Biometra Thermal Cycler
Direct Ethernet Connection Computer – Device
Instructions

Contents

1 Overview

This document describes the procedure for establishing a direct ethernet connection between a computer and a Biometra thermal cycler. To establish a direct ethernet connection it is required to set up a static IP address on the thermal cycler and on the computer.

1.1 Compatibility

The steps described in this document are compatible with all Biometra thermal cyclers with firmware version ME V2.00 – RE V2.00 or higher.

The TSuite used in this guide has version 1.02 – (1.12) – (1.04) – (1.03). Older Versions do not support the selection of COM ports and don't have the ability to enter an IP address directly.

The description refers to the Microsoft Windows 10 operating system. For other operating systems the steps may differ.

2 Set the thermal cycler to a static IP address

A Biometra standard thermal cycler and a Biometra TRobot II requires different steps to set up a static IP address. In the chapters 2.1 and 2.2 the procedure is described for each device class accordingly.

2.1 Set up a "stand-alone" Biometra thermal cycler

To set up a static IP address on a Biometra thermal cycler the use of the devices touch interface is highly recommended. An alternative option is to use an Ethernet connection to a network with an active DHCP server (applicable only if the thermal cycler is set to automatically obtain an IP address from a DHCP server or after a reset to the Default settings).

2.1.1 Setting the Biometra thermal cycler to a static IP address

Log in as a user with administrator rights and follow the steps in the following figures described below Fig. 5.
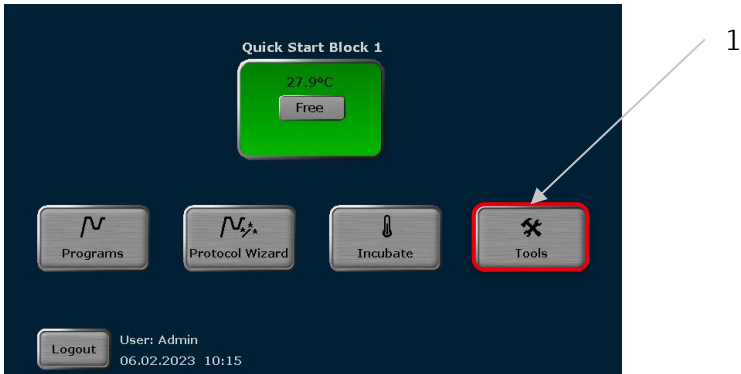
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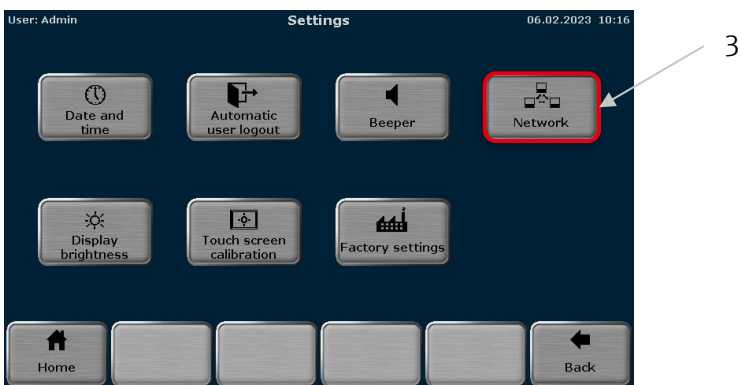Fig. 1 Biometra thermal cycler home screen (mono block)

Fig. 2 Biometra thermal cycler tools screen
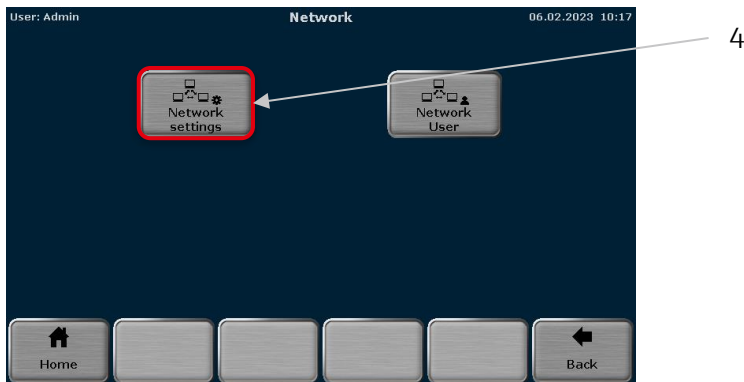

Fig. 3 Biometra thermal cycler settings screen

Fig. 4 Biometra thermal cycler network screen
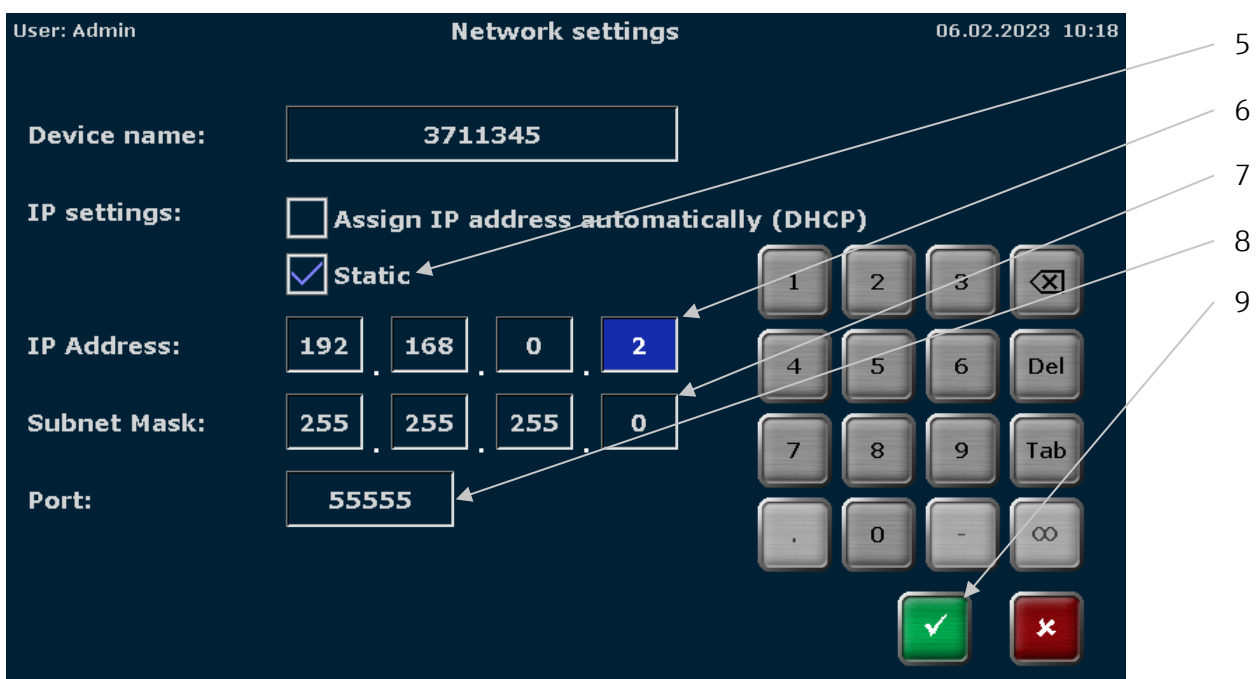

Fig. 5 Biometra thermal cycler network settings screen

1 Go to the *Tools* screen (Fig. 1).
2 Go to the *Settings* screen (Fig. 2).
3 Go to the *Network* screen (Fig. 3).
4 Go to the *Network settings* screen (Fig. 4).
5 Select the IP mode *Static*.
6 Set the IP address to any value between 192.168.0.2 and 192.168.0.254 (In this example the IP address is set to 192.168.0.2). Remember the entered IP address for later usage. When more than one thermal cycler is to be used in a network: The entered IP address must be unique for any thermal cycler in a network.
7 Set the subnet mask to 255.255.255.0.
8 Set the device port to 55555.
9 Save the changes.

2.2 Set up the automated thermal cycler Biometra TRobot II

To set up a static IP address on the Biometra TRobot II a serial connection to the PC is highly recommended. An alternative option is to use an Ethernet connection to a network with an active DHCP server (applicable only if the thermal cycler is set to automatically obtain an IP address from a DHCP server or after a reset to the Default settings).

2.2.1 Connecting the Biometra TRobot II via serial interface

- Connect the Biometra TRobot II via a RS232 interface to the PC.
- If your computer has no RS232 interface, you can use a USB-to-RS232 adapter.
- Make sure that no ethernet cable is connected to the Biometra Robot II.
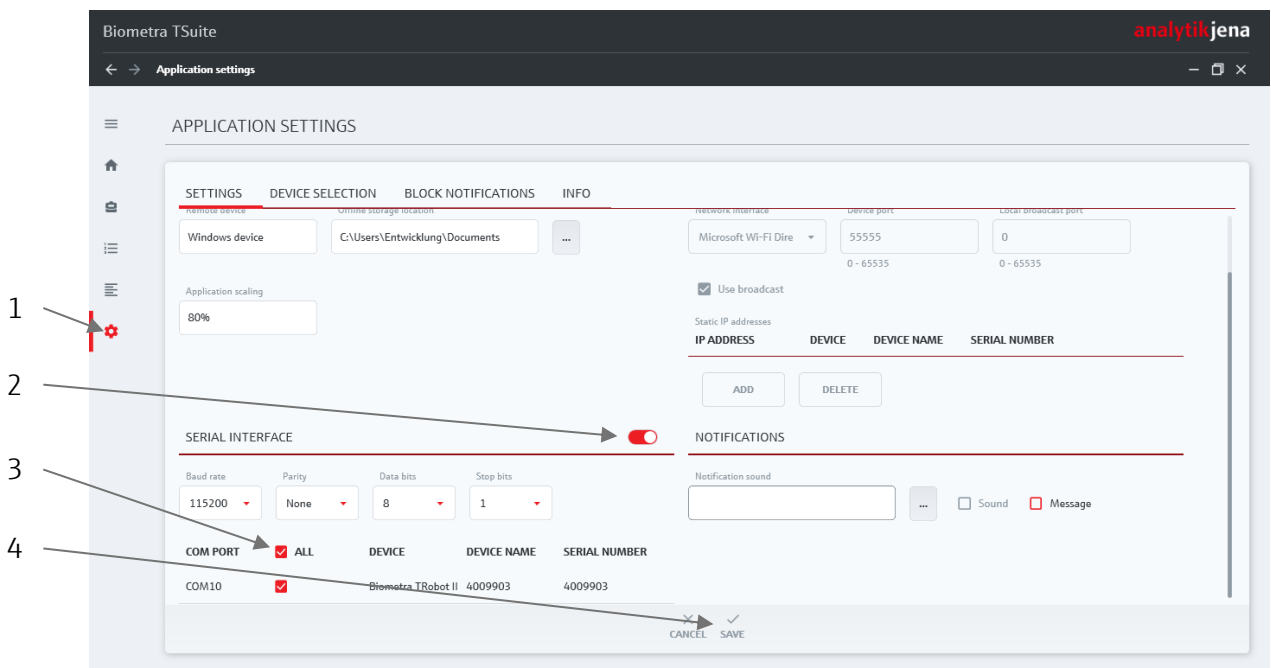- Follow the steps described below Fig. 6.

Fig. 6 Biometra TSuite settings for serial interface

1. Go to the application settings.
2. Turn on the serial interface.
3. If applicable turn on the setting *all COM ports*.
4. Save the changes.

2.2.2 Setting the Biometra TRobot II to a static IP address

▪ Go to the page *Home screen* shown in Fig. 7.
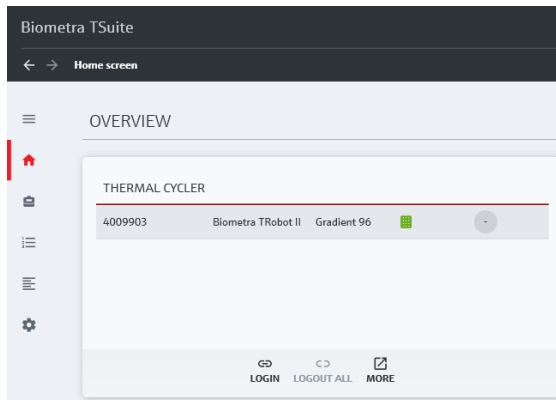

Fig. 7 Biometra TSuite home screen

▪ Select the Biometra TRobot II and login on the device as a user with administrator rights.

▪ Click on the button *More*. On the next page click on the button *Options*.

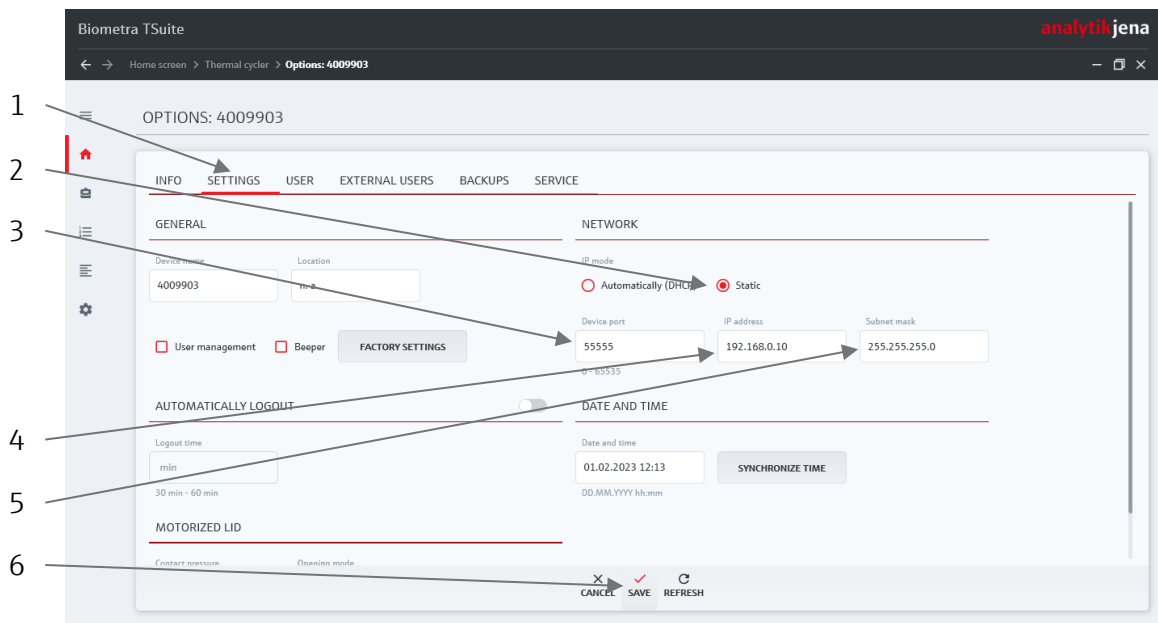▪ Set the network settings as described below Fig. 8.

Fig. 8 Biometra TRobot II network settings

1   Go to the thermal cycler settings.
2   Select the IP mode *Static*.
3   Set the device port to 55555.
4   Set the IP address to any value between 192.168.0.2 and 192.168.0.254 (In this example the IP address is set to 192.168.0.10). Remember the entered IP address for later usage. When more than one thermal cycler is to be used in the network: The entered IP address must be unique for any thermal cycler in the network.
5   Set the subnet mask to 255.255.255.0.
6   Save the changes.

▪ Log out of the Biometra TRobot II and switch the device off.

▪ Close the Biometra TSuite.

▪ Disconnect the cable from the RS232 interface.

3   Go to the Microsoft Windows Network Connections

You can go to the Microsoft Windows Network Connections on multiple ways.

3.1   Open Microsoft Windows Network Connections via settings dialog

▪ Go to Windows Settings

▪ Go to the Network & Internet settings

▪ Go to the option *change adapter options*.

   Alternatively, you can open the settings window as follows in chapter 3.2.

3.2   Open Microsoft Windows Network Connections via run dialog

▪ Press Win + R to open the Run command dialog box.

▪ Type *ncpa.cpl* and press Enter to open the Network Connections tool. See Fig. 9 for reference.

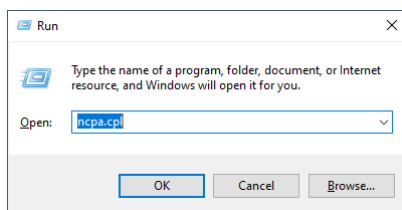Fig. 9 Windows run command dialog box

4 Identify the proper network interface

- Connect the Biometra thermal cycler via an ethernet cable to the computer.

- Identify the wired connections in the Windows Network Connections (see Fig. 10). Wired networks can be identified by their symbol (see Fig. 11).

- If there is only one wired network interface available, then no further actions for identifying the network interface are needed.
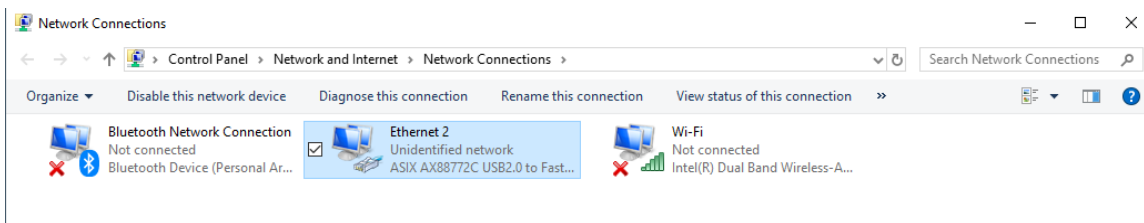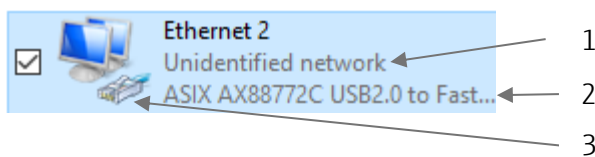

Fig. 10 Windows Network Connections

Fig. 11 Detailed view of a network interface display

1 Interface status.
2 Interface name.
3 Symbol for wired network.

- If there are more than one wired network interface, the correct one can be identified as follows:

  – Look at the interface status of the network interfaces.

  – Turn the Biometra thermal cycler on or off and observe which interface status is changing.

  – The interface that switches between the states *unidentified network* and *network cable unplugged* is the correct one.

- Remember the interface name.

5 Setting the computer to a static IP address

For the following steps you need administrator rights on the computer. Please refer to your local IT guidelines and, in doubt, ask your IT department for advice.

- Open the properties of the identified interface via the context menu.

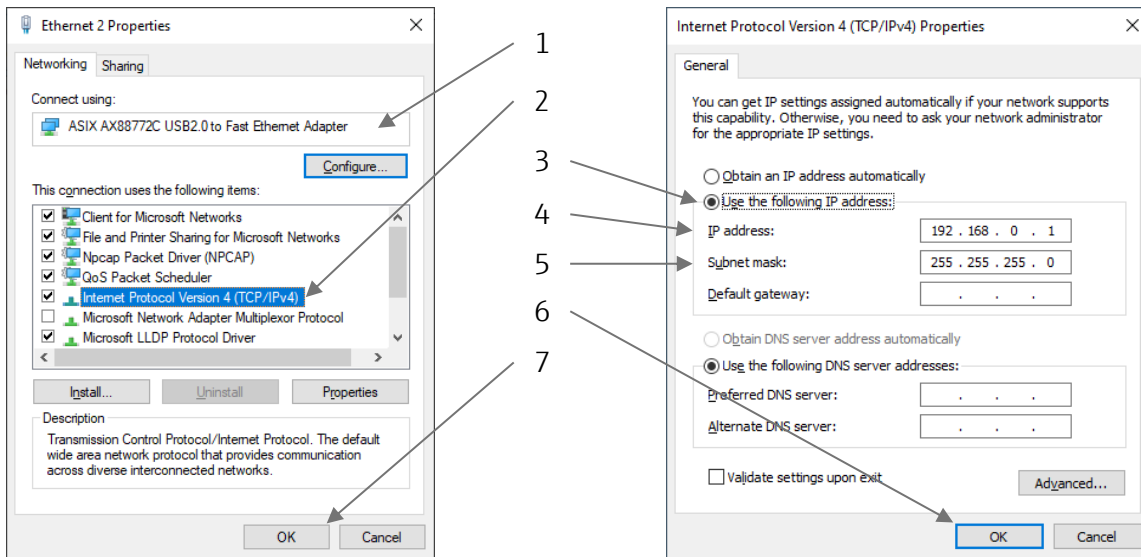- Follow the steps described below Fig. 12.

Fig. 12 Interface properties (left) and TCP/IPv4 properties (right)

1   Check that the interface name is correct.
2   Select the *Internet Protocol Version 4 (TCP/IPv4)* and select the *Properties* button.
3   Set the radio button to the option: *Use the following IP address*.
4   Enter the IP address 192.168.0.1.
5   Set the subnet mask to 255.255.255.0.
6   Save the changes in the TCP/IPv4 properties window.
7   Save the changes in the interface properties window.

6   Set up the Biometra TSuite for an ethernet connection

- If the Biometra thermal cycler is switched off, switch it on.
  When the Biometra TRobot II was connected via an RS232 connection, the Ethernet port was disabled. You must power cycle the Biometra TRobot II to re-enable the Ethernet port.

- Start the Biometra TSuite.
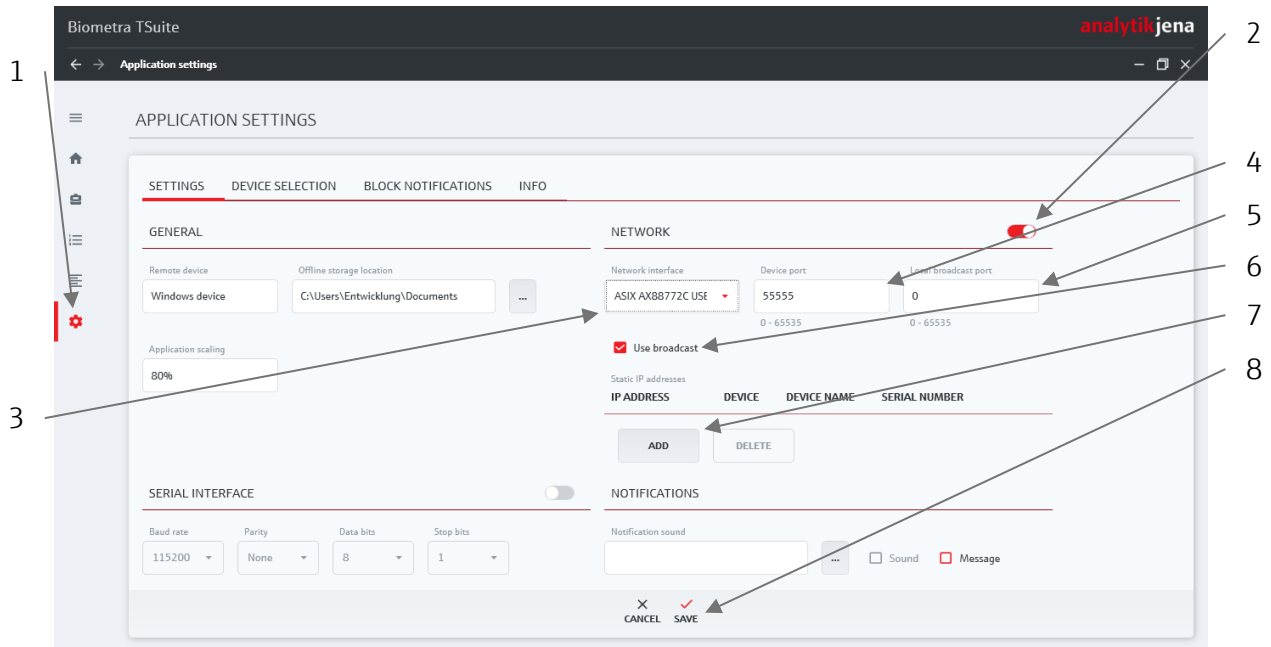
- Follow the steps described below Fig. 13.

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Fig. 13 Biometra TSuite settings for network interface

1   Go to the Application Settings.
2   Turn on the network interface.
3   Select the network interface based on the identified interface name from chapter 5.
4   Enter the device port 55555.
5   Enter the local broadcast port 0.
6   Enable the use of the *use broadcast* function to let Biometra TSuite search for the Biometra thermal cycler.
7   Or alternatively add the IP address of the Biometra thermal cycler, as entered in chapter 2.1.1 (Biometra "stand-alone" thermal cycler) or chapter 2.2.2 (Biometra TRobot II), directly.
8   Save the changes.

Your Biometra thermal cycler and your Biometra TSuite are now configured to use a direct ethernet connection.