TEMPERATURE RECALIBRATION INSTRUCTIONS USING PONEMAH v6.X
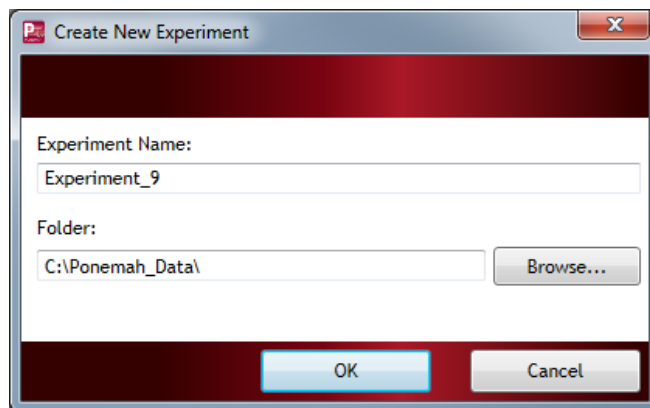
1. CREATE A NEW EXPERIMENT.

a. Launch Ponemah.
b. Select **Experiment | Create…**
c. Enter an **Experiment Name** and Click **OK**.

2. CONFIGURE THE TEMPERATURE IMPLANT TO AN UNCONVERTED SIGNAL TYPE.

a. Select **Hardware | Edit PhysioTel / HD (MX2) Configuration…**
b. Configure the MX2.
   i. From the MX2 Configuration, left click-and-drag the MX2 from the *Available MX2s* list to the *Selected MX2s* list.
   ii. Select the MX2 from the *Tree view* on the left to display the *MX2 Details* page.
   iii. Select **Create New Implant** button.
c. Configure the Implant.
   i. Enter an Implant *Name*.
   ii. Select **TA-F40-LF** from the *Implant Model* dropdown.
   iii. Enter the implant's *Serial Number*.
   iv. Associate a Receiver to the implant by checking its corresponding checkbox.
   v. Change the *Signal Type* of Channel 1 from **Temperature (2 Cal)** to **Unconverted**.
   vi. For additional implants, click the **Create New Implant** button and repeat steps c.i. through vi. Then click **Save & Exit**.

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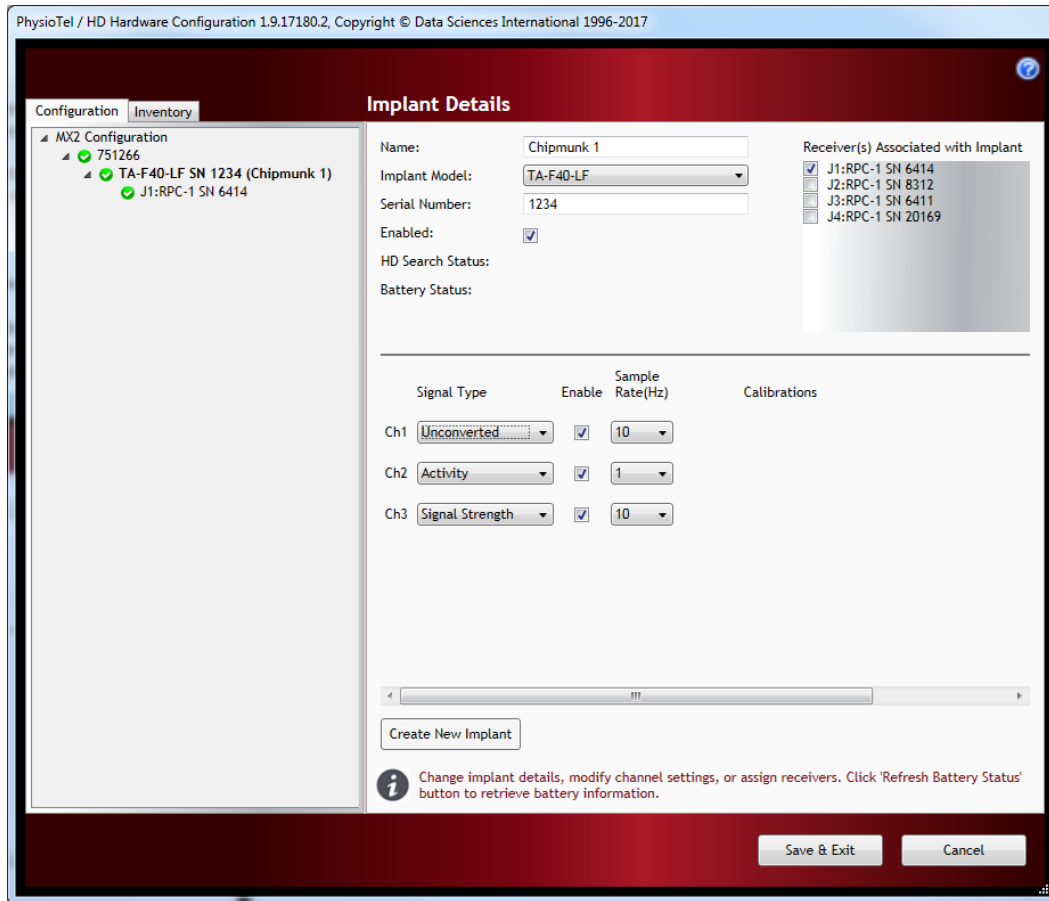
3.   CONFIGURE THE EXPERIMENT AND START THE ACQUISITION.

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a.   Double-click the first Subject listed in the *All* tab of the *Sampling Control* dialog.

b.   Update the *Analysis Module* for Channel 1 to **Temp**.

   i.   By default, the Non-pulsatile Mean (**TNPMN**) derived parameter will be enabled. This will be used to help obtain the new calibration value during the acquisition.

c.   Click the **Apply to Similar Subjects** button and click **OK** to accept the changes.

d.   Click **OK** to exit the *Subject Setup*.

e.   Select **Setup | Experiment Setup… | Graph Setup**.

f.   Select the **Arrange by Signal** button to arrange the temperature signals from all subjects onto a single graph. If using more than 8 subjects, adjust the *Max per page* number to **8** prior to selecting **Arrange by Signal** to create multiple graphs that include a maximum of 8 signals each to allow easier viewing.

g.   Enter a *Time* of **600** Seconds.

h.   Multi-select the enabled rows with your mouse, right-click and select **Set Low**. Enter **0** and click **OK**.

i.   Right-click again and select **Set High**. Enter **5000** and click **OK**.

j.   Click **OK** to exit the *Graph Setup*.

k.   Turn on the implants and place them in proximity of the receiver.

l.   From the *Sampling Control* dialog, select the **Start All Continuous** button. Observe the live trace.

m.   Select **Actions | Logging Rate**…

n.   Change the Logging Rate *Time* to **00:00:10** seconds and click **OK**. Click **Yes** to close the warning.

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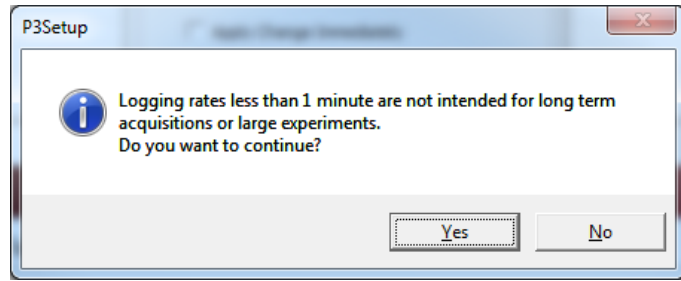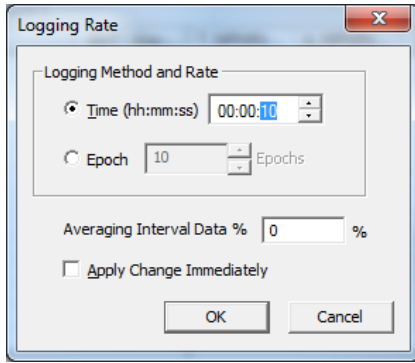
4. DETERMINE THE IMPLANTS' NEW CALIBRATION VALUES.

    a. Submerge the implant in a water bath of the temperature corresponding to the new **LOWER** calibration value (e.g. 5°C).

    b. Allow the implant to equilibrate from 5 minutes.

        i. Use the *Primary* graph and *Derived Parameter List View* **TNPMN** value to ensure the signal is stable.

        ii. Use the **TNPMN** value to choose the raw frequency data that corresponds to the **LOWER** temperature value.

        iii. Record this value below.

LOWER CALIBRATION VALUE

Temperature in °C	Frequency from T_NPMN

    c. Submerge the implant in a water bath of the temperature corresponding to the new **HIGHER** calibration value (e.g. 37°C).

    d. Allow the implant to equilibrate from 5 minutes.

        i. User the *Primary* graph and *Derived Parameter List View* **TNPMN** value to ensure the signal is stable.

        ii. Use the **TNPMN** value to choose the raw frequency data that corresponds to the **HIGHER** temperature value.

        iii. Record this value below.

HIGHER CALIBRATION VALUE

Temperature in °C	Frequency from T_NPMN

    e. Stop the acquisition by selecting the **Stop All Continuous** button from the *All* tab of the *Sampling Control* dialog.

5.   RECONFIGURE THE IMPLANT WITH THE NEW CALIBRATION VALUES.

  a.   Select **Hardware | Edit PhysioTel / HD (MX2) Configuration…**
  b.   Select the implant from the *Tree view*.
  c.   Change the *Signal Type* from **Unconverted** to **Temperature (2 Cal)**.
  d.   Enter the Lower Calibration Value.
    i.   Double-click the <u>LOWER</u> temperature value (35) to enable the edit field and enter your <u>LOWER</u> temperature value in °C (e.g. 5°C).
    ii.   Enter the recorded Frequency into the lower calibration value field.
  e.   Enter the Higher Calibration Value.
    iii.   Double-click the <u>HIGHER</u> temperature value (39) to enable the edit field and enter your higher temperature value in °C (e.g. 37°C).
    iv.   Enter the recorded Frequency into the <u>HIGHER</u> calibration value field.
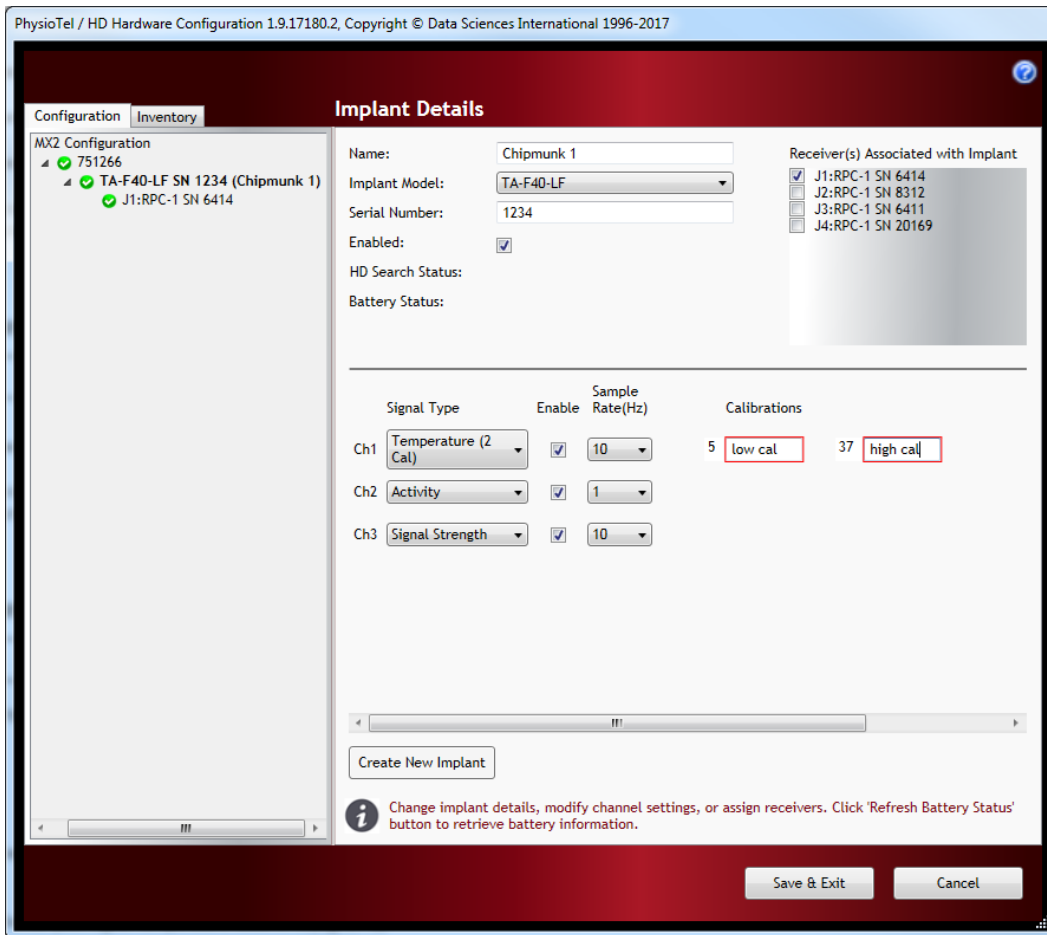
  f.   Repeat b. through e. for any additional implants.
  g.   Click **Save & Exit**.

6.   CALIBRATION VERIFICATION.

The implant(s) is now calibrated to its new temperature range. It is recommended to verify the temperature accuracy throughout the range over which it was just calibrated prior to implantation and commencement of a study.