Tutorial

Coding, Programming and Debugging HLP

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The AscTec SDK is a toolkit to get your own programming algorithms on the onboard microprocessor of your AscTec UAV. You can write your C-code in the given structure of the SDK and flash it on the HLP via a JTAG or serial connection. The more detail about how to use the SDK can found on the webpage(http://wiki.asctec.de/display/AR/SDK+Manual). But when you apply this toolkit in Windows 10, some problems could happen due to the incompatibility between Win10 and SDK. There are 3 tips for the application and flash code via JTAG.

1.) After you follow the tutorial for the installation (http://wiki.asctec.de/display/AR/SDK+Setup+for+Windows) and already import the project SDK 3.0 into the Eclipse, there are still some DLLs missing on Windows 10. You can download them from http://asctec.de/downloads/software/AscTec_SDK_v3.0_DLLs.zip , extract them into the AscTec_SDK_v3.0 folder in your eclipse workspace.

Pic.1 four DLLs missing on Win10

2.) When you compile the whole project in Eclipse, if an error shows like below:

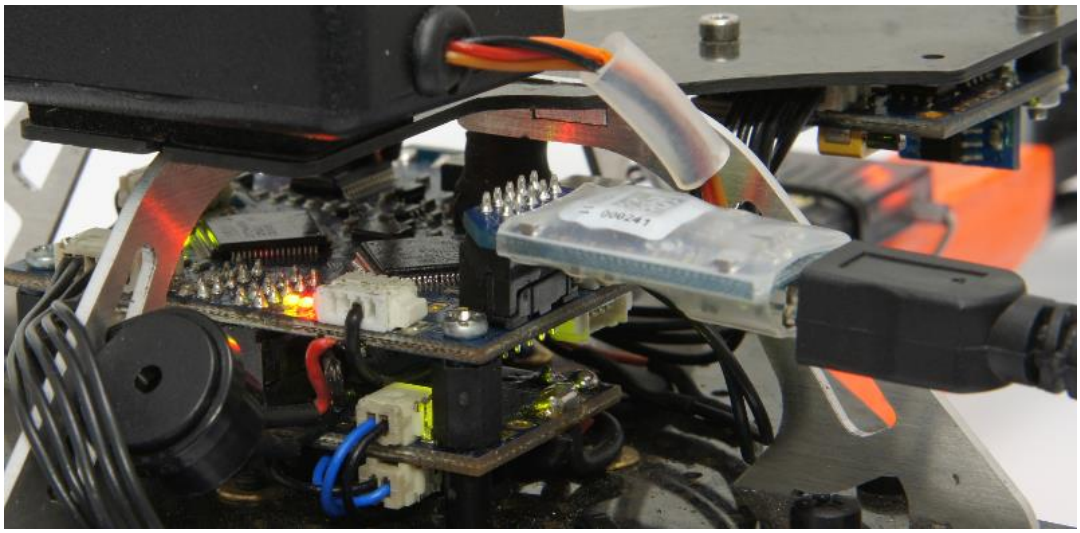
```
[main] sh 12196 sync_with_child: child 12224(0x1B4) died before initialization with status code 0xC0000142
```

This error will occur when your OS is above WIN 8(even 8.1). One DLL need to be replaced, you can download it from the link below:

http://www.asctec.de/downloads/software/sdk/msys-1.0.zip

Locate the folder where you have installed the SDK and navigate to WinARM\utils\bin. Replace the file named msys-1.0.dll with the new one.

3.) During our project, we use the JTAG to flash the HL. When you connect the computer and UAV with the JTAG-adapter(Pic.2), the driver will not installed automatically, so the computer can not identify the device. You can find several drivers provided by the AscTec on the webpage, but all of them don't support the OpenOCD.

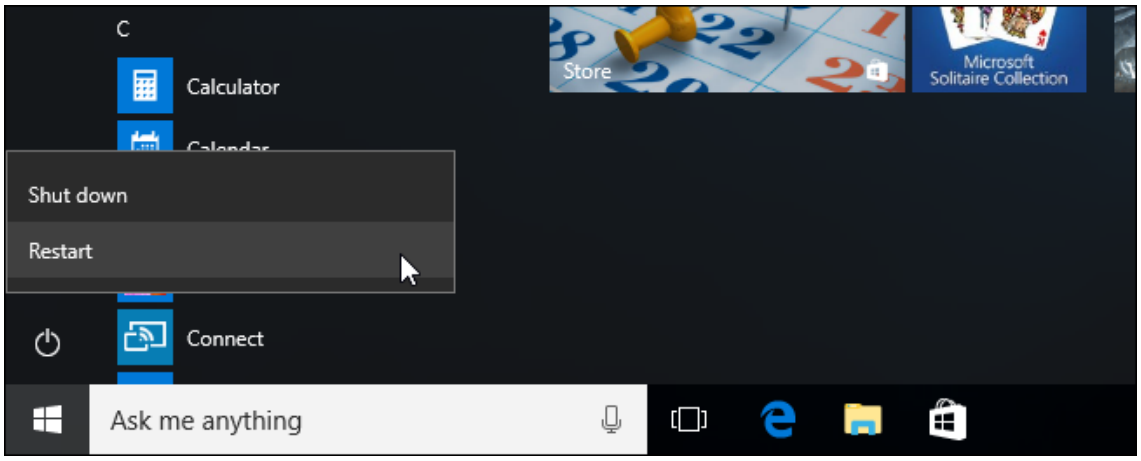


Pic.2 to get your code on the high level processor by using the JTAG-adapter.

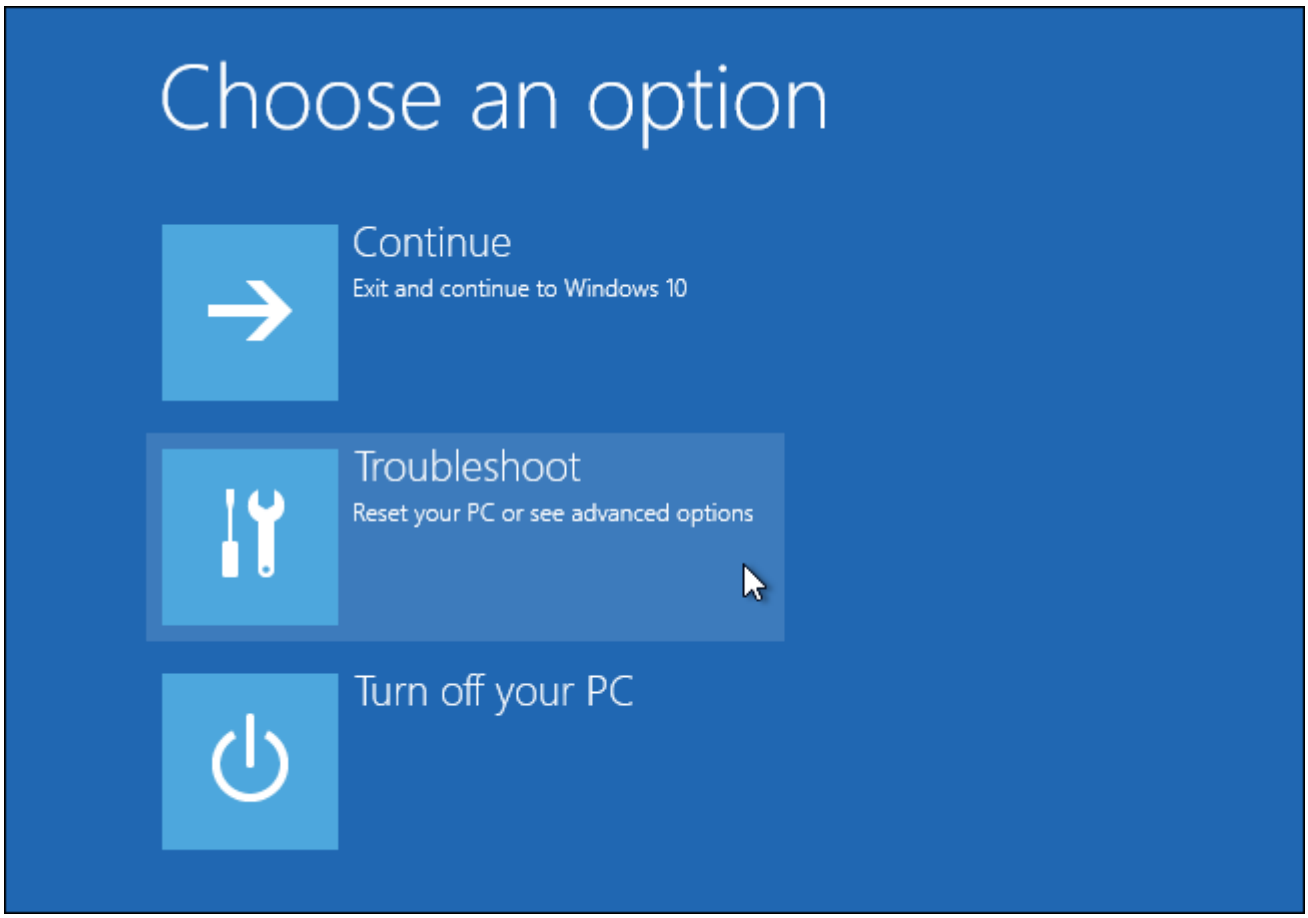
Here is the solution. Connect the computer and UAV via JTAG-adapter. Open your device manager and update the driver for the two JTAG entries. Manually select the driver folder and point it to <your SDK folder>/JTAG/oocd_link_treiber.

If Windows complains that the driver is not digitally signed you will need to disable Windows Driver Signature Enforcement temporarily.

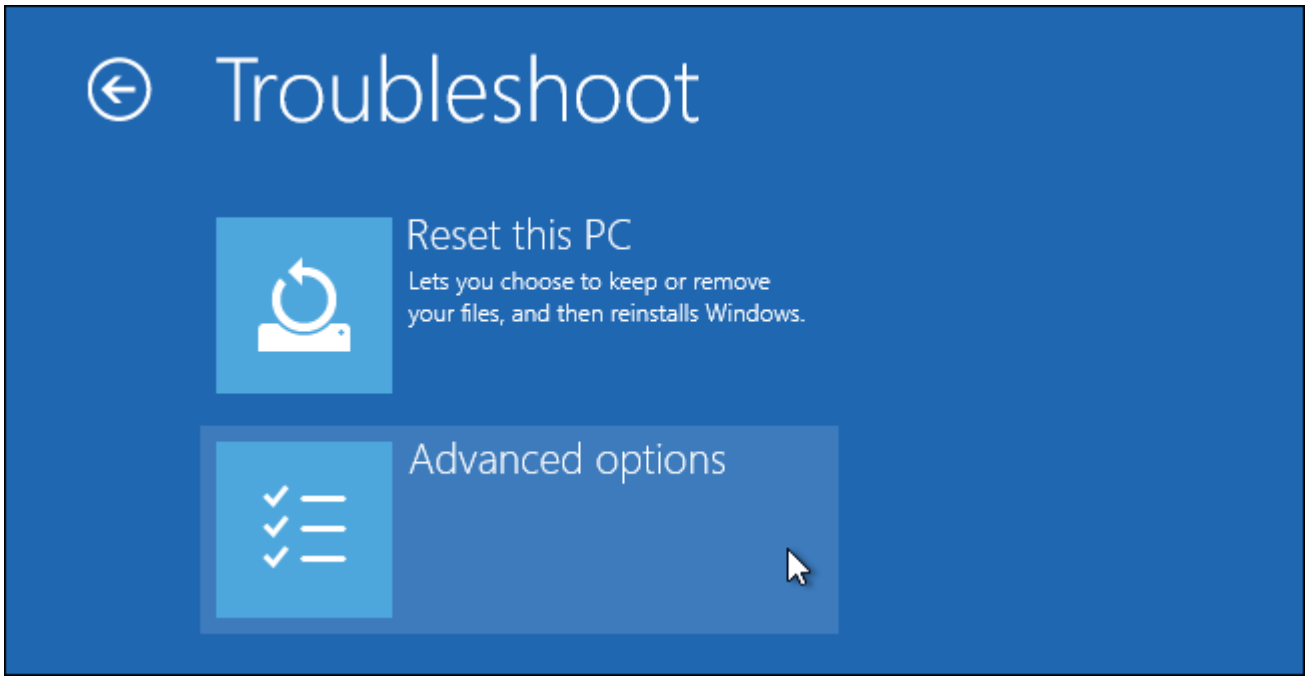
To do this, get to the Windows 10 advanced boot options menu. For example, you can hold down the Shift key while you click the "Restart" option in Windows. Your computer will restart into the menu.



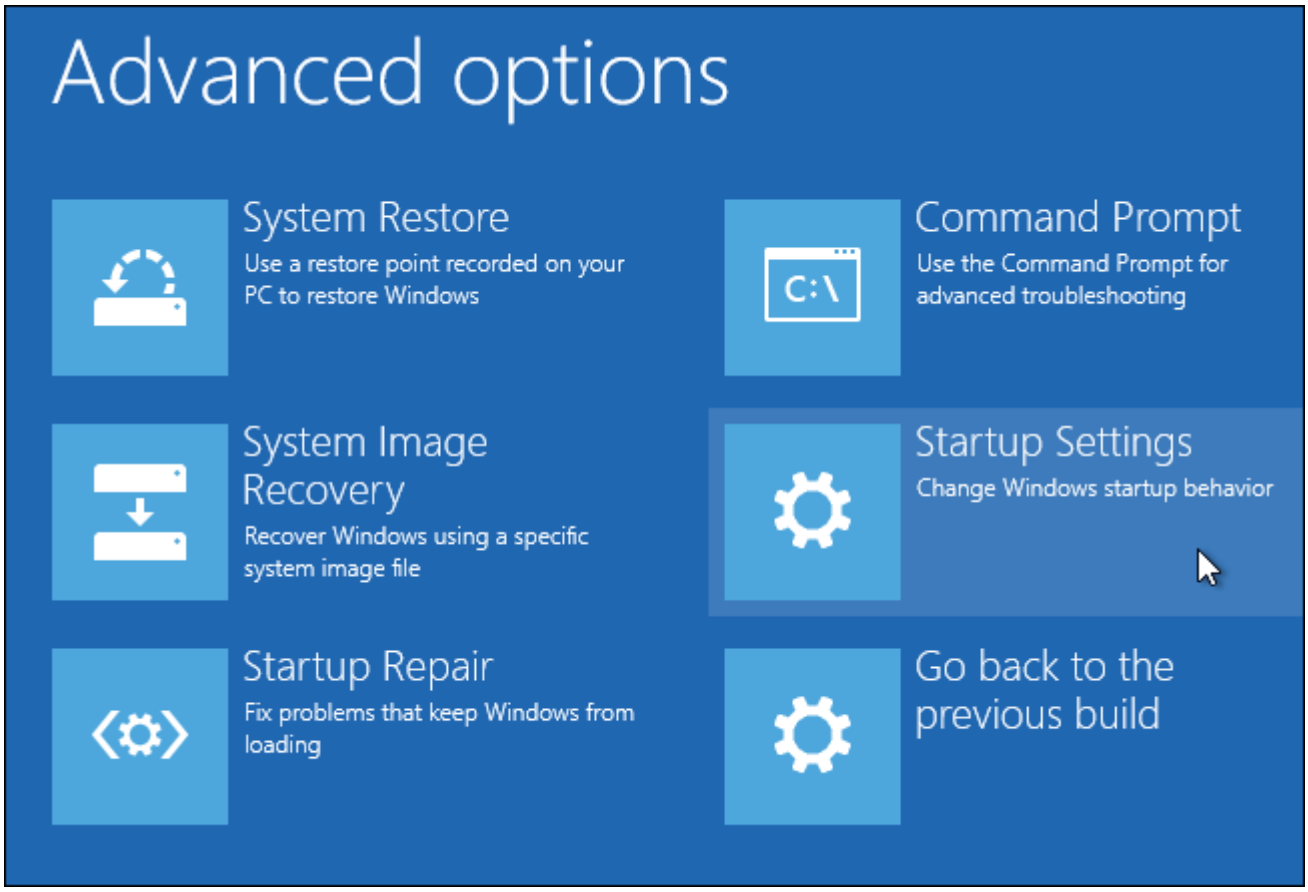
Select the “Troubleshoot” tile on the Choose an option screen that appears.



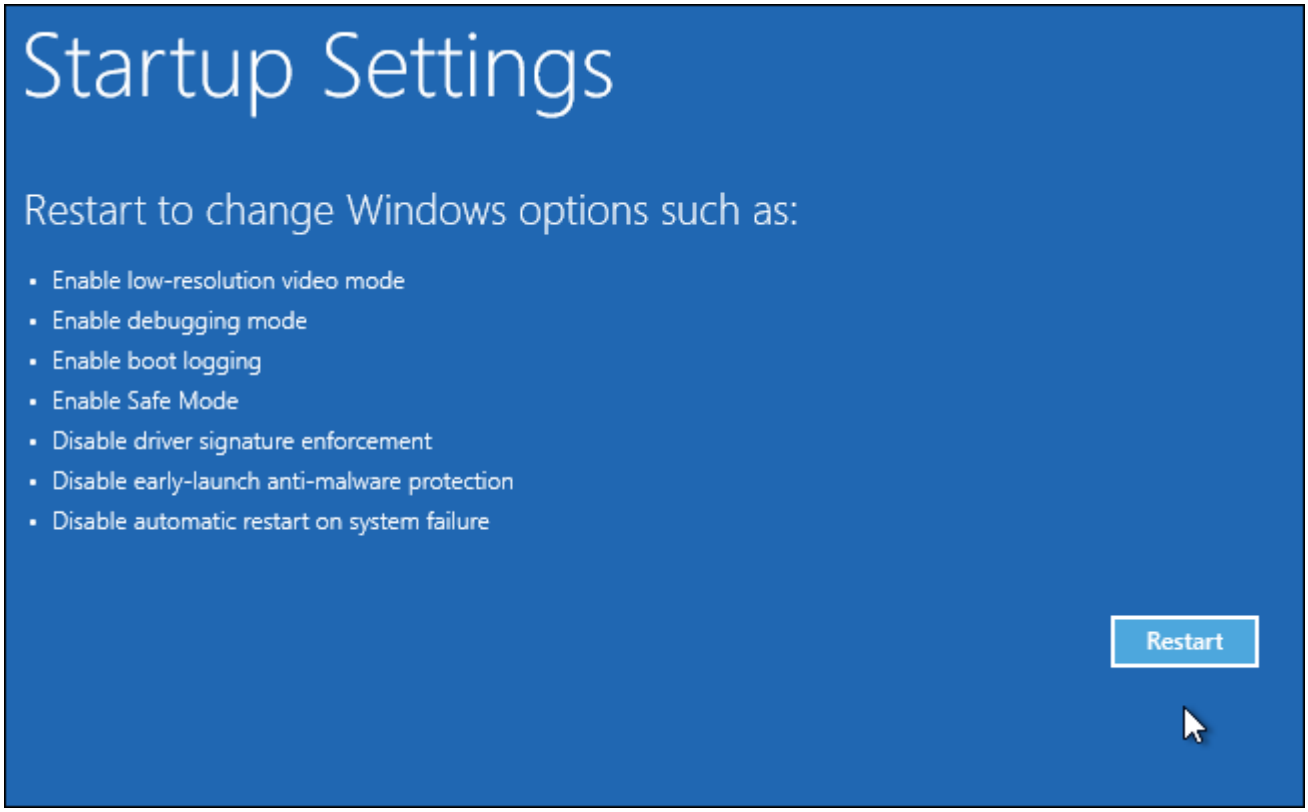
Select “Advanced options”.



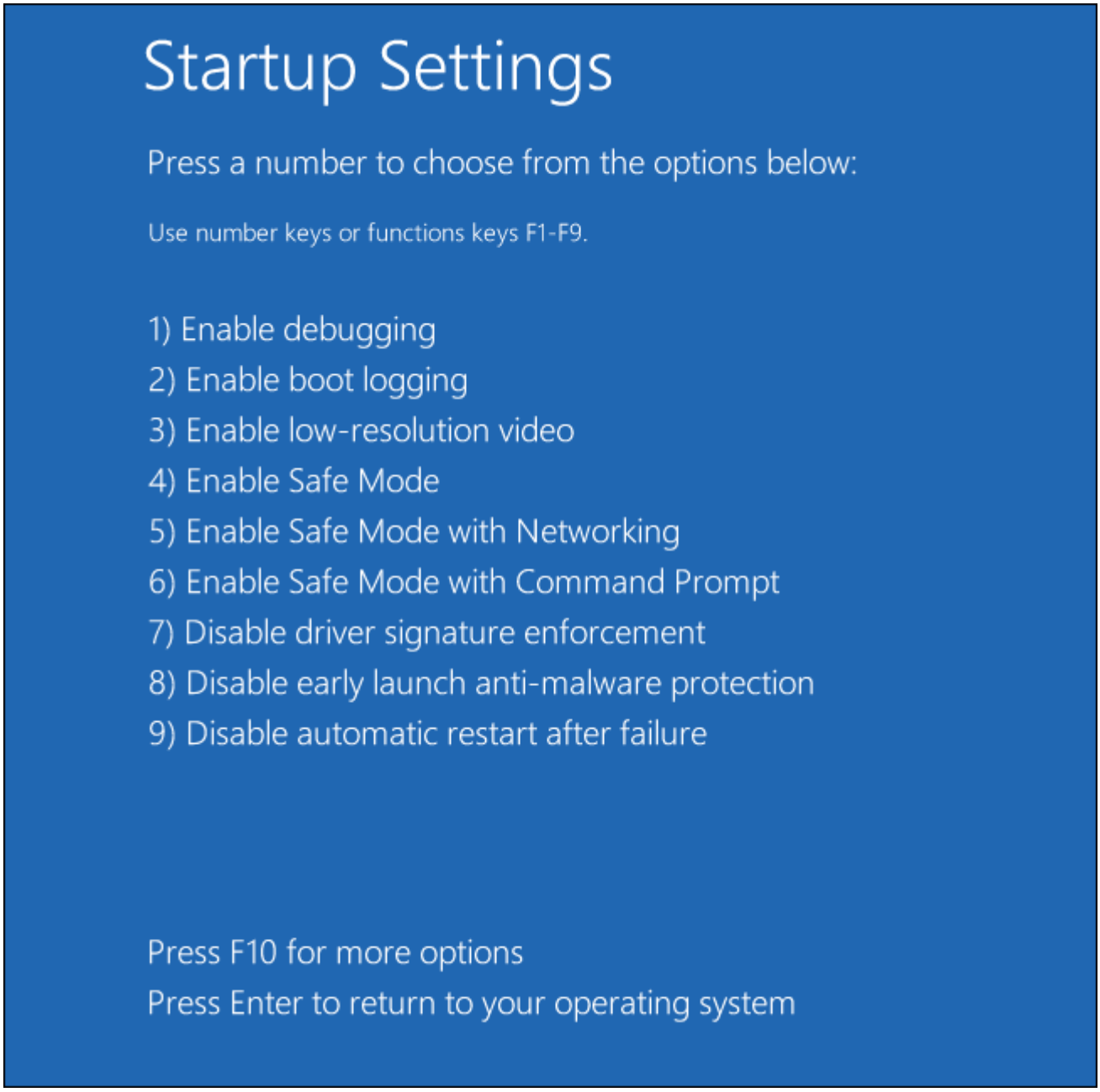
Click the “Startup Settings” tile.



Click the “Restart” button to restart your PC into the Startup Settings screen.



Type “7” at the Startup Settings screen to activate the “Disable driver signature enforcement” option.



Your PC now will boot with driver signature enforcement disabled and you'll be able to install unsigned drivers. (However, the next time you restart your computer, driver signature enforcement will be disabled, unless you go through this again)

Now open your device manager again and update the driver for the two JTAG entries. Manually select the driver folder and point it to <your SDK folder>/JTAG/oocd_link_treiber.

All errors should be solved, and the steps shown in http://wiki.asctec.de/display/AR/SDK+Manual should work for you.