

Instructions for the Windfreak Synthesizer v2.0. (Please read all the way through once before beginning.)

Drivers:

Windows 7 should not require drivers. Use the drivers if you have problems in Windows7 or if you are installing on Windows XP. The USB device that connects your PC to the PLL chip is the FTDI FT245R chip. The drivers are located in the "FTDI Drivers" folder located in the top directory of the Windfreak installation CD. This software has not been tested with Windows Vista, but should work.

When you plug in the Synthesizer board for the first time, Windows should recognize a new device and finish installing the drivers automatically. If you have driver problems Windfreak Technologies does not have Windows experts and you will make more/faster progress by contacting FTDI. Windfreak Technologies has not modified the included driver software from its original download from FTDI. Also we have not modified the PID and VID identifiers in the FTDI chip. By searching the FTDI website you can find ways to do this and many other interesting things.

Software:

After drivers are installed and the hardware plugged in there are two options.

- 1). Double click on ConfigWF2.vi in the source code directory if you have Labview 2010 or later installed. Please contact dgoins@windfreaktech.com for older versions. A version for Labview 8.0 is available.
- 2). If you dont have Labview, install Setup.exe from the installer directory. This installs the Labview runtime engine. It also installs WFsynth2 which you should be able to find under Start/All Programs.

Hardware:

The Windfreak Synthesizer is designed to work with USB power. Make sure your USB port can supply 200mA of current before plugging in this device. (Most newer PCs are capable of this). The cable (not supplied) is a USB mini. Windfreak Technologies assumes no responsibility for any damage the Synthesizer may cause to customer equipment. That being said, there is a resistor in series with the Vusb line that should help protect your PC. An auxiliary power connector is provided, but is to be used at your own risk. Examine the schematics and prove to yourself that it is safe and sound. The connector is ground on the center conductor and positive 5 volts on the outer conductor. On a typical PC USB generated noise is minimal and does not show up as modulation on the sidebands to any significant degree.

Operation:

Plug in at least one synthesizer before starting the software. With the Synthesizer board plugged in the Vcc LED (2nd from USB connector) should be lit and stay lit. Wait for a few seconds for the device to register on the USB bus and then start the software. Verify that at least one device is registered under the "Device Descriptions" tab with BOTH a Description and a Handle. On the Synthesizer board the Prg LED (closest to USB connector) should blink quickly during USB communications. Twist the Frequency knob in the software to verify that LED blinks. At this point the Lock LED should light (3rd from the USB connector) and stay lit. Until you get familiar with the software and the ADF4350 registers do not adjust any settings under the "PLL Cntrl" tab. Also hover your mouse over various fields to get tips on operation.

Please leave all hardware plugged in until the software is closed out. This will avoid USB issues. Click "Close All Devices" to stop the program.

If any of these LEDs dont light:

Vcc: Possible problem with PC and Vusb power. Try a different PC and or cable.

Prg: Watch it while twisting the Frequency Knob. If it doesnt blink there are probably driver issues. See "Drivers" above. Also try a different PC or USB cable.

RF Lock: If all the above is OK but Lock doesnt light it could be because settings in the "PLL Cntrl" tab are faulty. Exit out of the software and restart to make sure all default settings are loaded and try again.

If this doesnt work contact David Goins at dgoins@windfreaktech.com.