Windfreak Technologies, LLC
Installation instructions for the Windfreak SynthUSB3
(Please read all the way through once before beginning.)

Software:

Depending on your situation there are 3 options.

1). **If you don't have Labview:** Install Setup.exe from the installer directory. (Right click and install as administrator.) This installs the hardware drivers and the Labview runtime engine. It also installs the SynthUSB3 GUI executable which you should be able to find under Start/All Programs/Windfreak or the desktop. If there is an error on the driver install when using Windows 8 please install the drivers as per the help file in Extras/driver folder.

2). **If you do have Labview:** For any Windows other than Windows 10, install the hardware drivers located in the Extras/driver/ folder by right clicking on driver_install.exe and installing as administrator. Windows 10 comes with the proper drivers. If errors are encountered with Windows 8 follow the help file located in the same folder. Double click on SynthUSB3_x.vi in the Extras/Source Code/ directory if you have Labview 2017 or later installed.

3). If you already have the 2017 Labview Runtime Engine installed, double click on SynthUSB3_xx.exe in the Extras folder to run as a portable executable.

4). Use Termite to send text based commands to the SynthUSB3. See SynthUSB3com.pdf for instructions.

Drivers:

The Installer will automatically install the drivers if you use it. Windows 10 and Linux do not need drivers. If the drivers are needed, run the file located in the extras/driver folder. These are generic CDC/ACM drivers from PJRC.com.

Hardware:

The Windfreak SynthUSB3 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). When first plugging in the SynthUSB3, whether to a PC or just to USB power, it will go to its factory EEPROM setting. The factory setting is typically 1GHz with a power setting of 0dBm. All boot settings can be changed and saved for stand-alone operation.

The RF connector is high performance and needs to be treated with care. Avoid torqueing or bending via the RF connector and this will keep the center pin solder from cracking. Of course, try to reduce the possibility of ESD when handling.

Operation of WFT Software:

Plug in at least one synthesizer to USB before starting the software. Wait for a few seconds for the device to register on the USB bus and then start the software. The "Device Under Control" box in the top right hand side of the GUI shows the serial number of the device under control. If you plug in multiple devices click "Scan USB" under the Generator tab to go back and forth between controlling the different devices. Its possible to have multiple devices controlled by multiple GUI instances.

The software is mostly intuitive. A couple pointers are: To enter frequency and other values use the PC keyboard or knob. Otherwise hit enter on the PC keyboard if you typed in the value. Use the knob for fine tuning the frequency. Hover the mouse over the knob and use the wheel for easier adjustment. Adjust the sensitivity of the knob with the Knob Step Size drop down box.

Troubleshooting:

LED D1 doesnt light after connecting USB: Possible problem with PC and Vusb power. Try a different PC, USB port and or cable.

RF Lock LED D2: If Lock doesnt light it is because there is no RF phase lock. Make sure RF is turned on. Also make sure the internal reference is on. Click Re-Init Defaults on the extras tab. Try using Re-Init for other issues too.

The GUI wont talk to the SynthUSB: Make sure the drivers are installed. Check Control Panel / Device Manager for the driver under Ports (COM&LPT).

If you cant get it to work contact David Goins at dgoins@windfreaktech.com.