Bode 100 - Application Note
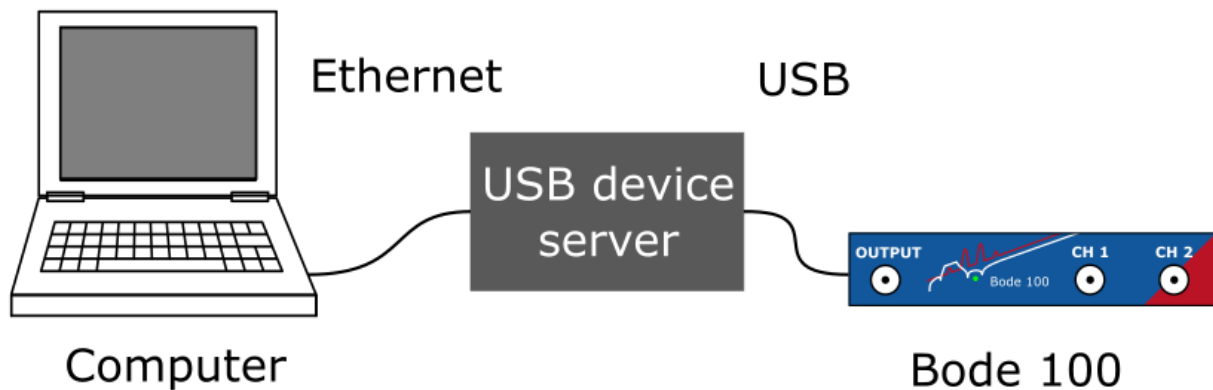
Controlling Bode 100 via Ethernet

By Tobias Schuster

Visit www.omicron-lab.com for more information.
Contact support@omicron-lab.com for technical support.

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Note: Basic procedures such as setting-up, adjusting and calibrating the Bode 100 are described in the Bode 100 user manual available at:
https://www.omicron-lab.com/downloads/vector-network-analysis/bode-100/

Note: All measurements in this application note have been performed using the Bode Analyzer Suite V3.23 Use this version or a newer version to perform the measurements shown in this document. You can download the latest version at
https://www.omicron-lab.com/downloads/vector-network-analysis/bode-100/

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1 Executive Summary

This application note shows how the Bode 100 can be controlled via Ethernet using a USB device-server. With such a device, the USB traffic will be routed over the Ethernet connection to the PC running the Bode Analyzer Suite.

The Bode 100 is a USB-controlled device which does not offer an Ethernet connection as a standard feature. In some cases, it might be necessary that the Bode 100 can be connected via Ethernet.

Using the Bode 100 via Ethernet does also offer a way to overcome issues with certain USB ports and drivers. Especially on newer computer systems (e.g. the AMD Ryzen architecture), the older Bode 100 Revision 1 devices (with USB 1.1) don't work reliably on the included USB ports. On a workstation computer, a PCIe USB-card can be an option to overcome these issues but on notebooks, this is not possible.

In the next section, a USB device server that was tested by OMICRON Lab is presented. Afterwards, the setup using this USB device server is described step-by-step.

2 The USB Device Server

A USB device server is a device which enables to connect and share a USB device over a network.

OMICRON Lab recommends using the USB device server **DS-510** from Silex Technology. This device was tested and worked in the environment of OMICRON Lab. Nevertheless, this does not guarantee that it works for all combinations of PCs, laptops and Bode 100s. Of course, there might also be additional USB device servers which work perfectly fine but haven't been tested by OMICRON Lab.

Figure 1: USB device-server DS-510 from Silex Technology

3 Setup

In the following, the setup of the USB device server DS-510 including the connection as well as the software configuration on the PC is explained.

3.1 Connection Setup

The computer must be connected to the USB device server DS-510 using an ethernet cable. The Bode 100 must be connected to the USB device server using a standard USB-A to USB-B cable as shown below:
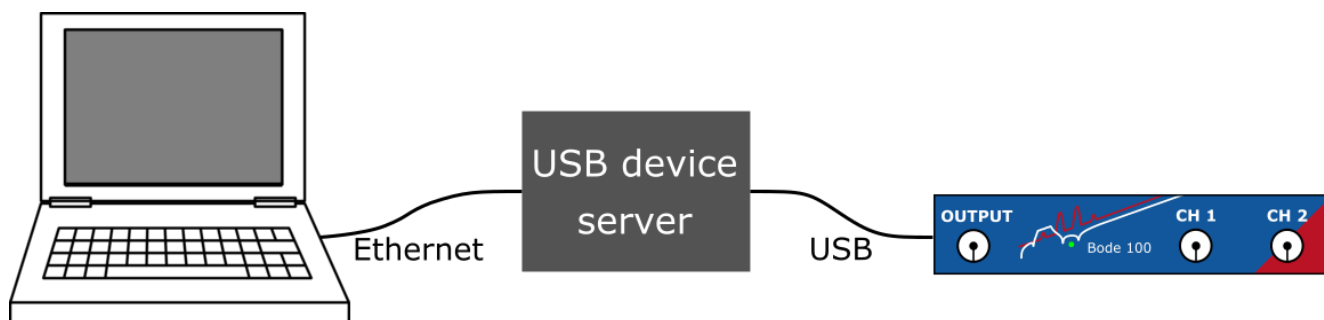

Figure 2: Connection setup

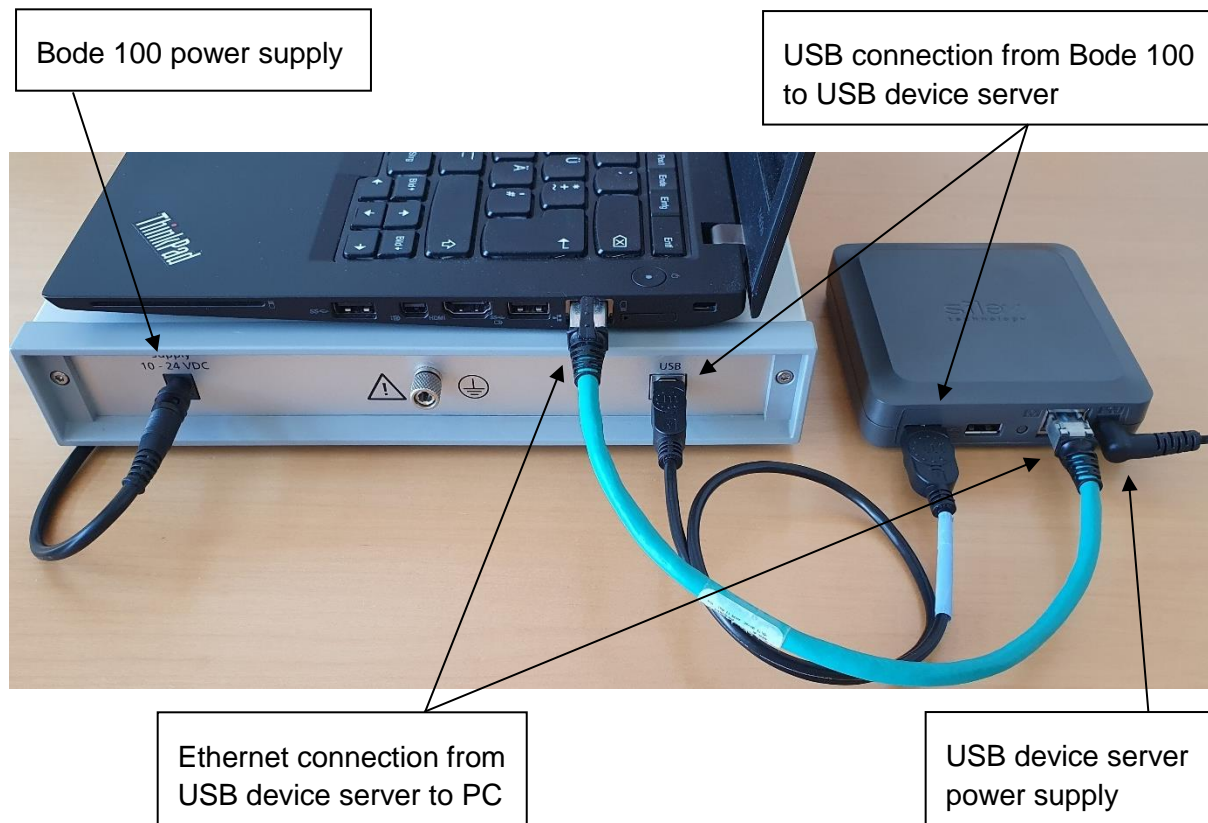The following picture shows a picture of a connection example in detail:

Figure 3: Detailed connection setup

3.2 Software Setup

After the connection setup is done, the PC needs to be configured such that the Bode 100 can be used on the PC. In the following, a PC with Windows 10 was used to test the setup. Note that the Bode Analyzer Suite must already be installed on the computer.

As a first step, the SX Virtual Link software needs to be downloaded from the Silex Technology (www.silextechnology.com) website and must be installed on the PC.

After installing, open the SX Virtual Link software which will show the following window.
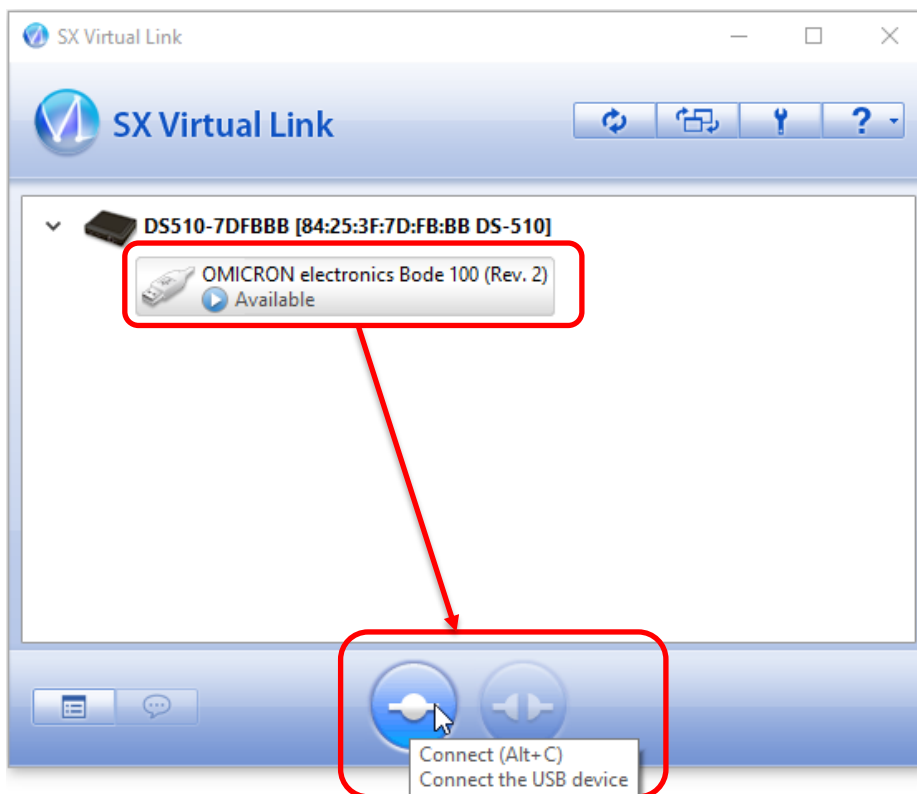

Figure 4: SX Virtual Link

Then, mark OMICRON electronics Bode 100 and click the "connect" button.

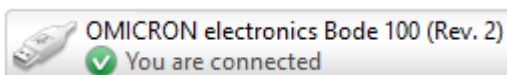After that, the Bode 100 should be displayed as "connected".

Figure 5: Connected status of Bode 100

Now, the Bode 100 can be used the same way as it would be directly connected to a USB port of the computer!

Note: If you use a Bode 100 Revision 1 device, you might need to connect two times.
The first time the *"Bode 100 without firmware"* then wait for some seconds and a second time the *"OMICRON Lab Bode 100 (Rev. 1)"*.

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4 Summary

Using a USB device server does allow to connect the Bode 100 via Ethernet. Besides a more flexible connection architecture, using Ethernet does also offer a way to overcome USB connection problems.

Of course, sufficient transfer bandwidth must be available, and the latency should be low enough to allow a trouble-free data transfer. This can be especially critical when using the device server in a bigger network but shouldn't be an issue when using a direct Ethernet connection to a computer.

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