

During my time at HAND ERC, I worked with Adafruit microcontrollers connected to load cells to measure forces across different transmission testbeds. Here's the general process I used:

### **1. Hardware setup**

- Ensure the load cells are properly connected to the Adafruit devices.
- Connect the Adafruit devices to the Teensy.
- Connect the Teensy to your computer.

### **2. Software setup**

- Set up Visual Studio.
- Write your calibration code (or use mine).

### **3. Calibration process**

- With no weight on the load cells, record the offset.
- Place a known weight (e.g., 20 g) on the load cells to calculate the Newton-per-count scaling factor.

### **4. Testing**

- Once calibrated, place your transmission module between the two load cells.
- Route a tendon through the system.
- Secure the tendon at both ends of the load cells using a knot or copper crimp.

## 5. **Data collection**

- Divide the output force by the input force to calculate the force efficiency.
- Average as needed to determine the overall force efficiency.

## 6. **Repeat** as necessary for additional tests.