1. Introduce

The Pin-board is used to turn FPC interface of Bio-M001A into a common open-source hardware interface (xRDUINO UNO), to support more mainboards; it also includes a FPC wire for connecting Bio-M001A and the pin-board; as shown in Figures 1 and 2 below.

Figure 1: Pin-board

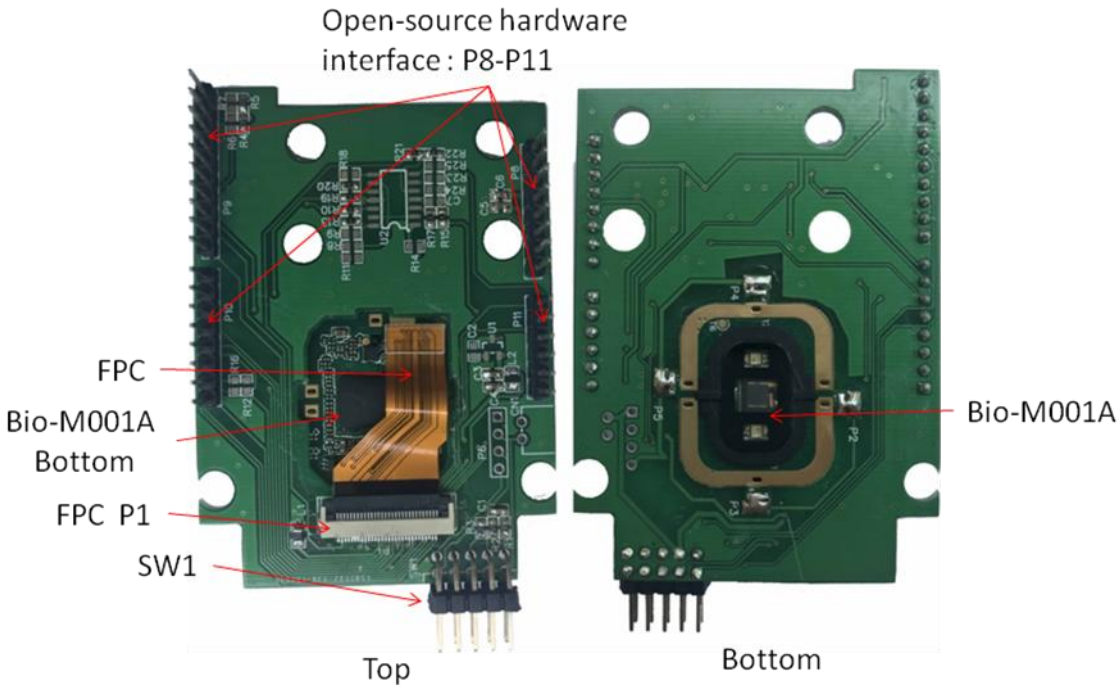
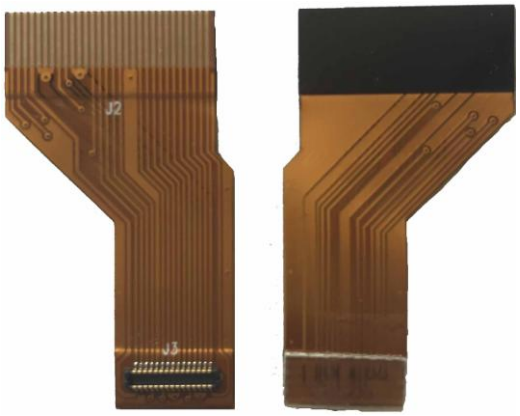


Figure 2: FPC wire



2. FPC wire

Bio-M001A provides 30-pin FPC connector (reference DF37NB-30DS-0.4V) to access analog and digital data.

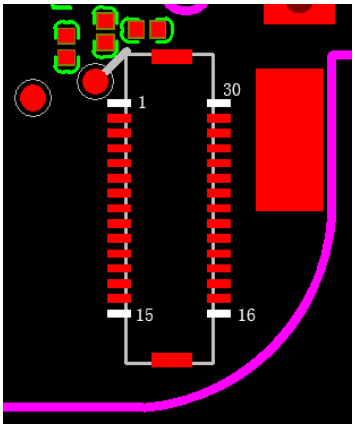


Figure 3

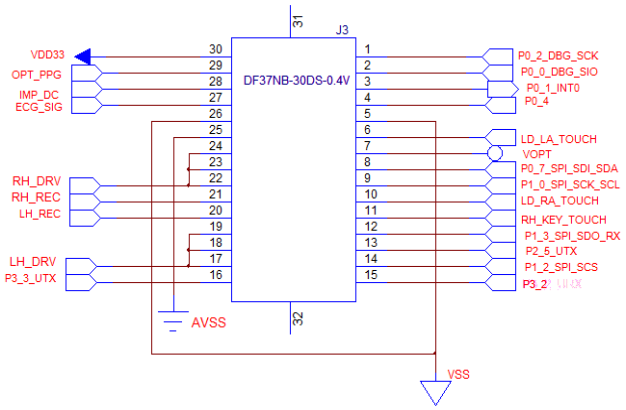


Figure 4

The FPC wire is used to connect Bio-M001A to the Pin-board, converting the double-row connector into a single-row 30-pins connector that pitch is 0.5mm. The schematic is shown in Figure 5.

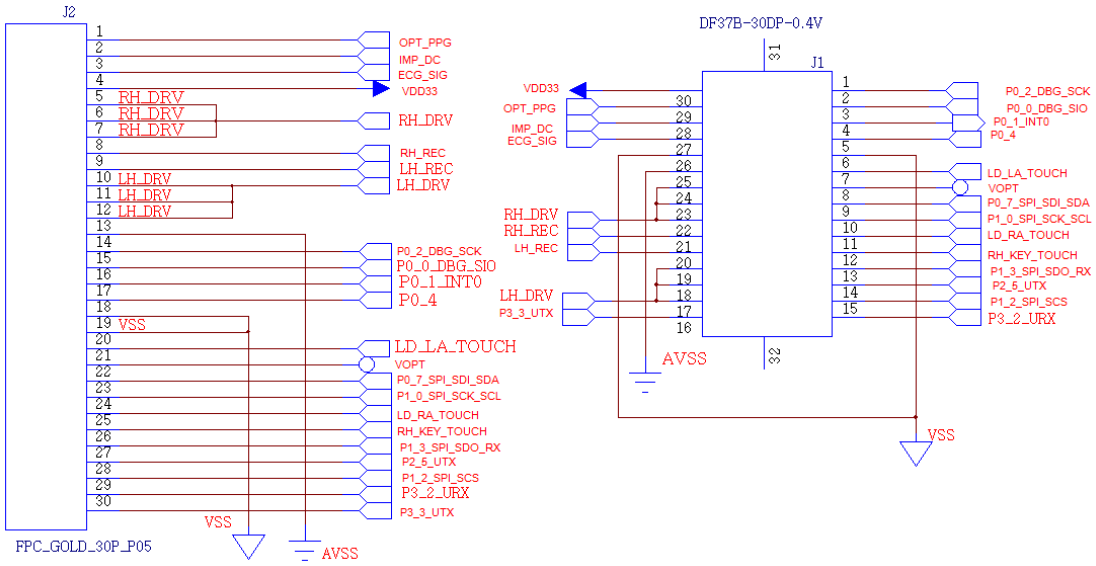


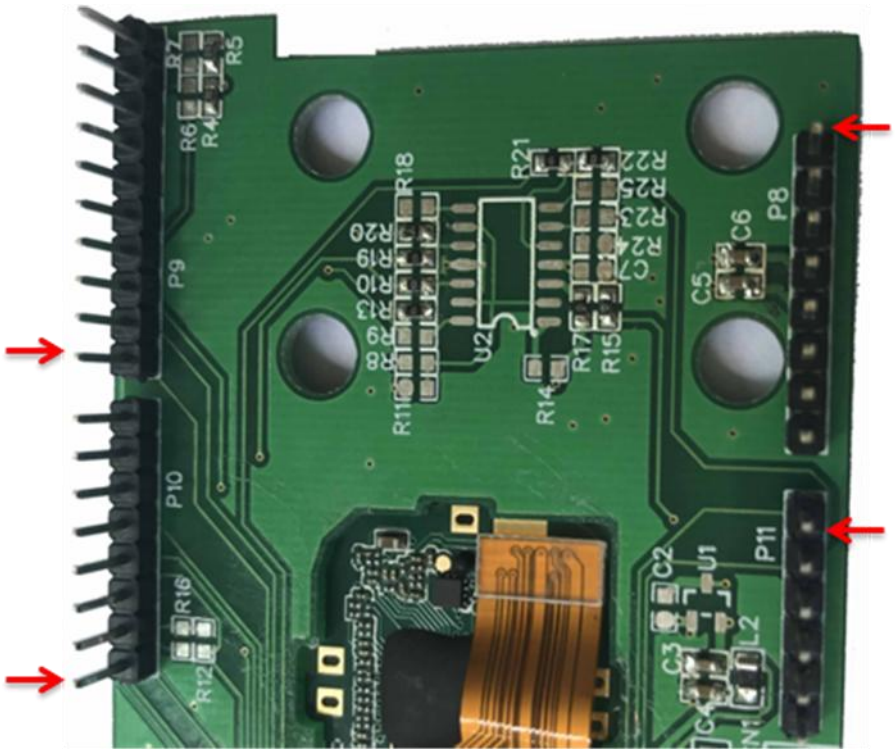
Figure 5

3. Pin-board

3. 1 Open-source hardware interface

The Pin-board provides an extended interface that is compatible with common open-source hardware interface (xRDUINO UNO), as shown in Figure 6 below; for detailed definitions, refer to the Schematic and PCB Open-Source Project：https://lceda.cn/seanfan/wmmed_ext_openhd

Figure 6



Analog signals including Lead-off signals LD_LA_TOUCH, LD_RA_TOUCH, RH_KEY_TOUCH, and impedance DC signal IMP_DC from Bio-M001A , need to be converted to the logical level suitable for digital IO by a comparator circuit,as shown in Figure 7 below.

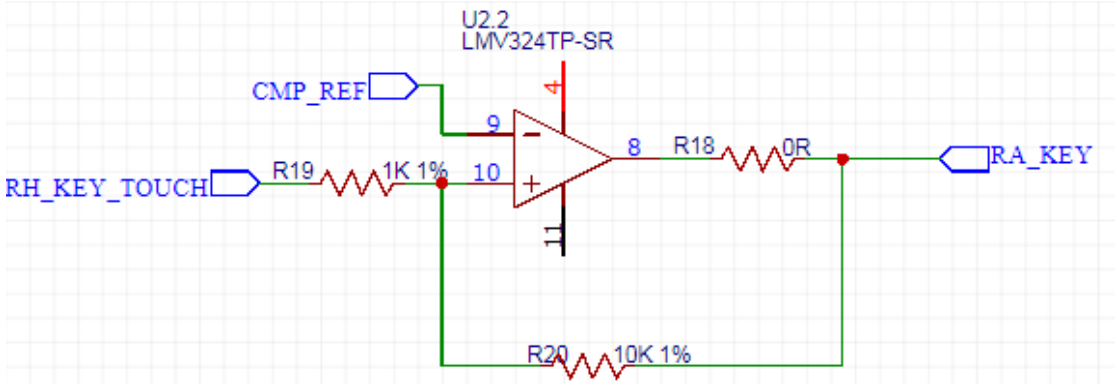


Figure 7

3．2 Reference impedance network

In order to verify the accuracy of the human body impedance measurement circuit, sometimes we need to use the known impedance network to calibrate.

The required reference impedance network can be connected by jumper SW1; As shown in Figures 8 and 9, for example, when we need resistance R2 (1k ohm) as a reference, we can short-connect the 4-7, 2-9, 1-10 jumpers of SW 1 and hold the other PINs floating; similarly, if we want to measure the R1C1 impedance network, we can short-connect 5-6, 2-9, 1-10 and hold other floating.

For normal measuring bio-impedance, as shown in FIG. 10, two pairs of limb electrodes should be connected to 2-9 and 1-10.

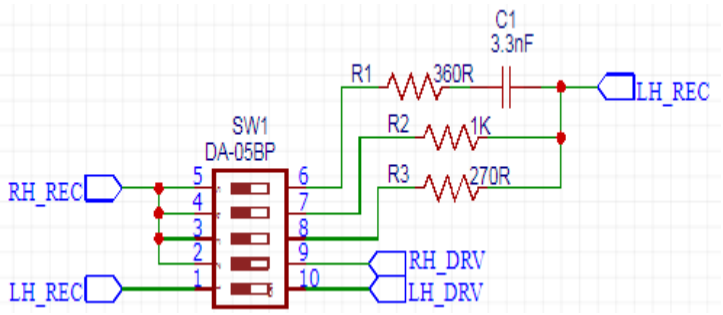


Figure 8

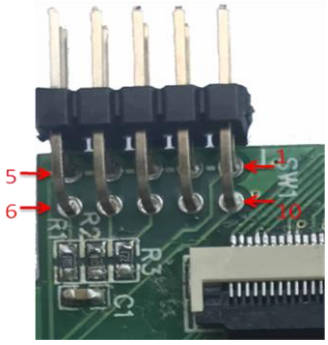


Figure 9

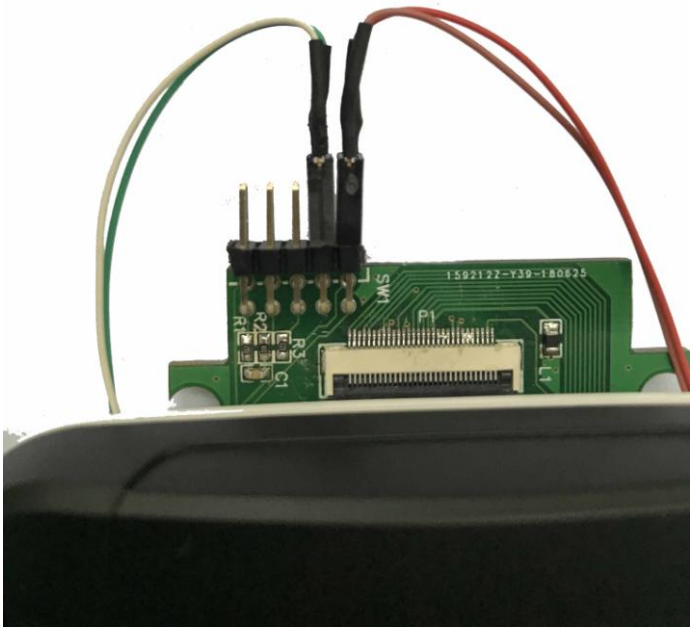


Figure 10