EESX Quick Start Guide

EESX-Evaluation-Board

Embedded Ethernet Switch Product Family

Development Kit for EESX20 and EESX30

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Contents

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 EESX 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 EESX 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.

- ■ **Operating Instructions**

    Supply the EESX-Evaluation-Board only inside the voltage range from +18 V up to +30 V at *UE1* and/ or *UE2* !

    Connect only cable for Ethernet data transfer to the Ethernet ports !

- ■ **WARNING**

Parts on EESX20/30 module or EESX-Evaluation-Board should not touched in operation!

Due to possible hot spots of electronical components – especially the case of integrated circuits.

About this Guide

Purpose

This document is a step-by-step guide that covers hardware and software installation procedures required to set up an EESX20 or EESX30 Development Kit with factory default settings.

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

► EESX 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

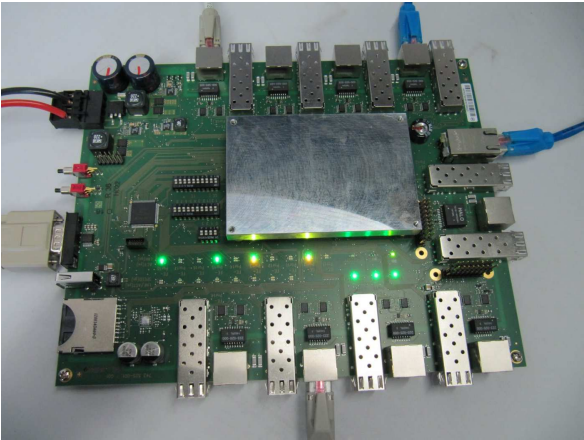The symbols used in this manual have the following meanings:

►	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 EESX20/30 Series into Evaluation-Board.
☐ Apply power to the EESX-Evaluation-Board.
☐ Connect the Module

1.1 Check Kit Contents

Item	Quantity in Development Kit
EESX-Evaluation-Board 	1x EESX-Evaluation-Board for one EESX module **Note:** The EESX module is not included
Product-CD 	1x

1.2 Plug the EESX20/30 module on the EESX-Evaluation-Board

Plug the connectors of the EESX-20/30 series module into the sockets (CO201–CO202) on the top of the EESX-Evaluation-Board as seen in Figure 1-1.
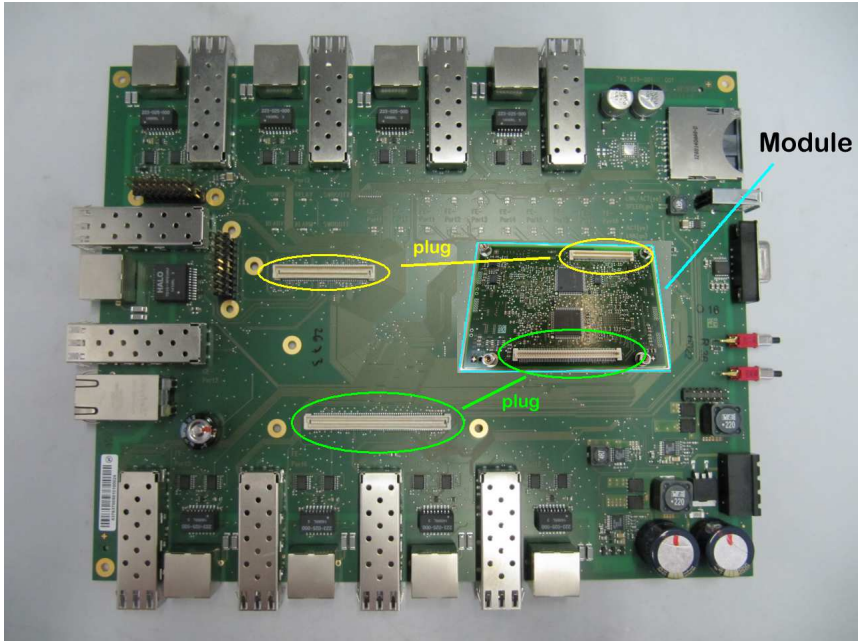

Figure 1-1: Connectors on the EESX-Evaluation-Board and counterparts on the EESX module

1.3 Apply Power to the EESX-Evaluation-Board

Connect the 18-32V DC (24V DC nominal is recommended) power supply directly into the Evaluation-Board's DC power connector as seen in Figure 1-2.
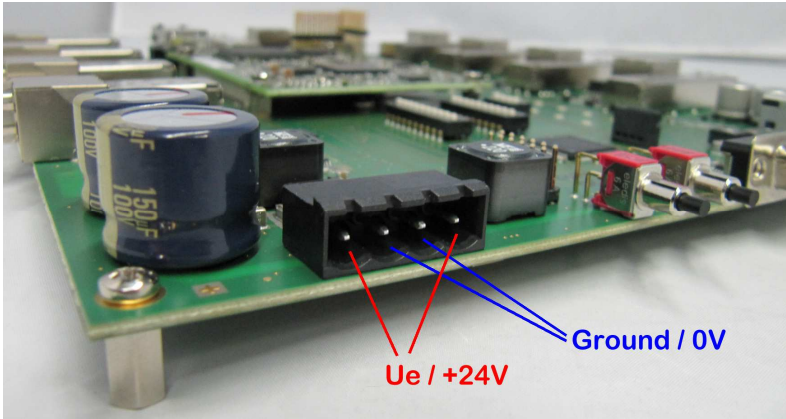
Figure 1-2: DC–Jack

1.4 Connect the EESX-Evaluation-Board

Use an Ethernet cable, connect the PC to any Ethernet port on the EESX-Evaluation-Board. The green Link-LED of the port will be active when a connection is available.

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

Figure 1-3 illustrates these connections.

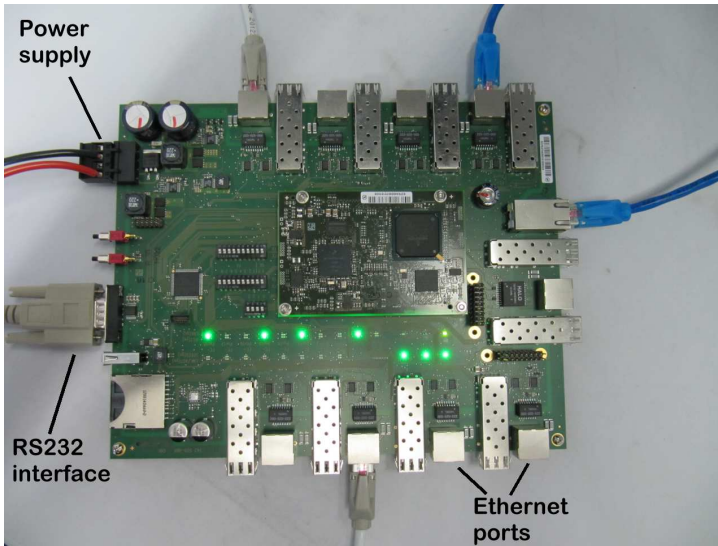You will find a detailed description of CLI in the "Command Line Interface" reference manual.

Figure 1-3: EESX-Evaluation-Board Connections

2 Network Management Interfaces

This chapter explains how to access your EESX, Embedded Ethernet Switch eXtended. The EESX 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 EESX module and PC should be in the same IP subnet. By default, the EESX 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 EESX module.

The EESX 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 EESX web-based interface.

☐ Connect the Ethernet cable to any EESX Ethernet port.

☐ Open a Web browser, for example Firefox version 29.0 or later, or Microsoft Internet Explorer version 9 or later.

☐ Establish a connection to the EESX module 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 8 ("Java™ Runtime Environment Version 1.8.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/.
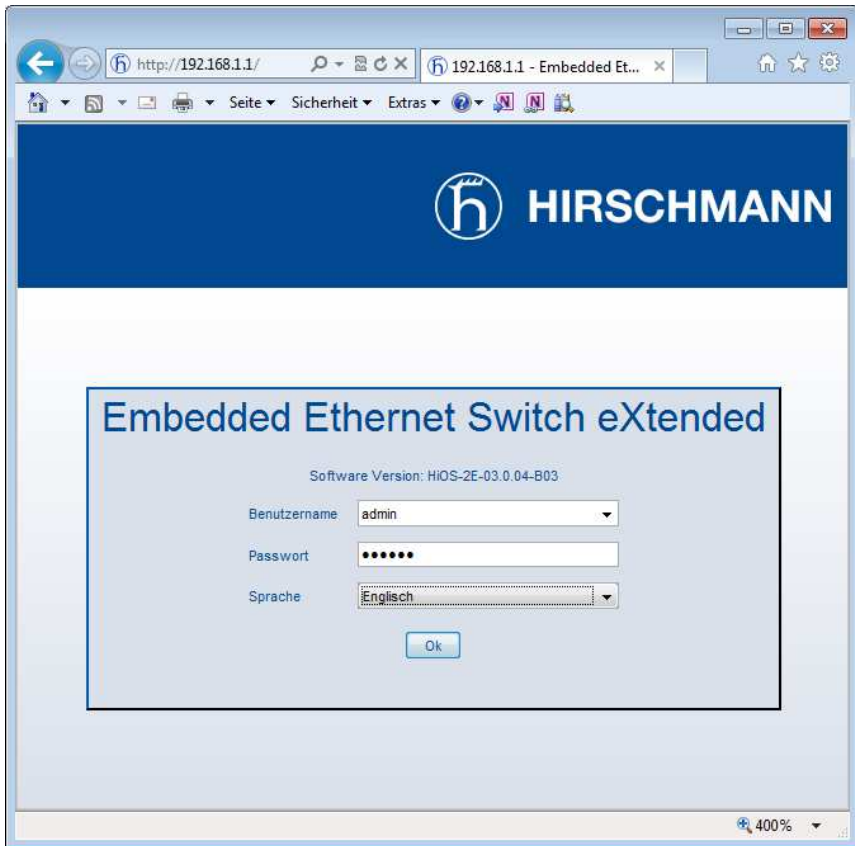
Figure 2-1: Login window

☐ 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 EESX's functions.

Figure 2-2: Basic Settings
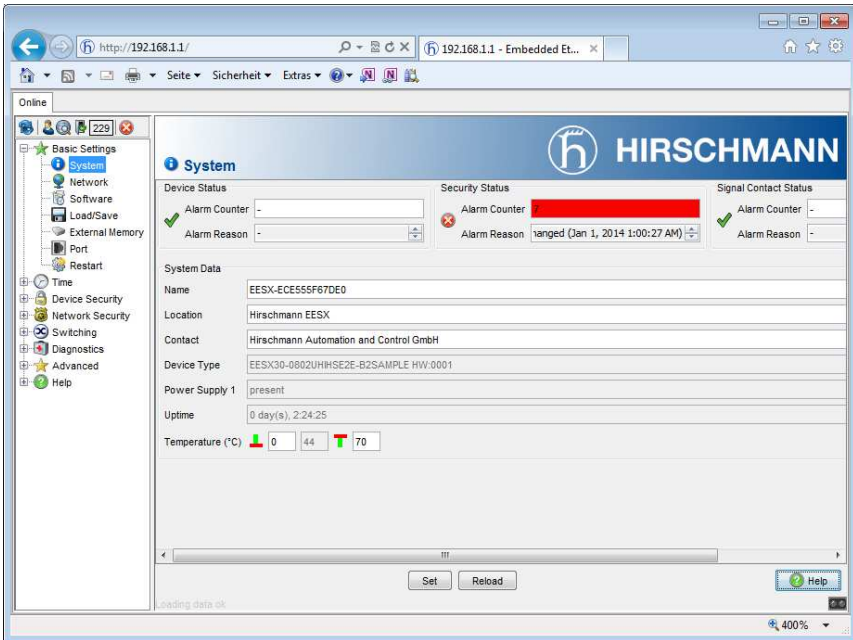
2.2 RS–232 serial communication

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

The terminal program *PuTTY* can be used for this option. The *PuTTY* application is included on the product DVD. To install *PuTTY*, start putty-0.60-installer.exe or a higher version.

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.
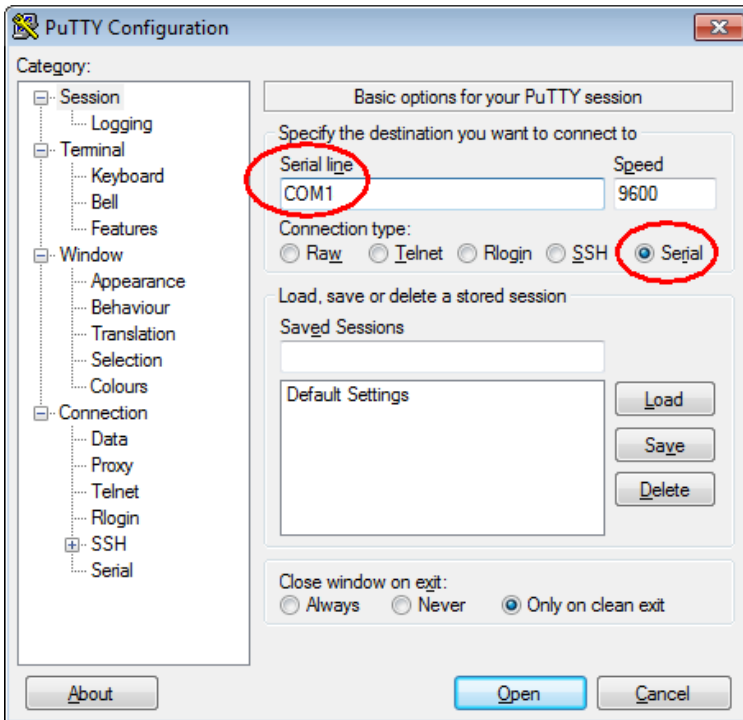
Figure 2-3: PuTTY configuration

Note: The serial COM-port at your PC can have a different number. Check it in the System Control window if you using a Windows™ OS.

☐ In the frame "Category" select "Connection: Serial"

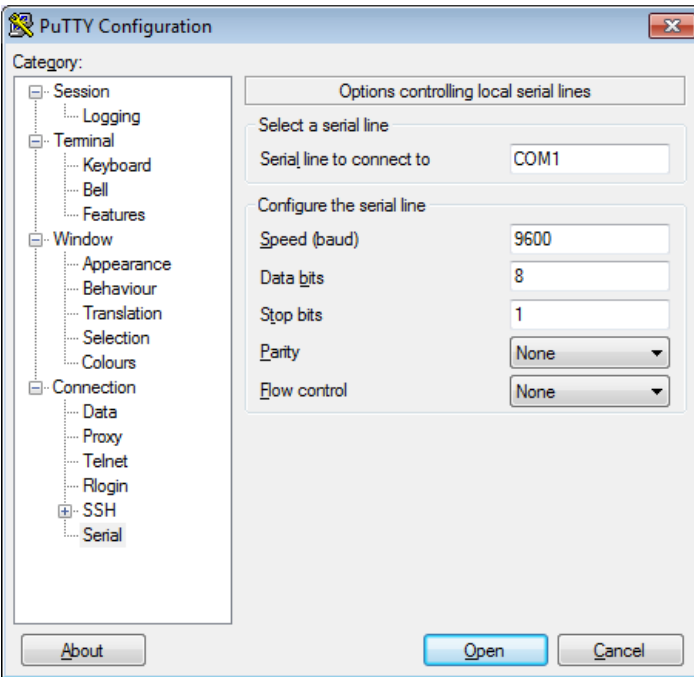☐ Enter the serial configuration parameters of the terminal emulation program shown in Figure 2-4.

Figure 2-4: PuTTY serial configuration

☐ Press the "Open" button to connect to the EESX module. The console login screen will appear.

```
COM1 - PuTTY

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                    EESX30 Release HiOS-2E-03.0.04-B03

                       (Build date 2014-07-15 07:59)


                 System Name  :  EESX-ECE555F67DE0
                 Management IP :  192.168.1.1
                 Subnet Mask  :  255.255.255.0
                 Base MAC     :  EC:E5:55:F6:7D:E0
                 System Time  :  2014-01-01 01:12:05


User:admin
Password:*******
```
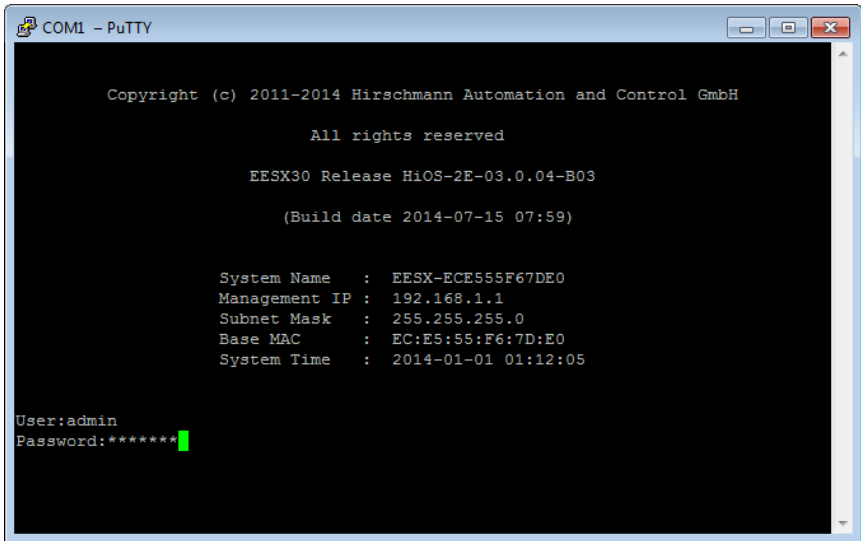
Figure 2-5: Login Screen

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

☐ Choose in the menu tree: Security: Management Access -> Server: Tab *Telnet*

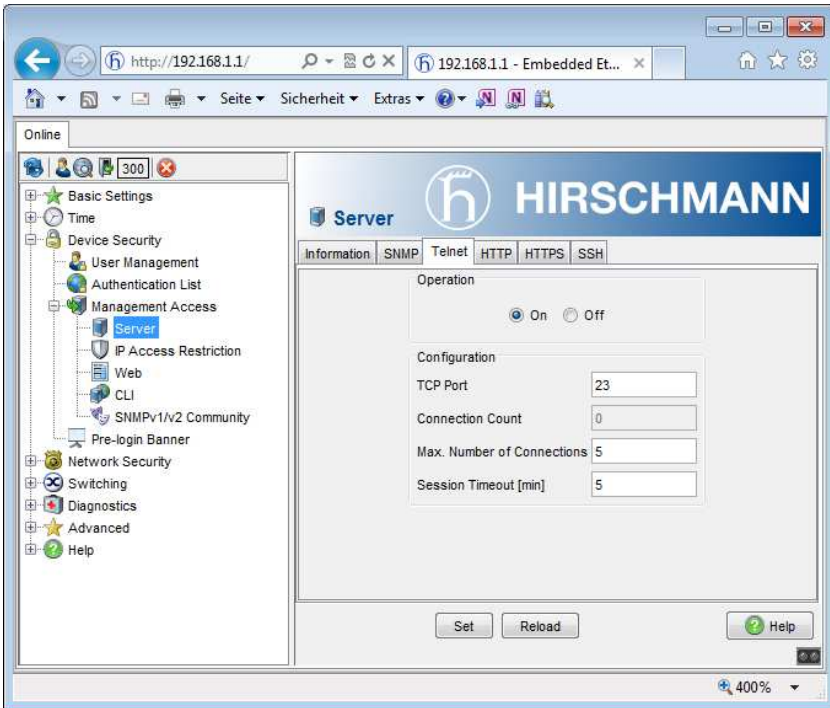☐ Set operation mode *On* (default); see also Figure 2-6

Figure 2-6: Activation of the Telnet Server
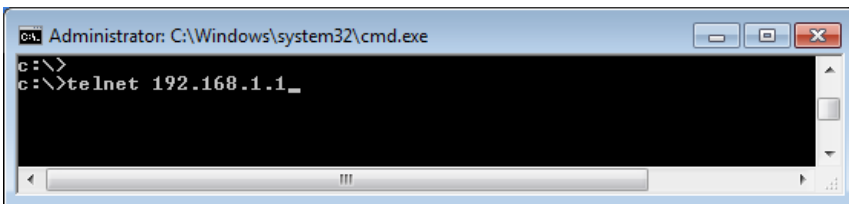
☐ Open a Telnet session to the EESX module.

Figure 2-7: Start a Telnet session

□ Press Enter to open the Console login screen.


```
Telnet 192.168.1.1

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                   EESX30 Release HiOS-2E-03.0.04-B03

                      (Build date 2014-07-15 07:59)


              System Name   :  EESX-ECE555F67DE0
              Management IP  :  192.168.1.1
              Subnet Mask    :  255.255.255.0
              Base MAC       :  EC:E5:55:F6:7D:E0
              System Time    :  2014-01-01 01:14:40


User:admin
Password:*******_
```
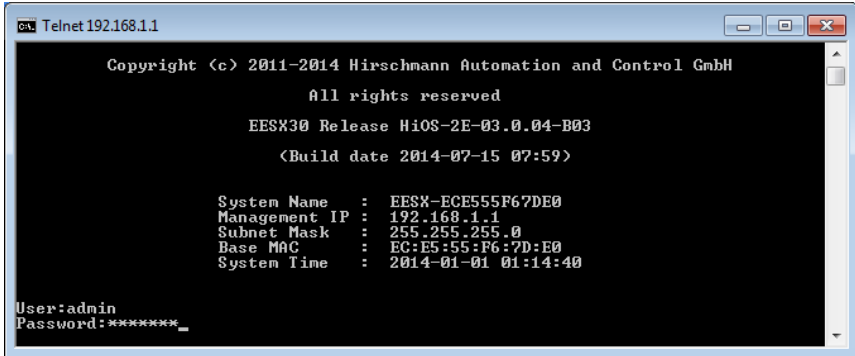
Figure 2-8: Telnet session, Module Login

□ 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 EESX 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 EESX.

When HiDiscovery is started, it automatically searches the network in a Muticast VLAN domain for devices that support the HiDiscovery protocol. The EESX HiDiscovery protocol is per default "activated" and is set to "read-write" access, which allows you to change network IP-Address and device Name.
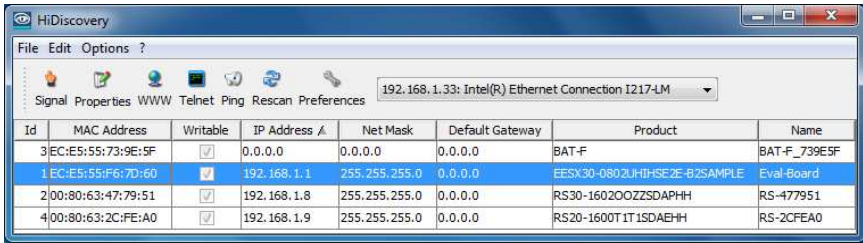
Figure 3-1: HiDiscovery

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 EESX device based on its MAC address as seen below.
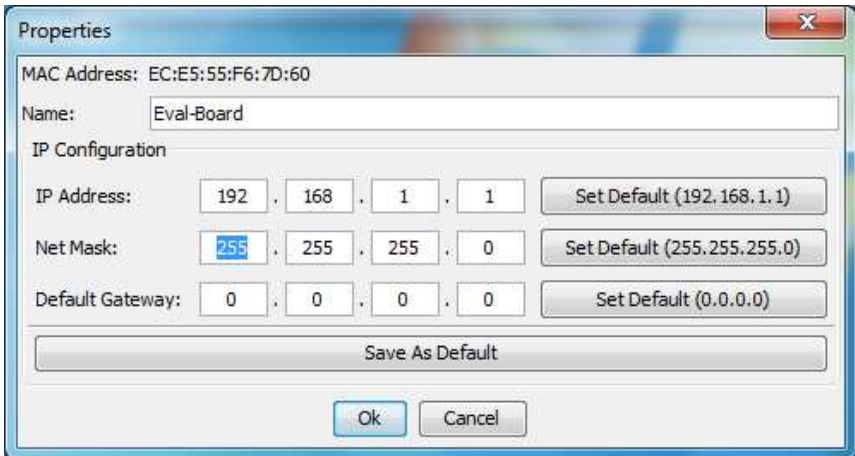

Figure 3-2: Setting IP-Parameters

A   Further Support

■   Technical Questions

For technical questions, please contact any Hirschmann dealer in your area or Hirschmann directly.
You will find the addresses of our partners on the Internet at
http://www.hirschmann.com
Contact our support at
https://hirschmann-support.belden.eu.com

You can contact us in the EMEA region at
► Tel.: +49 (0)1805 14-1538
► E-mail: hac.support@belden.com

in the America region at
► Tel.: +1 (717) 217-2270
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► Tel.: +65 68549860
► E-mail: inet-ap@belden.com

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► Training offers you an introduction to the basics, product briefing and user training with certification.
► The current training courses to technology and products can be found at http://www.hicomcenter.com
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