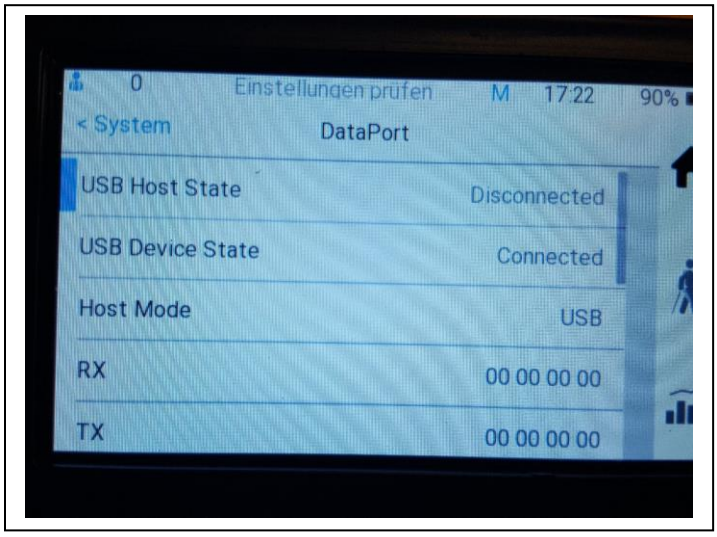
Enabling the DataPort

Settings on the Ekso

1. Activate the DataPort.
    a. On the Ekso UI, go to MFG Menu-> Advanced Walking, and make sure DataPort is set to either “2. Read Only” or “3. Read / Write”. (If the DataPort is used for data collection, then “2. Read Only” is sufficient.
    b. Go to Technician->System->DataPort and set the Host Mode to USB.

When you have connected a USB cable from the external (mini)-USB DataPort connector to your computer, the **USB Device State** should show “Connected”.



Also, on the Technician->Version screen, you should see a version information on the FES / DataPort line.

With this information we know that the DataPort board is successfully communicating with the Ekso.

Settings on the computer

1. Open the Windows Device Manager application and expand the “Ports (COM & LPT)” line. You’ll see a list of COM ports that Windows is using. Disconnect and reconnect the USB cable to the DataPort to see which COM port is being used for the DataPort connection.

2. Download and install the Python application from https://www.python.org/

3. Copy the files from the **dataport_python_files.zip** provided by Ekso Bionics to the Python application folder.

4. The Python application has a client/server structure where the server should always be started first.
    a. Open a command window in the directory where the python files are located and type this command at the prompt: **python server.py**

       Note: You might not have the python **serial library** installed on your computer yet. At the command prompt, type **“pip install serial”** and that should find the library on the internet and install it on your computer. Then that error should go away. There might be other libraries to install too....

    b. Open another command window in the same directory and type this command at the prompt: **python console.py**
    c. The console application will display a list of available COM ports; type the number corresponding to the COM port you identified earlier, then press Enter
    d. You should see some activity in the command window where the server application is running
    e. Test the connection status:
        i. From the Main Menu, press **2** to select **Send Commands**
        ii. Then select **1** to get the Time or **2** to get the Date, and confirm that the values match the time/date on the Ekso User Interface
    f. **Note that the time and date are displayed in the server window, not the client window**
    g. To log data, go back to the Main Menu, then select **3) Read Data** and **1) Start Data Stream**
    h. As commands are sent back and forth between the Ekso and the laptop, you’ll also see activity on the RX and TX lines displayed in Technician->System->DataPort on the Ekso UI
    i. Walk the patient
    j. End the data stream selecting: **2) Stop Data Stream from Read-Data sub-menu**. The data should get written to a file in the same folder where the python files are located. The file is named ekso_data.csv. The file needs to be re-named before the next stream or it will be overwritten.

A couple other points:

- If you run data logging again, the new data is appended to the existing data file, so the old data should not be overwritten
- The python code is just a simple example – users will probably want to develop it further or write a new application for their data logging needs. It doesn't have to run in python; any program that can connect to the serial port will work
- I got python errors when I tried to connect to the serial port. I had to uninstall the serial module and reinstall it before the application would connect to the serial port. These are the steps I followed:
    - pip uninstall pyserial
    - pip uninstall serial
    - pip install pyserial