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ACCTETHNK – Ethernet adapter kit for CT/ CTlaser/ CTratio

Scope of Supply

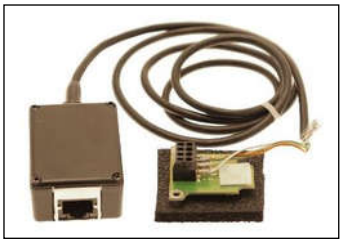
- Ethernet interface board
- Ethernet adapter incl. 1 m connection cable
- Software CD or USB stick
- Cable gland M12x1,5
- Mounting screws, cable tie

EU Declaration

The product meets the provisions of the EMC Directive **2014/30/EU** and the General Product Safety Directive **2001/95/EC**.

EMC General Requirements:
EN 61326-1:2013 (Basic requirements)
EN 61326-2-3:2013
Safety of measurement devices:
EN 61010-1:2010

This product is in conformity with Directive **2015/863/EU** (RoHS) of the European Parliament and of the Council of 4 June 2015 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

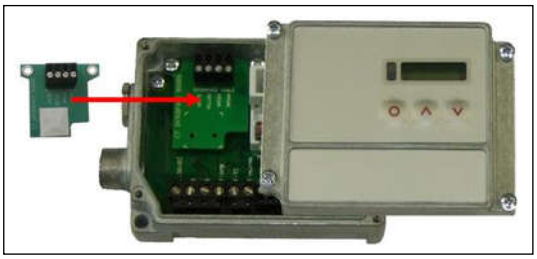


- The max. ambient temperature is 85 °C for the electronic box and 60 °C for the Ethernet adapter.
- The corresponding command list (CT-CTlaser-CTvideo-commands-xxxx-xx or CTratio-commands-xxxx-xx) can be found in the installation folder of the software under *Commands*.

1. Hardware Installation

Please plug the Ethernet interface board into the place provided, which is located beside the display. In the correct position the holes of the interface match with the thread holes of the CT box. Now press the PCB downwards and fix it using both M3x5 screws. Exchange the blind screw on the CT box by the cable gland and install the connection cable (interface board – Ethernet adapter). Make sure the wiring is correct according to the wire colours printed on the interface board.
Please connect the shield of the cable with the electronics housing (inside the cable gland).

The CT unit needs a power supply for operation with at minimum 12 V.
Please connect the Ethernet adapter device with your network using an Ethernet cable.



2. Network Installation

Insert the installation CD or the USB stick into the according drive on your computer. If the autorun option is activated the installation wizard will start automatically. Otherwise please start **CDsetup.exe** from the CD-ROM or via the USB stick. The following screen will appear. Please select **Install Ethernet Driver**. When using the USB stick, you will find the driver in the installation folder under *Driver* and *Ethernet*.



First of all you have to find out the IP adress oft he CT Ethernet adapter and change out of DHCP to a fix IP adress. For this case connect the CT Ethernet adapter to a DHCP-Server (e.g. your company network) and start the software *Digi RealPort Setup*

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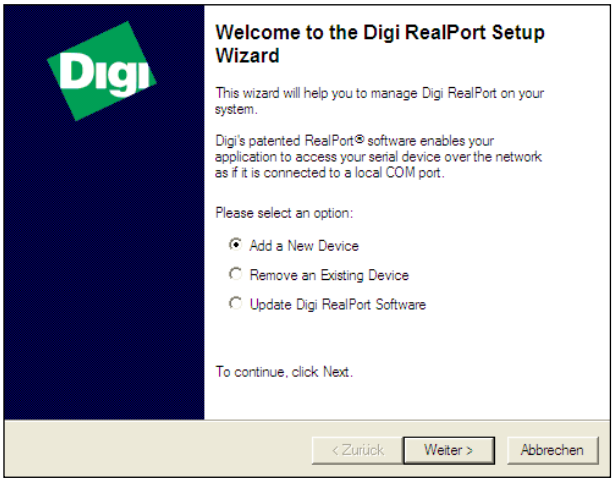
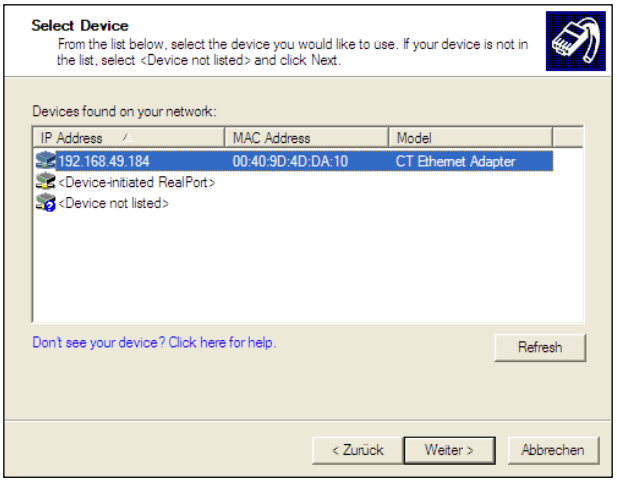
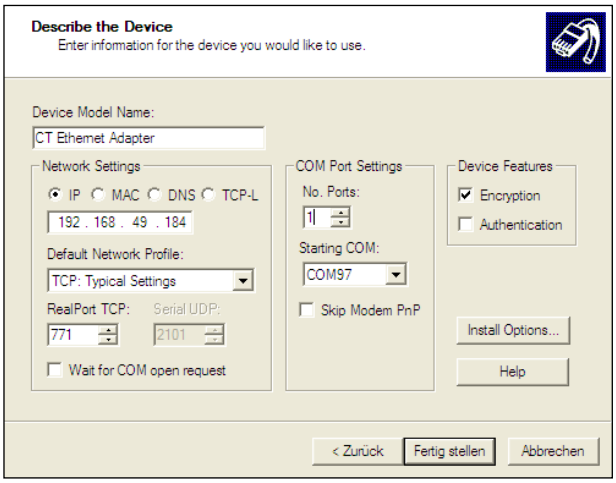


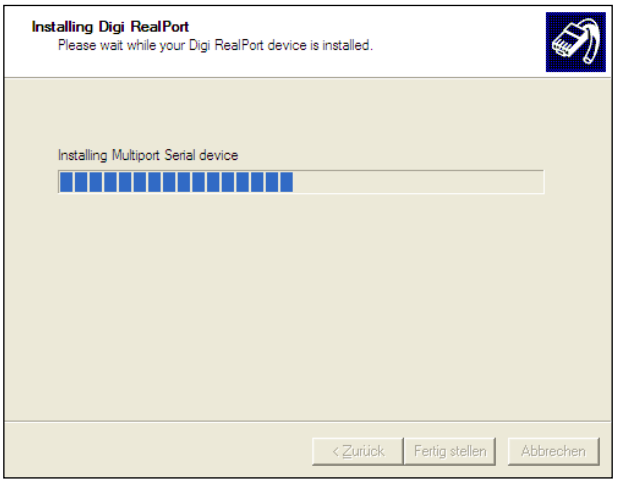
Select **Add New Device** and press **Continue**.



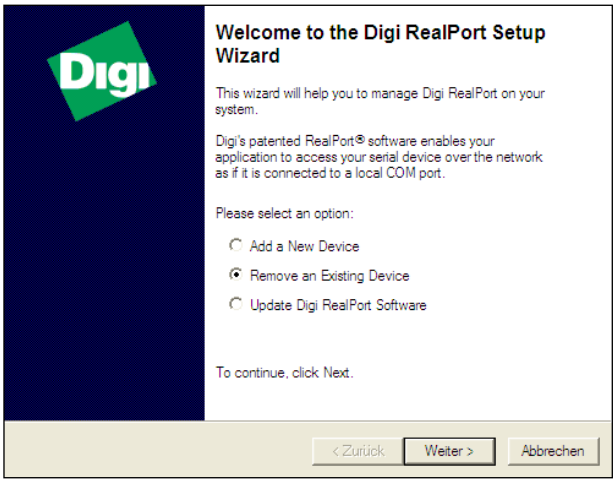
The IP- and MAC-address of the Ethernet adapter will appear in the list. You will find the MAC address also printed on the Ethernet adapter. Please mark the adapter in the list and press **Continue**.



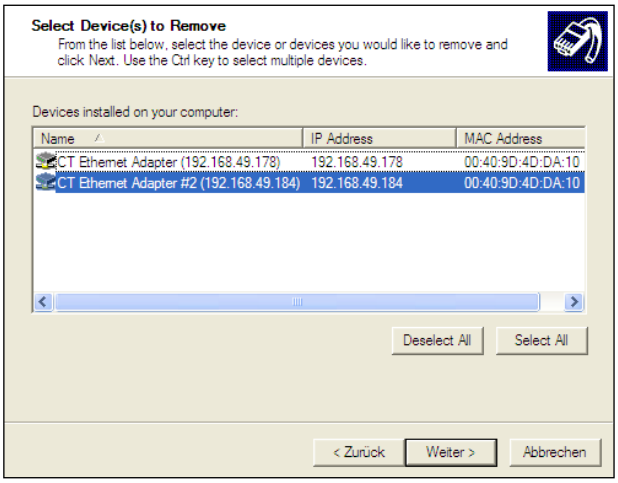
The following screen shows all settings. Please press **Finish**.



The device will be installed inside the network.



To deinstall an adapter please follow the steps described under **Network Installation**. Select **Remove an Existing Device** and then **Continue**.



In the following overview all on the PC installed Ethernet adapter are shown. Select the adapter(s) which should be deinstalled and press **Continue**.

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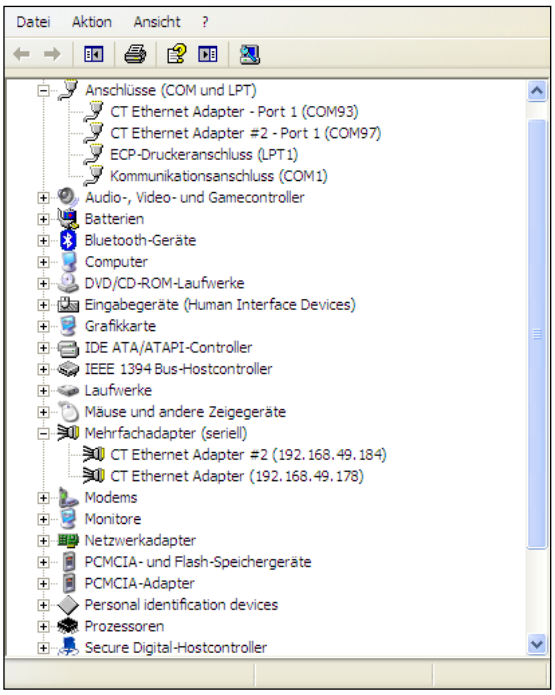
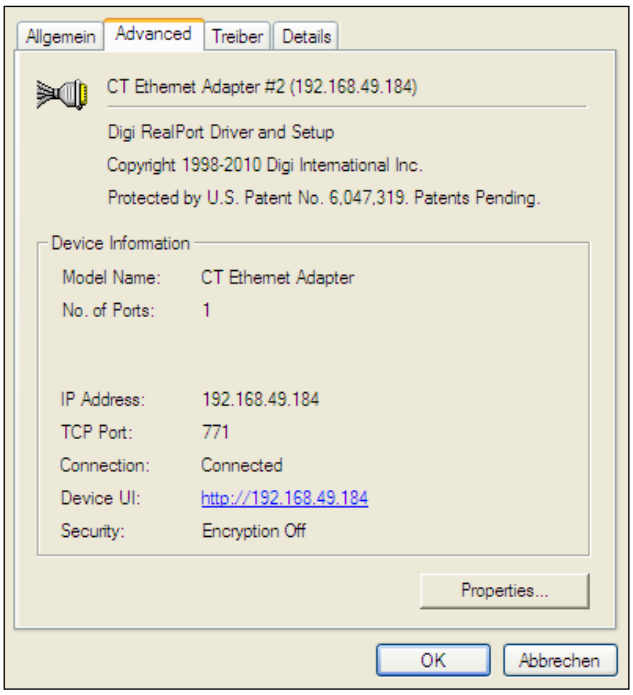
3. Direct Connection to a PC

If a direct connection between Ethernet adapter and PC is required the adapter and the PC need to get a fixed IP address. After the network installation please open the Windows device manager (Start/ Control panel/ System/ Hardware/ Device manager).



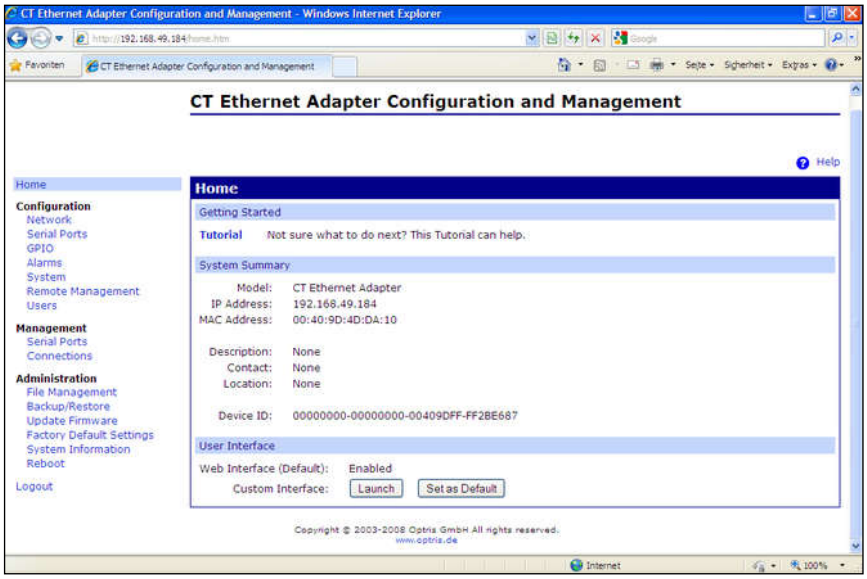
Please choose **Multi adapter (serial)** from the list. By double click on the desired Ethernet adapter a properties window is opening.



Please open the tab **Advanced** in this window. Beside **Device UI** you will find a link with the network IP address.

In a case that the system will ask you for the password please use:

User : root
Pass : dbps



By clicking on the link the configuration page for the Ethernet adapter will be opened in your web browser.
The PC must be connected to the internet for this purpose.
Please select **Network** (Navigation left; below Configuration).

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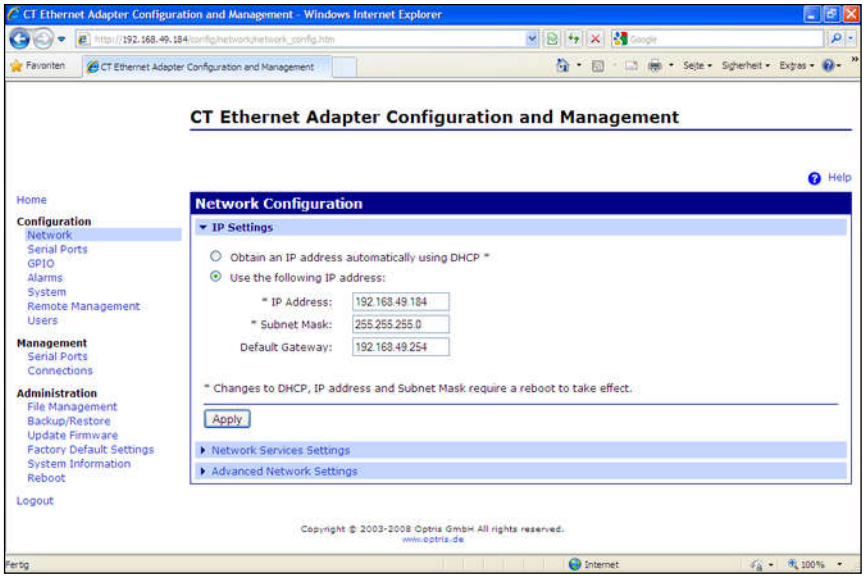
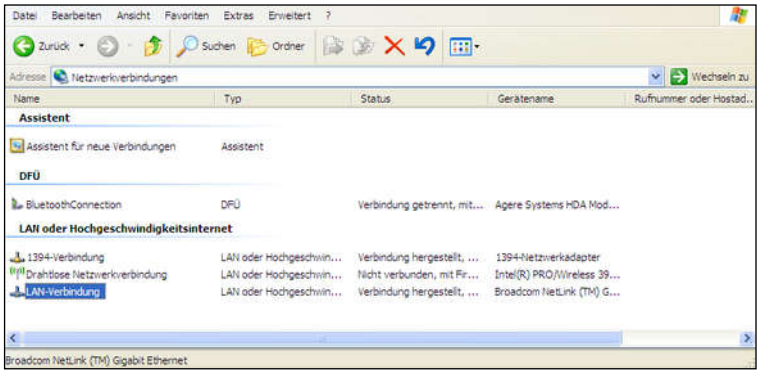
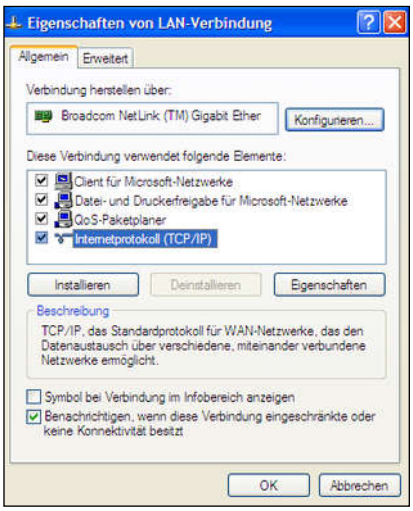


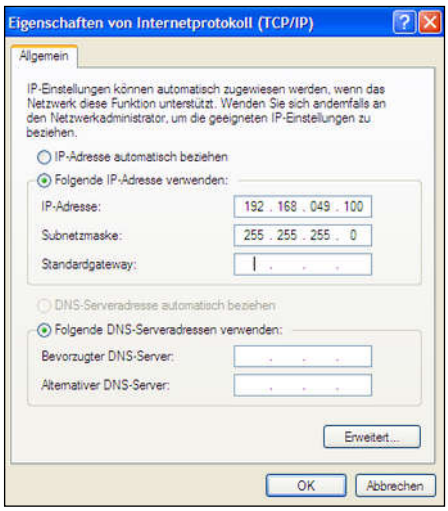
In the input mask below **Use the following IP address** you can now enter a fixed IP address.
Confirm your settings with **Apply**.
For a communication with the adapter you now have to configure the network settings on your PC.
Please open the LAN settings (Start/ Control panel/ Network settings/ Settings):



Mark the LAN connection and open the properties window (right mouse button)



Double click on **Internet protocol (TCP/ IP)**



Please enter a fixed IP address here for the PC. Please note that the first three blocks have to match with the IP address of the adapter device (example: 192.168.049). Press **OK**. The installation is finished.

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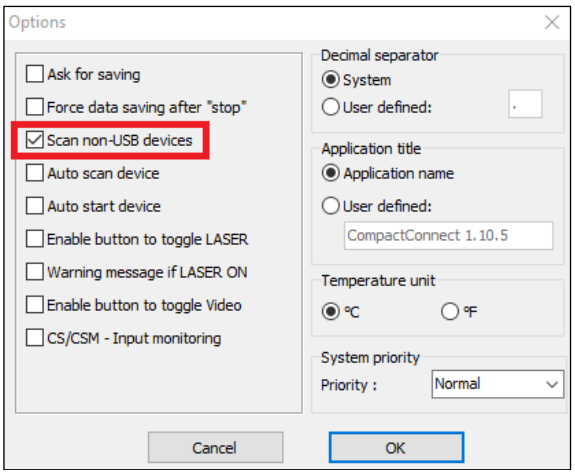
4. Settings inside the software CompactConnect/ Compact Plus Connect

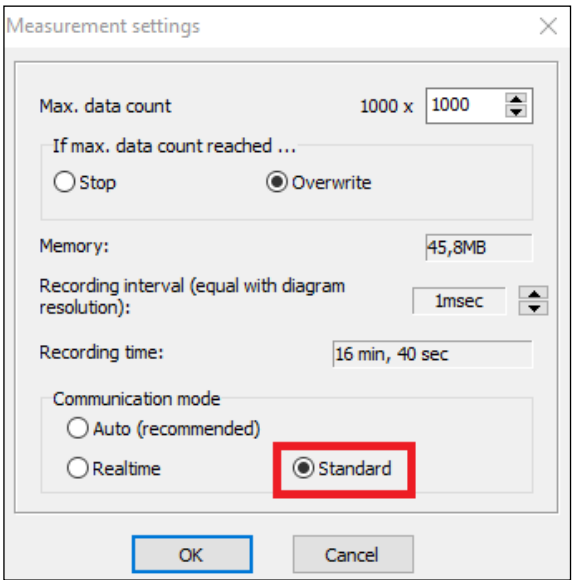
After a successful network installation of the Ethernet adapter you can start the software CompactConnect/ Compact Plus Connect.

Only required for software CompactConnect:

To make sure that an available device can be found you should activate at first the function **Scan non-USB devices** in the menu point **Preferences/ Options**:



Further you should set the **Communication mode** to **Standard** (Menu: **Measurement/ Settings**).
This activates the so-called polling mode (bi-directional communication).



5. Reset of the Adapter

The Ethernet adapter can be reset to the **factory default** configuration. Please use a ballpen to reach the reset button (hole on top of the housing):

- Power on the device while holding the Reset button down.
- After a few seconds you may see a blink of the green LED (network connection).
- Wait until you see the green LED blink a 1-5-1 pattern [1)], then release the reset button.
- Wait for the device to boot up. At this time, the configuration is returned to **factory defaults**.
- Powering off the device ***before*** releasing the button guarantees the configuration will NOT be reverted.
- Powering off the device just after releasing the button will result in an unknown configuration, possibly having some or all settings reverted to defaults.

[1)] blink – pause – 5xblink – pause – blink

After the reset the adapter works in the DHCP mode. If you like to establish a direct connection to a PC please follow this instruction, chapter 3.

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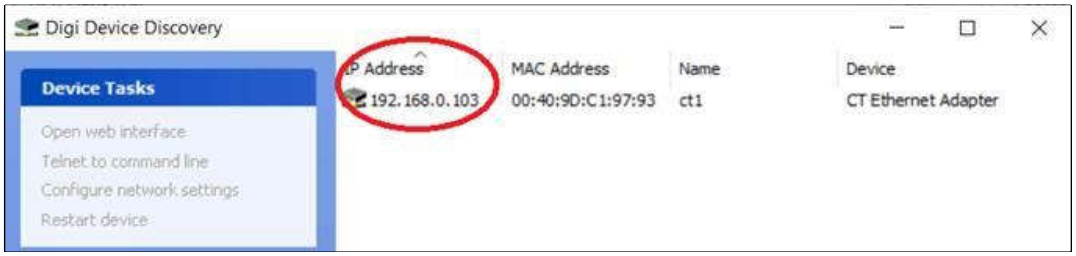
Communication via Raw TCP/IP

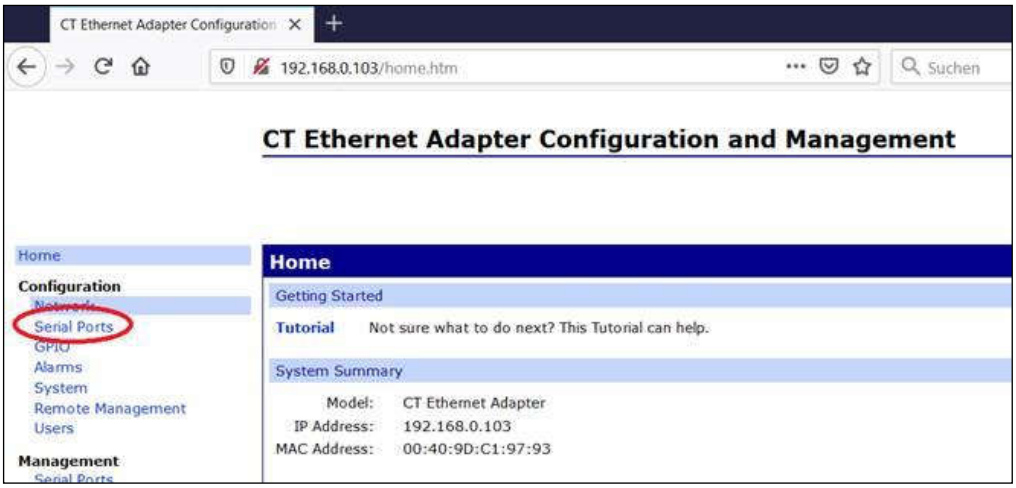
The optional Ethernet interface for CT (ratio) devices is primarily promoted to implement a virtual COM port with a Windows PC. Alternatively, this interface can also be used for communication via "Raw TCP/IP" on any computer platform.
The Ethernet-Interface is shipped preconfigured for the usage with a Virtual COM port, but can easily be reconfigured for a “Raw TCP/IP” protocol.

1. In order to communicate via Raw TCP/IP, the CT with the Ethernet-Interface needs to be powered and connected to a network with an DHCP server. As an alternative to the DHCP server, a fixed IP address can also be assigned.

2. Find the IP-address of the Ethernet-Interface. The “Digi Device Discovery Utility” from the Digi website (www.digi.com) can be used for that purpose.



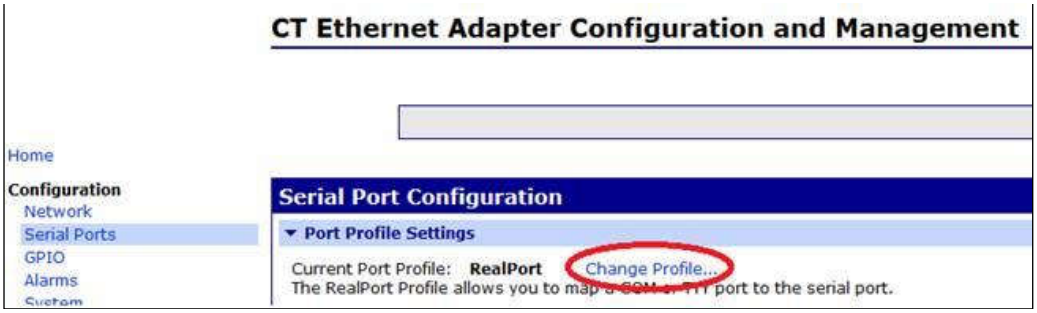
3. Enter this IP-address into the address line of your Internet browser. The Home Page of the Ethernet-Interface should be shown.



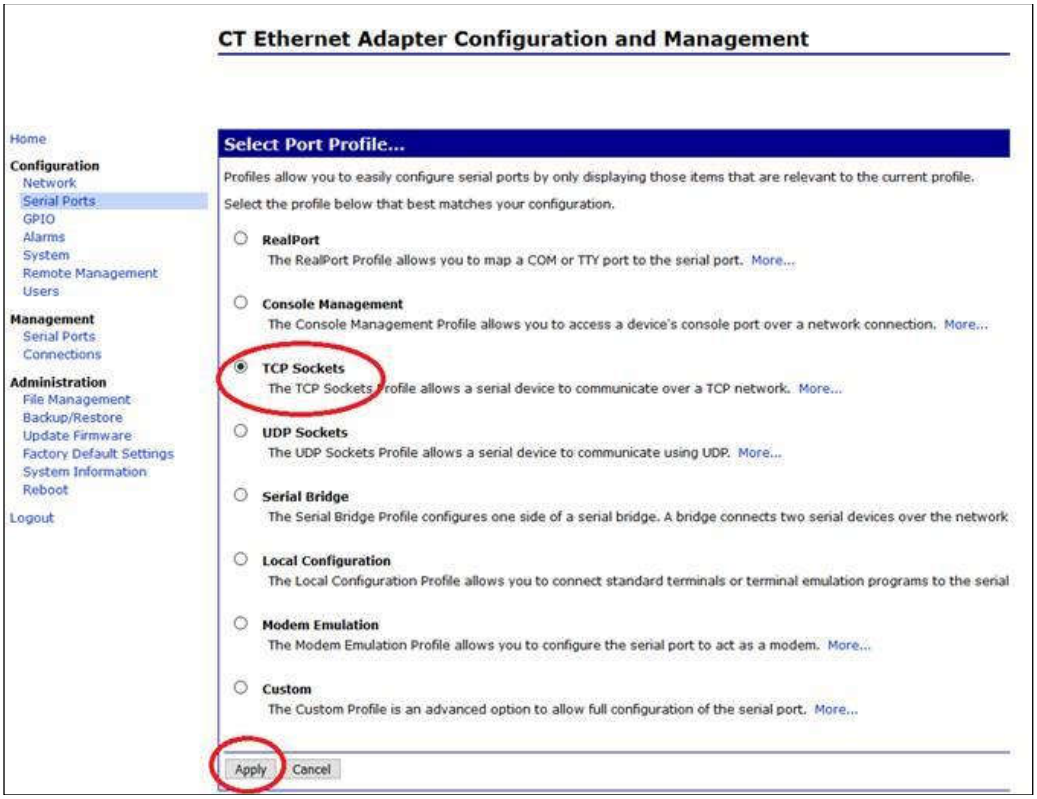
4. Select “**Serial Ports**”



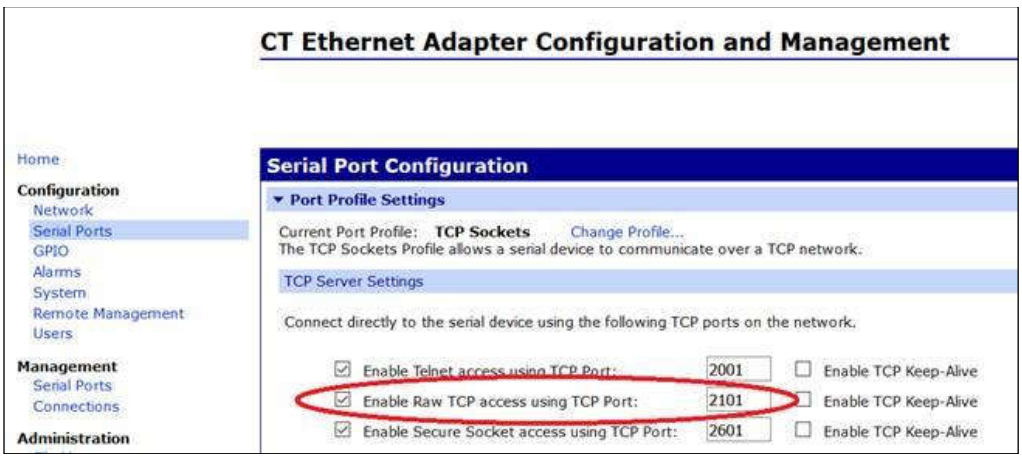
5. Select “**Port 1**”



6. Select “**Change Profile**”

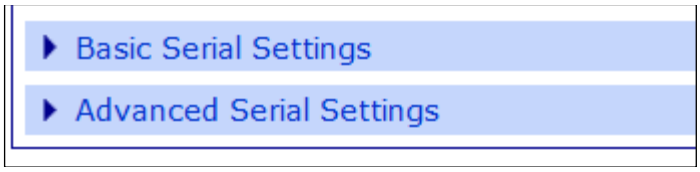


7. Check “**TCP Sockets**”, click “**Apply**”, then the following screen should be shown:

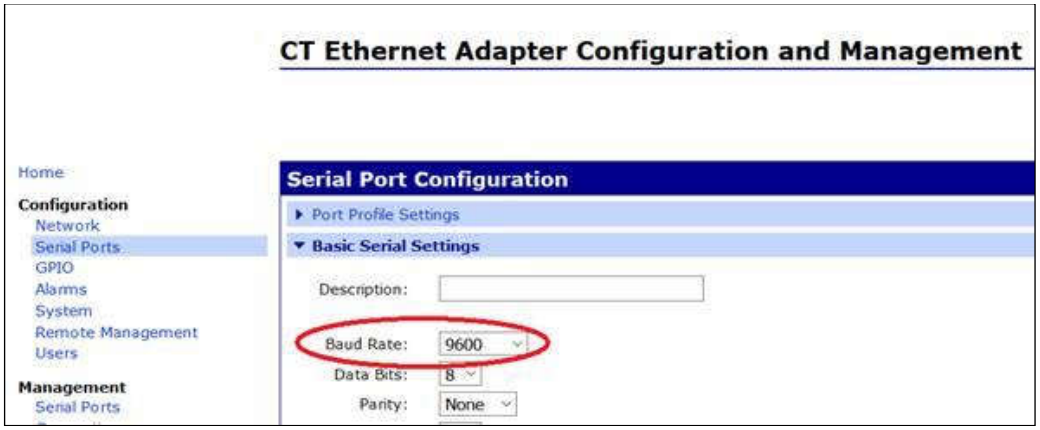


8. Make sure that “**Enable Raw TCP access using TCP Port:**“ is checked, note the port number “**2101**”.

9. Scroll down to “**Basic Serial Settings**” and click on that triangle.

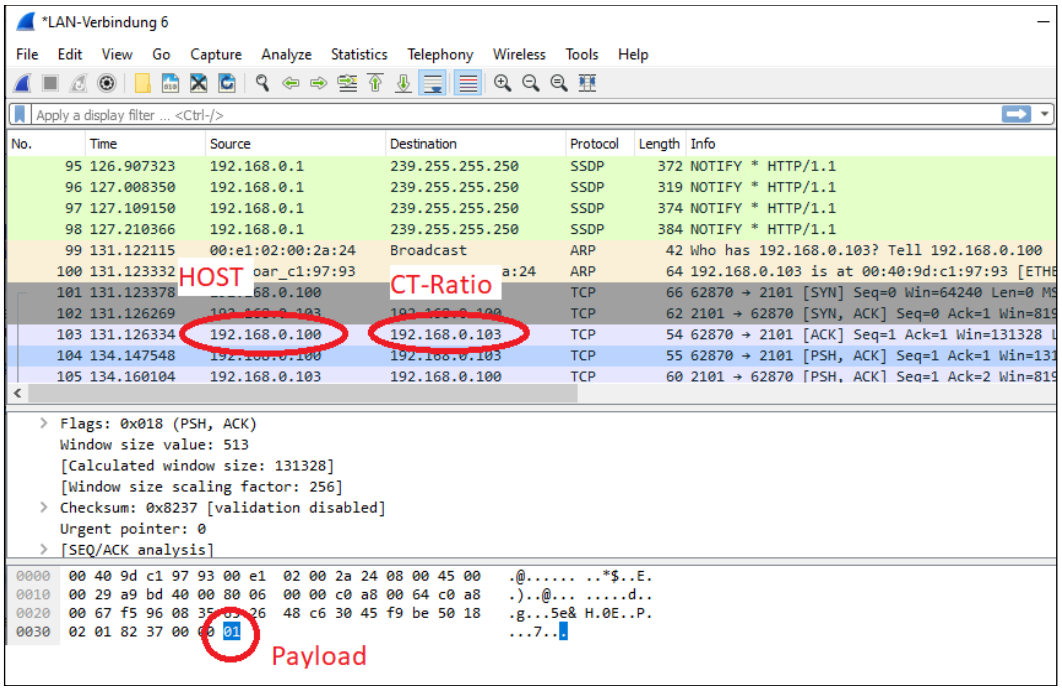


10. **A Serial Port Configuration** page should be shown.



11. Make sure that the selected baud rate is the same that has been set for the CT (Ratio) instrument, click the **apply** button.

12. Now every TCP/IP client program can be used to connect to the IP address of the Ethernet-Interface with the port number “2101”. The communication commands for the CT (Ratio) instrument can be used, i.e. the binary command “0x01” to query the primary temperature value. The network monitor program “Wireshark” shows the data on the network (just a single byte “0x01” as the payload, sent from the host with the IP-address 192.168.0.100 to the instruments with the IP-address 192.168.0.103).



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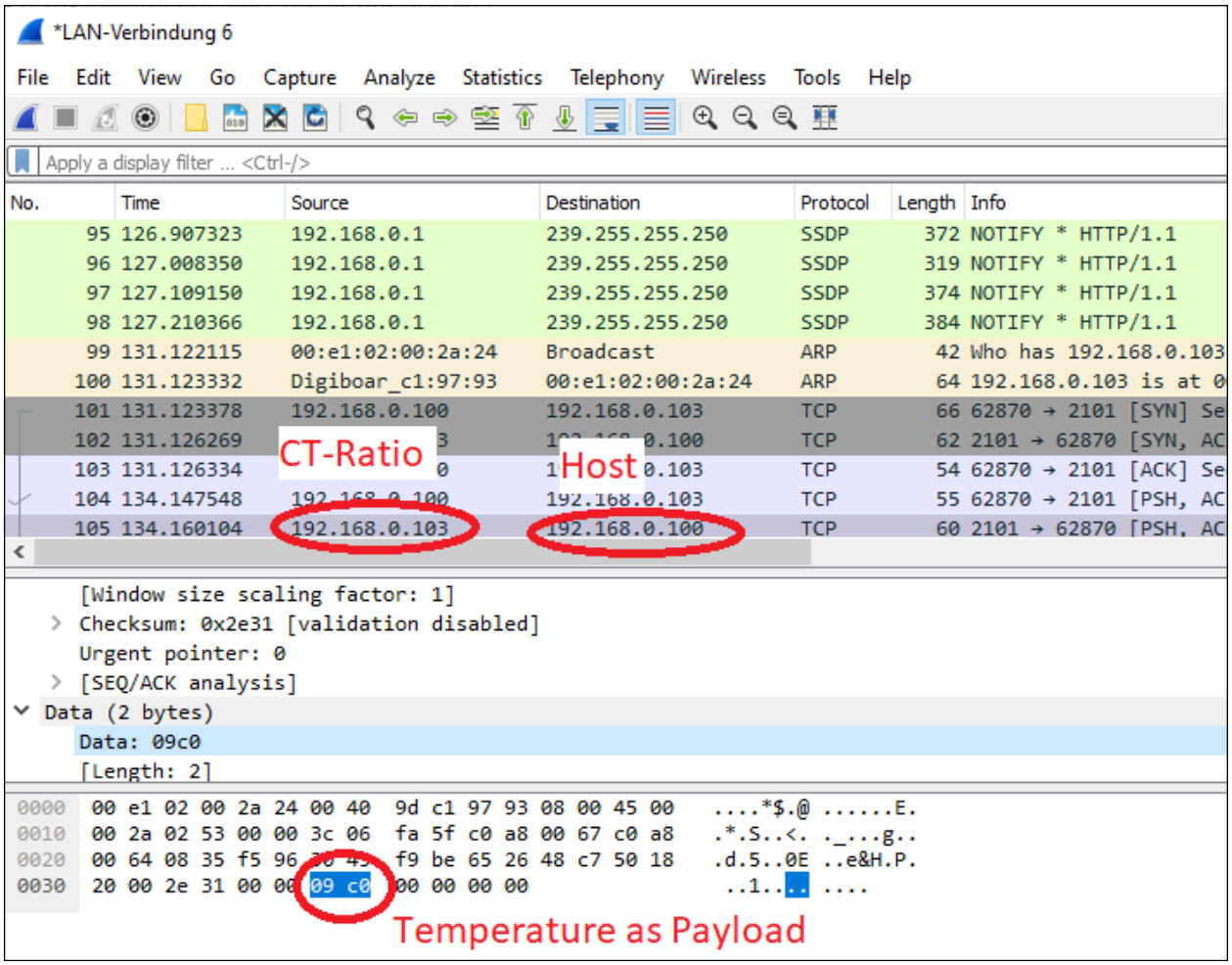
The CT (Ratio) instrument with the IP-address 192.168.0.103 will answer to host with the IP-address 192.168.0.100 will with 2 bytes 0x09c0 (MSB first), that indicate the temperature.
To calculate the temperature in °C subtract 1000 from that value and divide this number by 10 (0x9c0=2496 decimal, (2496–1000)/10=149.6 °C).



Please refer to the serial command list for command syntax and data format. The corresponding command list (CT-CTlaser-CTvideo-commands-xxxx-xx or CTratio-commands-xxxx-xx) can be found in the installation folder of the software under *Commands*.