<u>Testing V1000 Foetal Heart Simulator PCBs.</u>

The following components are required to test a V1000 PCB:

1   V1000 Foetal Heart Simulator key/display membrane.
2   A 10k ohm potentiometer
3   One Brown/Red power supply lead
4   One Orange/Yellow output lead.

In addition, the following test equipment is required:

1   A 5V DC, 100mA power supply
2   A single channel, low bandwidth oscilloscope.

<u>Method.</u>

Notes:

  - as the processor has been programmed prior to being mounted on the PCB, no in-circuit programming will be necessary.

  - please read and understand a complete paragraph – to see what is required – before carrying out any actions set out in the paragraph.

  - if in doubt, please ASK.

1   Solder tack the potentiometer into the V1000 PCB (that is to be tested) from the non-component side of the PCB and with the longest solder spill nearest to the Viamed labelling at the top of the PCB. Do not use too much solder as the potentiometer will have to be removed when the test is completed. Whilst looking at the potentiometer side of the PCB, turn the knob fully clockwise.

OR

        With the V1000 PCB component side facing you and the board ident at the top - use a mini-pincer type test clip (Farnell 443-5760) to short out the top centre and left hand connections of VR1.

2   With the component side of the PCB upwards, plug the membrane tail connector onto connector CN3 with the chamfered pin 1 end to the CN2 side of the connector. The membrane will be "front up".

3   Connect the Orange/Yellow lead to CN4 – polarity is unimportant. Connect the other end of the lead to a x1 oscilloscope lead, again polarity is unimportant. Set the oscilloscope for 2V/division, 200mS/division and AC coupled.

4   Connect the Brown/Red lead to connector CN1. The Red core should be nearest to the edge of the PCB. Connect the tails to the 5V power supply with Brown to negative and Red to positive. Turn on the power supply, nothing should happen.

5   Press the "Power symbol" button on the membrane once. A current of about 12mA should be seen on the power supply. The LEDs should cycle twice from "Auto" to 210 and then LED "120" should flash permanently. The "Battery" LED should be ON permanently whilst the other LEDs cycle.

6   With the "120" LED flashing continuously, press the "Heart symbol" button once, the "120" LED should stop flashing and the "150" LED should start flashing. Further presses should advance the flashing LED to "210" and then "Auto". In "Auto" mode the "Auto" LED always flashes together with a number LED, initially the "30" LED. After about 30 seconds, the "30" LED should stop flashing and the "60" LED start flashing. Every 30 seconds, the flashing number LED should advance. Just check that the flashing LED advances to "60".

7   A further press of the "Heart symbol" button should stop the "Auto " LED flashing and start the "30" Led flashing permanently. Additional presses of the "Heart symbol" button should advance the flashing LED.

8   With the "120" LED flashing, the oscilloscope should have a display similar to the one shown below. The frequency should increase as the flashing LED is advanced with the "Heart symbol" button.

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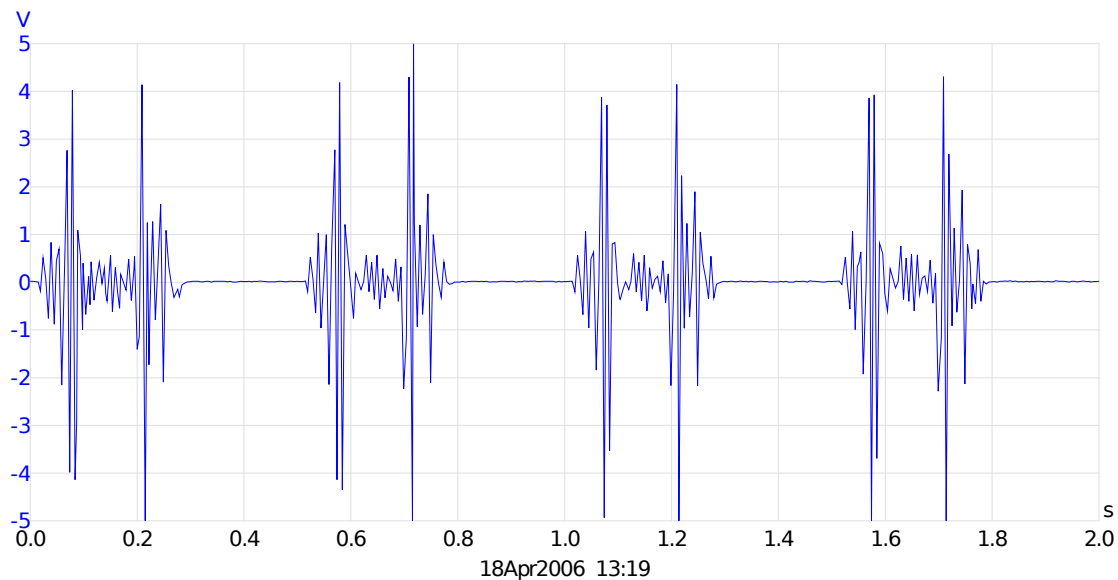
9   Press the "Power symbol" button once and the unit should switch OFF.

10   The test is complete. Disconnect everything from the V1000 PCB and unsolder the potentiometer.

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