Driver installation procedure for ALT-USB and ALT-BMP at Windows 8, 8.1, 10 system.
Version 2017.07.15

Very Important!!! Altimeter has to be connected to USB type 1.0 or 2.0. It won't work at USB 3.0.

All points of that instructions shall be done precisely

Points 1..8 of this manual execute only once. Do not repeat on subsequent installation attempts. Points 9..12 can be repeated many times - until the connection to the altimeter
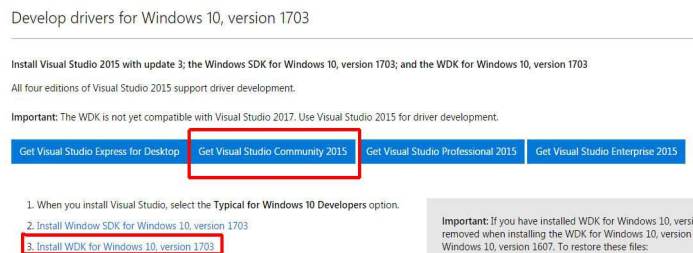
In Windows 8...10 system all connected devices must have so called "signed" drivers. Driver used for altimeter connection are not "digitally signed" and are not registered in Windows system.

Therefore before connection of altimeter, drivers has to be signed and registered in the system. Following steps have to be completed:

1. From website http://adrel.com.pl/download.html download pack **"Altimeter_Driver_Windows8_10"**
At disc **C** create a folder eg. **Altimeter/Driver** and unpack downloaded pack to it. In folder **C:Altimeter/Driver** following filed should be visible:
- createcat8.bat
- createcat81.bat
- createcat10.bat
- lowcdc.inf
- lowcdc.sys
- usbser61.sys
- Install_altimeter_W8_10.pdf
- Instalacja_altimetru_W8_10.pdf

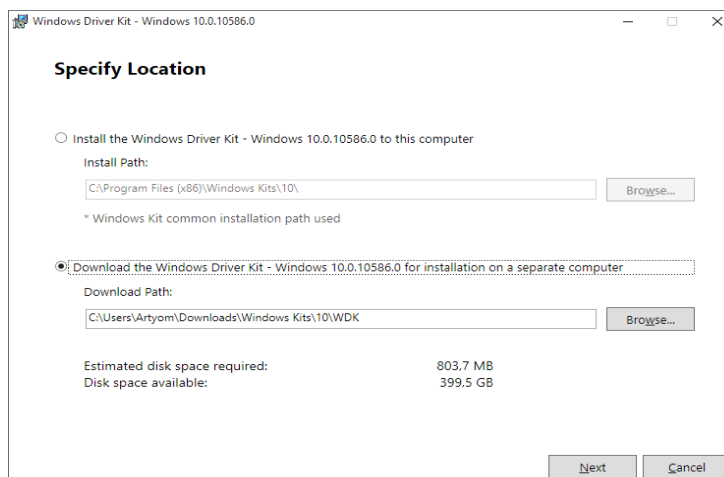**2.** Enter website https://developer.microsoft.com/en-us/windows/hardware/windows-driver-kit

3. From above side choose "**Get Visual Studio Community 2015**", save installation file on hard drive and after - install application. Choose option " Typical for Windows 10 developers" and click "Permission for changes". Installation will take about an hour. After it finishes press "Lunch" button and do not register the application. Choose "Not now, maybe later" and close it.

4. On the same webpage
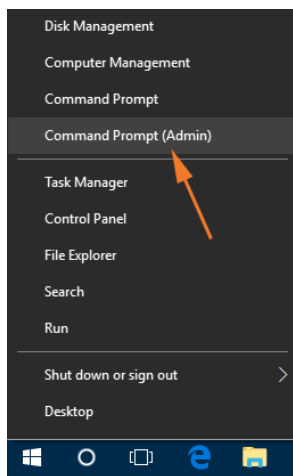https://developer.microsoft.com/en-us/windows/hardware/windows-driver-kit
click on "**Install WDK for Windows 10,version 1703**" - as marked on screenshot above
File **wdksetup** will be downloaded.
IMPORTANT! Run **wdksetup** file and choose saving to hard drive. As a path we set any folder for download.

5. Go to that folder and enter **…/Windows Kit/10/WDK**, launch **wdksetup** and accept: default setting, default conditions and changes on computer. Installation will take couple of minutes. After, choose **"close"** option.

6. On the keyboard press combination of "Windows" + "X". At your left window will pop – choose **Command Prompt (Admin)**

In new versions of Windows, Command Prompt is no available via Win + X combination. Use Windows "search" option (magnifier icon) by typing "cmd". Select the Command Prompt by right mouse click and "Run as Administrator"

Type: **Bcdedit.exe -set TESTSIGNING ON**

Line "the operation completed successfully" should appear. **Restart the computer**. In right bottom corner of desktop line "Test Mode…" should be visible.

7. One more time use "Windows" + "x" combination and choose **Command Prompt (Admin)** or in newer system use search option as described above

Type:
    cd c:\altimeter\driver   **(press Enter)**
and then type:
for Windows 8:
    createcat8   **(press Enter)**
for Windows 8.1:
    createcat81   **(press Enter)**
for Windows :
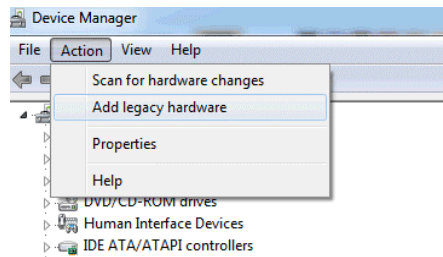   **createcat10**   **(press Enter)**

Type only one command dependently of your Windows system
Series of communicates should appear (as pasted at the end of instruction). Close command prompt.
Compilation one of above commands has to result in:
Number of wornings: 0"
Number of errors: 0"

8. Repeat point 7, so rerun Command Prompt and type „createcat…" command dependently of Windows

9. Use "Windows" + "x" combination and go for **"Device Manager"**

10. Connect the altimeter to USB in the computer. In device manager, card with "Ports (Com & LPT)" or "Other devices" should appear. Open the card – it should contain "Serial USB device" or "USB-232" with warning triangle beside it. - **Then go to point no. 12.**
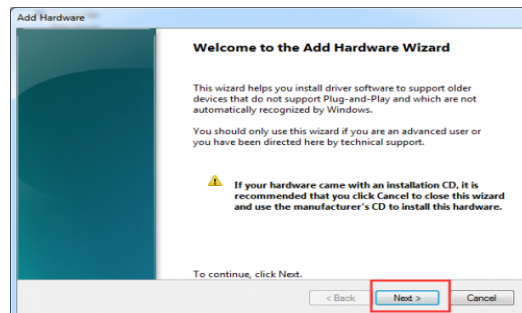
If on "Ports (Com & LPT)" card there will be no new USB device, most likely "unknown device" or "other" will show up in cards. It has to be uninstalled – therefore use right mouse lick and choose "uninstall". Afterwards complete tasks from **point 11** (do not proceed to point 12)

11. Click on „Ports (Com & LPT)" card (if it is not, then any other) and complete following
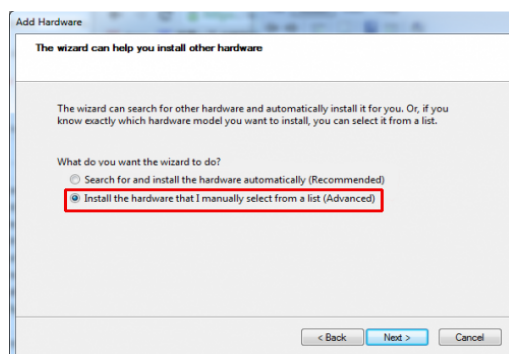
    a)   Open „Action" menu on top taskbar and choose „Add legacy hardware"
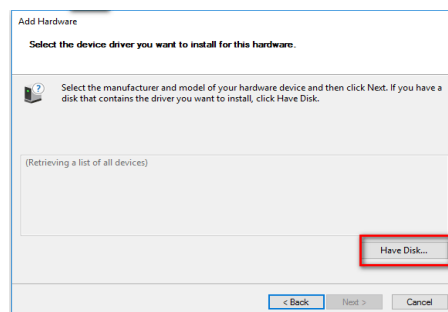

    b)   Click "Next"

    Choose manual installation, and click "Next"

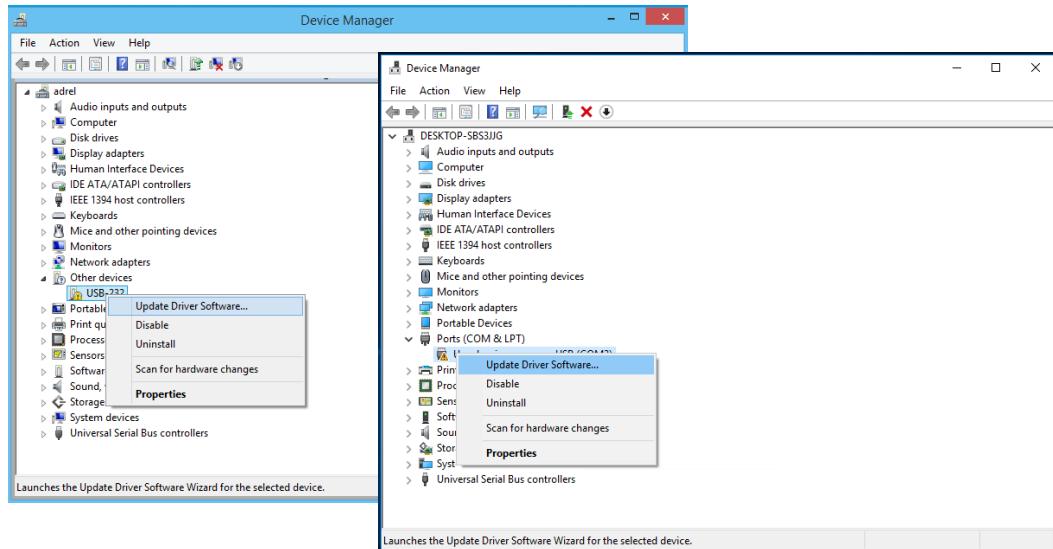   On the Next screen, make sure the Ports (COM & LPT) option selected and click on Next.
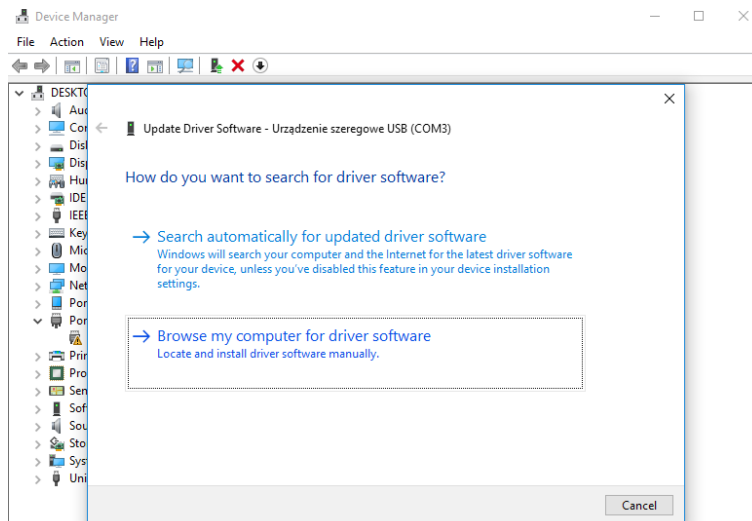
c) Click „Have Disk"

    And jump to subpoint **12f)**

12. Point the mouse on "Serial USB devices" or "USB-232" and right click it

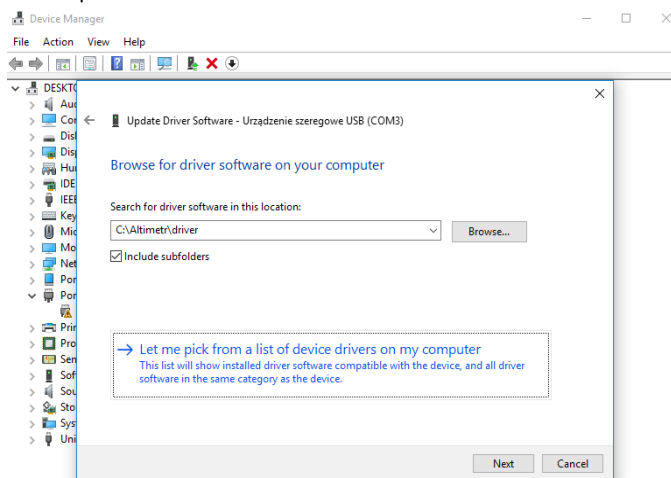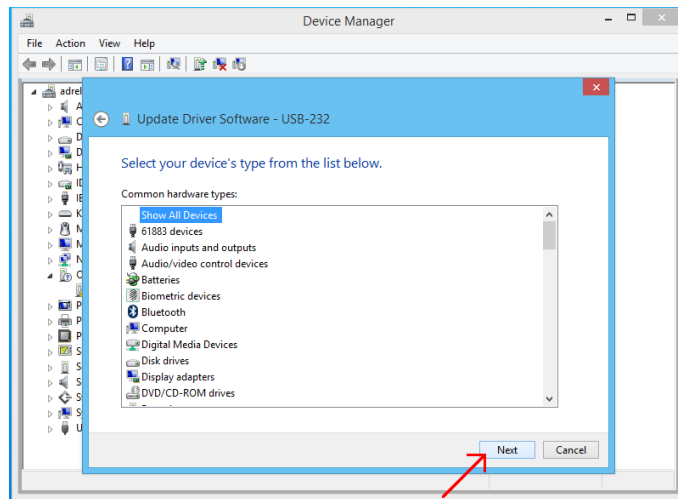   a.   Choose "Update Driver Software"
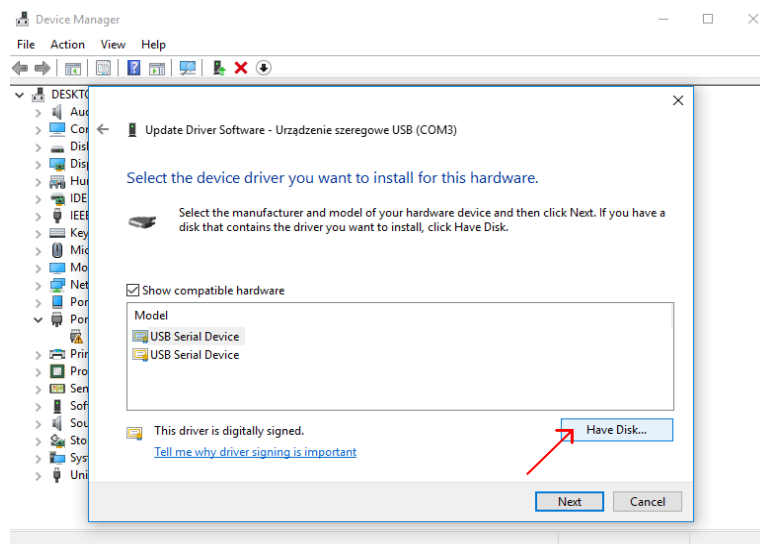

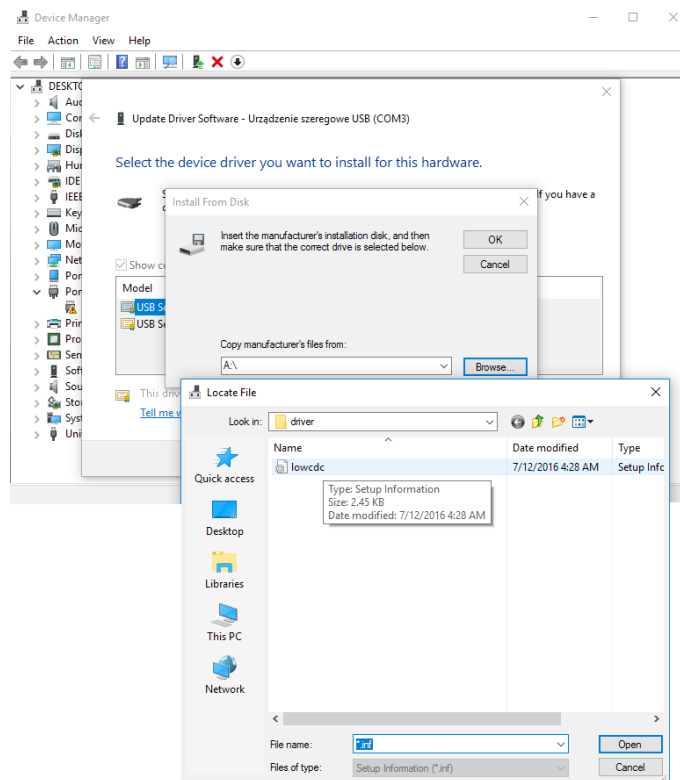   b.   "Browse my computer"

    c.   "Let me pick from a list…"

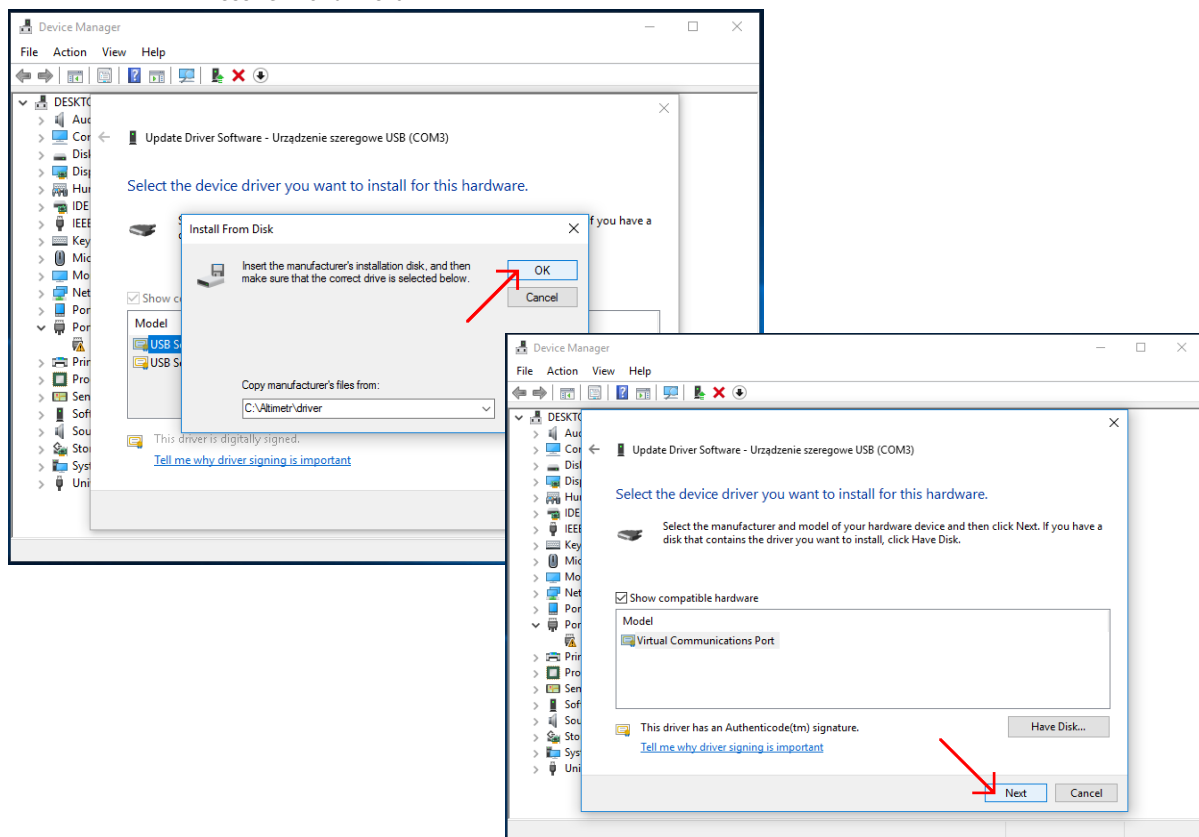d. for Windows 8, 8.1 select "Show All Devices" and "Next"

e. "Have Disk..."

f. "Browse" – The window will pop up. Navigate to **c:\altimeter\driver** and double click **lowcdc** driver stored in that folder.

Press "OK" and "Next"

g. Driver has been installed! Read the number of assigned COM port (e.g. COM3) and after opening altimeter program navigate to **Altimeter -> Settings** and set correct port in **Choose Port** field.

13. Enjoy!

Commends after running **createcat...**

c:\Altimeter\driver>cd c:\Program Files (x86)\Windows Kits\10\Bin\x86

c:\Program Files (x86)\Windows Kits\10\bin\x86>Inf2Cat /driver:"c:\Altimeter\driver" /os:10_X64
....
Signability test complete.

Errors:
None

Warnings:
None

Catalog generation complete.
c:\Altimeter\driver\lowcdc.cat

c:\Program Files (x86)\Windows Kits\10\bin\x86>if 1 EQU 1 (if not exist "c:\Altimeter\driver\certcopy.cer" (
MakeCert -r -pe -ss CA -n "CN=Artyom Protaskin CA" "c:\Altimeter\driver\certcopy.cer"
 CertMgr /add "c:\Altimeter\driver\certcopy.cer" /s /r localMachine root
 CertMgr /add "c:\Altimeter\driver\certcopy.cer" /s /r localMachine trustedpublisher
))
Succeeded
CertMgr Succeeded
CertMgr Succeeded

c:\Program Files (x86)\Windows Kits\10\bin\x86>SignTool sign /v /s CA /n "Artyom Protaskin CA" /t http://timestamp.verisign.com/scripts/timstamp.dll "c:\Altimeter\driver\lowcdc.cat"
The following certificate was selected:
    Issued to: Artyom Protaskin CA
    Issued by: Artyom Protaskin CA
    Expires: Sun Jan 01 01:59:59 2040
    SHA1 hash: 6BD425131EC512E3C2F70A2FFF962E709D903F43

Done Adding Additional Store
Successfully signed: c:\Altimeter\driver\lowcdc.cat

Number of files successfully Signed: 1
Number of warnings: 0
Number of errors: 0

c:\Program Files (x86)\Windows Kits\10\bin\x86>SignTool verify /v /pa "c:\Altimeter\driver\lowcdc.cat"

Verifying: c:\Altimeter\driver\lowcdc.cat
Signature Index: 0 (Primary Signature)
Hash of file (sha1): DF090EDBDEAC1405271253E4C8250F5C38966067

Signing Certificate Chain:
    Issued to: Artyom Protaskin CA
    Issued by: Artyom Protaskin CA
    Expires: Sun Jan 01 01:59:59 2040
    SHA1 hash: 6BD425131EC512E3C2F70A2FFF962E709D903F43

The signature is timestamped: Fri Oct 07 14:25:48 2016
Timestamp Verified by:
    Issued to: Thawte Timestamping CA
    Issued by: Thawte Timestamping CA
    Expires: Fri Jan 01 01:59:59 2021
    SHA1 hash: BE36A4562FB2EE05DBB3D32323ADF445084ED656

      Issued to: Symantec Time Stamping Services CA - G2
      Issued by: Thawte Timestamping CA
      Expires: Thu Dec 31 01:59:59 2020
      SHA1 hash: 6C07453FFDDA08B83707C09B82FB3D15F35336B1

        Issued to: Symantec Time Stamping Services Signer - G4
        Issued by: Symantec Time Stamping Services CA - G2
        Expires: Wed Dec 30 01:59:59 2020
        SHA1 hash: 65439929B67973EB192D6FF243E6767ADF0834E4

Successfully verified: c:\Altimeter\driver\lowcdc.cat

Number of files successfully Verified: 1
Number of warnings: 0
Number of errors: 0