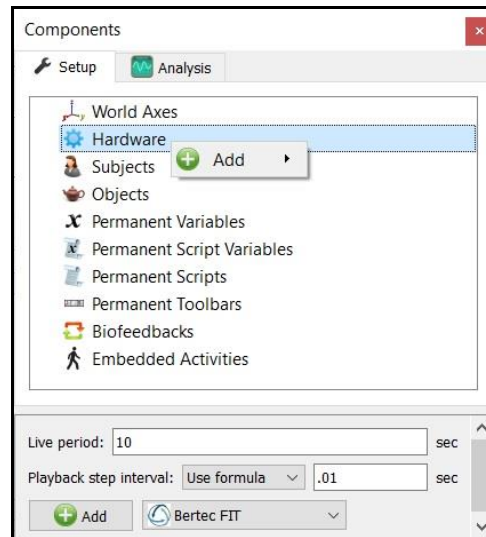


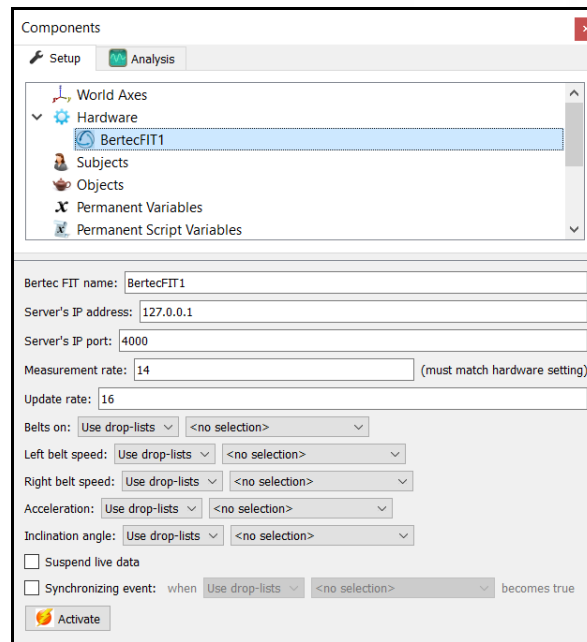
The MotionMonitor xGen Hardware Guide: Configuring Bertec FIT Treadmill Controls

This document reviews the procedures for configuring the Bertec FIT treadmill controls in The MotionMonitor xGen.

1. From the Hardware node in the Setup Components window add the Bertec FIT component through the Add button at the bottom of the Components window or right-click on the Hardware node to add the device.



2. From the Bertec FIT parameters panel, specify a name for your Bertec FIT device. The Server's IP and Server's port addresses must match the settings in the Bertec Treadmill Control Panel. The Measurement rate (rate that the Bertec Treadmill Control Panel sends data) is not controllable by The MotionMonitor xGen and needs to match the performance of the Bertec Control Panel. Currently, there is no provision within the Bertec Control Panel to specify this rate and the actual rate needs to be determined empirically. The Update rate is the rate that data are sent to the Bertec Treadmill control panel.



Belts on controls whether the belts will be on or off and is expecting a Boolean value. Two commonly used variables for this setting are TRUE and Recording. TRUE would result in the belts always being on, so they would continue to run in between recordings. Recording would only turn the belts on while an activity is recording, so the belts would turn off in between recordings. Alternatively, any user defined Boolean variable can be assigned.

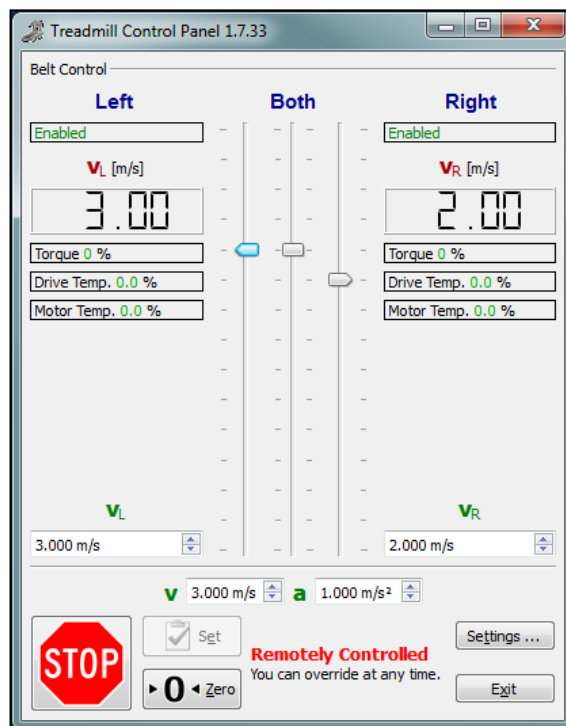
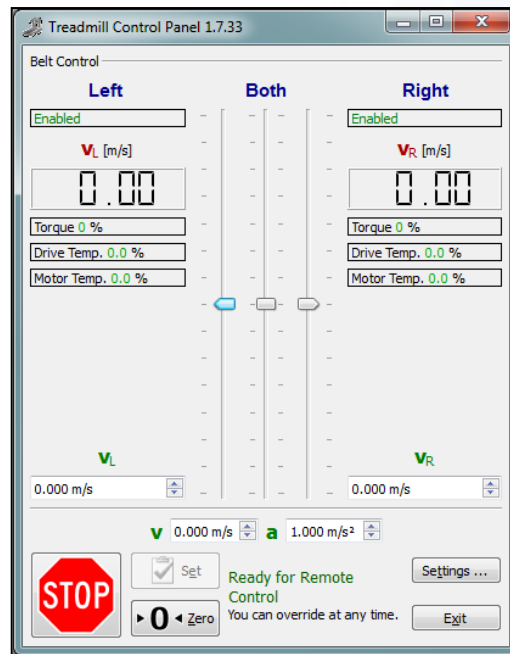
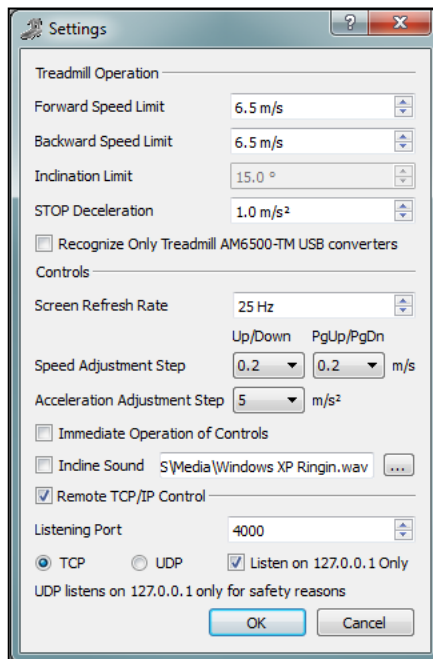
The Left and Right Belt Speed, Acceleration and Inclination angle will update the treadmill Control Panel settings. These entries can be by formula, named variable or constants, but all need to be defined. The Inclination angle should not be changed while the belts are running or while the inclination feature is locked in place.

The Activate button will enable the communication between the Bertec FIT component and the Treadmill Control Utility. However, the belts will only “run” when the specified “Belts on” condition is TRUE. Before activating this device, the Treadmill Control Panel will need to be properly configured, as described and shown below.

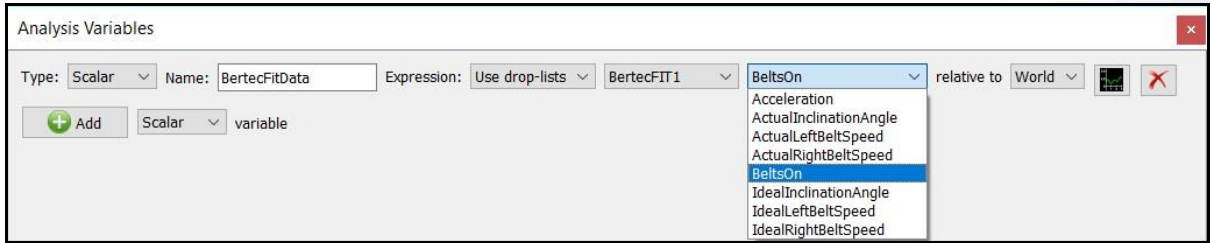
Using the Remote Control Features of the Treadmill is very dangerous. Poorly defined settings created by the user or interruption in Communication protocols can have unexpected results in the behavior of the treadmill. Precautions should include the use of safety harnesses and safety rails as well as thorough testing before involving human subjects.

The Bertec Treadmill Control program, treadmill.exe will generate the following display. It should be run and the settings established before activating the BertecFIT component in The MotionMonitor xGen. When setting up an experiment, the user should begin with “Speed Adjustment Step” and “Acceleration Adjustment Step” set to their lowest value.

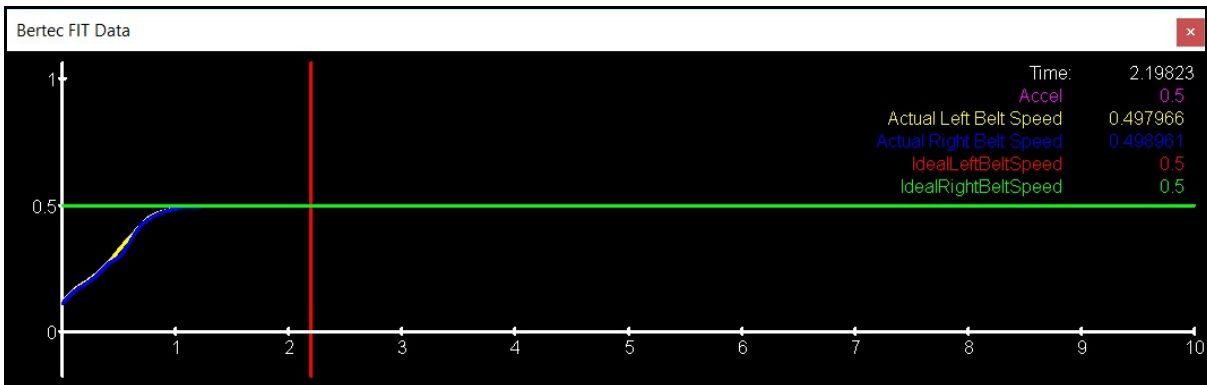
Enabling “Remote TCP/IP Control” within the Control Panel Settings dialog will result in the Treadmill Control panel displaying a notice in green that it has begun listening for commands on the appropriate port. After activating the BertecFIT component, the Control Panel will indicate that it is under remote control and will adjust its data accordingly. An example is shown in the image below:



- BertecFIT data can be defined as Analysis Variables and plotted in Graphs as seen in the image below. Tutorial videos for adding variables and graphs can be found at <https://themotionmonitor.com/support/>.



The Acceleration data type will report the specified acceleration value for the BertecFit device. The IdealInclinationAngle will report the specified Inclination angle for the BertecFit device, while the ActualInclinationAngle will report the Inclination angle returned by the Bertec Treadmill Control Utility. The IdealLeftBeltSpeed/IdealRightBeltSpeed will report the specified left and right belt speeds for the BertecFit device, while the ActualLeftBeltSpeed/ActualRightBeltSpeed will report the left and right belt speeds returned by the Bertec Treadmill Control Utility.



4. Please review the instructions for the Bertec Analog Device Configuration for configuring analog Bertec force plates, including calibration, alignment and data analysis procedures.

