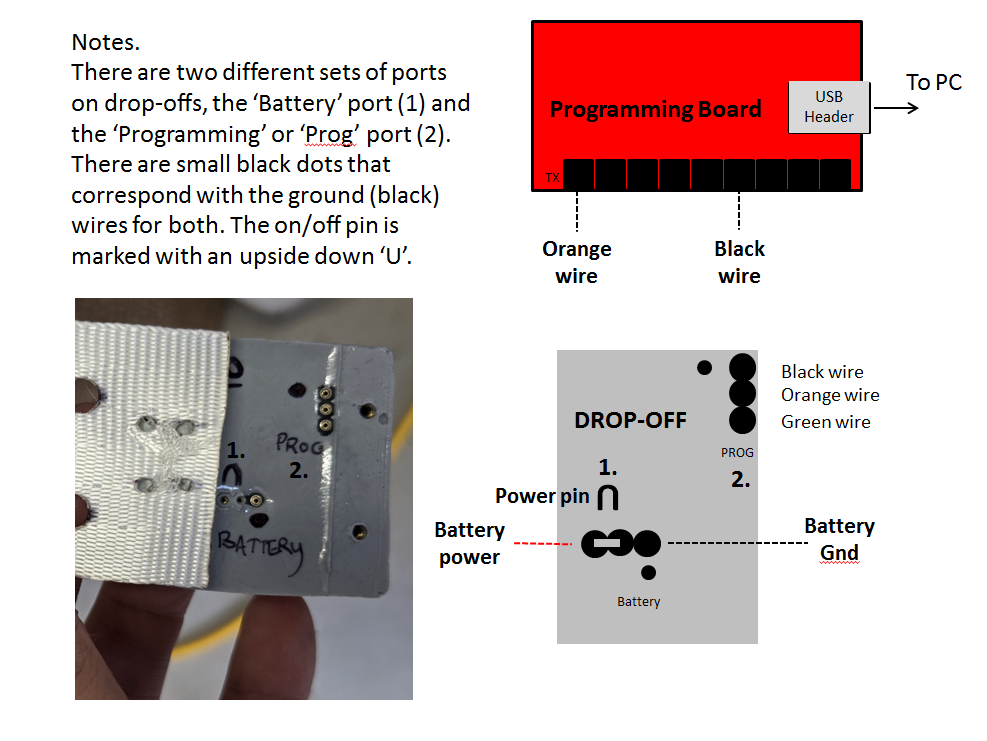
# A rough guide to getting Wild Spy drop-offs up and running

# Pinout/Connections

Before starting the drop-offs, familiarize yourself with all the connections and pinouts. The pinout/connections of the drop-off PCB (grey) and programming PCB (red) is shown in Figure 1. Be sure not confuse the battery connector/cable (red and black wires only) with the programming connector/cable (three wires –black, orange and green). As the different cables suggest, there are two separate connection points on drop-offs: the power/charging port (labeled ‘Battery’), and the programming port (labeled ‘Prog).



**Figure 1.** Programming board (red) and drop-off (grey). The cable is pre-connected to the programming board with the wires in the correct slots, so only the cable orientation when connecting to a drop-off needs to be carefully followed. Use the small black dots to align cables such that black wires connect to these holes. Do not attempt to connect a battery cable (red and black wires only) to a programming port, or vice versa. To power on/off drop-offs a small u-shaped pin must be inserted in the corrected holes of the battery port (see further below).

# Step 1. Installing the drop-off software

Installation of the programming and data downloading software is fairly straightforward. However, there are a number of system requirements and recommendations. Firstly, a PC running Windows with the .NET Framework 4 or later is required (<https://dotnet.microsoft.com/download/dotnet-framework>). If not, when an attempt is made to install the software, an error message will appear identifying this as a requirement. If this error message does appear, follow the link above to download and then install the .NET Framework and then proceed with obtaining the Wild Spy software, which can be found on the Github repository here:

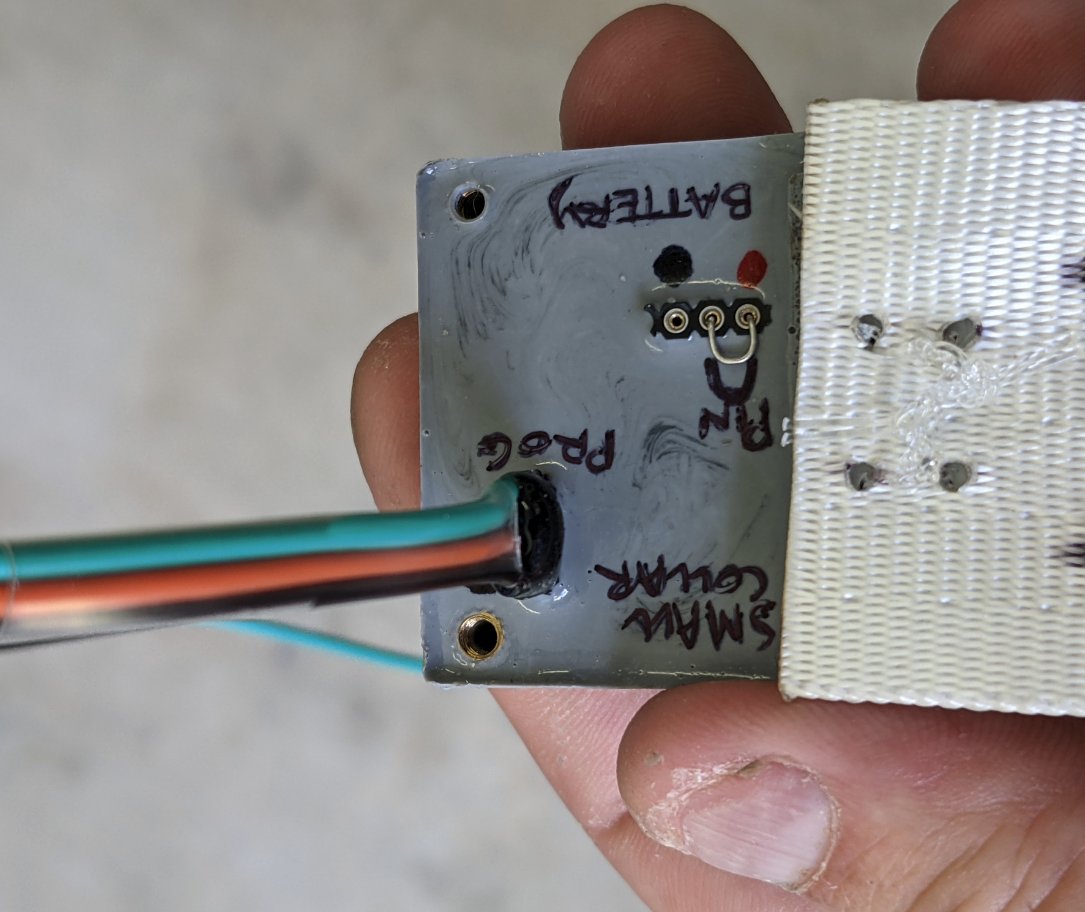
<https://github.com/Wild-Spy/OpenDrop/releases/latest> Simply extract the archive to a folder and run the EXE.

# Step 2. Turning the device on

To power on drop-offs, a small, ‘u-shaped’ pin must be inserted into two of the three holes of the battery port.

***CAUTION: Avoid incorrect pin installation as the device has no reverse polarity protection!***

The correct pin ports are labeled with an upside down ‘U’, and correspond with the outside left (red dot) and middle holes with the drop-off oriented so the writing can be read normally. See Figure 2.

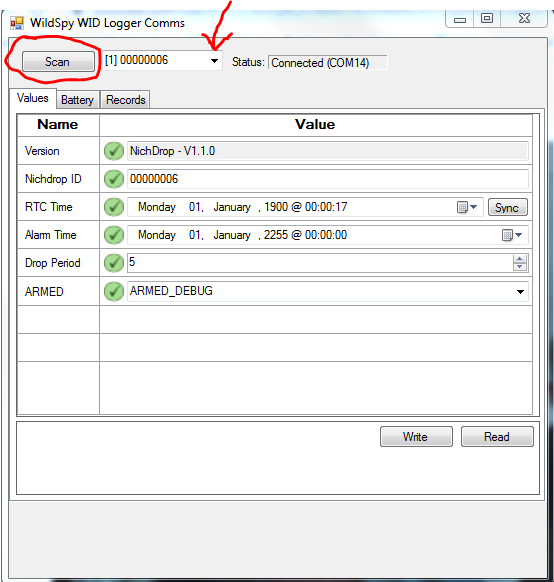


**Figure 2.** Drop-off with power pin and programming cable connected correctly.

At all costs, avoid any electrical connection between the outside pins of the battery port (red and black spots) other than via the charging cable (see below) as these are the battery power and ground points respectively. **The power pin must be inserted to program the drop-off.**

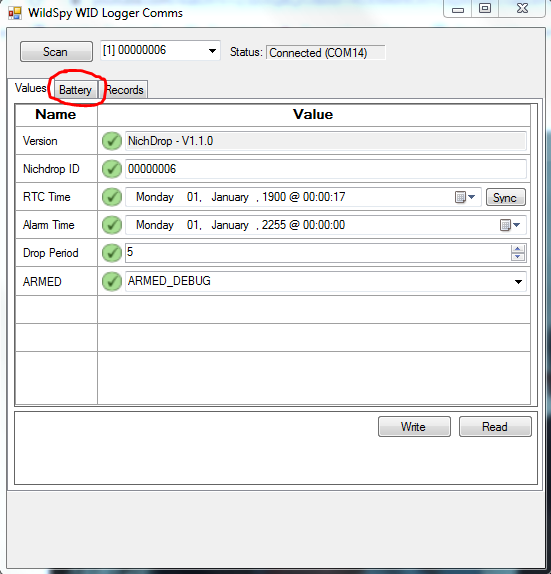
# Step 3. Programming the device

The version of the software shown below may differ slightly to the most recent revision, but the ‘Values’ tab is essentially the same. Connect a drop-off to a computer with the installed and opened software, via the programming board and USB cables. Once connected, click, “Scan” on the software window, and then click the small drop down tab arrow in the nearby mini window (shown with a red circle and arrow respectively in figure 3). A long set of zeros (e.g. 00000000) should appear in the window beside the “Scan” button, and these must be selected by clicking on them, to initially populate the various parameter tabs shown with the green ticked circles ( ) in figure 3. If no numbers appear the drop-off has not been detected. Try unplugging both the cable and power pins, leaving everything disconnected for approximately 30-60sec and then trying again



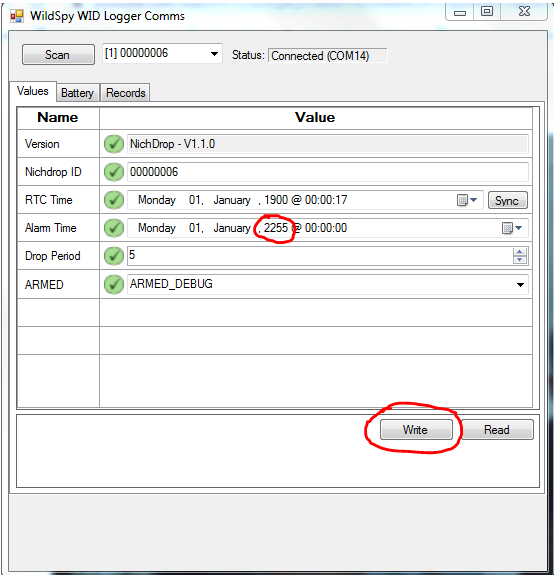
**Figure 3.** Drop-off window of the programming software showing a drop-off year far ahead in time

Before programming in any information, click the ‘Battery’ tab, and check to make sure the battery value is around 4.10-4.20 volts (see Figure 4.).



**Figure 4.** Drop-off connected with all the rows populated and the battery tab circled in red

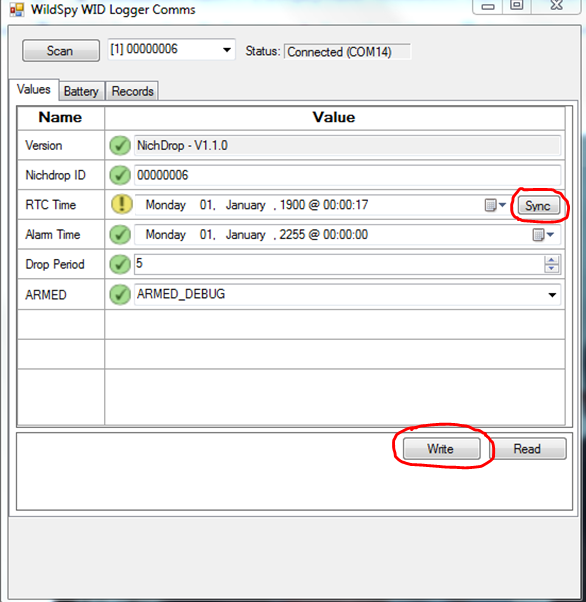
Once the information is populated, you should see an ‘Alarm Time’ set to a point in the future (e.g. year 2222). If this is not the case, this should be the first thing you enter. Simply click on the year and change it to something like 2222 and then click the ‘Write’ button at the bottom of the window (see Figure 5).



**Figure 5.** Alarm Time set to way ahead in the future and Write button circled

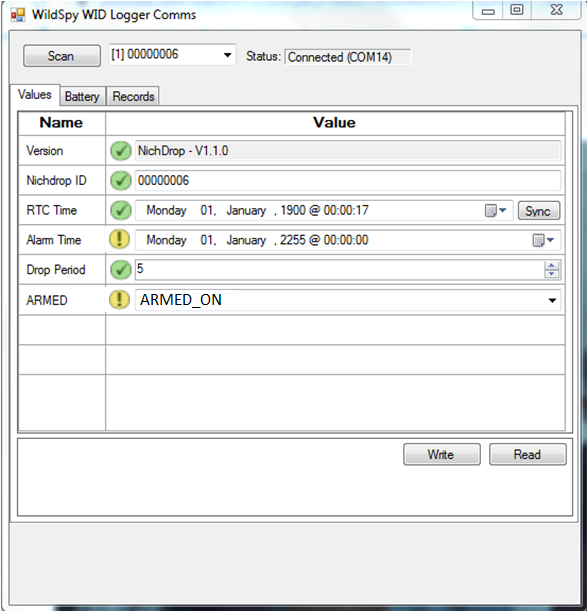
This ensures that when you press ‘Sync’ you will not inadvertently activate the drop-off.

Once the ‘Alarm Time’ is set in advance of the current date, press ‘Sync’ to synchronize the drop-off and PC times (see Figure 6). Remember that whenever you change a setting, for it to take effect, you must also click write (see below). Note also that any time a setting is changed but isn’t yet programmed, it will appear as an exclamation point with a yellow background, as opposed to a tick with a green background.



**Figure 6.** RTC time setting

Once the time is correctly synced, you can program a preferred time and date for the drop-off to activate using the ‘Alarm Time’ setting. Click on the ‘Alarm Time’ year and change it to the current year. Then use the calendar drop down button to select a month and day. Finally, set the desired activation time. Once the ‘Alarm Time’ is correct, ***change the ‘ARMED’ setting to ‘ARMED\_ON’*** (see Figure 7). If you don’t, the drop-off will not activate.



**Figure 7.** ARMED setting changes to ARMED\_ON

Once you are happy with all these settings (always double check the PC sync time is correct too) you can click Write to program them in.

The drop-off is now essentially programmed once Write is clicked (and all the exclamation marks will change to tick marks). The drop-off can then simply be unplugged from the cable.

# Step 4. Making the drop-off field-ready

Once the drop-off is programmed, all the exposed battery and programming ports need to be covered in adhesive silicone/silicone putty, to ensure they are water resistant. Be careful not to get any silicone on the nylon line or the section of collar material the line is attached to because this might hamper or even prevent a clean detachment. The putty takes about 30min to not be tacky anymore, as do most adhesive silicones, but it usually takes at least 24 hours for them to fully cure. Avoid any heat source (e.g. heat gun) getting close to the nylon line as this might damage or melt it.

**Notes and Troubleshooting**

The drop-off activation process involves a heating element (nichrome wire) getting hot enough to melt nylon line that attaches the drop-off to the collar material. ***CAUTION:*** *This wire reaches temperatures of multi-hundred degrees centigrade and should* ***never*** *be touched during activation!* In a complete drop-off, this entire section is sealed off behind a 3mm acrylic plate. It’s still worth keeping fingers away from this section if the drop-off is still in activation mode. A drop-off is set by default to activate approximately five times in a few minutes, to ensure it has completely detached a collar, so it’s possible you might pick it up during this activation period if you are present when it starts and the collar detaches from an animal. On the animal there is an additional layer of collar material between it and the drop-off. Almost no heat should be detectable by the animal and it won’t be harmed.