

AN008 - Legacy Windows Driver Installation

Document History

Revision	Date	Changes
V 1.0	March 15 2017	First release of document. Driver installation has been reworked to use a unified installer for all Windows versions with driver version V3.33. This application note shows the installation for the legacy drivers.

Hardware and Software covered by this Document

All M2i, M2i-exp, M3i, M3i-exp, M4i and M4x products

Windows Driver prior to V3.33 (released on CD 3.48, August 2017)

M2i and M3i Software Driver Installation

Before using the board a driver must be installed that matches the operating system. The installation is done in different ways depending on the used operating system. The driver that is on CD supports all cards of the M2i/M3i series. That means that you can use the same driver for all cards of these families.



With the CD revision 3.00 (June 2010) the CD structure was revised and the root folder of the Windows drivers was changed from „spcm_driver“ to „Driver“. The screen shots shown in the installation chapters might still show the former version.

Interrupt Sharing

This board uses a PCI interrupt for DMA data transfer and for controlling the FIFO mode. The used interrupt line is allocated by the PC BIOS at system start and is normally depending on the selected slot. Because there is only a limited number of interrupt lines available on the PCI bus it can happen that two or more boards must use the same interrupt line. This so called interrupt sharing must be supported by all drivers of the participating equipment.

Most available drivers and also the Spectrum driver for your board can manage interrupt sharing. But there are also some drivers on the market that can only use one interrupt exclusively. If this equipment shares an interrupt with the Spectrum board, the system will hang up if the second driver is loaded (the time is depending on the operating system).

If this happens it is necessary to reconfigure the system in that way that the critical equipment has an exclusive access to an interrupt.

On most systems the BIOS shows a list of all installed PCI boards with their allocated interrupt lines directly after system start. You have to check whether an interrupt line is shared between two boards. Some BIOS allow the manual allocation of interrupt lines. Have a look in your mainboard manual for further information on this topic.

Because normally the interrupt line is fixed for one PCI slot it is simply necessary to use another slot for the critical board to force a new interrupt allocation. You have to search a configuration where all critical boards have only exclusive access to one interrupt.

Depending on the system, using the Spectrum board with a shared interrupt may degrade performance a little. Each interrupt needs to be checked by two drivers. For this reason when using time critical FIFO mode even the Spectrum board should have an exclusively access to one interrupt line.

Important Notes on Driver Versions 2.22 and Control Center 1.41 and newer

With Windows driver version V2.22 and later required internal driver changes were needed, such that Windows 2000 is no longer compatible with the WDM driver version.



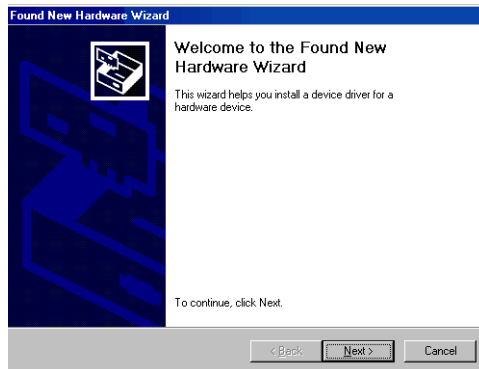
Windows 2000 users should use the driver version 2.11 (available as separate download from the Spectrum homepage), because with driver version V2.22 on, this operating system is no longer supported.



Windows 2000 users should also use the Control Center version 1.41 (available as separate download from the Spectrum homepage), because with driver version V1.42 on, this operating system is no longer supported.

Windows 2000

Installation



When installing the board in a Windows 2000 system the Spectrum board will be recognized automatically on the next start-up.

The system offers the direct installation of a driver for the board.

Let Windows search automatically for the best driver for your system.



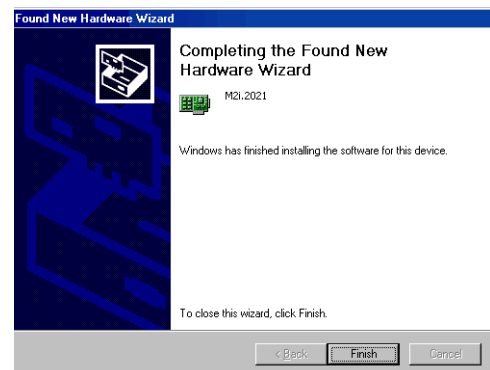
Select the CD that was delivered with the board as installation source. The driver files are located on CD in the directory \Driver\win32.

The hardware assistant shows you the exact board type that has been found like the M2i.2021 in the example.

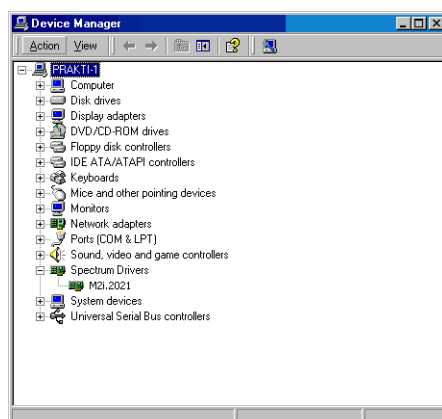


The drivers can be used directly after installation. It is not necessary to restart the system. The installed drivers are linked in the device manager.

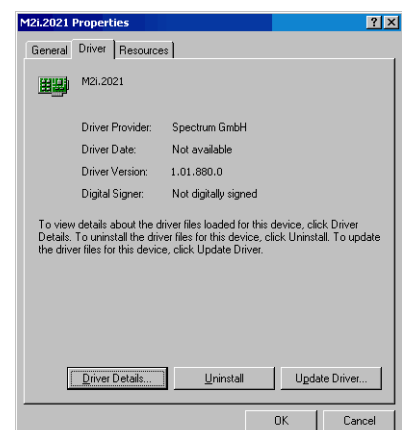
Below you'll see how to examine the driver version and how to update the driver with a newer version.



Version control



If you want to check which driver version is installed in the system this can be easily done in the device manager. Therefore please start the device manager from the control panel and show the properties of the installed driver. On the property page Windows 2000 shows the date and the version of the installed driver. After clicking the driver details button the detailed version information of the driver is shown. This information is also available through the control center.

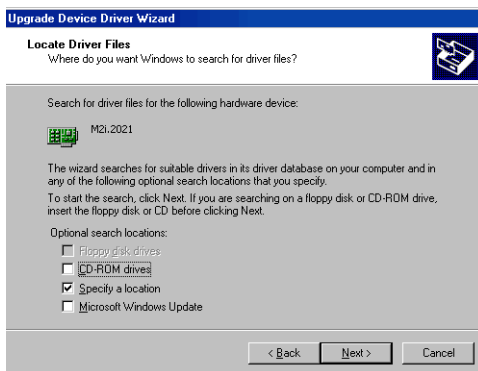
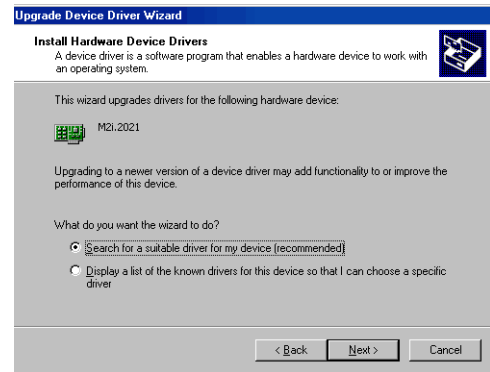


Driver - Update

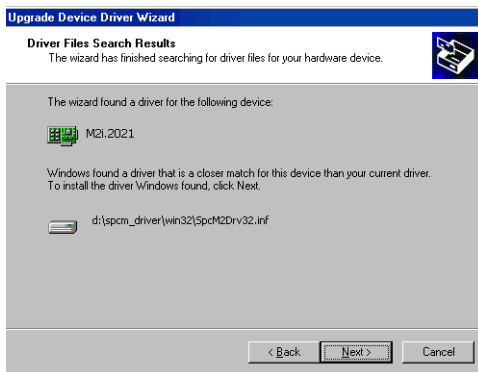
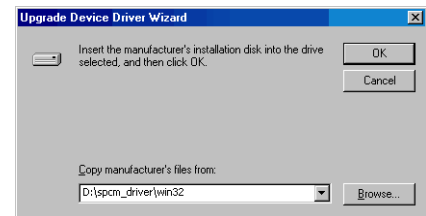
If a new driver version should be installed no Spectrum board is allowed to be in use by any software. So please stop and exit all software that could access the boards.



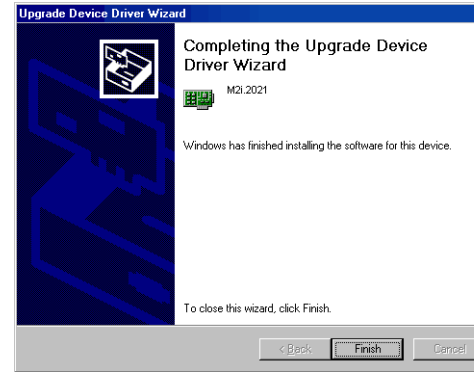
A new driver version is directly installed from the device manager. Therefore please open the properties page of the driver as shown in the section before. As next step click on the update driver button and follow the steps of the driver installation in a similar way to the previous board and driver installation.



Please select the path where the new driver version was unzipped to. If you've got the new driver version on CD please select the \Driver\win32 path on the CD containing the new driver version.



The new driver version can be used directly after installation without restarting the system. Please keep in mind to update the driver of all installed Spectrum boards.



Important Notes on Driver Versions 2.22 and Control Center 1.41 and newer

With Windows driver version V2.22 and later required internal driver changes were needed, such that Windows 2000 is no longer compatible with the WDM driver version.



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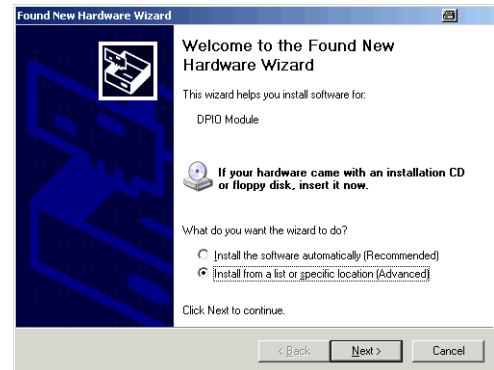
Windows XP 32 (64 Bit discontinued)

Installation

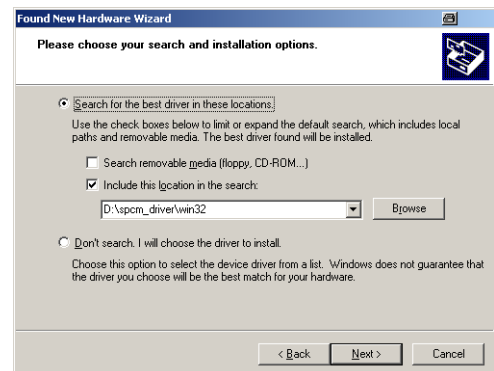
When installing the board in a Windows XP system the Spectrum board will be recognized automatically on the next start-up.

The system offers the direct installation of a driver for the board.

Do not let Windows automatically search for the best driver, because sometimes the driver will not be found on the CD. Please take the option of choosing a manual installation path instead.



Allow Windows XP to search for the most suitable driver in a specific directory. Select the CD that was delivered with the board as installation source. The driver files are located on CD in the directory \Driver\win32 for Windows XP 32 Bit or \Driver\win64 for Windows XP 64 Bit.



The hardware assistant shows you the exact board type that has been found like the M2i.2021 in the example.

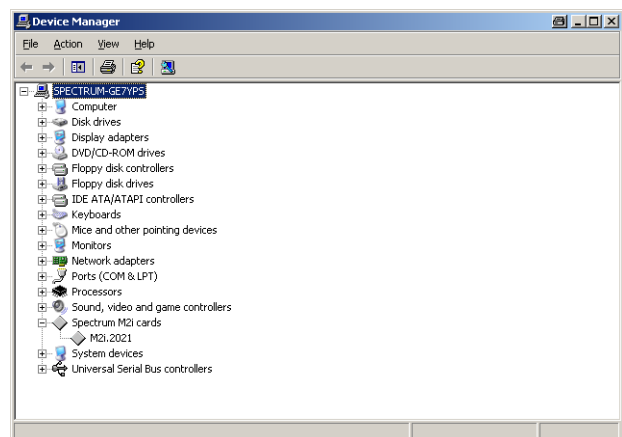
The drivers can be used directly after installation. It is not necessary to restart the system. The installed drivers are linked in the device manager.

Below you'll see how to examine the driver version and how to update the driver with a newer version.



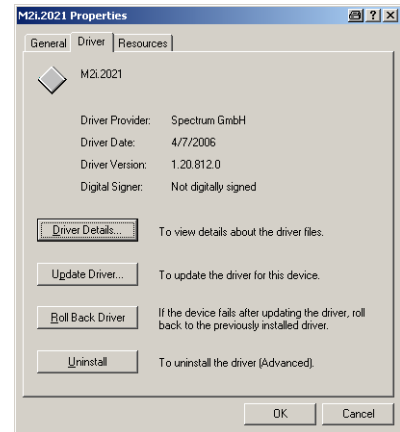
Version control

If you want to check which driver version is installed in the system this can be easily done in the device manager. Therefore please start the device manager from the control panel and show the properties of the installed driver.



On the property page Windows XP shows the date and the version of the installed driver.

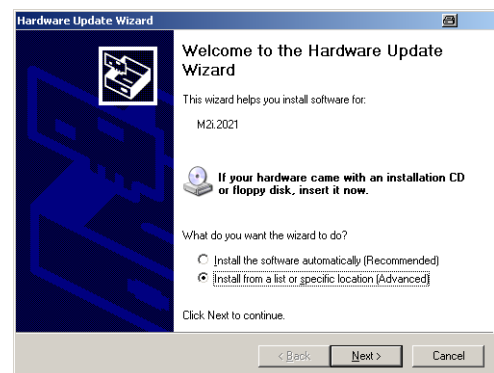
After clicking the driver details button the detailed version information of the driver is shown. This information is also available through the Spectrum Control Center.



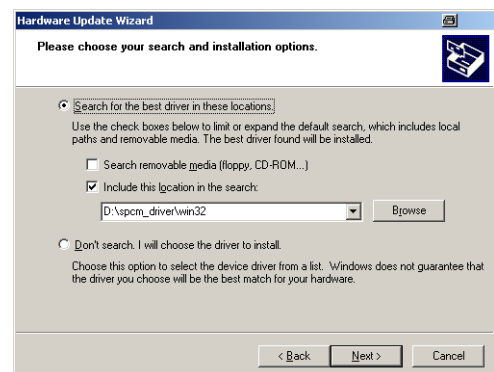
Driver - Update

If a new driver version should be installed no Spectrum board is allowed to be in use by any software. So please stop and exit all software that could access the boards.

A new driver version is directly installed from the device manager. Therefore please open the properties page of the driver as shown in the section before. As next step click on the update driver button and follow the steps of the driver installation in a similar way to the previous board and driver installation.



Please select the path where the new driver version was unzipped to. If you've got the new driver version on CD please select either the \Driver\win32 or \Driver\win64 path on the CD containing the new driver version.



The new driver version can be used directly after installation without restarting the system. Please keep in mind to update the driver of all installed Spectrum boards.



M4i and M4x Software Driver Installation

Before using the board a driver must be installed that matches the operating system. The installation is done in different ways depending on the used operating system. The driver that is on CD supports all cards of the M4i and M4x series. That means that you can use the same driver for all cards of these families.

With CD revision 3.00 (June 2010) the CD structure was revised and the root folder of the Windows drivers was changed from „spcm_driver“ to „Driver“. The screen shots shown in the installation chapters might still show the former version.



Windows XP 32 (64 Bit discontinued)

Installation

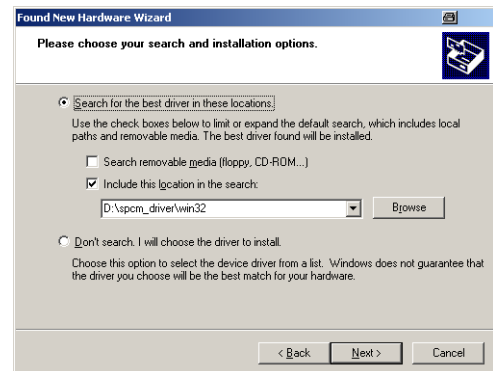
When installing the board in a Windows XP system the Spectrum board will be recognized automatically on the next start-up.

The system offers the direct installation of a driver for the board.

Do not let Windows automatically search for the best driver, because sometimes the driver will not be found on the CD. Please take the option of choosing a manual installation path instead.



Allow Windows XP to search for the most suitable driver in a specific directory. Select the CD that was delivered with the board as installation source. The driver files are located on CD in the directory \Driver\win32 for Windows XP 32 Bit or \Driver\win64 for Windows XP 64 Bit.



The hardware assistant shows you the exact board type that has been found like the M2i.2021 in the example.

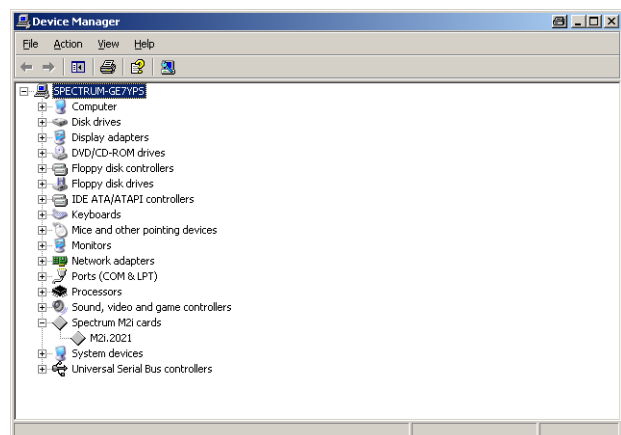
The drivers can be used directly after installation. It is not necessary to restart the system. The installed drivers are linked in the device manager.

Below you'll see how to examine the driver version and how to update the driver with a newer version.



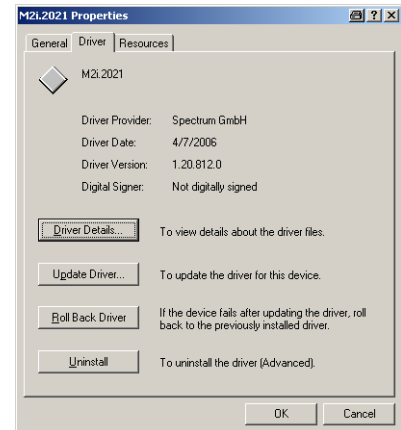
Version control

If you want to check which driver version is installed in the system this can be easily done in the device manager. Therefore please start the device manager from the control panel and show the properties of the installed driver.



On the property page Windows XP shows the date and the version of the installed driver.

After clicking the driver details button the detailed version information of the driver is shown. This information is also available through the Spectrum Control Center.



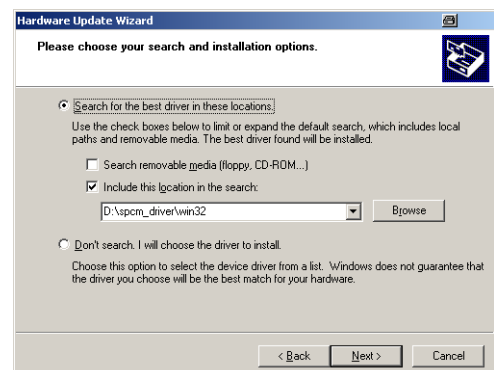
Driver - Update

If a new driver version should be installed no Spectrum board is allowed to be in use by any software. So please stop and exit all software that could access the boards.

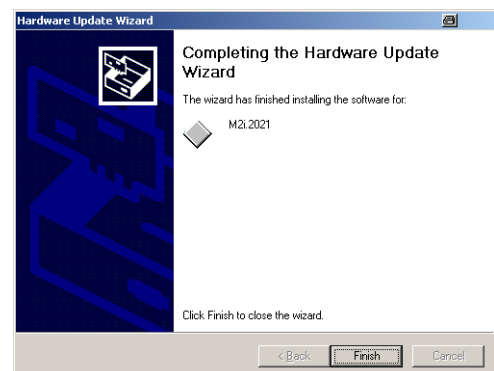
A new driver version is directly installed from the device manager. Therefore please open the properties page of the driver as shown in the section before. As next step click on the update driver button and follow the steps of the driver installation in a similar way to the previous board and driver installation.



Please select the path where the new driver version was unzipped to. If you've got the new driver version on CD please select either the \Driver\win32 or \Driver\win64 path on the CD containing the new driver version.



The new driver version can be used directly after installation without restarting the system. Please keep in mind to update the driver of all installed Spectrum boards.

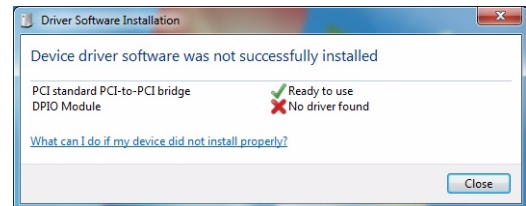


Windows 7, 32/64 Bit

Installation

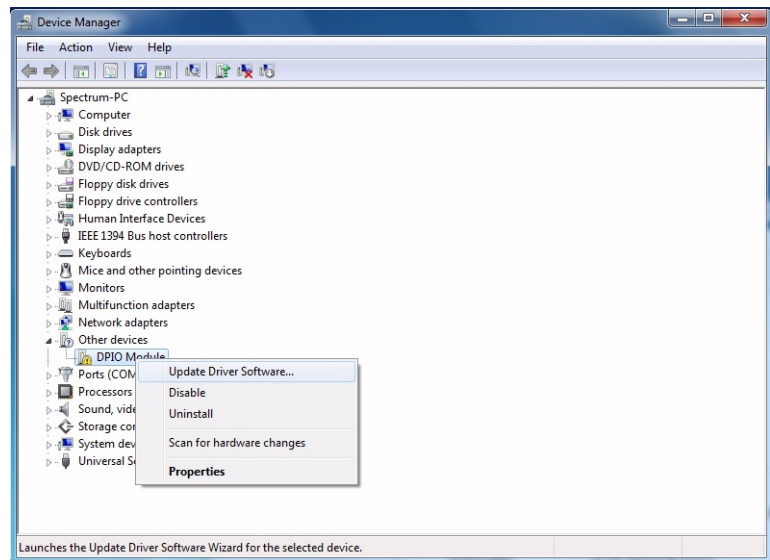
When installing the card in a Windows 7 system, it will be recognized automatically on the next start-up. The system tries at first to automatically search and install the drivers from the Microsoft homepage.

This mechanism will fail at first for the „DPIO Module“ device, as shown on the right, because the Spectrum drivers are not available via Microsoft, so simply close the dialog.

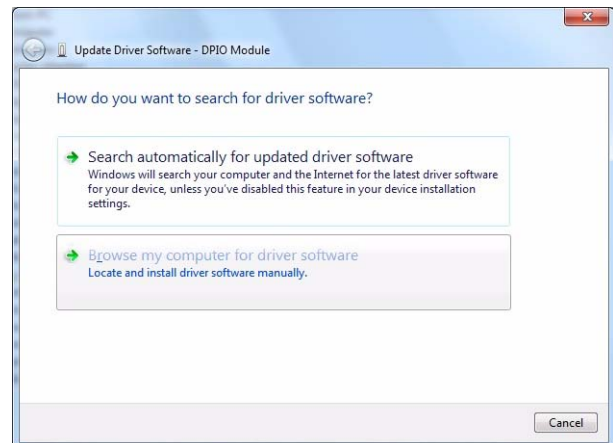


Afterwards open the device manager from the Windows control panel, as shown on the right.

Find the above mentioned „DPIO Module“, right-click and select „Update Driver Software...“



Do not let Windows 7 automatically search the for the best driver, because it will search the internet and not find a proper driver. Please take the option of browsing the computer manually for the driver software instead. Allow Windows 7 to search for the most suitable driver in a specific directory.

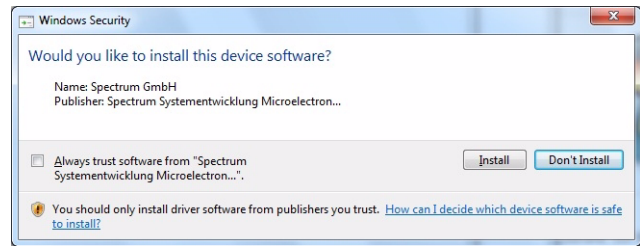


Now simply select the root folder of the CD that was delivered with the board as installation source and enable the „Include subfolders“ option.

Alternatively you can browse to the installations folders. The driver files are located on CD in the directory
 \Driver\win32 for Windows 7 32 Bit
 or
 \Driver\win64 for Windows 7 64 Bit.



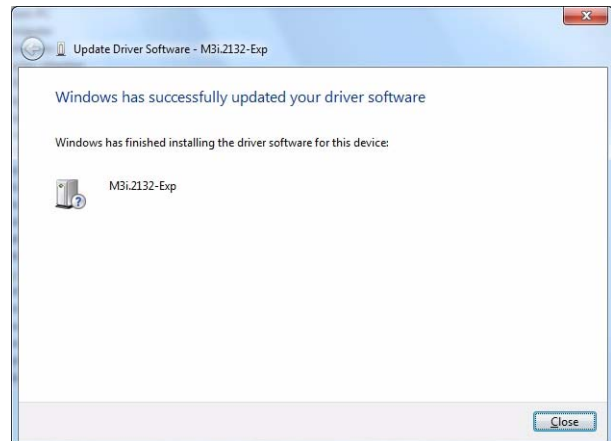
On the upcoming Windows security dialog select install. To prevent Windows 7 to always ask this question for future updates, you can optionally select to always trust software from Spectrum.



The hardware assistant then shows you the exact board type that has been found like the M3i.2132 in the example.

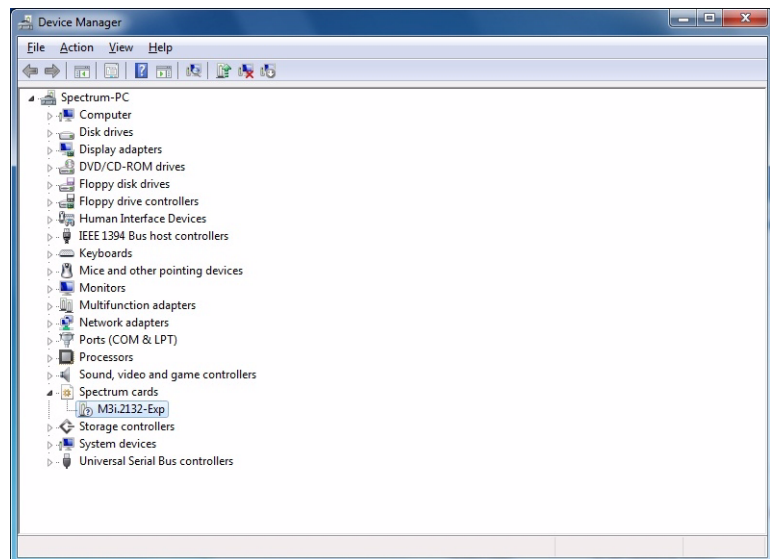
The drivers can be used directly after installation. It is not necessary to restart the system. The installed drivers are linked in the device manager.

Below you'll see how to examine the driver version and how to update the driver with a newer version.



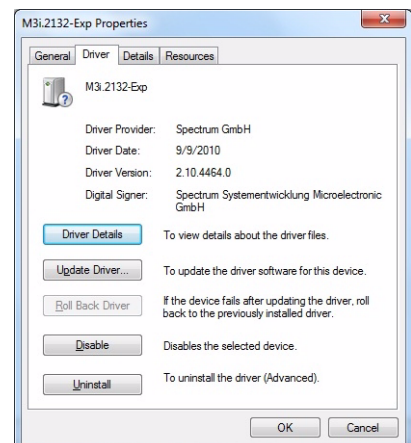
Version control

If you want to check which driver version is installed in the system this can be easily done in the device manager. Therefore please start the device manager from the control panel and show the properties of the installed driver.



On the property page Windows 7 shows the date and the version of the installed driver.

After clicking the driver details button the detailed version information of the driver is shown. This information is also available through the Spectrum Control Center.



Driver - Update

The driver update under Windows 7 is exact the same procedure as the initial installation. Please follow the steps above, starting from the device manager, select the Spectrum card to be updated, right-click and select „Update Driver Software...” and follow the steps above.