

The MotionMonitor xGen Hardware Guide: Collecting VICON Analog Data

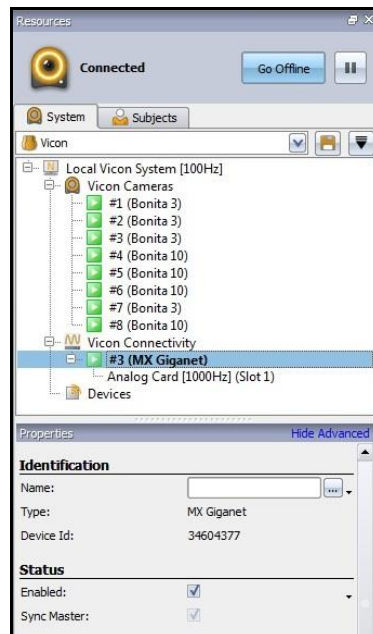
Overview

The MotionMonitor xGen software can collect both marker and analog data through VICON Nexus. This Knowledge Base article will review the process for streaming analog data collected through Nexus into The MotionMonitor xGen. For information on streaming marker data through Nexus, refer to “The MotionMonitor xGen Interface to Vicon Cameras – Nexus X” Knowledge Base articles.

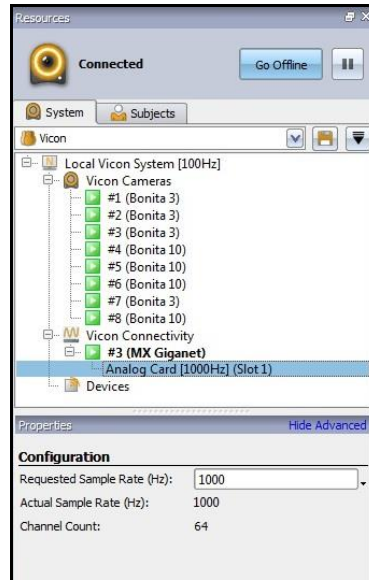
This guide assumes that the Vicon system is ready for real time data collection, including camera connection, calibration and that all of the required real time labeling models (VSK’s) have been defined and calibrated. It is also assumed that a Database has been created within Nexus and that the A/D hardware is connected and recognized through Nexus.

Note: In order to collect analog data in The MotionMonitor xGen, the software must be released for Data Acquisition data collection. Other data types, such as EMG, EEG, force plates, etc., must also be released in order to perform the setup and analyses of these devices within The MotionMonitor xGen. Contact your Client Support Engineer if you have questions about the functionalities of your system.

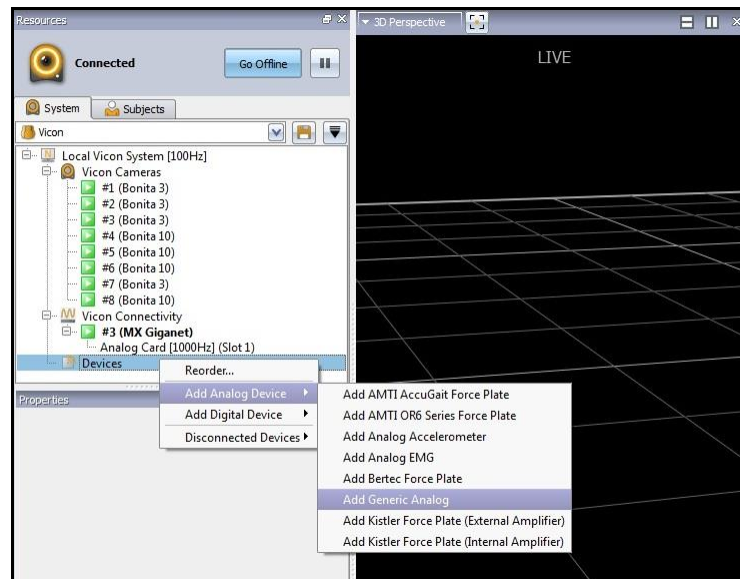
1. After launching the Nexus application and preparing the system for data collection as described above, go to the System tab in the Resources pane and highlight the A/D device under Vicon Connectivity. In the image below, this refers to the #3 (MX Giganet) device. Click “Show Advanced” under Properties, if it is not already enabled. A new name for the device can be provided in the Properties panel. Ensure that the device is enabled under the Status properties.



- Next, select the analog card, as shown below. Show the advanced properties and specify the Requested Sample Rate (Hz). Confirm that the Actual Sample Rate (Hz) and Channel Count properties reflect the appropriate values for the hardware.

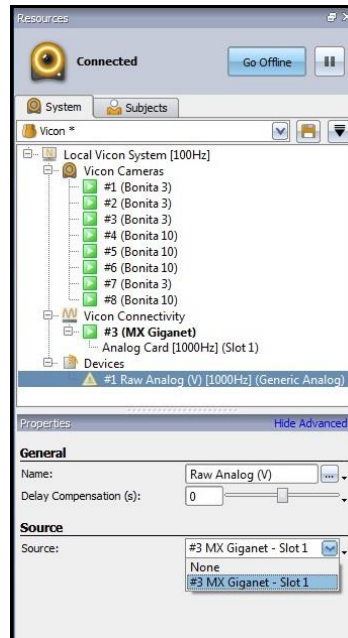


- Next, right click on the devices, select “Add Analog Device” and “Add Generic Analog”, as seen below.

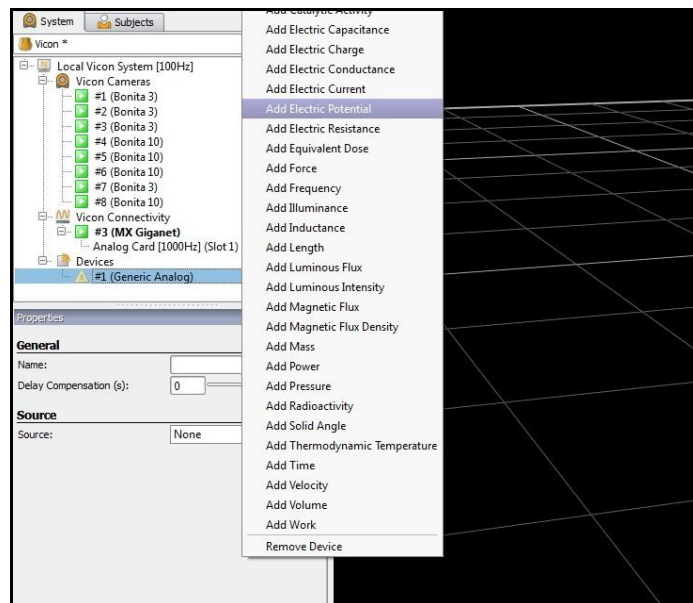


Regardless of the type of analog data being collected a Generic Analog device should be selected. Further differentiation between whether the signal is from a force plate, EMG, load cell, event marker, etc., will be made within **The MotionMonitor xGen**.

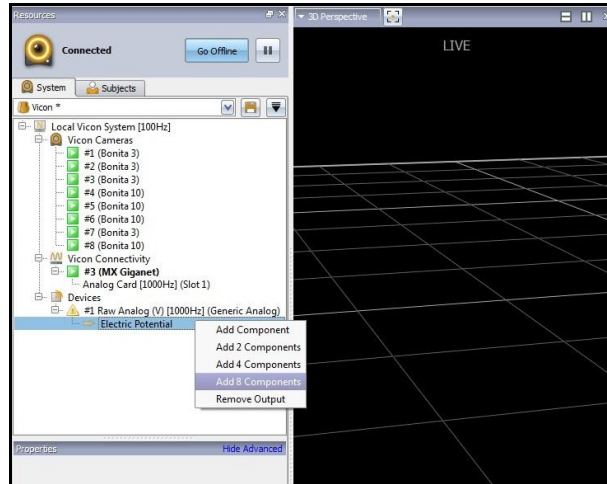
- After the Generic Analog device has been added, the device properties need to be set. Select the Generic Analog device and show the advanced properties. The source for where analog data are being collected from needs to be selected and the name for the device can be updated.



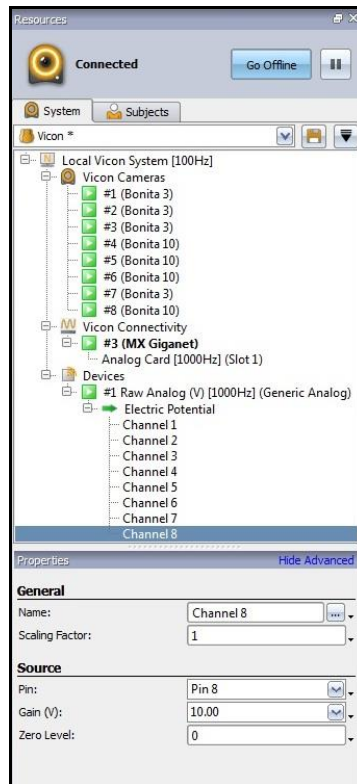
- Next, right click on the Generic Analog device and select "Add Electric Potential".



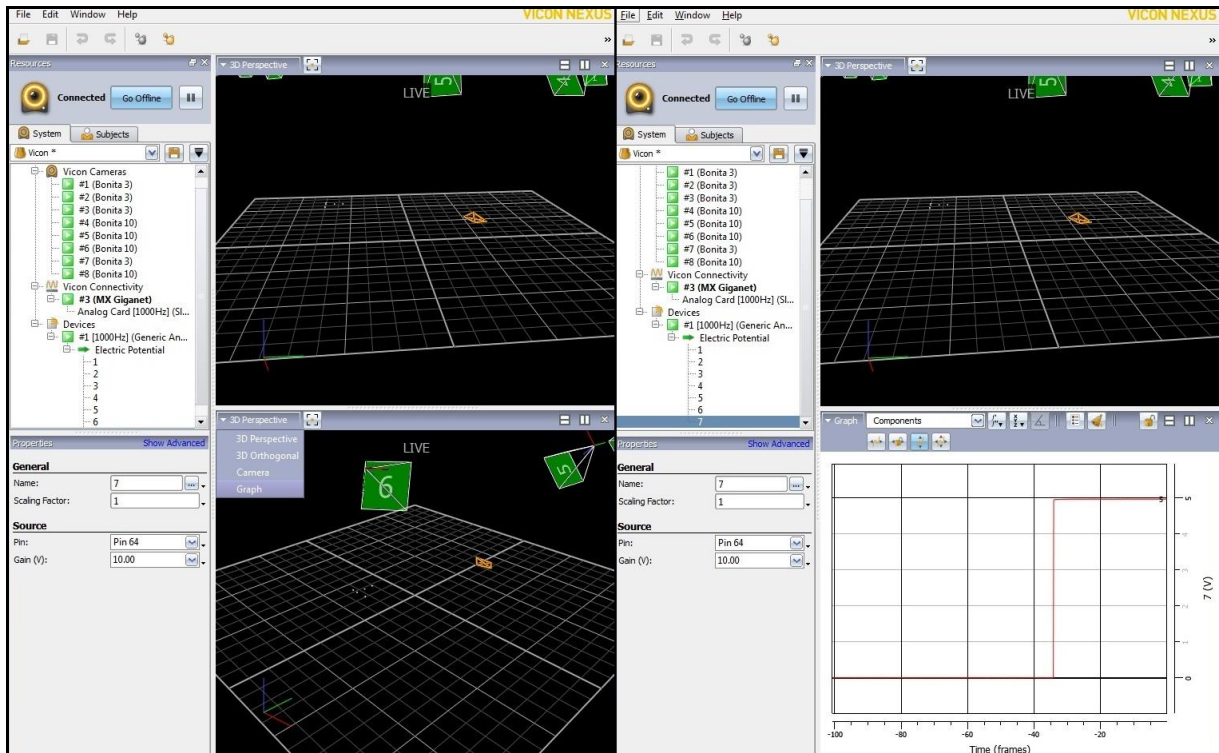
- Right click on Electrical Potential and select the number of components to add. The number of components should be equal to the number of channels that will be streamed into **The MotionMonitor xGen x**. This is the analog data that will be streamed to **The MotionMonitor xGen**. Not all Vicon analog channels need to be streamed.



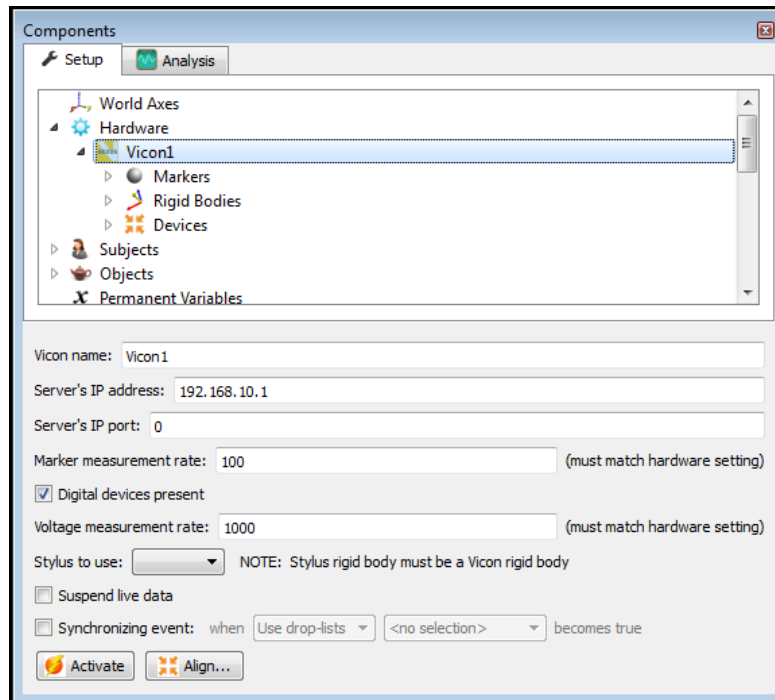
- Show the advanced properties for the Electrical Potential components and update the channel name. The scaling factor should be set to 1. The Pin refers to which channel # the variable is coming into the Vicon A/D board through and the Gain (V) refers to the voltage range for the channel. Once these steps have been completed for all components the icons for the Generic Analog device and Electric Potential will turn from yellow to green.



- At this point, analog data are ready to be streamed into **The MotionMonitor xGen** alongside marker data from Vicon. These settings can now be saved within Nexus as a System configuration. To view a time series graph for an analog channel, select the split screen icon in the upper right-hand corner of the Animation Pane. Select “Graph” from the dropdown in the upper left-hand corner of the Animation Pane, as seen in the image below on the left. Then, select the channel to be graphed, as seen in the image below on the right where channel 7 has been selected.



9. Launch **The MotionMonitor xGen** software. From the Setup tab in the Components Window, add or click on the Vicon hardware component in order to configure the hardware. Confirm that the settings entered here match the settings of Nexus for the measurement rate, number of markers and the IP address of the computer running Nexus. For analog data, enable the Digital Devices Present checkbox and set the measurement rate to match the settings of Vicon for analog data. Click the Activate button to initialize communication with the Vicon Nexus software.



10. **The MotionMonitor xGen** is now configured to collect analog data through Vicon Nexus. Force plates, EMG and other analog data can now be configured through the Devices list in the Setup Components window and collected as if using a traditional A/D board connected directly to the **The MotionMonitor xGen** computer. For more information on any particular analog data type, please refer to **The MotionMonitor xGen** Software User's Manual or contact a Client Support Engineer, support@TheMotionMonitor.com.