2017

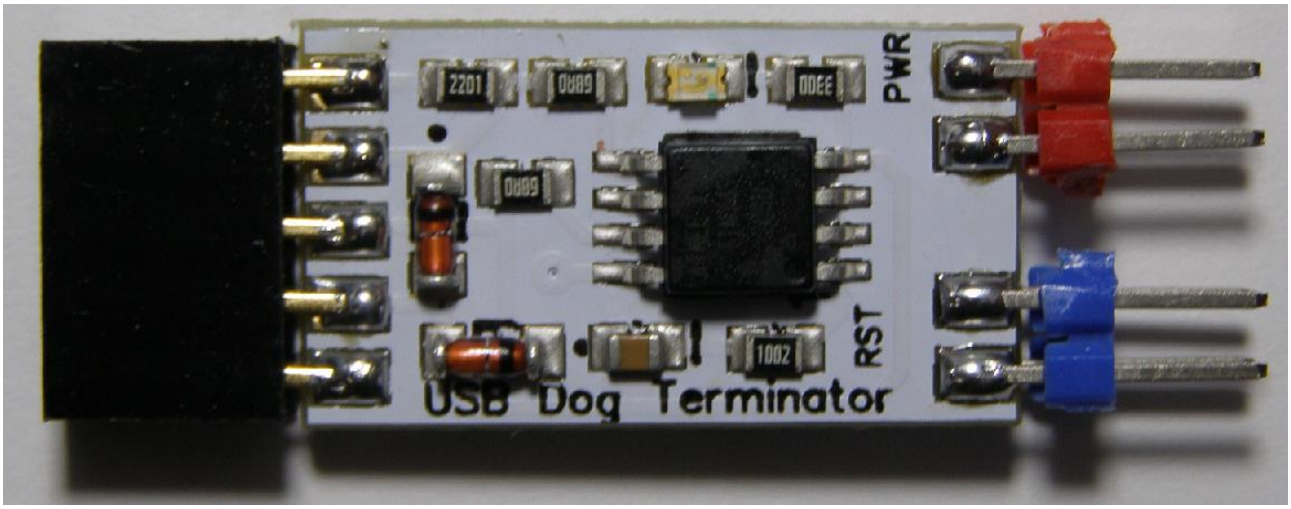
# USB Dog Terminator



## User manual

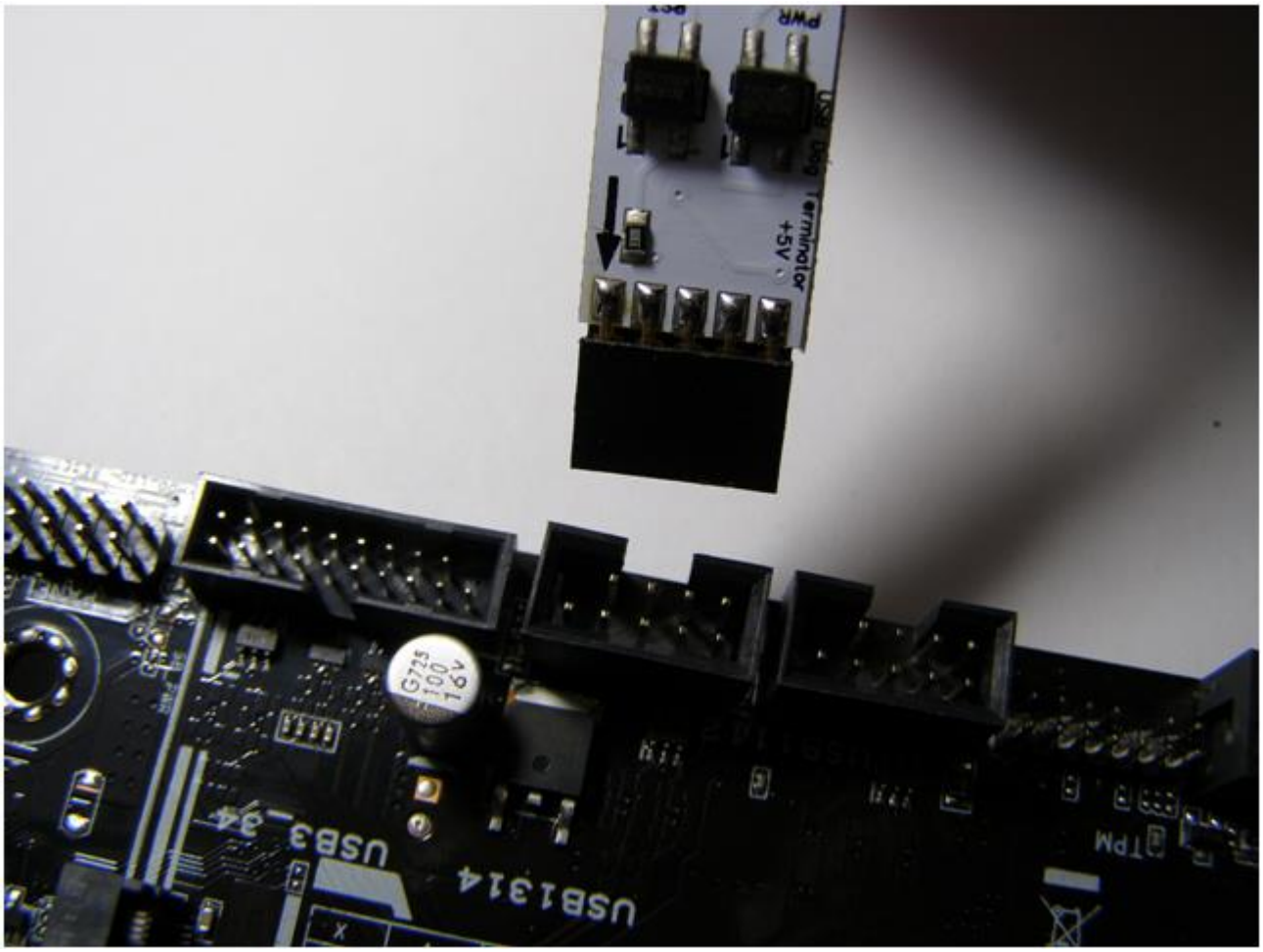
www.willem-ua.com

## Brief description

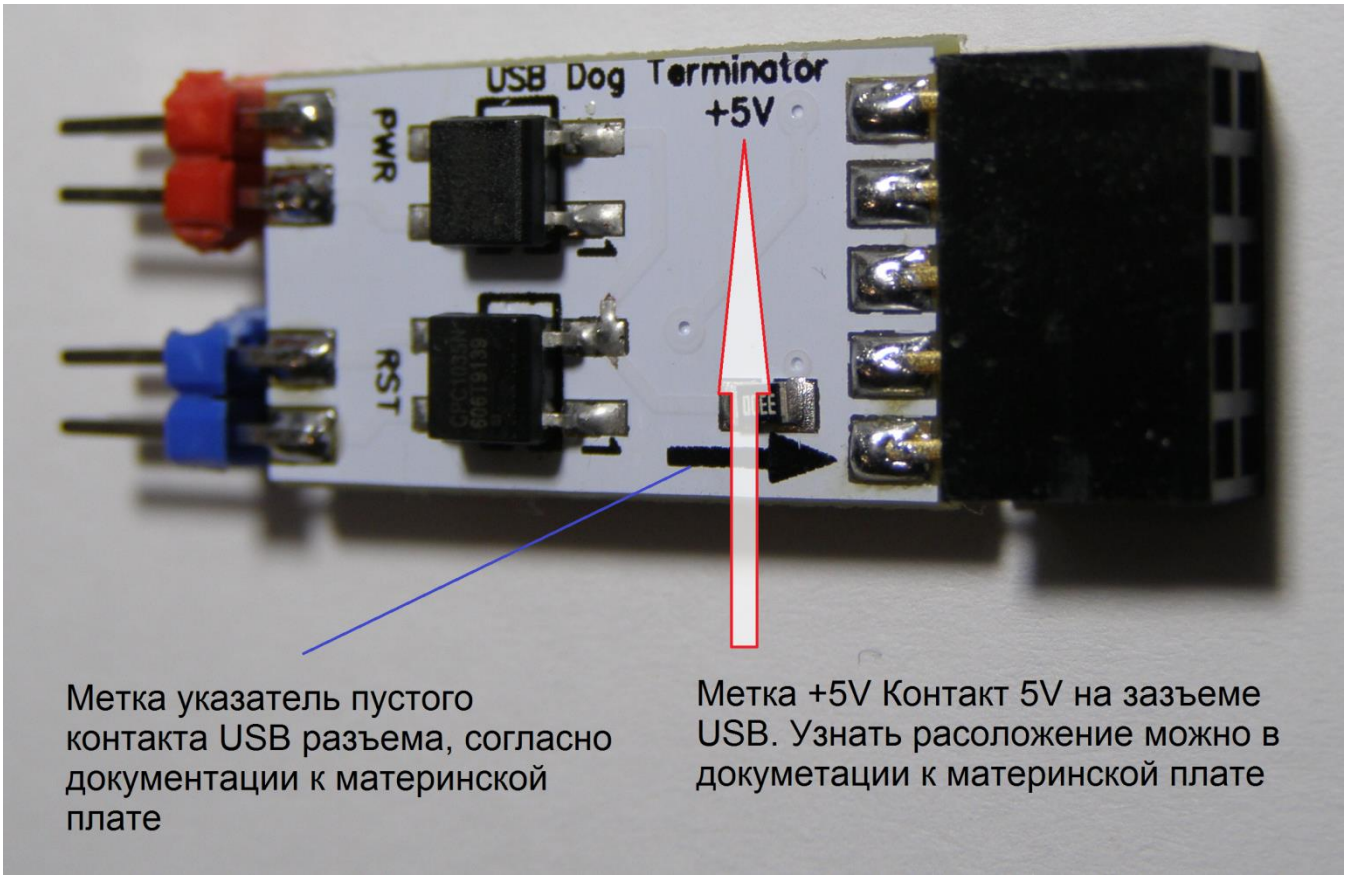



USB DOG Terminator was designed specifically for use in GPU farms and is intended to reboot the computer if the operating system (hereinafter OS) freezes. If the computer cannot be rebooted when the OS freezes “hard”, USB Dog Terminator switches it off and then on again. This continues until the computer boots the OS and the USB Dog Terminator service program starts working. The boot wait time, the freeze wait time and other values can be adjusted by the user in the USB Dog Terminator service program if needed. Thanks to the LED indication, the various operating modes, described below, can be observed visually.

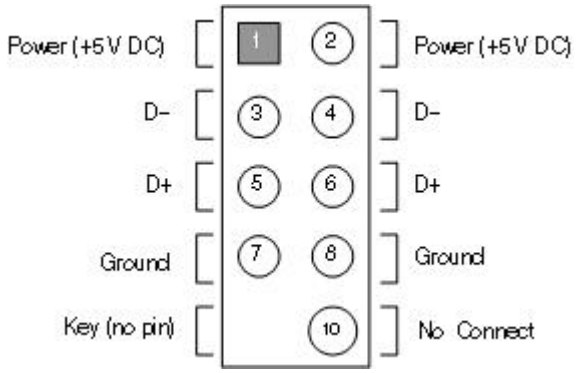
USB Dog Terminator connects to a USB port located on the motherboard as a pin header connector. The computer is controlled via additional adapters, which are connected in place of the RESET and POWER buttons, and these in turn connect to the USB Dog Terminator board, so that computer control is retained



## Connection.

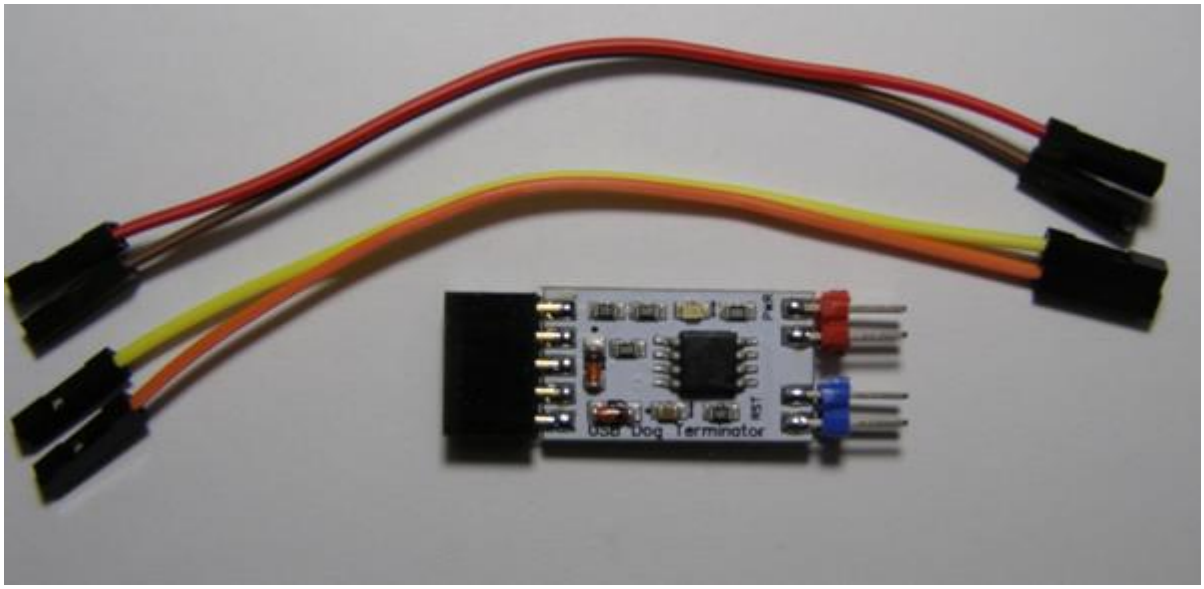



The USB Dog Terminator board has markings for correct installation of the device on the computer motherboard. Before installation, use the motherboard manual to determine where the supply voltage is and where the empty pin of the USB connector is.

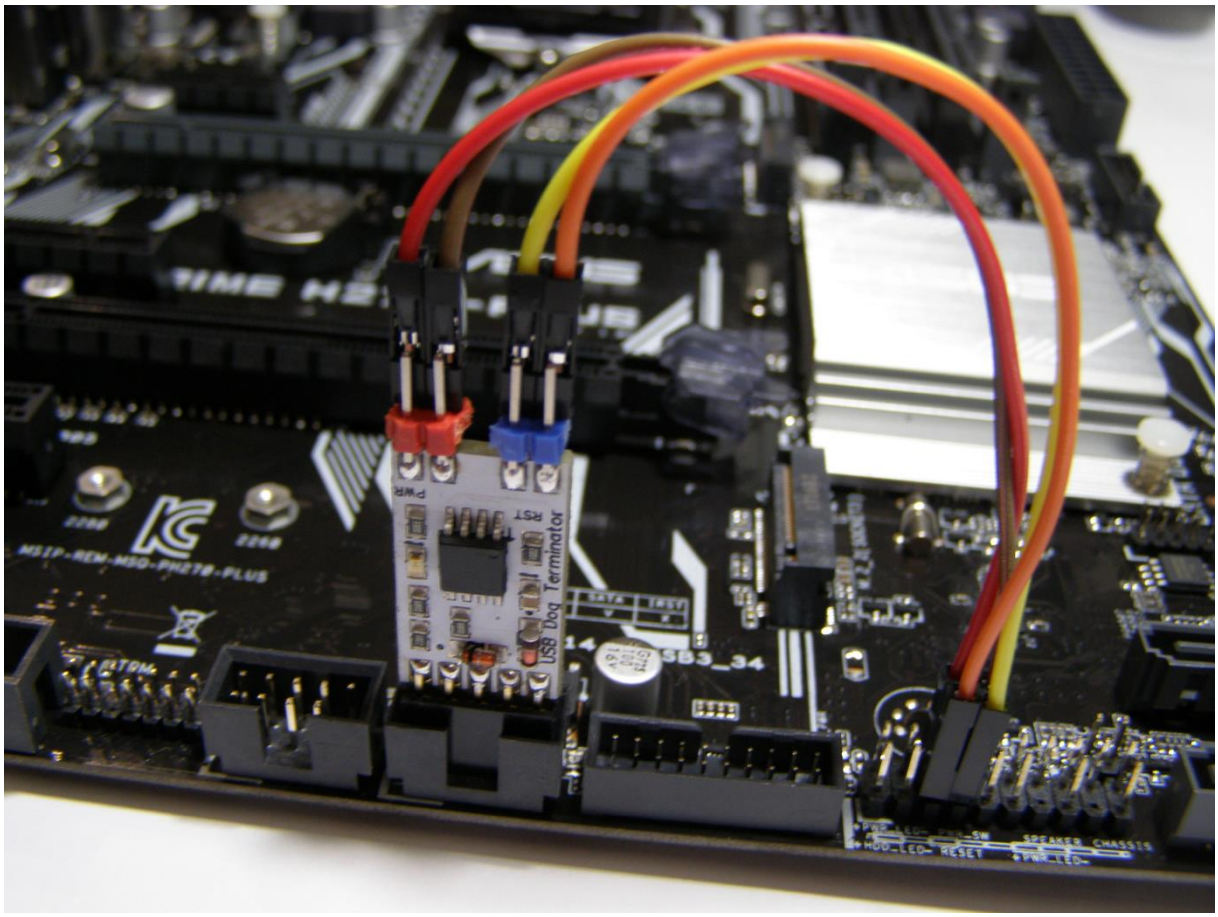



**Incorrect connection of USB Dog Terminator will not damage the computer or the device itself, but the device will not work!**

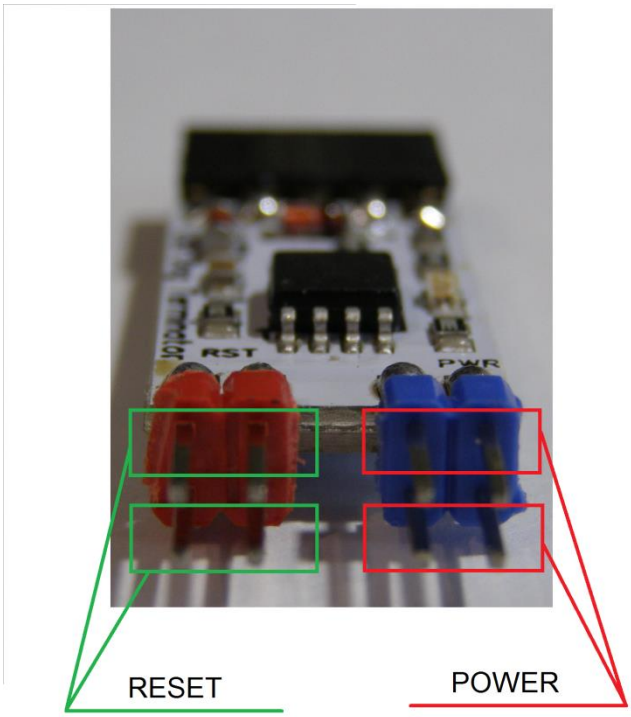
The computer RESET and POWER buttons are connected to the pin headers of USB Dog Terminator, after disconnecting them from the motherboard. The adapter wires are connected in their place.




When connecting the RESET and POWER control signals from the computer to USB Dog Terminator using the adapter wires, follow the labels of the connected functions: RST – RESET, PWR – POWER. Connector polarity does not matter.



The adapters from USB Dog Terminator to the buttons are connected from the free pins of the connectors. The wire colour coding (polarity), both on the button side and on the POWER and RESET control signal pins, also need not be observed. As shown in the picture above, only the POWER and RESET control signals from USB Dog Terminator are connected



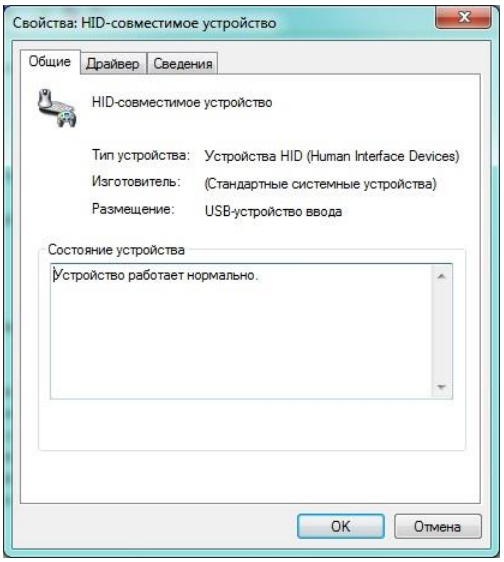

**Note! The maximum load current of the control outputs must not exceed 50 mA!!! Therefore, using the USB Dog Terminator control outputs for other purposes without additional equipment specially designed for this is not recommended!**

At the first computer start, USB Dog Terminator is in "stop" mode and does not control the RESET and POWER buttons.

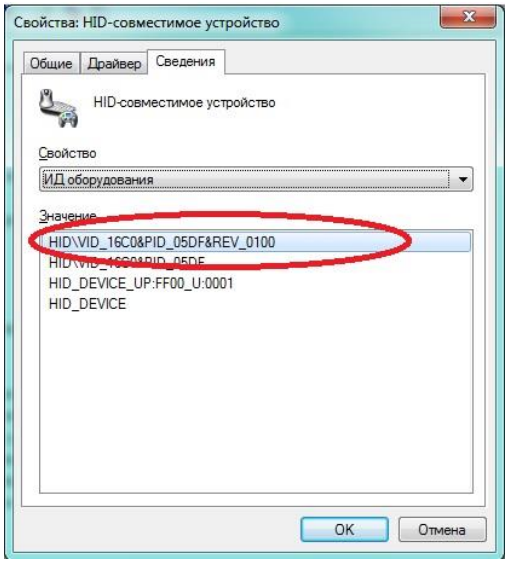
**For USB Dog Terminator to work correctly, on the computer motherboard, set the jumper that supplies power to the USB ports when the computer is off, if the motherboard manufacturer provides one. Or look for the corresponding function in the BIOS settings under USB configuration.**

## Software installation and setup.

After connection, at the first computer start the device is detected as a HID-compliant device. You can see it via “Control Panel” -> “Device Manager” -> “HID devices”



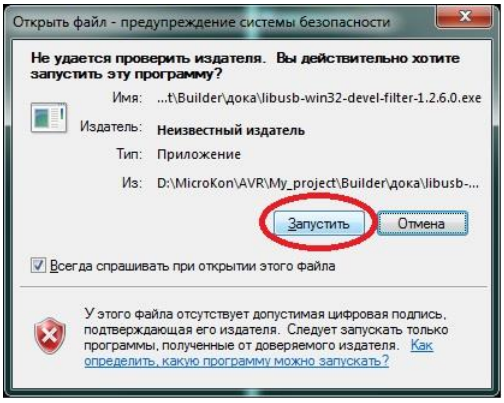

You can make sure it is USB Dog Terminator by selecting the “Details” tab and choosing “Hardware Ids” in the “Property” drop-down list.



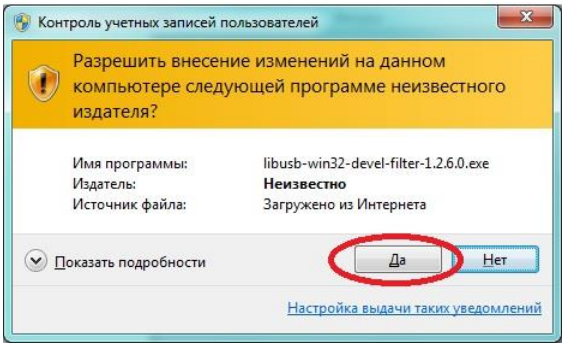

The value of this property must be VID 16C0 and PID 05DF, or the full form HID\VID_16C0&PID_05DF&REV_0100. If there are several HID devices, find the one with this VID and PID.

Next we install the driver management program and the driver itself. The driver includes versions for both x32bit and x64bit OS. Open the folder «WTD Dog Terminator\Driver» and run the file libusb-win32-devel-filter-1.2.6.0.exe

A security warning window will appear. Click Run.



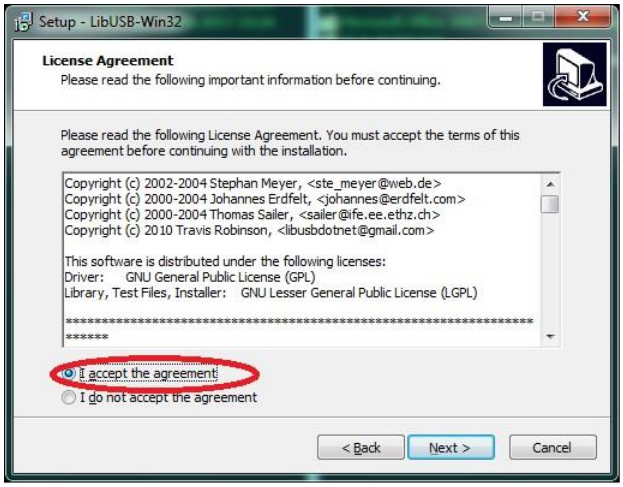

Then another dialog box will appear, where you also need to agree.




After that, the driver installation welcome window opens.

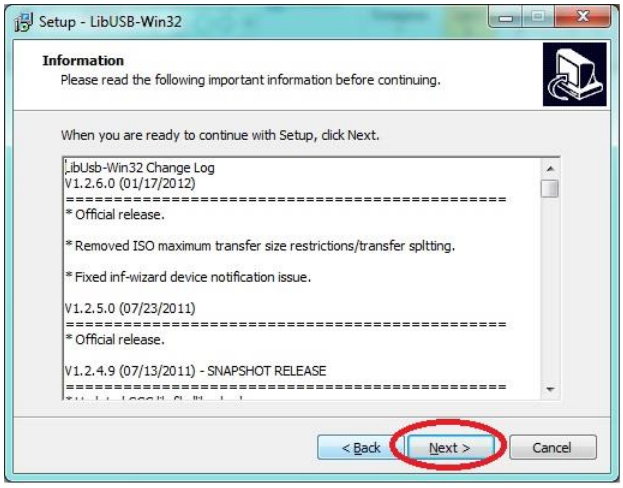


Next, accept the license agreement.

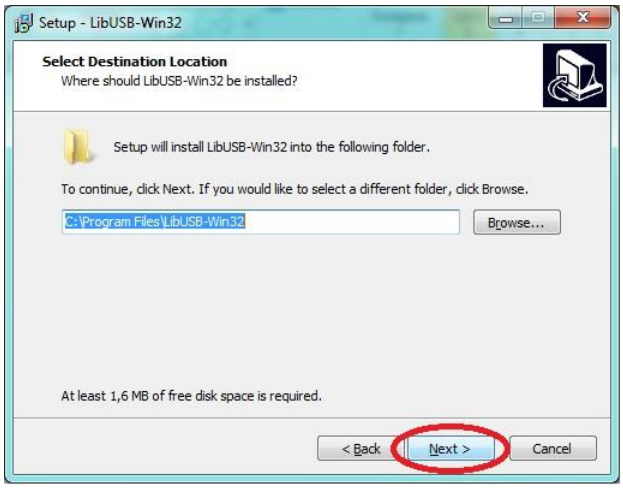



Continue the installation by clicking Next.

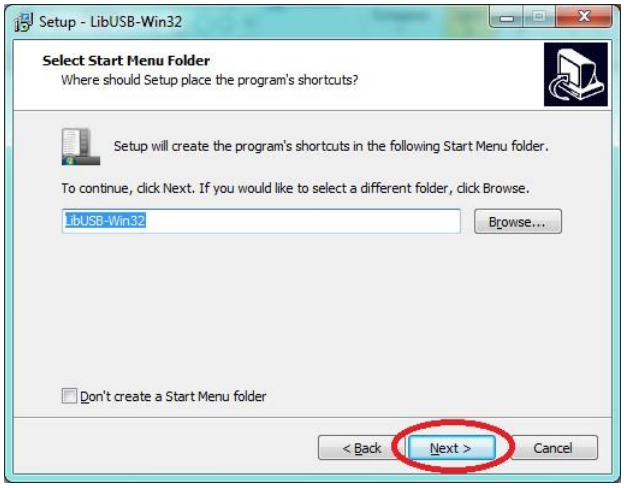
Then a window with product version info, etc., where you also click Next .



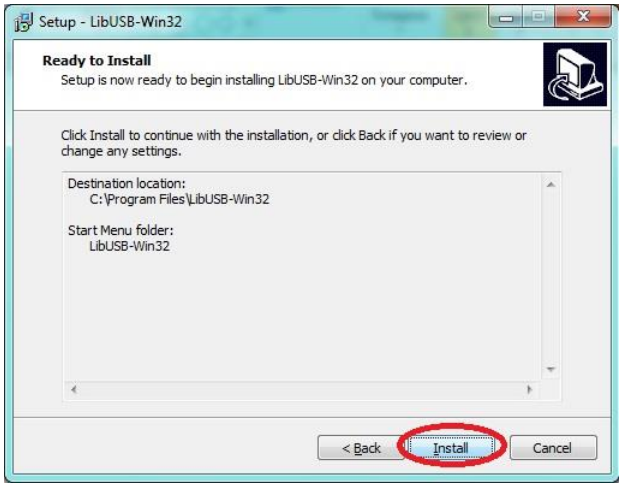

The next window offers to choose the installation path for the driver management program. Leave it as is and click Next.



The next window offers to change the program name as it will appear in the “Start” menu. Click Next.



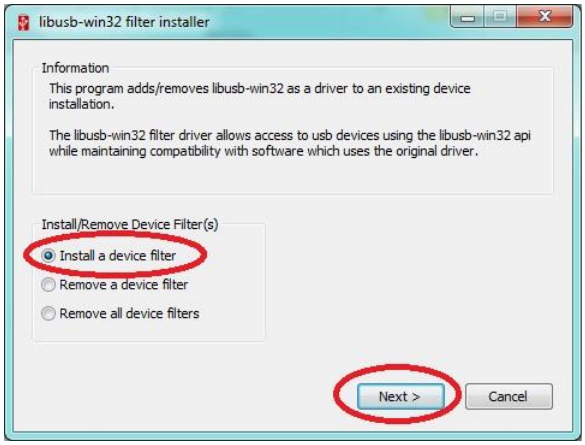

Another information window where you also click Next.



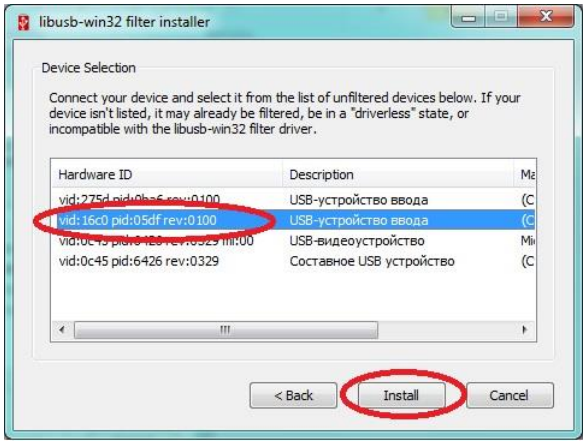

In the installation completion window, tick the box to launch the application after installation and click Finish.



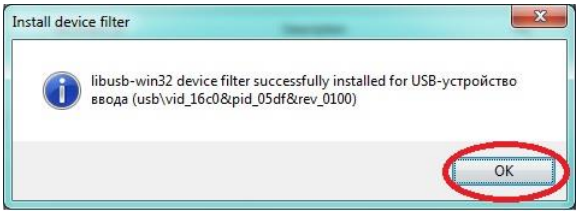
Now the installation window of the actual USB Dog Terminator device driver appears. Tick the device filter installation option and continue the installation.



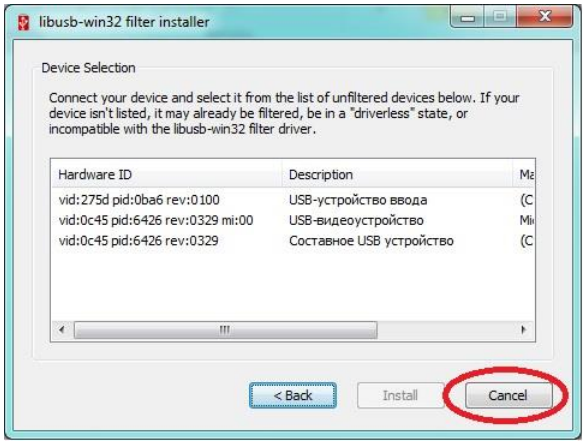

The next window shows a list of USB devices. In this list find our device by the identifier we already looked at earlier, VID 16C0 and PID 05DF (HID\VID_16C0&PID_05DF&REV_0100).




Click OK in the window confirming successful installation of the driver.



Close the window or click Cancel to finish the driver installation.

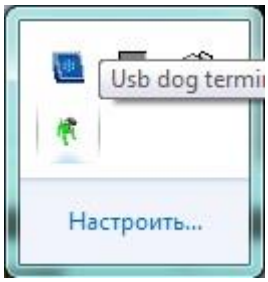



Driver installation is complete.

## Installing and launching the service program, and USB Dog Terminator operating algorithms.

For the program to work, from the WTD Dog Terminator folder copy the Dog Terminator folder to any convenient location on your computer's hard drive, for example the root of drive C, and run the application.

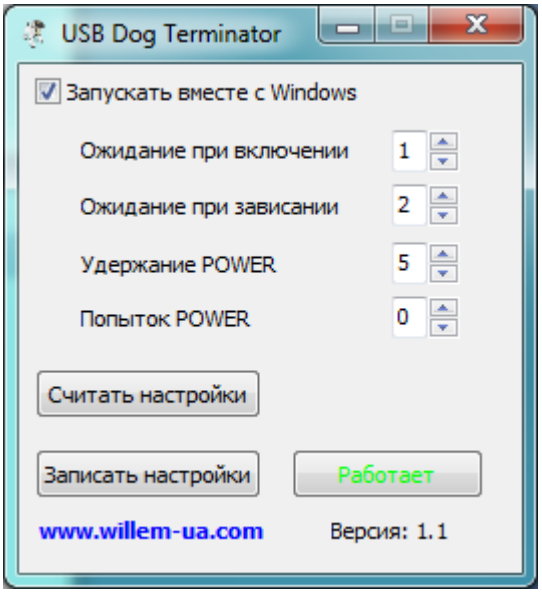
After launch, the program should start and after a few seconds minimise to the system tray (a special area next to the clock on the taskbar).




Double-click the icon to restore the program from the tray.

The green label on the “Running” button shows the current state of the program. The LED on the USB Dog Terminator board will flash briefly about 1 times per second.

The program window offers the following settings:




- Start with Windows – this item needs no comment.
- “Power-on wait” – the computer boot wait time at power-on, from 1 minute to 10 minutes. After this time, the computer is considered not started and an attempt to switch it on is made. Meanwhile the LED on the USB Dog Terminator board flashes long (about half a second on, half a

second off) to indicate that it is not receiving a signal from the service program and is waiting for it to start. After the time set in the program, it forces a shutdown (long press of the “POWER” button) and switches on again; button press events light the LED for the duration of the presses;

- “Freeze wait” – the wait time, from 1 minute to 10 minutes, when the computer freezes. If during this time USB Dog Terminator receives no signal from the control program, after the program has already started and was sending signals to the device, USB Dog Terminator presses the “RESET” button and goes into the computer boot wait mode. While there is no signal from the control program, the LED makes 3 short flashes.

- “POWER hold” – the time from 1 to 10 seconds for which the “POWER” button is held down to force the computer off. Button presses light the LED for the duration of the presses;

- “POWER attempts” – the number of computer off/on retries if previous attempts did not start the OS and the USB Dog Terminator control program. The number of attempts is from 0 (infinite) to 10. I.e. after 10 failed attempts to switch on the computer, USB Dog Terminator goes into stop mode and lights the LED steadily without flashing;

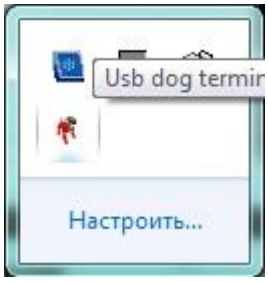
- “Read settings” button – reads the saved control program settings from the internal memory of USB Dog Terminator. This also happens when the program starts.

- “Write settings” button – after any changes to the wait intervals or any other changes in the control program, these settings must be written to the USB Dog Terminator device for them to take effect and to be saved in the device's non-volatile memory.

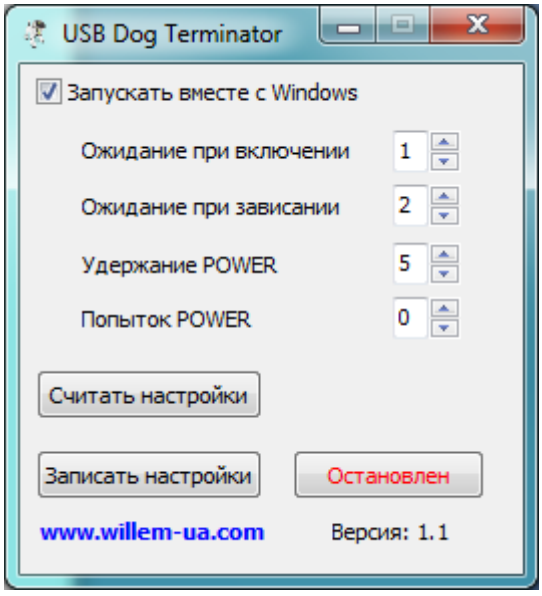
Reading and writing settings are accompanied by a double flash of the LEDs.

- “Running” button – shows the current state of USB Dog Terminator; pressing this button forcibly stops USB Dog Terminator if needed, for example to set up the computer or for other purposes. The LED then stops

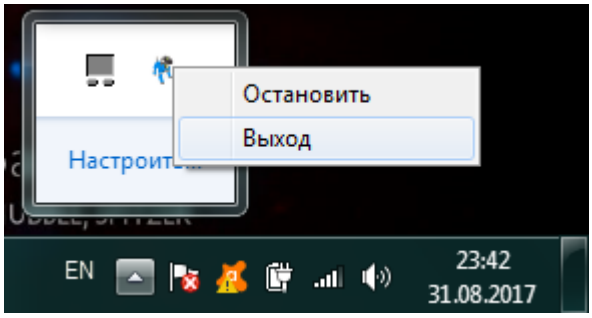
flashing and lights steadily. The program icon turns red, and the “Running” button label changes to “Stopped”




If you do not press this button again to put USB Dog Terminator back into operation and restart the computer, after the reboot USB Dog Terminator returns to normal operation, because autostart (if the corresponding box is ticked) launches the program, which in turn takes USB Dog Terminator from “stopped” to “running” mode.



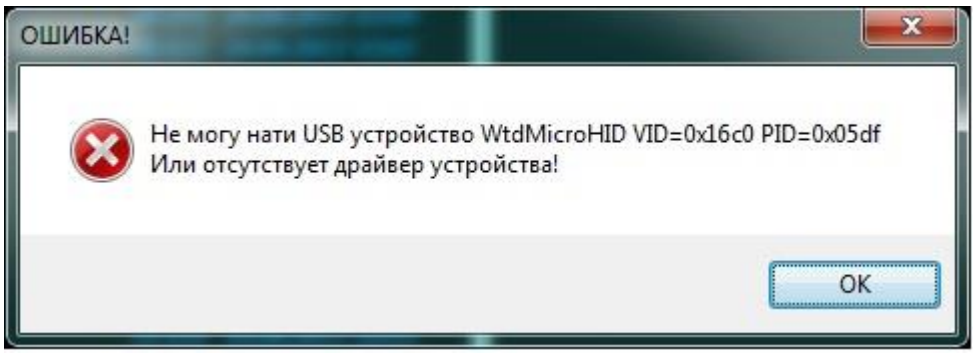

Clicking the close icon minimises the program to the system tray. To close the program (unload it from memory), right-click the program icon in the tray and the “Exit” context menu appears. Clicking it closes the program.



## Possible errors and how to fix them.

If the computer keeps rebooting while USB Dog Terminator is connected to the USB port and works normally, disconnect from the board the wires going to the motherboard POWER and RESET button connectors and reconnect the wires from the corresponding buttons to their place on the motherboard. Switch on the computer and wait for the OS to boot.

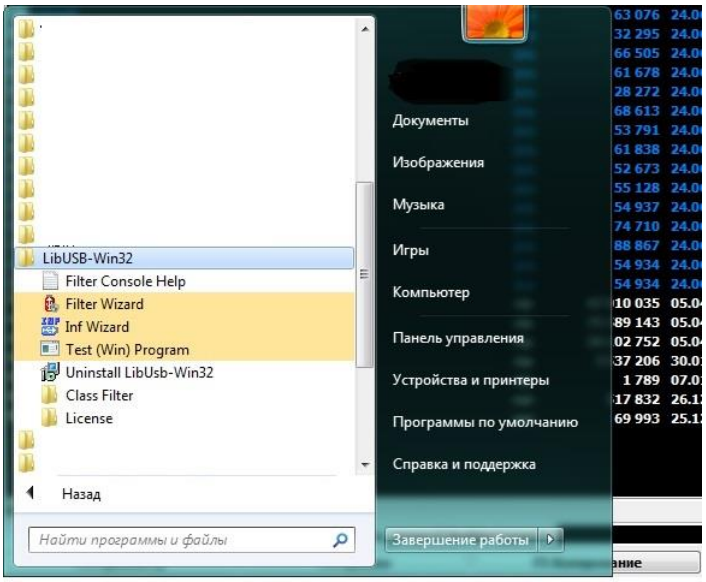
If an error occurs after the OS starts:




The error may occur when USB Dog Terminator is not connected to the USB port and an attempt to run the program caused this error.

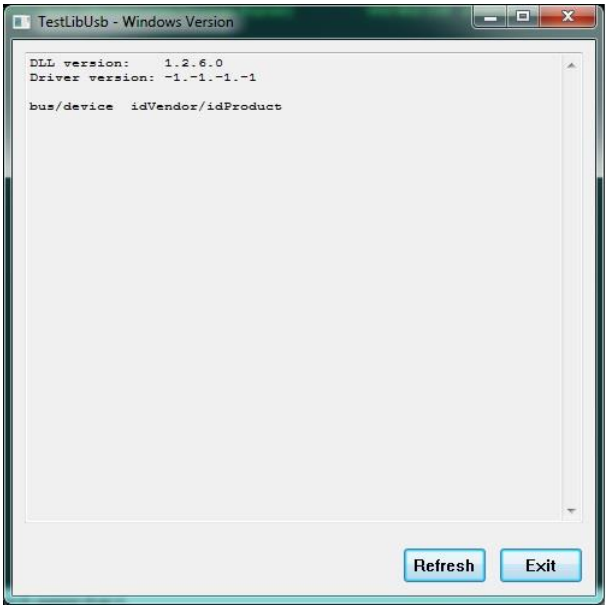
The second cause is if the device driver was not installed or the device driver stopped working. In this case the device driver must be tested or reinstalled.

To test or reinstall the USB Dog Terminator device driver, open the Start menu and find the LibUSB-Win32 program item.



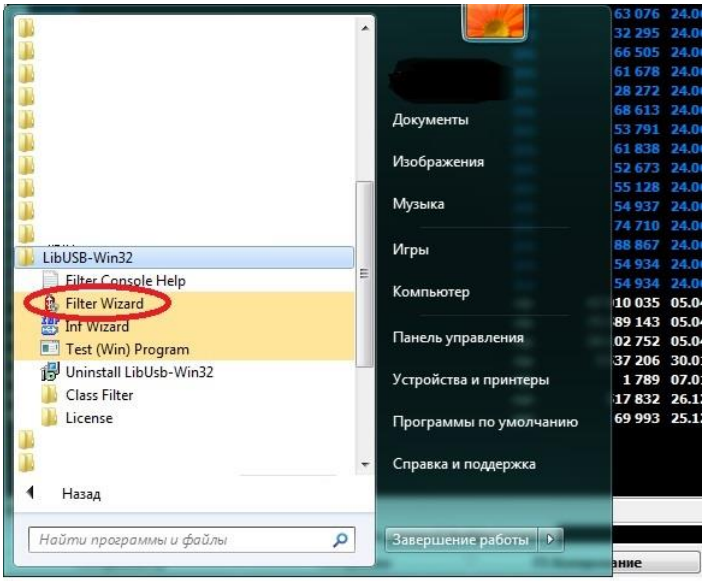
Choose the driver test program Test (Win) Program, provided that USB Dog Terminator is connected to the USB port and works normally.

Click Test (Win) Program.

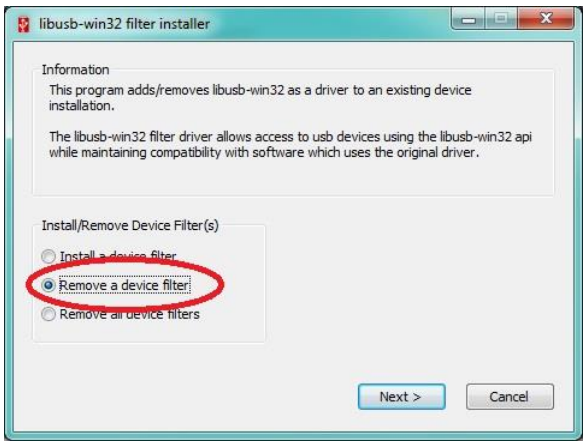



If the test program shows what is in the picture, it means the device driver was not found and must be reinstalled.

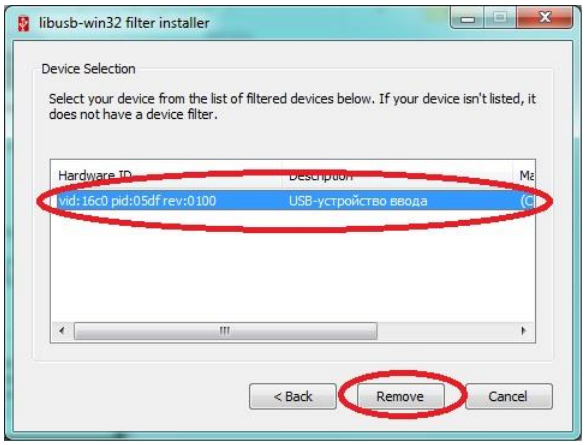
To do this, follow these steps. Open the Start menu again and run the Filter Wizard program



Choose “Remove a device filter”. Click Next



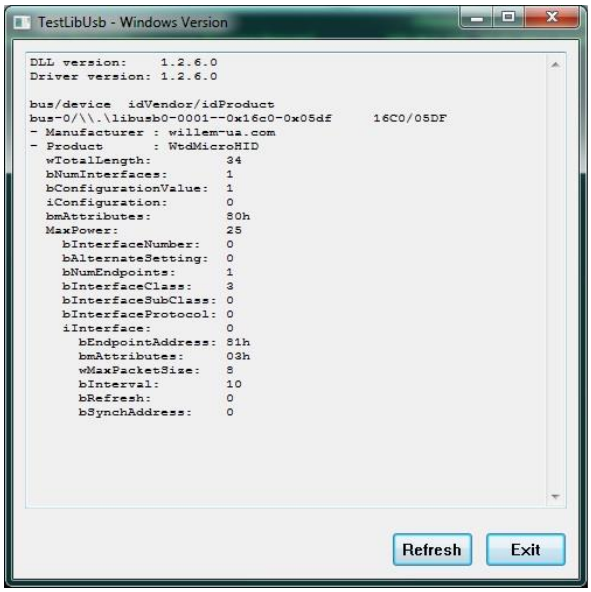

Then select our device in the list, checking its VID 16C0 and PID 05DF. Click “Remove”.




Close the window.

To install, run Filter Wizard again and repeat the driver installation as described above.

After installing the driver, if you run Test (Win) Program, the result should be as shown in the picture below.




Test (Win) Program reports that the driver is installed successfully. Switch off the computer, reconnect the button wires to the motherboard according to the instructions and switch on the computer.