HIRSCHMANN
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EES Quick Start Guide

Embedded Ethernet Switch Product Family

Development Kit for EES20 and EES25

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Safety instructions

This documentation contains instructions which must be observed to ensure your own personal safety and to avoid damage to devices and machinery.

- **Certified usage**

  The device may only be employed for the purposes described in the catalog and technical description, and only in conjunction with external devices and components recommended or approved by the manufacturer. The product can only be operated correctly and safely if it is transported, stored, installed and assembled properly and correctly. Furthermore, it must be operated and serviced carefully.

- **Qualification requirements for personnel**

  Qualified personnel as understood in this manual and the warning signs, are persons who are familiar with the setup, assembly, startup, and operation of this product and are appropriately qualified for their job. This includes, for example, those persons who have been:

  - ► trained or directed or authorized to switch on and off, to ground and to label power circuits and devices or systems in accordance with current safety engineering standards;
  - ► trained or directed in the care and use of appropriate safety equipment in accordance with the current standards of safety engineering;
  - ► trained in providing first aid.

- **National and international safety regulations**

  - ☐ Make sure that the electrical installation meets local or nationally applicable safety regulations.

- **Note on the CE marking**

  The EES is not intended for end users in accordance with item 2(1)b) of the EMC Directive 2004/108/EG. See also chapter 1.2 in “Guide for the EMC Directive 2004/108/EC (21st May 2007)”. The manufacturer or distributor of the end device in which the EES was installed, is responsible for adhering to the applicable EU directives, as well as the CE marking.

  The EES adheres to the EMC standards as listed in section 5.1 of this document.

The EMC tests were performed in combination with the Evaluation Board.

- **Maintenance**

  - ☐ When designing this device, Hirschmann was largely able to forego using wear parts. The parts subject to wear are dimensioned to last longer than the lifetime of the product when it is operated normally.
  - ☐ Relays are subject to natural wear. This wear depends on the frequency of the switching operations. Depending on the frequency of the switching operations, check the volume resistance of the closed relay contacts and the switching function.
  - ☐ Hirschmann are continually working on improving and developing their software. You should regularly check whether there is a new version of the software that provides you with additional benefits. You will find software information and downloads on the product pages of the Hirschmann website.

- **ESD guidelines**

  The media modules contain components highly sensitive to electrostatic fields.These components can be easily destroyed or have their lives shortened by an electrical field or by a discharge caused by touching the contacts. You can find more informationen about devices vulnerable to electrostatic fields in IEC/TR 61340-5-2 (2007-08)

- **Recycling note**

  After usage, this product must be disposed of properly as electronic waste, in accordance with the current disposal regulations of your county, state and country.

About this Guide

Purpose

This document is a step-by-step guide that covers hardware and software installation procedures required to set up an EES20 or EES25 Development Kit with factory default settings.

In addition to your Development Kit, make sure you have the following items available:

- ► EES Module
- ► PC with Ethernet connection
- ► Power supply, 24 VDC
- ► Ethernet cable and optionally terminal cable RS-232
- ► Java Runtime Environment (JRE) installed on your PC for Running the WEB interface

Legend

The symbols used in this manual have the following meanings:

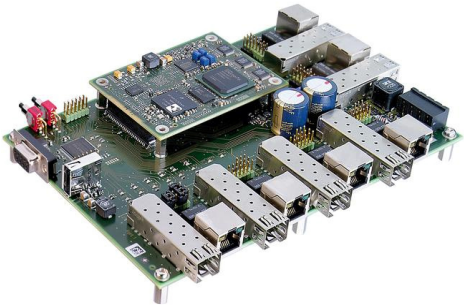
►	Listing
□	Work step
■	Subheading

1 Hardware set up

These steps, as described in detail, are used to set up the Hirschmann hardware:

- ☐ Check Kit Contents
- ☐ Plug the EES 20/25 Series into baseboard.
- ☐ Apply power to the EES baseboard
- ☐ Connect the Module

1.1 Check Kit Contents

Item	Quantity in Development Kit
Development board 	1x Baseboard **Note:** The EES Module is not included
Product-CD	1x

1.2 Plug the EES 20/25 Series into development board.

Plug the EES 20/25 Series module into the sockets on the top of the baseboard (CO103–CO101) as seen above.

1.3 Apply Power to the EES Baseboard

Connect the 18-32V DC (24V DC is recommended) power supply directly into the development board's DC power connector as seen in Figure 1-1.

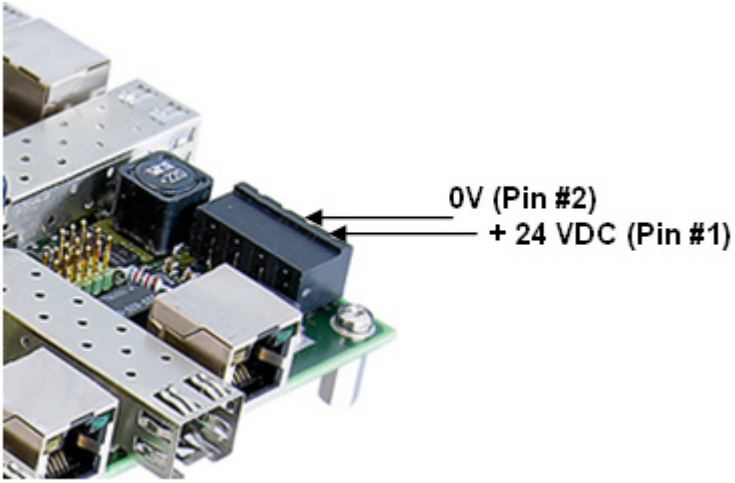


Figure 1-1: DC–Jack

1.4 Connect the Board

Using an Ethernet cable, connect the PC to any Ethernet port on the EES Baseboard. The Ethernet port's green LED should be "On" when connected.

In addition to the Ethernet connection, the device also has a RS-232 serial connection to obtain Command Line Interface (CLI) access.

Figure 1-2 illustrates these connections.

You will find a detailed description of CLI in the "Command Line Interface" reference manual.

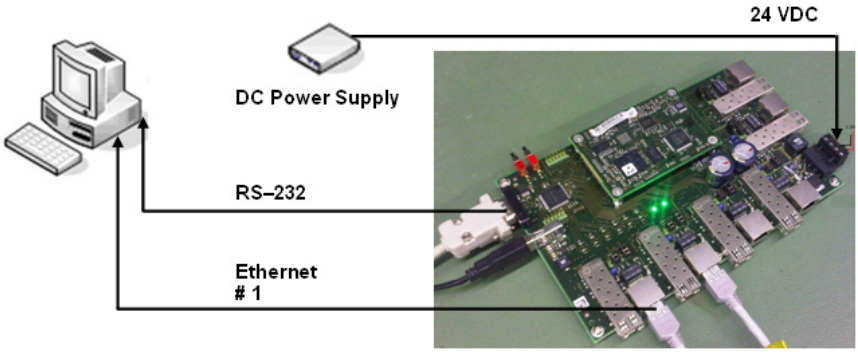


Figure 1-2: Board Connection

2 Network Management Interfaces

This chapter explains how to access your EES, Embedded Ethernet Switch. The EES Series can be controlled using three different interfaces:

- WEB Interface via Ethernet
- RS-232 serial communication
- Telnet access via Ethernet (In the delivery state, the telnet session is set to “Off”)

2.1 Web Interface

The EES Module and PC should be in the same IP subnet. By default, the EES IPv4 address is **192.168.1.1** and the subnet mask is **255.255.255.0** (for a Class C network).

Configure the PC’s Ethernet port IP address. In a Windows environment, the PC IP-address can be changed in the TCP/IP Settings window. Select an IP address in the same subnet as the EES Module.

The EES web-based interface provides a convenient way to modify the embedded switch configuration and access the built-in monitoring and network administration functions via a standard browser.

The Web browser uses an applet which communicates with the device via the Simple Network Management Protocol (SNMP).

Perform the following steps to access the EES web-based interface.

☐ Connect the Ethernet cable to any EES Ethernet port.

☐ Open a Web browser, for example Mozilla Firefox version 1 or later, or Microsoft Internet Explorer version 6 or later.

☐ Establish a connection to the EES by entering the IP address in the following form: http://192.168.1.1. The Web login window in Figure 2-1 will be displayed.

Note: The Web-based interface uses Java software 6 (“Java™ Runtime Environment Version 1.6.x”). Install the software from the enclosed CD-ROM. To do this, you go to “Additional Software”, select Java Runtime

Environment and click on “Installation”. Optional you can download JRE updates from the site: http://www.java.com/de/.

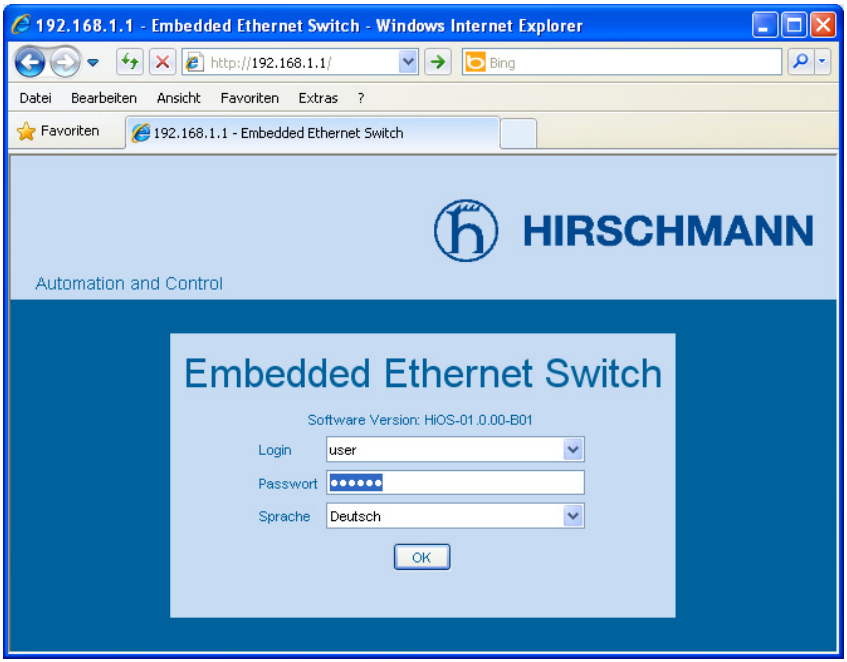


Figure 2-1: Login window

- ☐ The device's default settings allow you to have read access. To have read/write access, enter the login "admin" and the password "private". The language can also be changed. The device allows you to choose between English and German.
- ☐ Click OK to continue.
- ☐ The Web base interface of the device appears on the screen. Use the Menu Tree on the left side of the window to open and configure each of the EES's functions.

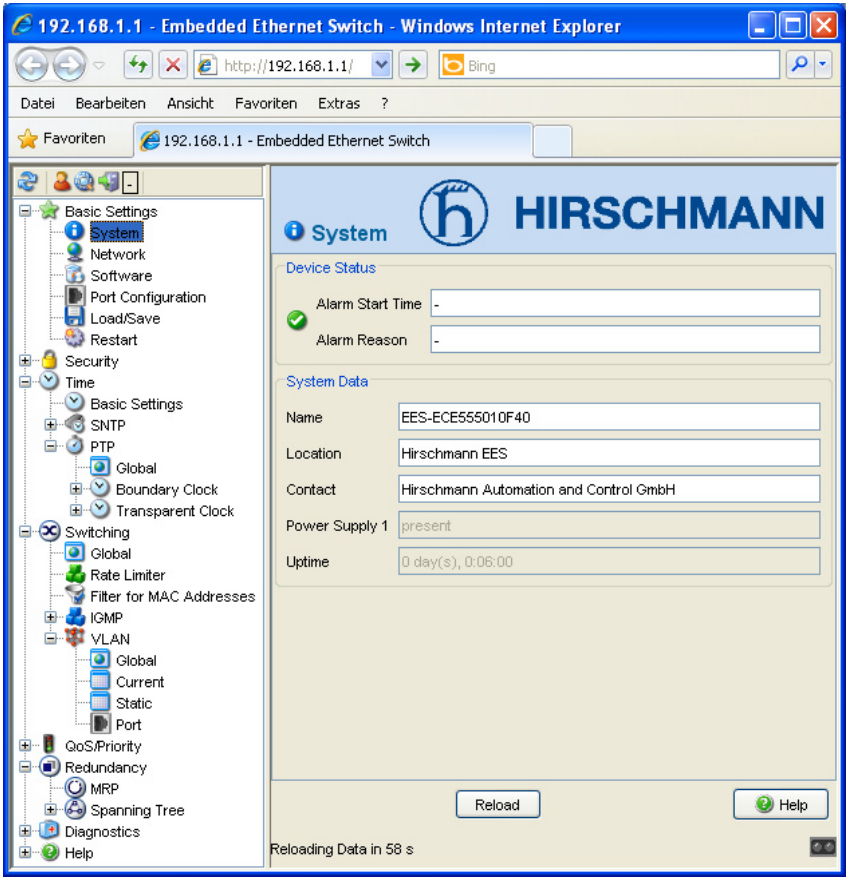


Figure 2-2: Basic Settings

2.2 RS–232 serial communication

The serial console connection method requires a serial cable to connect the EES to a PC COM port.

The terminal program, PuTTY, can be used for this option. The PuTTY application is included on the product CD. To install PuTTY, start putty-0.60-installer.exe. Go to “additionalSoftware\PuTTY” and follow the instructions.

☐ Start PuTTY then, in the frame “Category”, select the tree element “Session”. In the frame, “Specify the destination you want to connect to”, click on the option “Serial” as seen in the figure below.

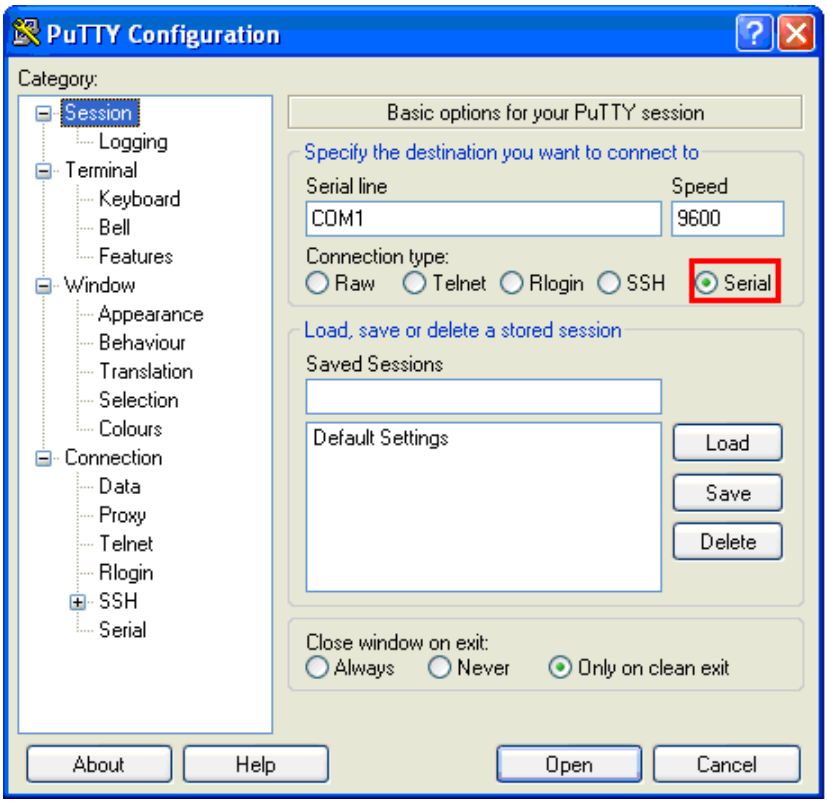


Figure 2-3: PuTTY configuration

☐ In the frame “Category” select “Connection: Serial”

☐ Enter the serial configuration parameters of the terminal emulation program shown in Figure 2-4.

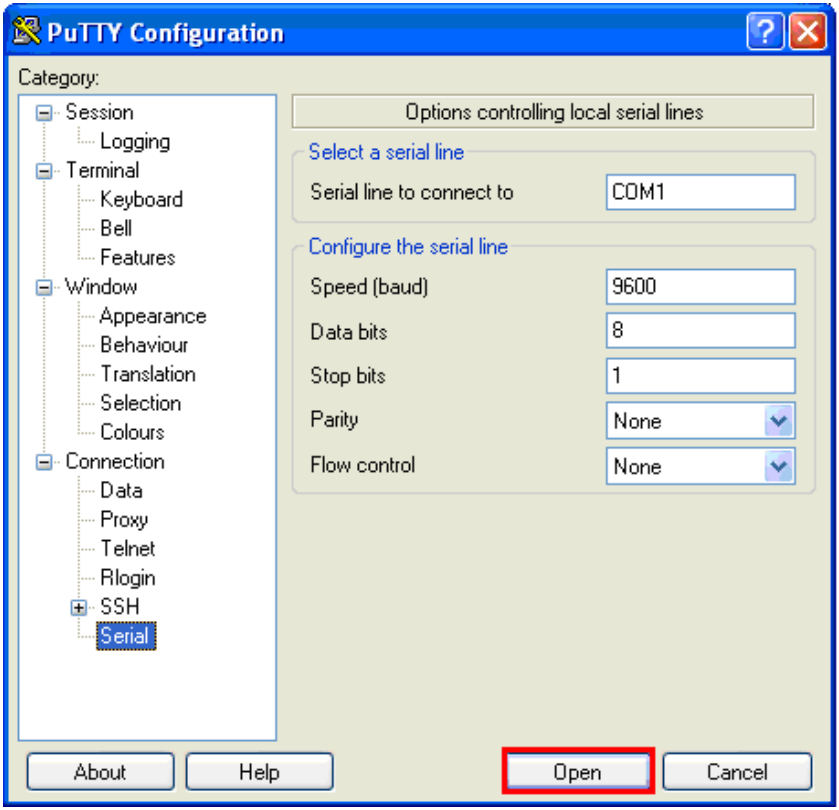


Figure 2-4: PuTTY serial configuration

☐ Press the “Open” button to connect to the EES. The console login screen will appear.

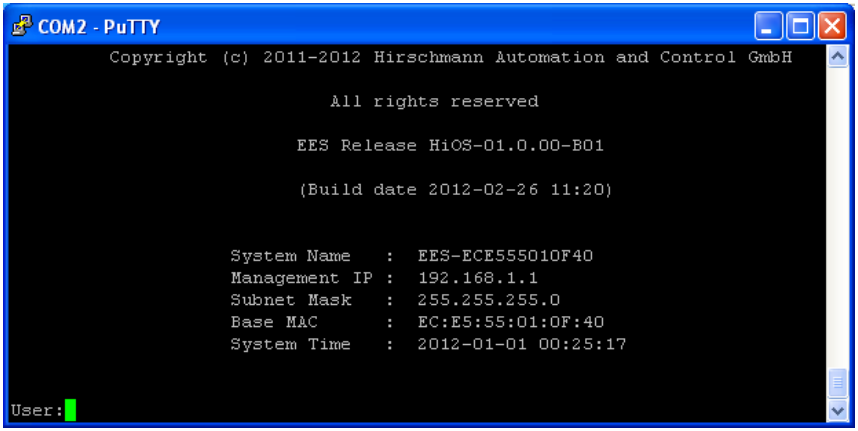


Figure 2-5: Login Screen

2.3 Telnet access via Ethernet and TCP/IP

The Telnet Console looks and operates in precisely the same manner as the RS-232 Interface.

Perform the following steps to access the console utility via Telnet.

☐ Start web interface via Ethernet

☐ Using the menu tree open, Security: Management Access: Server: Telnet, as seen in Figure 2-6 below.

☐ Set operation mode ‘On’

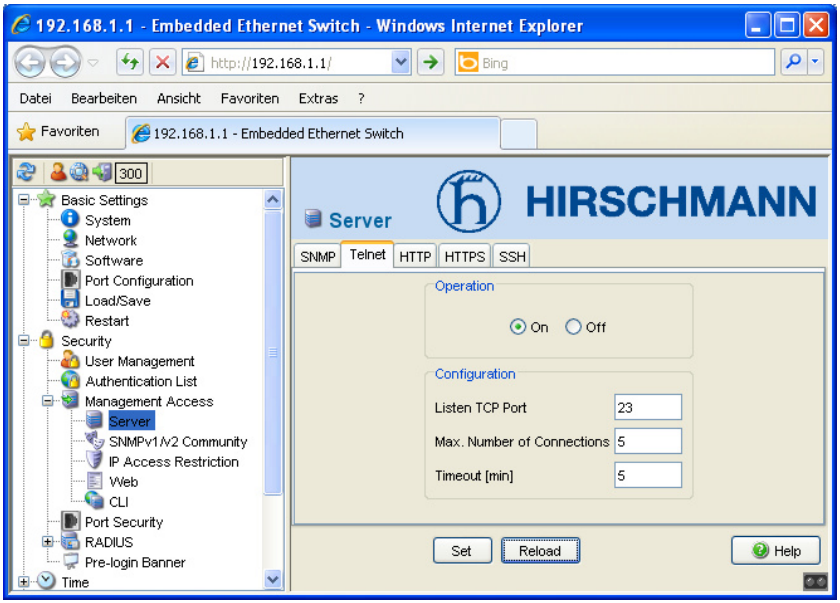


Figure 2-6: Unlock Telnet session

☐ Open a Telnet session to the EES.

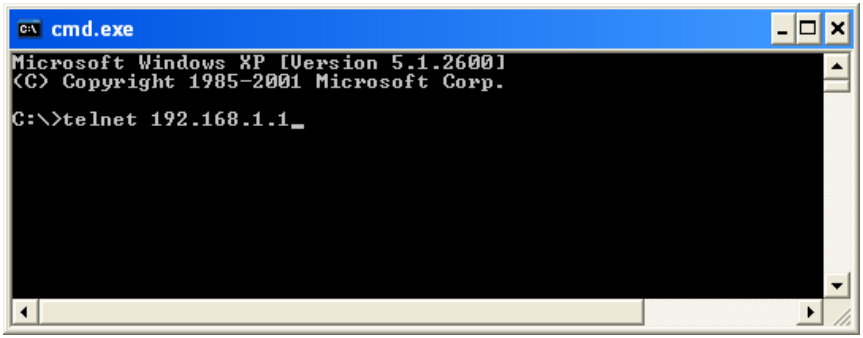


Figure 2-7: Telnet session

☐ Press Enter to open the Console login screen.

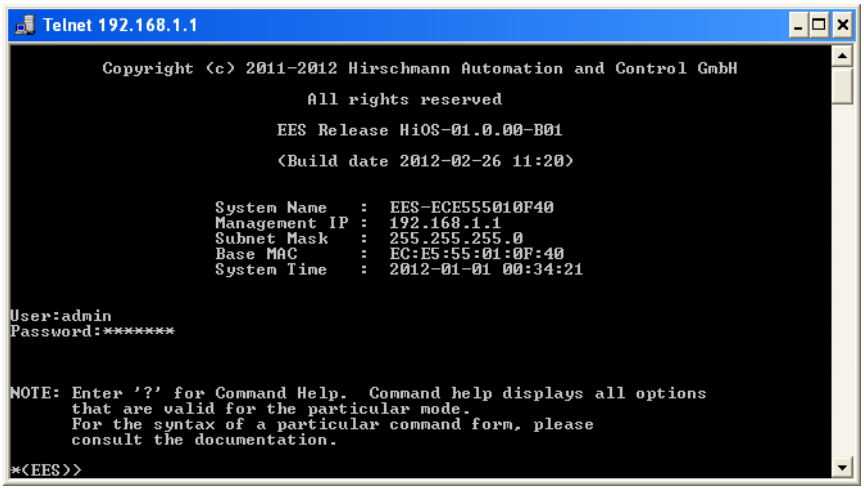


Figure 2-8: Login Screen

☐ Enter "admin" at the User prompt and enter "private" at the Password prompt to obtain read/write access on the module.

☐ Press “Enter” and the EES CLI Global Menu will be displayed. The CLI commands are described in detail in the user manual.

3 Changing the default IP-Address

There are two ways to change default IP-Address to establish a connection:

- By accessing serial communication RS-232 directly or,
- By using device discovery software such as, Hirschmann's HiDiscovery tool.

3.1 Serial communication

Using the CLI Command, **network parms**, you set the IP Address, subnet mask and the IP of the gateway IP router (optional). The IP Address and the gateway must be in the same subnet.

- ☐ In the User Exec mode enter: "**enable**" to change to the Privilege Exec Mode.
- ☐ In the Privilege Exec mode enter the command: network parms <ipaddr><networkmask> [gateway]. The gateway entry is optional. **e.g. network parms 192.168.1.1 255.255.255.0**

- ☐ Any changes must be saved to the devices memory to be persistent after a power cycle. Therefore, enter command: "**save**"

3.2 Hirschmann's HiDiscovery Tool

Install the HiDiscovery software on your PC. The software is on the CD supplied with the development kit. The HiDiscovery application uses the first PC network card found. If your computer has several network cards, you can select these from the HiDiscovery toolbar. The HiDiscovery application provides an easy-to-use and effective way to set-up a network profile on the EES.

Note: The software package WinPcap Version 3.1 is also included with the installation of HiDiscovery.

When HiDiscovery is started, it automatically searches the network in a VLAN Broadcast domain for devices that support the HiDiscovery protocol. On delivery, the EES HiDiscovery protocol is “enabled” and access is set to “read-write” which allows you to change device IP-Address.

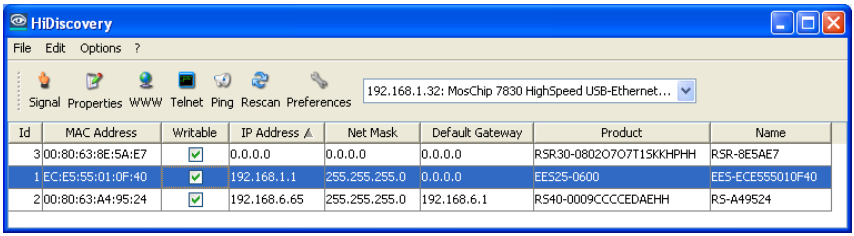


Figure 3-1: HiDiscovery

Note: If the HiDiscovery application does not find any devises, check to ensure that your firewalls are disabled.

The HiDiscovery protocol allows you, from your PC via an Ethernet connection, to allocate an IP address to the EES device based on its MAC address as seen below.

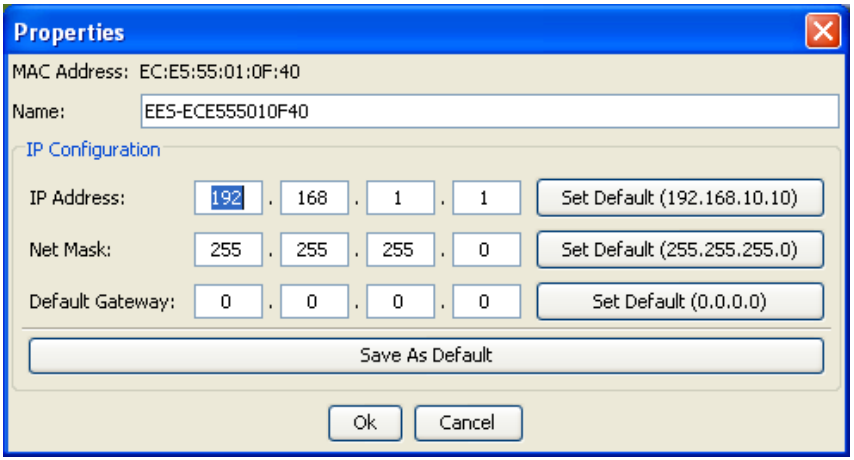


Figure 3-2: Setting IP-Parameters

A Further Support

Technical Questions

For technical questions, please contact any Hirschmann dealer in your area or Hirschmann directly.
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