

How to connect up to 16 GLD 20-24 Mini motor control stages to a PC by using a Ethernet Terminal Server (LANtronix)

1. Introduction

The stepper motors of some moving systems of GIANO are operated by GLD 20-24 Mini motor control stages (stepper motors and control stages are made by phytron). A terminal server is required when more than one control stage are connected to a PC. The LANtronix (ETS16P) is a multi-port device that provides a shared network access to terminals or devices and can be used to connect the GLDs. The ETS supports the TCP/IP protocol and Microsoft LAN Manager protocols. This report describes how to connect a PC by using the LANtronix Ethernet terminal server with three and more motor control stages.

2. Test Setup

The wiring concept of the test setup is shown in Fig. 1. A PC is connected through a TCP/IP network (crossed LAN cable) to a Ethernet terminal server (LANtronix ETS16P). From this terminal server, each motor control stage is connected by a RJ45 serial port on the back panel.

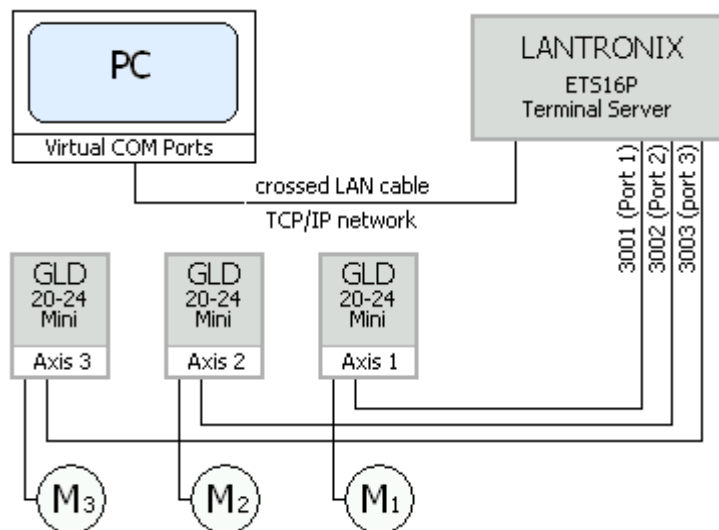


Fig. 1: Network layout and wiring concept the test setup.

Fig. 2 shows the pin assignment of the cables, which must be use for connecting the terminal server with the GLD motor control stages. Be sure that the pins are right connected.

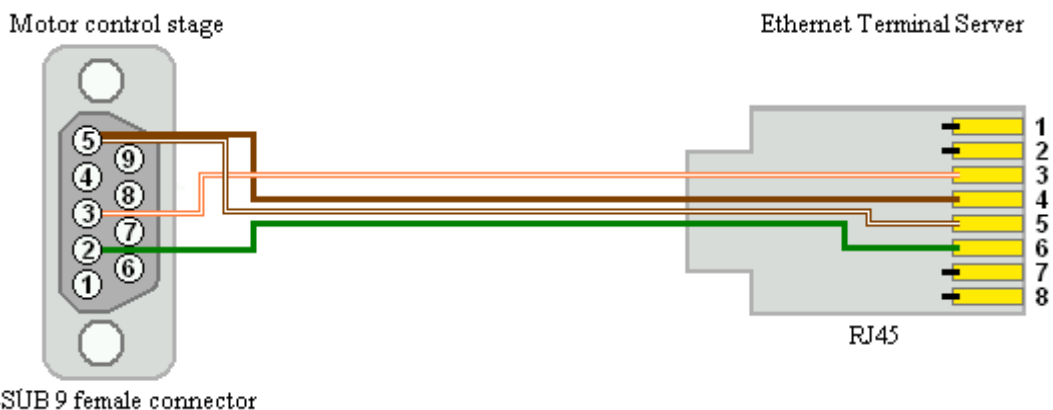


Fig. 2: Cable wiring and pin assignment of the motor control stage connection.

3. Software installation

The LANtronix allows to control up to 16 devices and must be connected to the PC by a crossed LAN cable. The communication software, IPCOMM (phytron), could only send commands to the motor control stages by using a serial port. To use this software in combination with the terminal server, a virtual COM port must be created. This can be realized through a software tool (VSP) from the HW group. This software tool adds to the operating system a virtual COM port, (**COM3** for example) and redirects the data from this port through the TCP/IP network to another hardware interface → LANtronix.

3.1 Generate a virtual serial port

The software tool to generate a virtual COM port (VSP) can download as a free software tool on the HW-group website. www.hw-group.com

Unzip the downloaded file and install the VSP software tool by a double mouse click. After the successful program start of VSP the desktop will show up like in Fig. 3. To generate a virtual port, the IP address of the terminal server and the port number where the serial cable are connected, should be known.

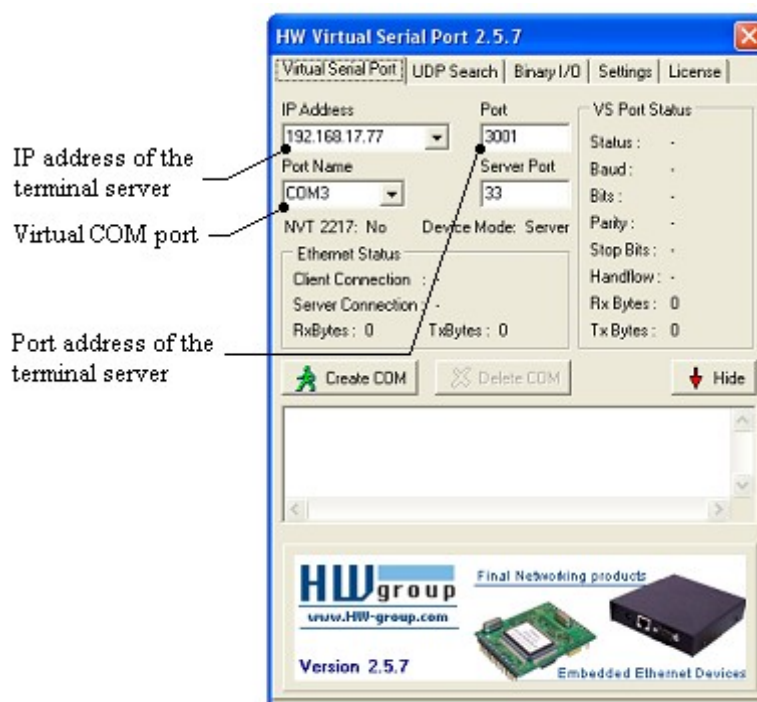


Fig. 3: Tool to generate a virtual COM port VSP HW-group

The fix IP address is printed on the terminal server **IP 192.168.17.77**. The address of each respective port of the terminal server is 300x, where x is the port number (for example serial port 3 = 3001).

Note: *This software tool can only generates one virtual port. To get a further port, start another VSP window and use the corresponding parameters.*

3.2 IPCOMM Communication Software

IPCOMM is a program to send commands and setting parameters to the motor control stages. This program runs only under a Microsoft Windows operating system. To install the program, use the IPCOMM manual from pytron. To start the program, double click on the IPCommV2 icon on the desktop.

Before using the IPCOMM software, connect the GLD 20-24 MINI motor control stages to the LANtronix Ethernet terminal server and switch on the power supply (use a stabilized power supply 24 V). After turning on the power, check the axis ID in the setup menu of each GLD and change the order when it is necessary (for example **0** = 1st. axis; **1** = 2nd. axis; etc).

Control a stepper motor:

To control an stepper motor, set the generated virtual COM port on “Port” and select the corresponding axis on “Axes” in the IPCOMM software. Then click on the blue number, which is your selected axis, to start the control panel.

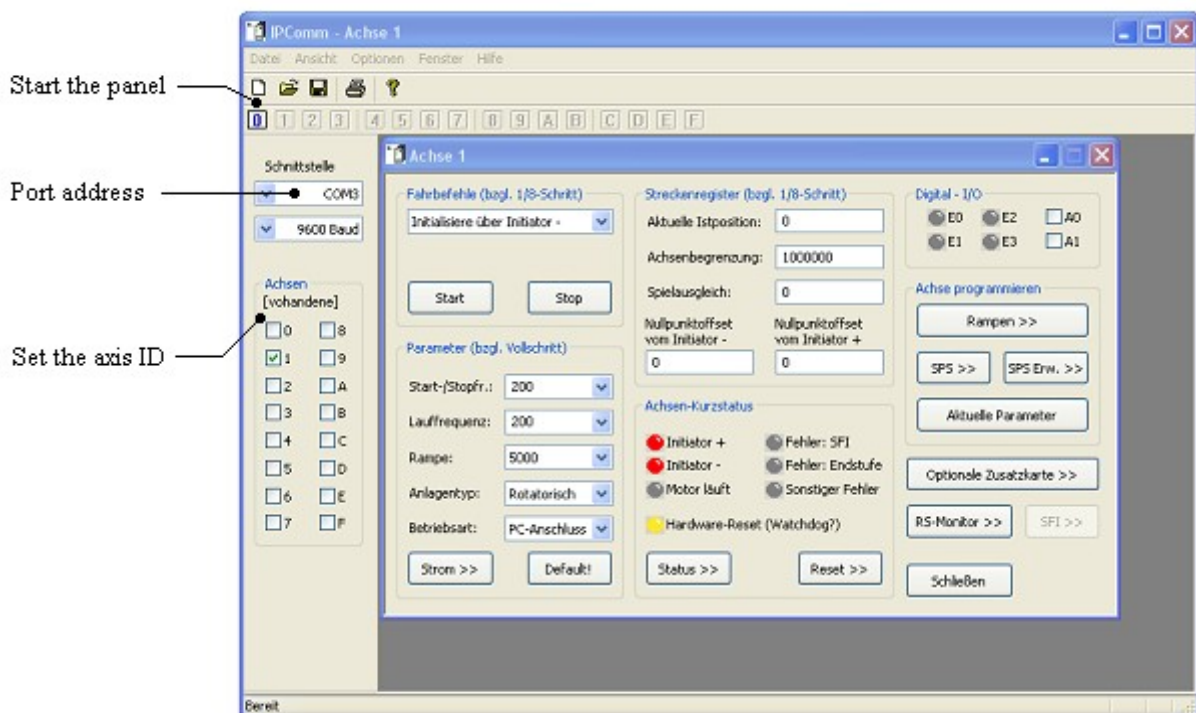


Fig. 4: Desktop of the IPCOMM software after starting the control panel.

Control more than one axis:

To control more than one stepper motor, generate first the virtual COM ports (for example **COM3**, **COM4**, **COM5**, etc.). Afterwards set the axis identifications by using different numbers (**0**, **1**, **2**, ...) in the setup menu and start the IPCOMM software. Select the first generated COM port and the corresponding axis ID, then start the control panel. Select the next generated COM port and also the corresponding axis ID, and so on.

Note: Before loading the next panel, be sure that no axis is set

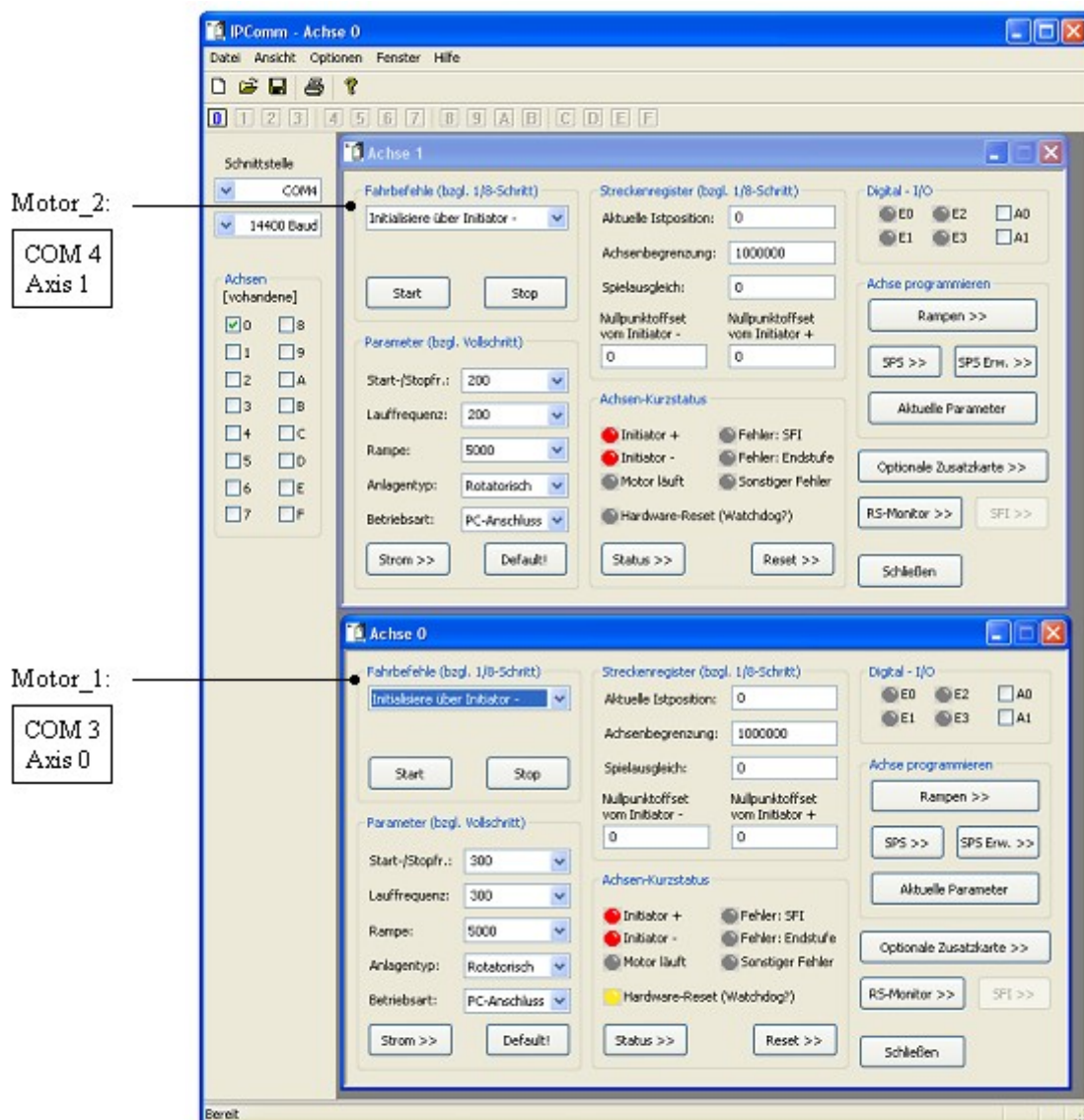


Fig. 5: Desktop of the IPCOMM software after starting a second control panel.