

Aessent Technology Ltd

aes220 High-Speed USB FPGA Mini-Module

Windows Installation Manual V1.4.2

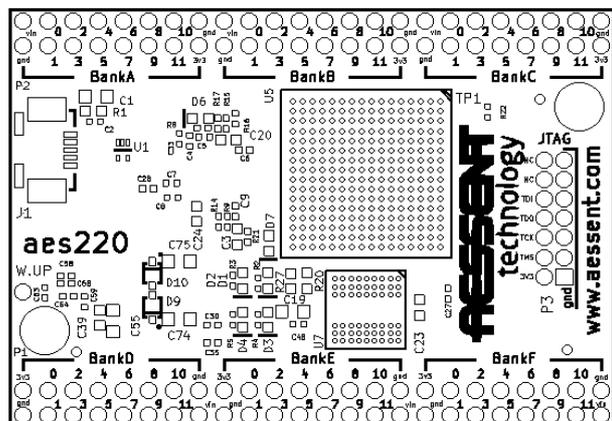


Table of Contents

1 Driver installation.....	3
2 Installing the aes220 API.....	10
2.1 C API.....	10
2.2 C++ API.....	10
2.3 C# API.....	11
3 Installing aes220Programmer.....	11
4 If nothing happens when plugging aes220 module.....	12

Figure Index

Figure 1: Found New Hardware Wizard.....	3
Figure 2: Found New Hardware: aes220.....	4
Figure 3: Browse for Driver.....	4
Figure 4: Driver Path Selection.....	5
Figure 5: Driver Publisher Verification Warning.....	5
Figure 6: Driver Successfully Installed.....	6
Figure 7: Windows Vista Problem.....	6
Figure 8: Vista Device Manager Selection.....	7
Figure 9: Device Manager.....	8
Figure 10: Device Uninstall.....	8
Figure 11: Device Recognised in the Device Manager.....	9
Figure 12: Device Manager -> Other devices.....	12

1 Driver installation

This manual will guide the user through installing the necessary files to use the aes220 High-Speed USB FPGA mini-module on a Microsoft Windows systems.

It applies to Windows XP, Windows Vista and Windows 7 platforms with the exception of Windows XP 64bits.

Download and uncompress the aes220WindowsInstall.zip folder in a location of your choice

Plug the aes220 module into a USB port.

Windows should not recognise the device and start the Found New Hardware Wizard:

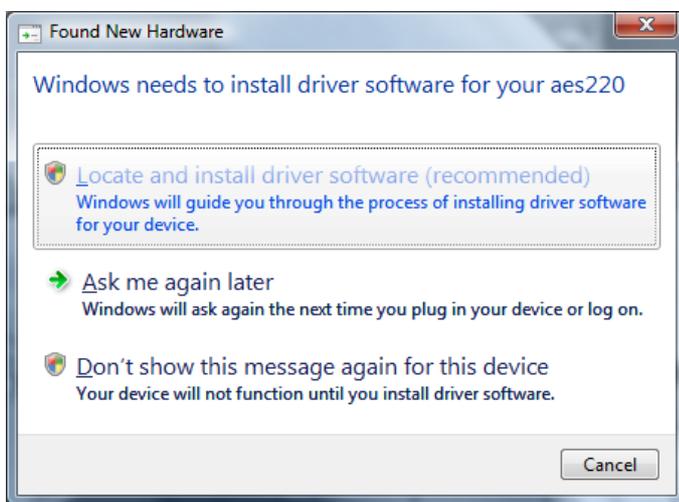


Figure 1: Found New Hardware Wizard

Select "Locate and Install driver software (recommended)" option

When asked to "Insert the disc that came with your aes220" Click on "I don't have the disc. Show me other options."

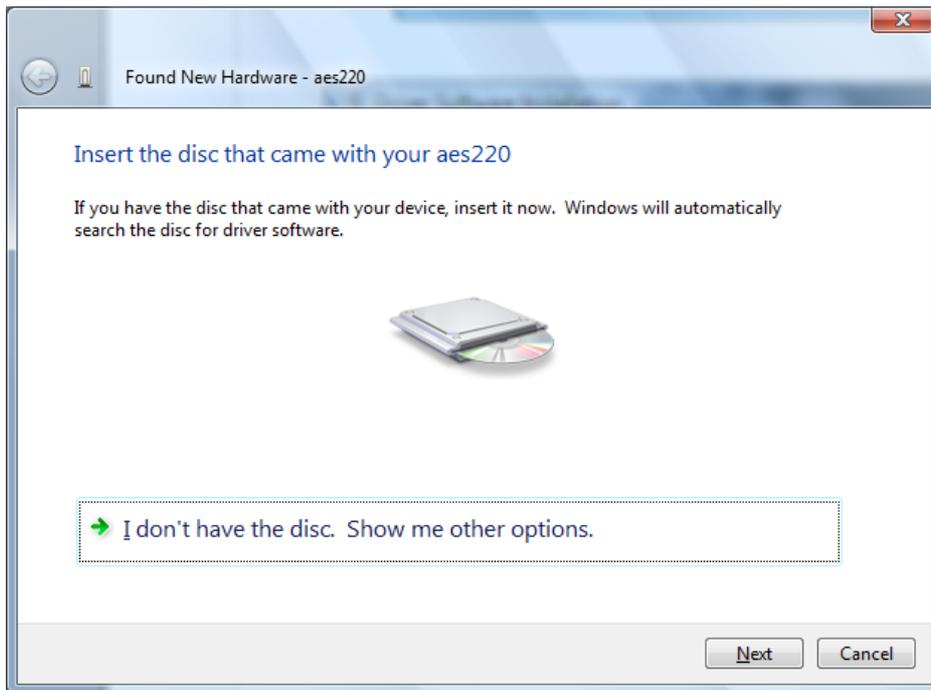


Figure 2: Found New Hardware: aes220

On the next screen choose "Browse my computer for driver software (advanced)"

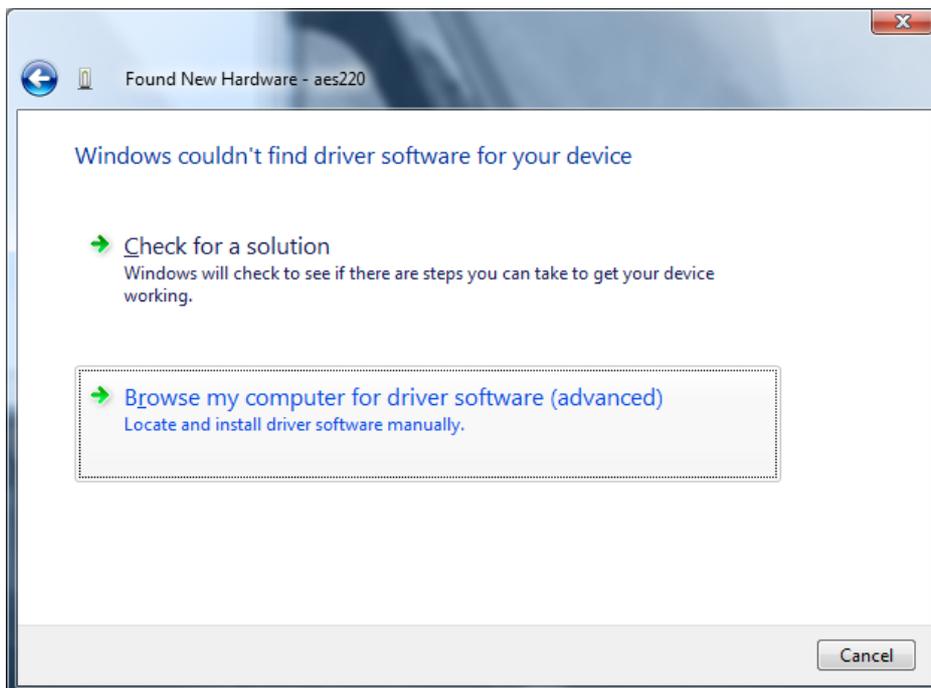


Figure 3: Browse for Driver

Browse to where the top folder for the drivers is located (the folder containing the .inf file and x86/amd64 folders) and click next

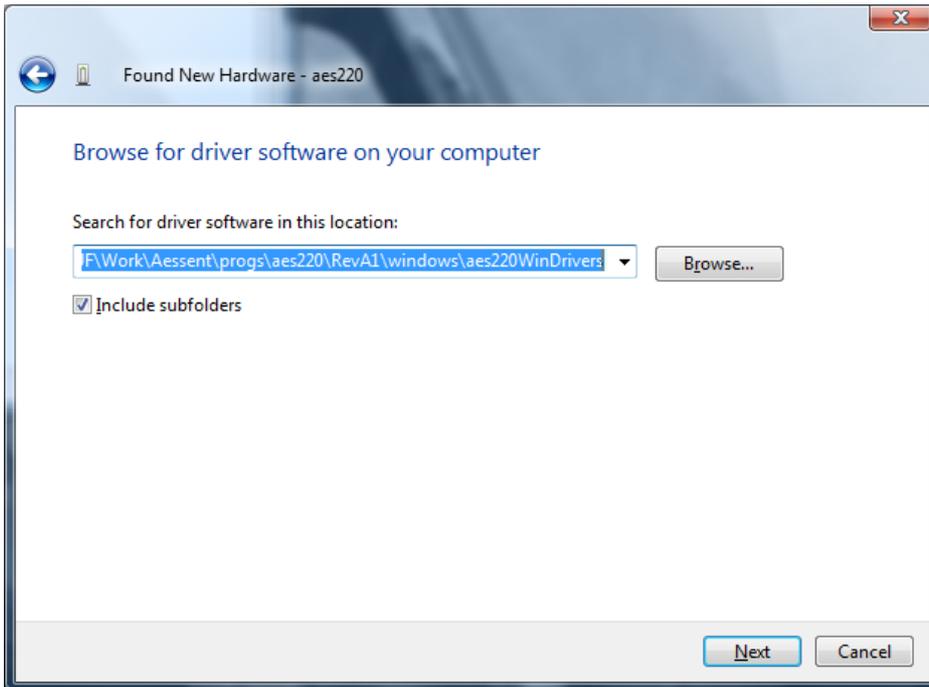


Figure 4: Driver Path Selection

Windows Security might warn you about not being able to verify the publisher of the driver. Select the "Install this driver software anyway" option:

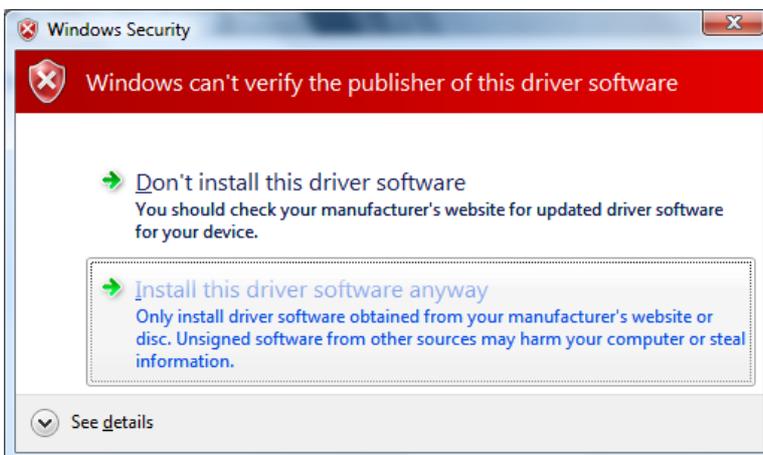


Figure 5: Driver Publisher Verification Warning

Eventually the successful driver installation window should appear:

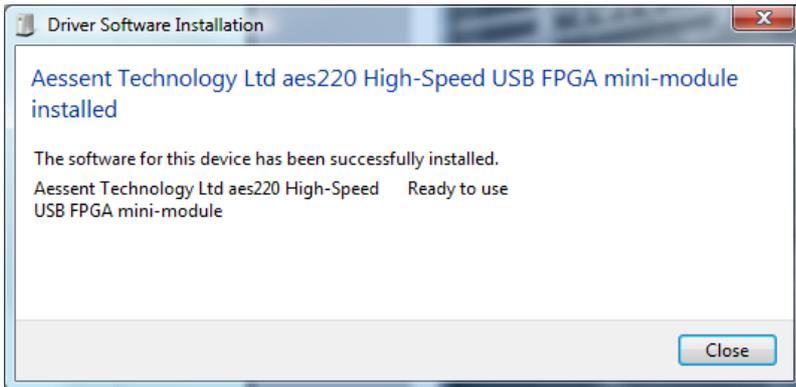


Figure 6: Driver Successfully Installed

Note to Windows Vista users

On Windows Vista it can happen that the installation fails the first time round:

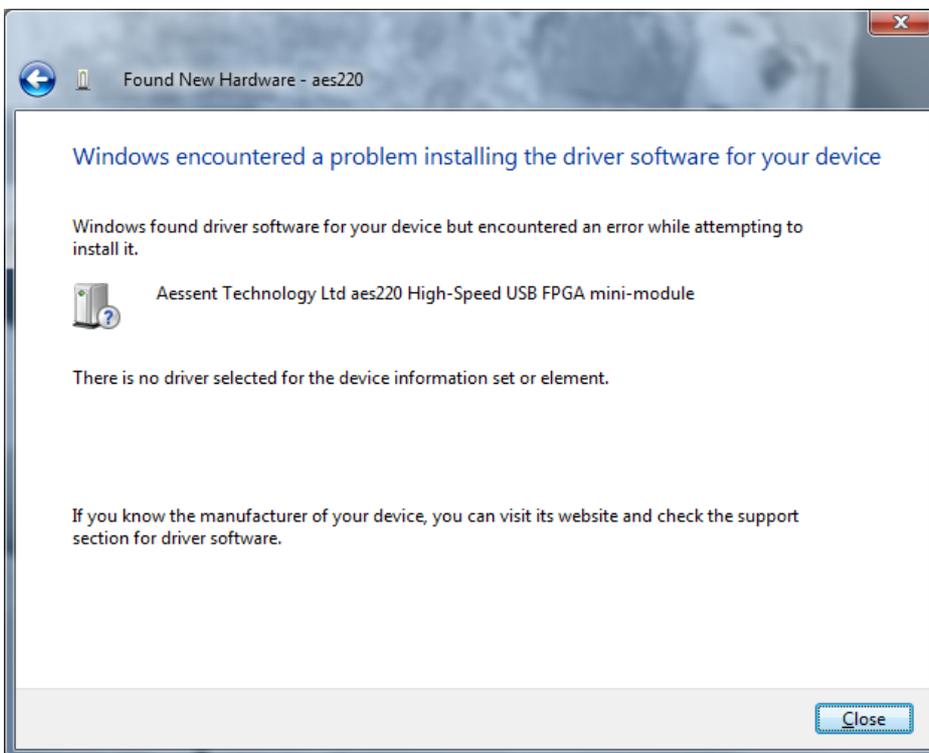


Figure 7: Windows Vista Problem

If this is the case open the Device Manager:

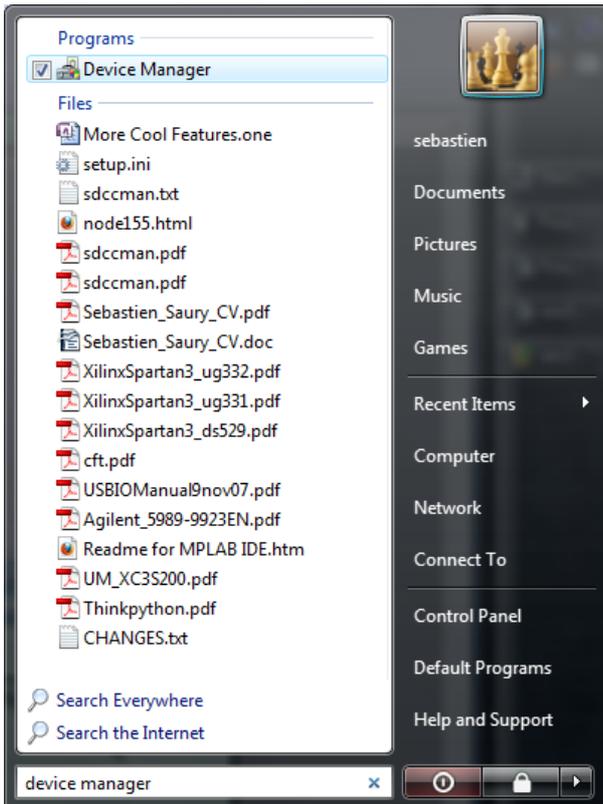


Figure 8: Vista Device Manager Selection

Right click on the aes220 device which should be preceded by a warning sign:

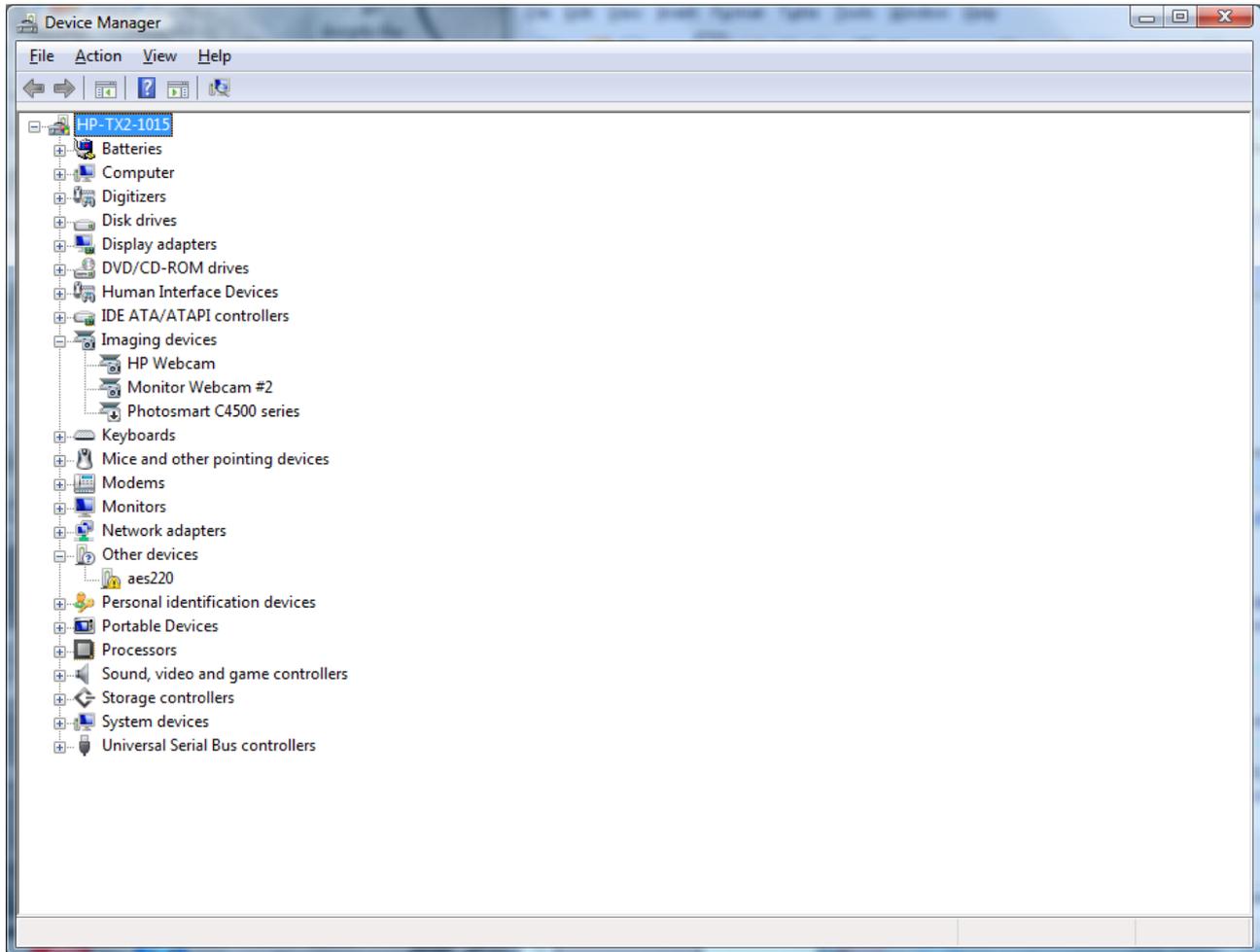


Figure 9: Device Manager

Select the uninstall option
and click OK when asked about uninstalling the device from the system:



Figure 10: Device Uninstall

The device should now have disappeared from the Device Manager list.

Unplug the module and re-connect it.

Windows will look for the driver again and a message will appear with a successful installation this time.

If looking into the Device Manager the whole device description will now appear under the libusb devices listing:

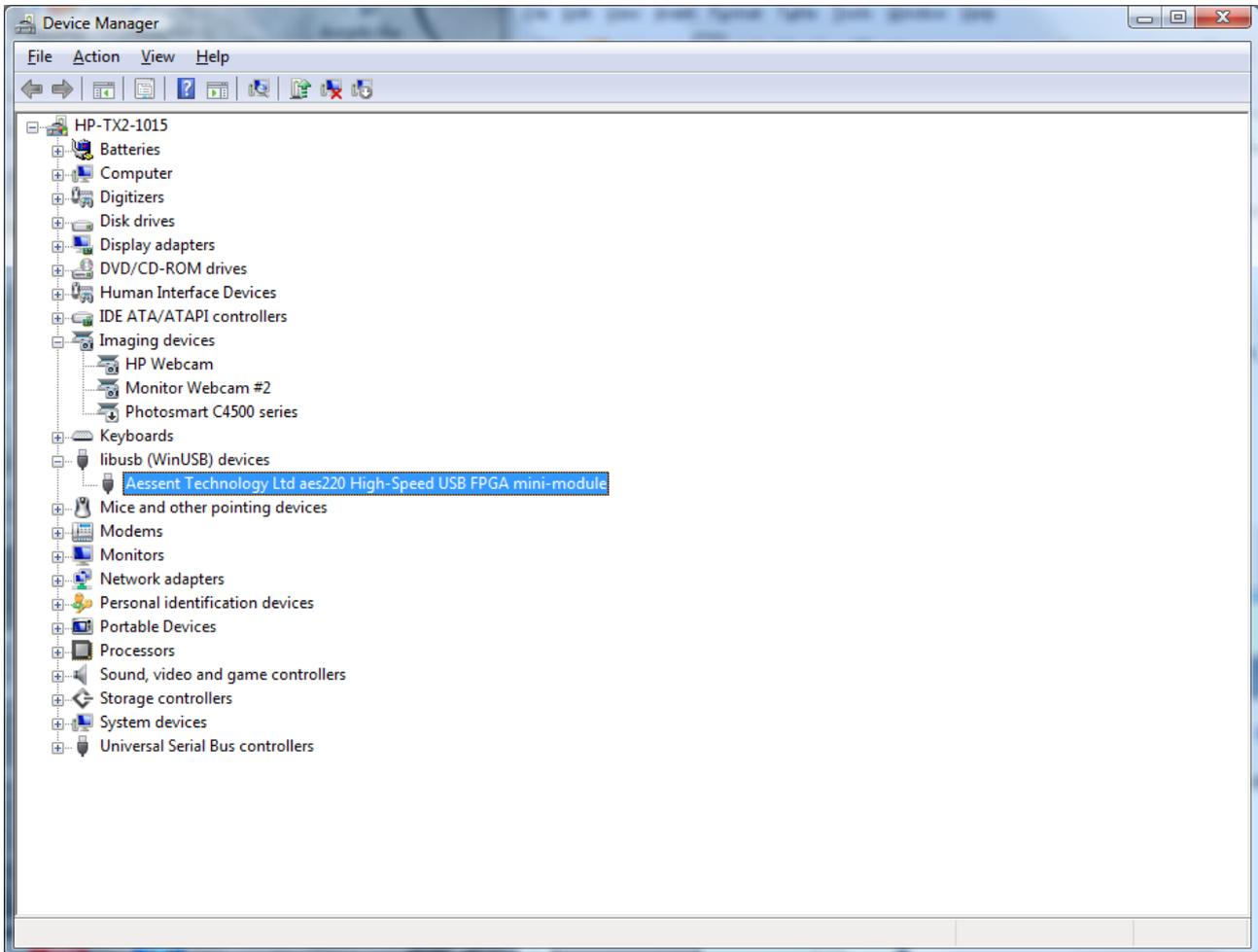


Figure 11: Device Recognised in the Device Manager

2 Installing the aes220 API

The aes220 various API facilitate the communication with the FPGA via the USB interface. Just select the API relevant to the language you are using. The API consist of a collection of routines interfacing with the firmware inside the aes220 micro-controller and the FPGA. These routines are described in the software support documentation at: <http://www.aessent.com/products/aes220-minimodule.html>

Unless libusb is already installed on the computer copy the libusb.dll files from \aes220_win_files\DLL\ (contained in aes220WindowsInstall.zip) to the System32 folder on 32 bit systems and SysWOW64 on 64 bit systems.

Note: however counter intuitive, on Windows 64 systems the System32 folder is for 64 bit libraries while the SysWOW64 folder is for 32 bit libraries

2.1 C API

In order to use the C API you need to copy the following files into a location of your choice and then set your linker to include the location path:

libaes220-x.x.x.dll

libaes220-x.x.x.dll.a

libaes220-x.x.x.dll.def

Optionally add the location path of the header file aes220_API.h to your compiler (to be able to use the #include <aes220_API.h> notation).

Note: replace the x.x.x in the files names with the current library version.

2.2 C++ API

In order to use the C++ API you need to copy the following files into a location of your choice and then set your linker to include the location path:

- If using Mingw:
 - libaes220_C++-x.x.x.dll
 - libaes220_C++-x.x.x.dll.a
 - libaes220-C++-x.x.x.dll.def
- If using Visual Studio:
 - libaes220_C++-x.x.x.dll
 - libaes220_C++-x.x.x.lib

Optionally add the location path of the header file aes220_C++API.h to your compiler (to be able to use the #include <aes220_API.h> notation).

Note: replace the x.x.x in the files names with the current library version.

2.3 C# API

In order to use the C# API you need to:

- Install .net Framework 4.5 from Microsoft website if it is not present on the machine. (available at: <http://www.microsoft.com/en-gb/download/details.aspx?id=30653>)
- Install Visual C++ Redistributable for Visual Studio 2012 (x86) if not present on the machine. (available at: <http://www.microsoft.com/en-us/download/details.aspx?id=30679>). Important: even on 64 bit systems it is the x86 version of the redistributable which is required.
- Copy libaes220_C++CLI-1.x.x.dll and libaes220_C#-1.x.x.dll to a directory of your choice.
- Add libaes220_C#-1.x.x.dll as a Reference to your C# project.
- When building a program using the API target the x86 platform (Properties → Build → Platform target: x86)

<p><u>Note</u>: replace the x.x.x in the files names with the current library version.</p>
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3 Installing aes220Programmer

In order to run aes220_Programmer and aes220_ProgrammerGUI on a Windows platform it is required to copy a few DLL files into the platform System32 folder (normally found at: C:\Windows\System32\) on 32 bit systems and in the SysWOW64 (<C:\Windows\SysWOW64>) on 64 bit systems.

Unless you have libusb and MinGW already installed on your computer copy the DLL files from \aes220_win_files\DLL\ (contained in aes220WindowsInstall.zip) to the System32 folder (or SysWOW64 on 64 bit systems).

Copy the \aes220_win_files\bin\ folder to a location of your choice but keep all the programs in it together.

No other setup is required.

4 If nothing happens when plugging aes220 module

It can happen that although no driver is found the driver wizard does not come up on the screen.

If that is the case open the "Device Manager" via the "Control Panel" or the Windows Key.

In "Other Devices" there should be the aes220 device with a warning yellow icon.

Right click on the device and select "Update Driver Software..."

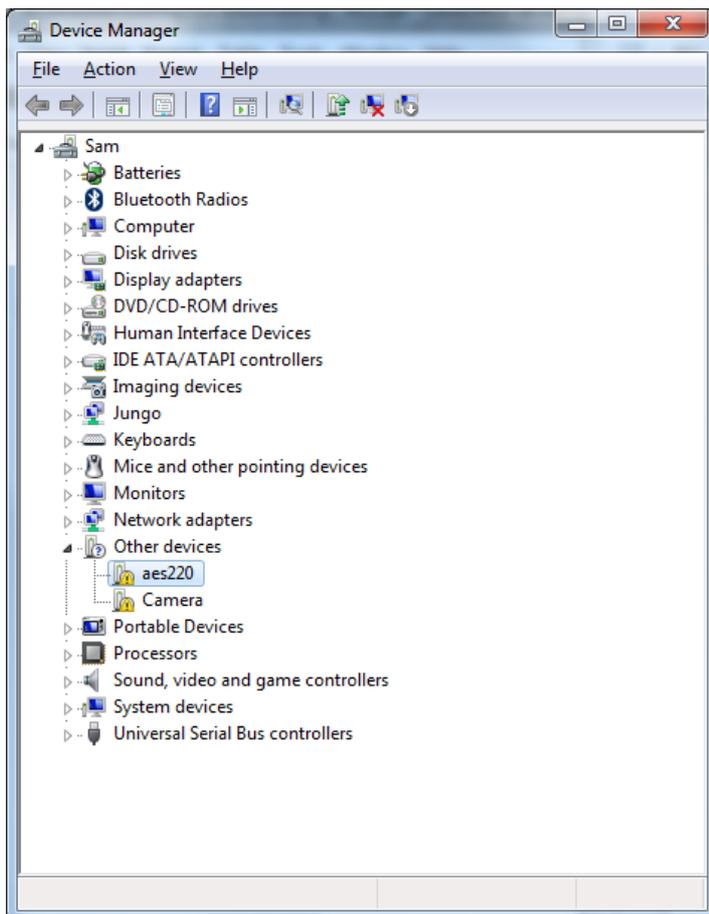


Figure 12: Device Manager -> Other devices