

Driver installation for old MAVO-USB devices

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1 Preface

To work with this manual, you have to have knowledge in working with the Windows Device-Manager and how to manually install drivers.

Additionally, some “technical terms” may be used in this manual which are not explained.

Should you not get along with the here described procedure or not feel safe while following the manual please ask an IT staff or a tech savvy person.

1.1 Operating systems

The here described procedure should work on all Windows versions since XP.

It was successfully tested on Windows XP, Windows 7 (32bit & 64bit) and Windows 10 (64bit).

1.2 Standard driver installation

This is the normal procedure that you have probably already tested, for the sake of completeness, but here again mentioned.

Connect the meter to the computer with the supplied USB cable. When the computer is connected to the Internet, Windows detects the device and installs the drivers automatically.

If Windows does not detect the drivers automatically, you can manually download and install the drivers.

You can download the D2XX Drivers from [FTDI Chip](http://www.ftdichip.com) directly here: <http://www.ftdichip.com/Drivers/D2XX.htm>

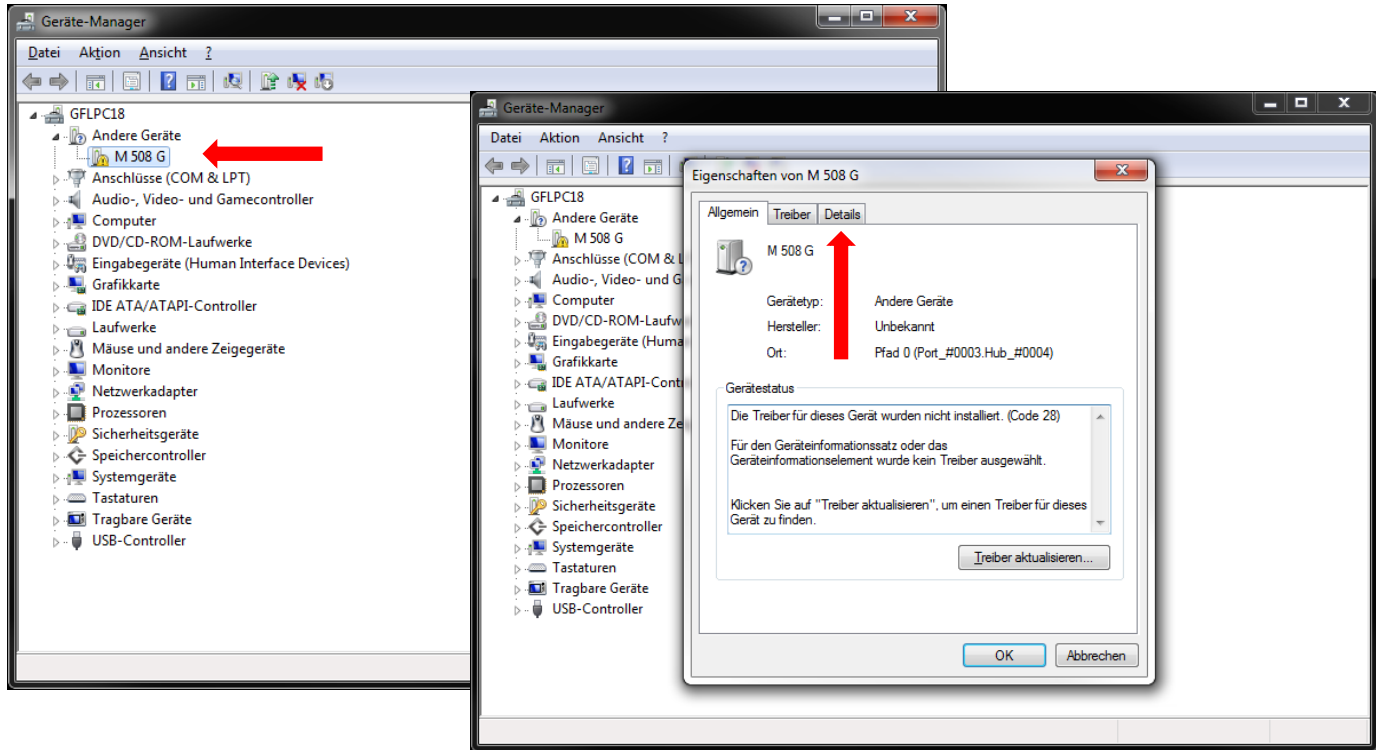
On this page you will find the current driver for your operating system in the table. Also available in the “Comments” column as an executable setup for easier installation and installation instructions.

If that does not have the desired success please check your device according to point 2.

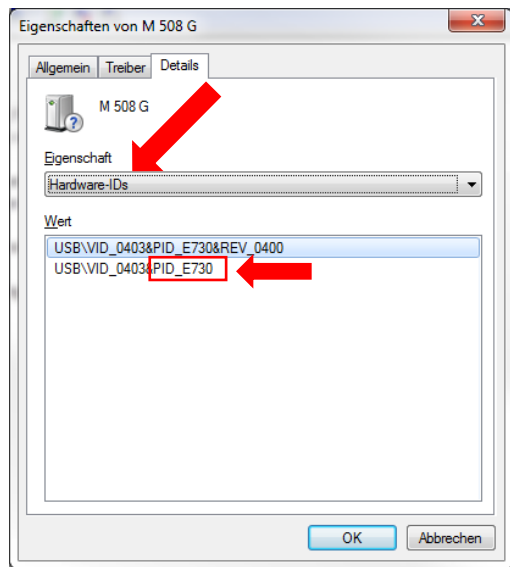
2 Checking of the USB-IDs

Before proceeding, please check the USB-IDs of the connected MAVO-USB device as the error may be elsewhere.

Even if no driver can be installed, Windows detects the device and displays it in Device-Manager. Open it and look for the device with the yellow warning sign, normally under "Other devices". Right-click to open the properties of the device and select the "Details" tab:



In this view you select the item "Hardware IDs" in the drop-down list:



Here you get the USB VID and PID displayed. If the PID is not "PID_6001" it is an old MAVO-USB device and you need the special drivers for your device to work on this computer or you can change the PID for it to work normally on any computer automatically.

Possible PIDs of old devices are:

- E730 for a C-USB
- E731 for a B-USB
- E732 for a Mavo-Monitor
- E733 for a Mavo-Spot 2

You also have the option to send the device to us, then we will change the ID for you for free. Alternatively, you can do it yourself (read more on that later).

3 Old MAVO-USB drivers

Until a few years ago, the standard FTDI driver with our own PIDs was used for our devices. This was changed around the release of Windows 7. Since then, we've been shipping our devices with FTDI's standard PIDs, so Windows can automatically find and install the latest drivers.

However, these old PIDs cause problems with newer systems because Windows can't find drivers for these devices. Fortunately, the old drivers also work for new Windows systems, which makes it easy to still use the device or change the PID, making the device compatible with all new computers.

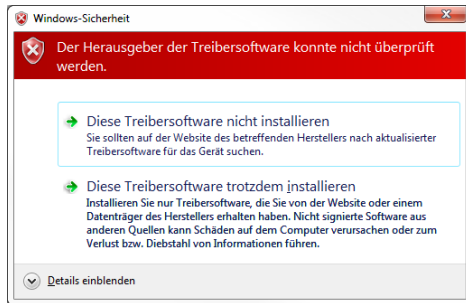
3.1 Installation of old drivers

The drivers for the old PIDs is stored in this archive in the folder "Mavo-USB Driver (old USB-IDs)".

Even if this driver works on all Windows versions since XP, the use of non-digitally signed drivers has to be activated for Windows 8 and 10! If you are using Windows 8 or 10, first complete the steps in Appendix A before continuing.

After connecting the device and Windows' attempt to install drivers, the device will be displayed with an exclamation mark in the Device-Manager. Here we click with the right mouse button and select "Update driver software". We choose "Search for driver software on the computer" to manually select a driver.

Then we let Windows look for a driver in a selected folder. We choose the "Mavo-USB Driver (Old USB-IDs)" folder. By clicking on "Next", Windows finds the driver and warns immediately that the driver could be unsafe.



We acknowledge that Windows should install the driver anyway.
Windows installs the driver and adds a working device to the "USB controller" section.

What's left is a "USB Serial Port" under "Other devices". We install this in the same way as the first one.

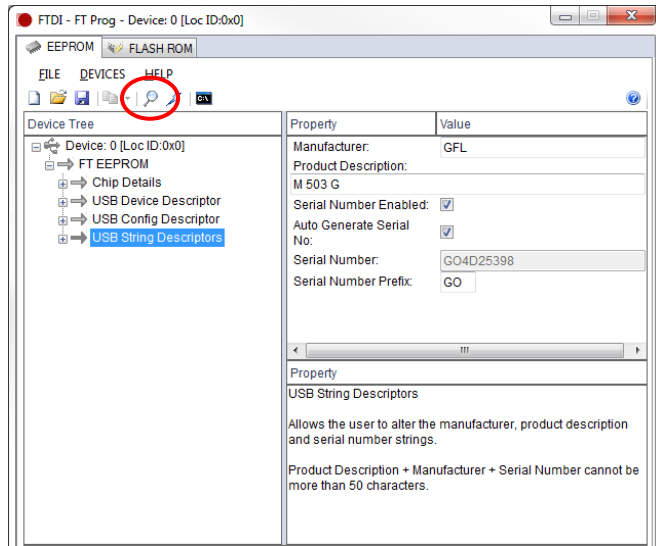
If both devices (Serial Port + USB Controller) are installed, the device is ready for operation and can be addressed via the serial interface with a terminal program or operated via the gLux2 software.

3.2 Changing the USB-PID


Even though the device is now fully functional on this computer, we strongly recommend that you change the USB PID to a default value so that the device is compatible with all newer versions of Windows.

This is easily possible with the [FT Prog](#) program from [FTDI-Chip](#).


Download and install the program. Start the program and click on the small magnifying glass to search for connected devices. When the device is found, the possible settings are displayed.



Select the settings for the "USB String Descriptors" and make sure that the automatic generation of the serial number is deactivated. If you keep these activated, the device will be assigned a new serial number when programming. However, this has no negative consequences or effects (you will not notice this when working with the device).

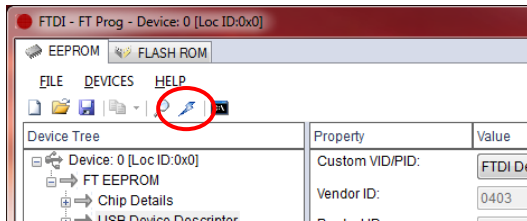
Device Tree	Property	Value
 Device: 0 [Loc ID:0x0] <ul style="list-style-type: none">FT EEPROM<ul style="list-style-type: none">Chip DetailsUSB Device DescriptorUSB Config DescriptorUSB String Descriptors	Manufacturer:	GFL
	Product Description:	M 503 G
	Serial Number Enabled:	<input checked="" type="checkbox"/>
	Auto Generate Serial No:	<input type="checkbox"/>
	Serial Number:	GO4D25398
	Serial Number Prefix:	GO

Then select the properties for the "USB Device Descriptor":

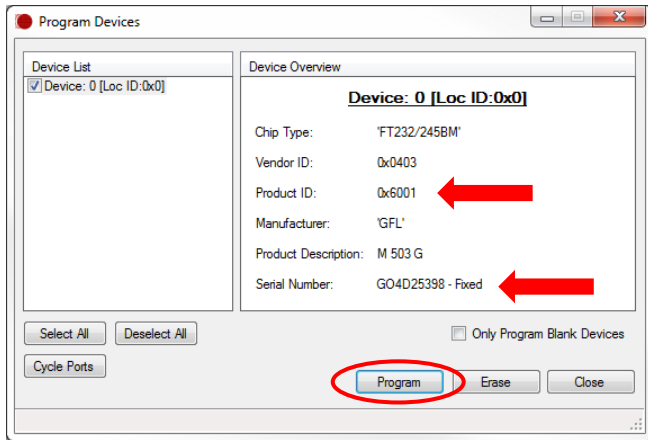
Device Tree	Property	Value
 Device: 0 [Loc ID:0x0] <ul style="list-style-type: none">FT EEPROM<ul style="list-style-type: none">Chip DetailsUSB Device DescriptorUSB Config DescriptorUSB String Descriptors	Custom VID/PID:	FTDI Default
	Vendor ID:	0403
	Product ID:	6001
	USB Version Number:	USB 2.0

Set the VID / PID to "FTDI Default" here.

Then click on the small flash at the top bar:



A new window opens in which you should check the settings again.



Make absolutely sure that the Product ID is set to 0x6001. If it is something else, it may happen that the device can no longer be operated on the USB Bus and you have to send us the device to have it repaired (not for free). Finally click on "Program". After a few seconds, the programming is completed and you can use the device normally on any computer.

Appendix A Unsigned drivers for Windows 8 and newer

Here is an easy way to disable the need for a digital signed driver that worked under a current Windows 10 (1809). If you have problems with this method or if it does not work, you will need to search the Internet for an alternative method. Unfortunately, we can't help you in this case.

But you will find countless instructions and videos on the Internet, if you search for "disable Windows 10 driver signature".

1. Open the Windows command prompt as an administrator. Only administrative privileges allow you to execute the following commands.
2. Run the following command at the command prompt.
You can copy and paste the commands. If the command is not recognized, you may need to use a " / " instead of the " - ". Upper and lower case is not relevant.

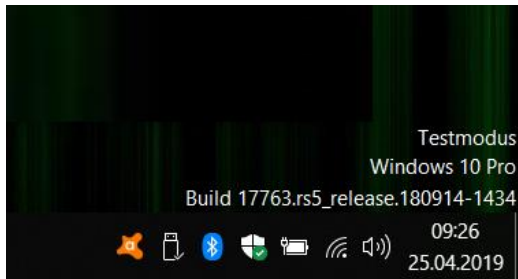
```
BCDEDIT -Set LoadOptions DDISABLE_INTEGRITY_CHECKS
```

3. Then execute the following command:

```
BCDEDIT -Set TESTSIGNING ON
```

4. Close the window and restart the computer.

After the restart, the bottom right of the desktop should show that the test mode is activated.



Now you can install the drivers and set the PID of the device to the default value.

Then deactivate the test mode again:

1. Open the Windows command prompt as an administrator.
2. Run the following command at the command prompt:

```
BCDEDIT –Set LoadOptions EENABLE_INTEGRITY_CHECKS
```

```
BCDEDIT –Set TESTSIGNING OFF"
```

3. Close the window and restart the computer.

Now your computer is back in normal mode and the display at the bottom right of the desktop has disappeared.

With the standard PID, Windows finds the drivers automatically and you can use the device normally.