected to a LAN.	If connecting the instrument to a switch or hub, verify that the instrument is connected with a standard LAN cable.
An incorrect LAN cable is being used.	<ul style="list-style-type: none"> – If connecting the instrument directly to a PC, verify that the instrument is connected with a cross-over cable. – If connecting the instrument to a switch or hub, verify that the instrument is connected with a standard LAN cable.
The device's LAN port is not active.	Connect the instrument to a known working LAN port.
The device is configured to use DHCP, but no DHCP server is available.	<ul style="list-style-type: none"> – Disable DHCP. – Connect the device to a LAN that uses a DHCP server.
The instrument is configured to use a duplicate static IP address.	<ul style="list-style-type: none"> – Make sure that no other device is using the same IP address as your instrument. – Configure your instrument to use a different IP address.

I cannot ping the instrument's IP address or host name

Possible cause	Possible solution
The instrument was unable to join the LAN.	See "The instrument was unable to join the LAN" on page 67.
The instrument's LAN settings are incorrect.	Verify that the instrument's settings are appropriate for your LAN.
A firewall is preventing communication between your PC and your instrument.	Make sure that your firewall settings allow communication between your PC and other devices.
The instrument is using Auto-IP (That is, the instrument assigned itself a 169.254.x.x IP address) and your PC is not using Auto-IP (That is, PC does not have a 169.254.x.x IP address).	<ul style="list-style-type: none"> – Disable Auto-IP on the instrument. – Configure your PC to use Auto-IP.

The PC cannot communicate with the instrument using the instrument's host name

Possible cause	Possible solution
No DNS server is available.	Communication with the instrument using the instrument's IP address.
The DNS server has not been updates.	Wait several minutes.
Your PC cannot communicate with the device over your LAN.	See "I cannot ping the instrument's IP address or host name" on page 68.

I cannot view the instrument webpage

Possible cause	Possible solution
<ul style="list-style-type: none"> - The instrument has not yet joined the LAN. - The instrument is unable to join the LAN. 	See “The instrument was unable to join the LAN” on page 67.
Your PC cannot communicate with the device over your LAN	See “I cannot ping the instrument's IP address or host name” on page 68.
You are attempting to use the device's hostname and the hostname is not working.	See “The PC cannot communicate with the instrument using the instrument's host name” on page 68.
Your browser is configured to use a proxy, and the proxy does not allow communication with the instrument on the LAN.	Disable or configure the proxy settings. Open Internet Explorer and select Tools > Internet Options > Connections > LAN Settings .

The IVI Driver will not open the connection

Possible cause	Possible solution
Your PC cannot communicate with the device over your LAN.	See “I cannot ping the instrument's IP address or host name” on page 68.
Someone else is currently connected to the instrument.	Make sure that no one else is connected to the instrument.

Rack Mounting the P-Series Modular Power Meter

The N8262A P-Series modular power meter can be located on a bench-top or rack mounted in standard 19-inch EIA rack cabinets.

Rack mounting

The P-Series modular power meter is easily rack-mounted using available rackmount options. These kits provide all the necessary hardware to rack mount one or two P-Series modular power meter side-by-side on a sliding shelf, while occupying one EIA rack unit of space.

Rackmount options available are:

- Option 908 – applicable for single instrument rackmount
- Option 909 – applicable for dual instrument rackmount.

To rack mount the power meter, refer to the Rackmounting Instructions Sheet. The instructions sheet will be provided with the Rack Mount Kit (p/n: N8262A-908 or p/n: N8262A-909), which will come separately as an optional kit upon ordering.

NOTE

You may refer to *Test System Development Guide* (59889821 TSDG6 Racking, Application Note 1465-6) before rackmounting. This application notes will walk you through important considerations for arranging your test equipment in a rack.

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This information is subject to change without notice. Always refer to the English version at the Keysight website for the latest revision.

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