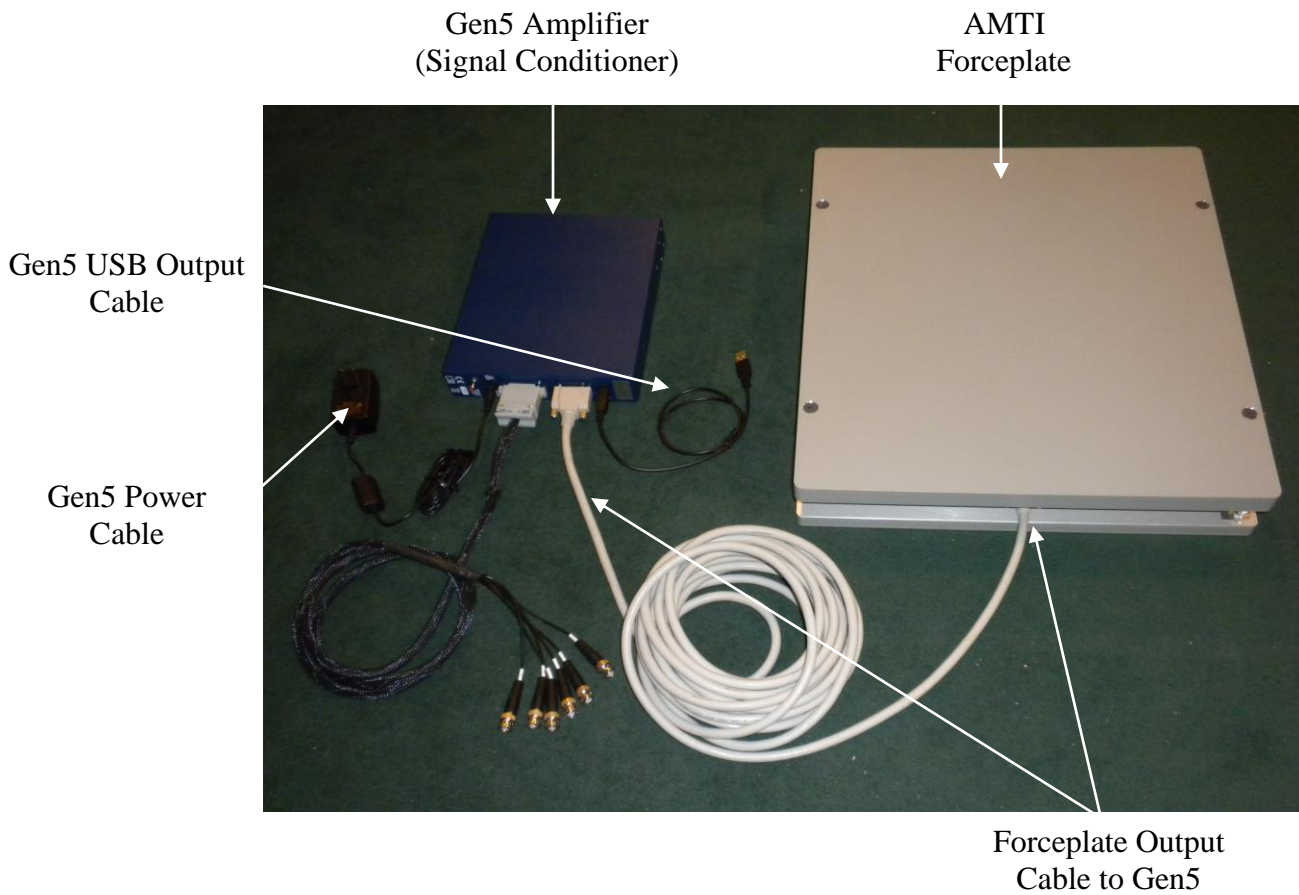


The MotionMonitor xGen Hardware Guide: AMTI Gen5 Digital Configuration

This document reviews the procedures for configuring the AMTI Gen5 device in The MotionMonitor xGen software with USB.

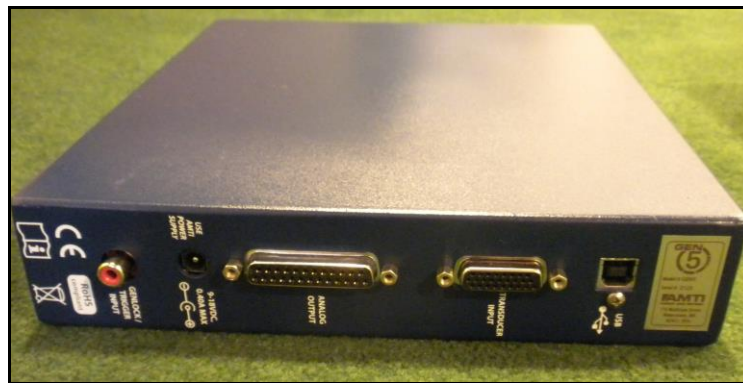
System overview showing major components



1. Place the force plate on a flat surface.
2. All connections should be made as shown below. Identify the 26-pin D Sub female connector on the force plate output cable. Match this end of the cable with the male 26-pin D Sub connector on the force plate. Connect the cable and tighten the two screws on the D Sub connector. Note that some older force plates require a specific conversation cable in order to connect the force plate to this output cable.



3. Connect the other end of the force plate output cable to the back of the Gen5 Amplifier connection labeled "Transducer Input" and tighten the connectors.



4. Install the Gen5 software and drivers on your computer using the Gen5 installation CD. Contact your Client Support Engineer if you require assistance obtaining these materials.

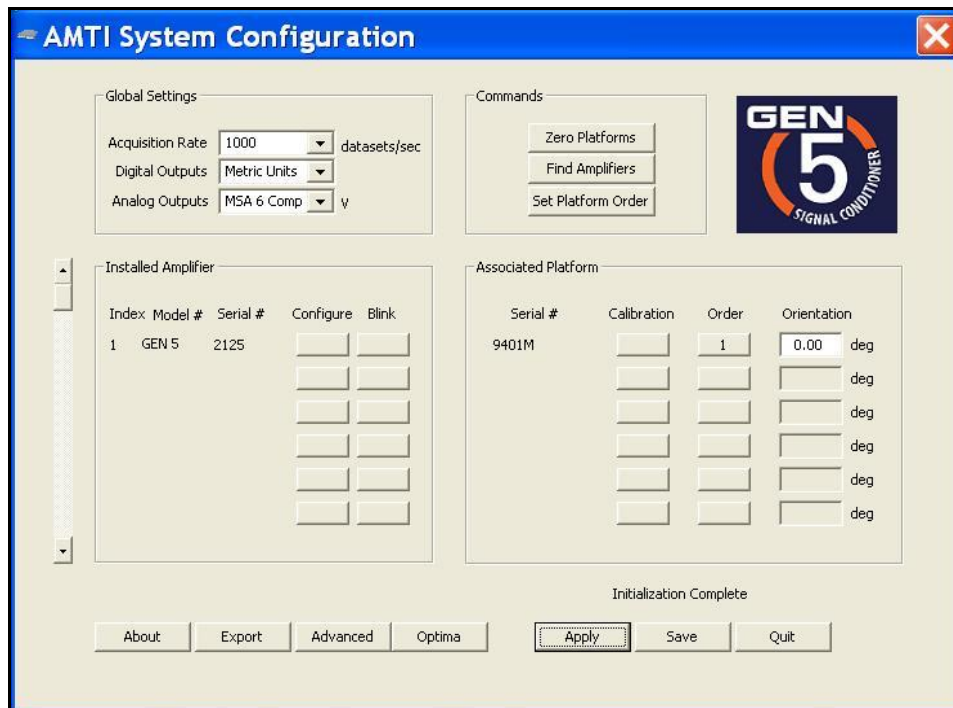
5. Connect and plug in the power supply to the Gen5 Amplifier. Connect the USB cable from the back of the Gen5 Amplifier to the computer. Toggle the power switch on the front of the Gen5 Amplifier to turn it on. The LED on the power switch should turn on when the power is in the on position.



6. Launch the AMTI System Configuration software from the desktop shortcut.

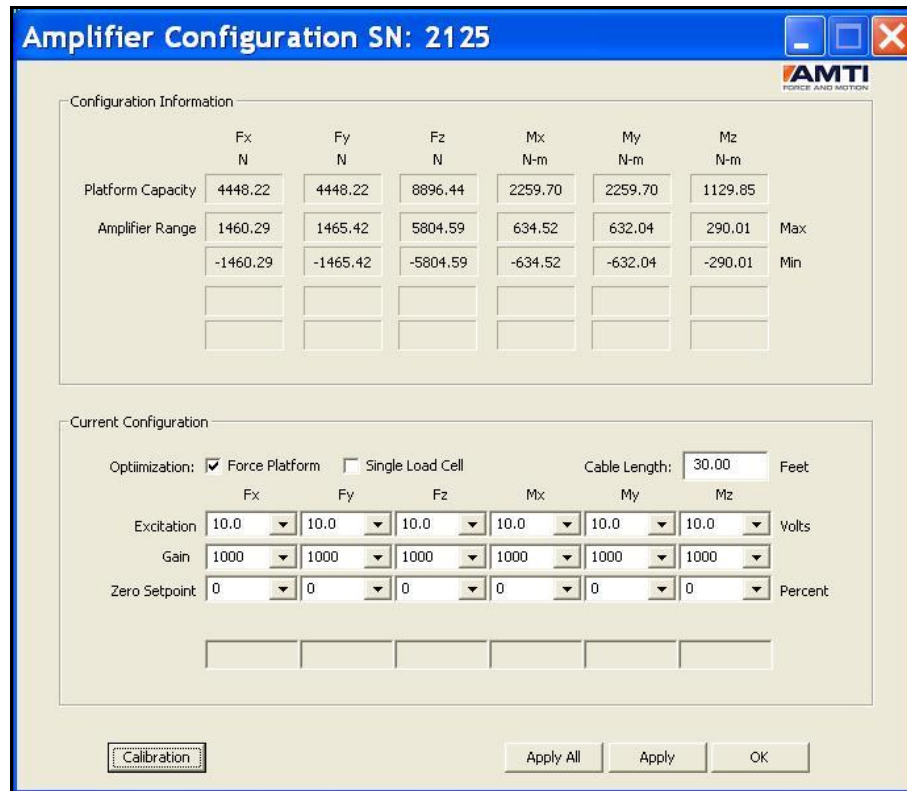


7. From the Global Settings section of the AMTI System Configuration dialog, select MSA 6 Compatible from the Analog Outputs drop down menu.

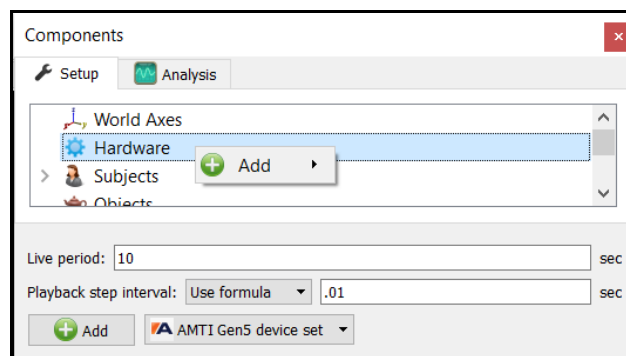


Note: If the force plate is an AMTI Smart Platform the correct calibration settings are automatically loaded into the Gen5 when it is powered on. If the platform is not an AMTI Smart Platform the calibration file will have to be manually uploaded to the Gen5 through the Calibration button in the Associated Platform section of the AMTI System Configuration dialog.

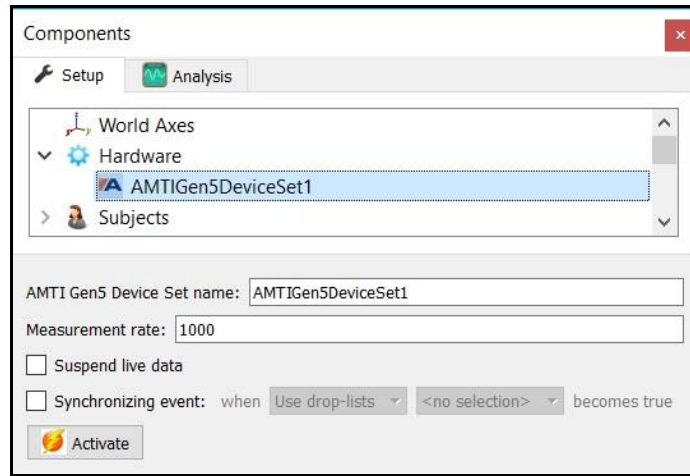
- From the Installed Amplifier section of the AMTI System Configuration dialog, click on the configure button for each connected amplifier. Select the desired values for the Excitation voltage and Gain settings. Click Apply and then OK.



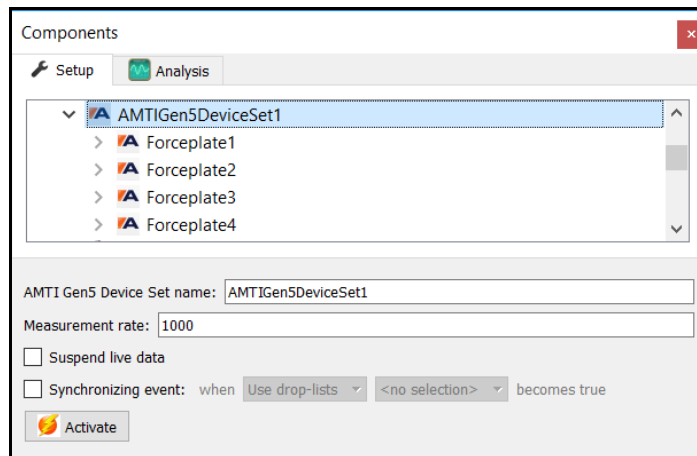
- From the main window of the AMTI System Configuration dialog, click Apply and then Save. You can now quit out of the application. These settings will be saved to the flash memory for the Gen5 Amplifier and should not need to be reconfigured unless any of these settings need to be changed or if hardware modifications are made.
- With no load on the force plate, push the “Auto-zero” button on the front of the Gen5 Amplifier. The LED on the Auto-zero button should blink.
- Start The MotionMonitor xGen and go to the Setup Components Window.
- From the Hardware node in the Setup Components window add the AMTI Gen5 device set through the Add button at the bottom of the Components window or right-click on the Hardware node to add the device.



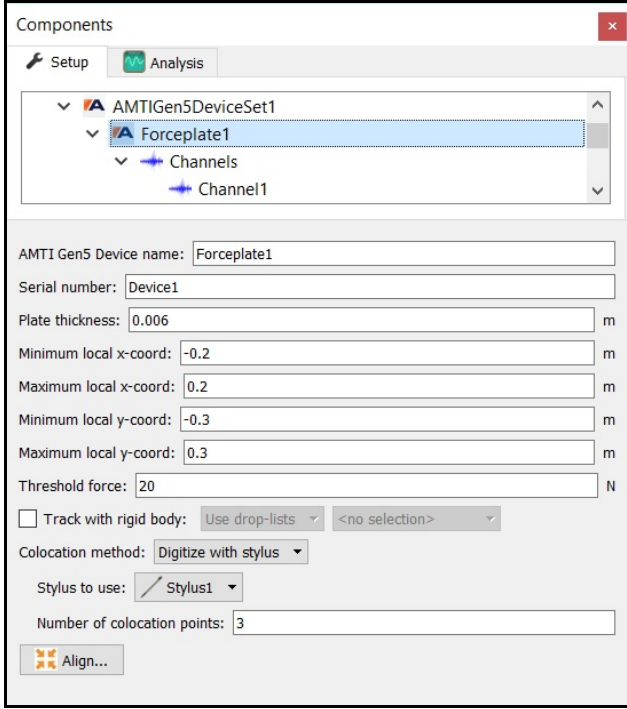
- From the AMTI Gen5 Device Set parameters panel, specify your measurement rate and click on the “Activate” button.



- Any devices that were configured through the AMTI System Configuration application should be automatically populated under the AMTI Gen 5 Device Set.



15. Selecting a force plate will bring up the parameters panel for that plate. The plate thickness field refers to any materials affixed to the surface of the plate. The min/max x and y coordinates refers to the dimensions for the plate, relative to its origin. This will control the footprint for the force plate in the animation window. The settings displayed in the image below would be for a 40cm x 60cm force plate. The “Threshold force” sets the minimal allowable force to be used in the software for computing force derived and Center of Pressure data. The “Colocation method” can be selected as either “Digitize with Stylus” or “Use Expressions”. The preferred and recommended method for alignment is the “digitize with Stylus” option. This method requires that a stylus be configured using a kinematic tracking system. Select the stylus from the “Stylus to use” drop-list and specify the number of points to use in the colocation points. Click the “Align” button and follow the prompts to align the force plate. This process needs to be performed for each force plate.

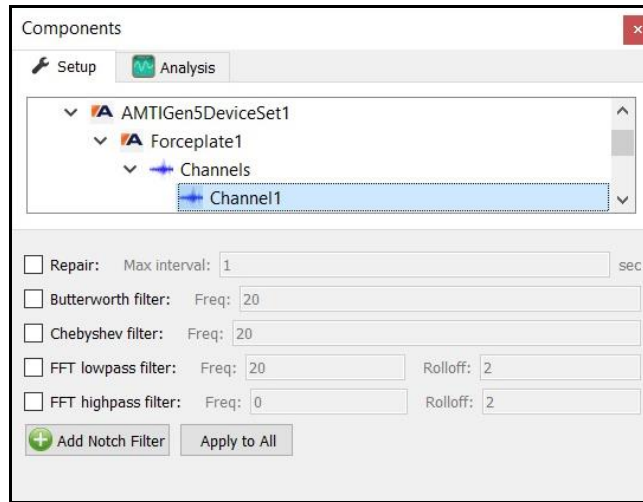


The screenshot shows the 'Components' panel in a software interface. It has two tabs: 'Setup' and 'Analysis'. Under 'Setup', there is a tree view showing a hierarchy: 'AMTIGen5DeviceSet1' (expanded) -> 'Forceplate1' (selected) -> 'Channels' (expanded) -> 'Channel1'. Below the tree, the configuration fields for 'Forceplate1' are displayed:

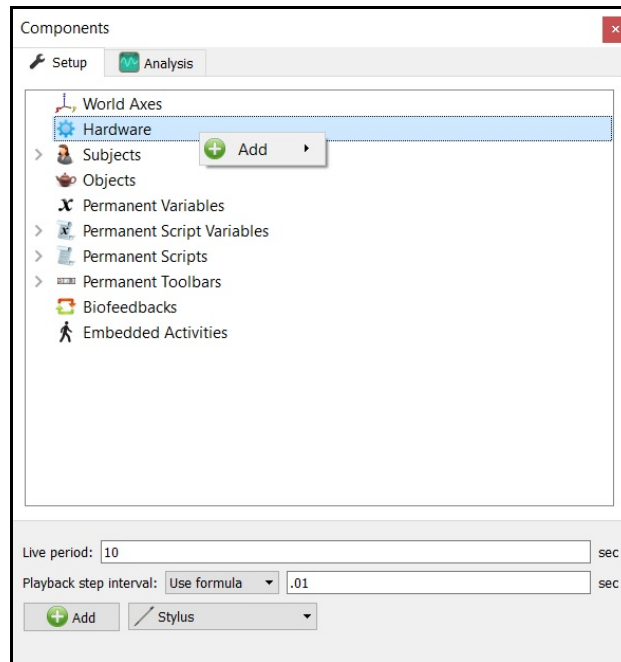
- AMTI Gen5 Device name: Forceplate1
- Serial number: Device1
- Plate thickness: 0.006 m
- Minimum local x-coord: -0.2 m
- Maximum local x-coord: 0.2 m
- Minimum local y-coord: -0.3 m
- Maximum local y-coord: 0.3 m
- Threshold force: 20 N
- Track with rigid body: Use drop-lists <no selection>
- Colocation method: Digitize with stylus
- Stylus to use: Stylus1
- Number of colocation points: 3
- Align... button

Be sure to press the hardware zero button before taking any of the colocation points. The colocation points should not be taken in the corners of the force plate, near a load cell or along the midline of two adjacent load cells. A steady strong force should be applied perpendicular to the surface of the force plate using the specified stylus. Stylus tip and CoP position data will then be used from each of the digitized readings to align the coordinate system of the force plate with that of the world. A tutorial video for configuring force plates can be found at <https://themotionmonitor.com/support/>.

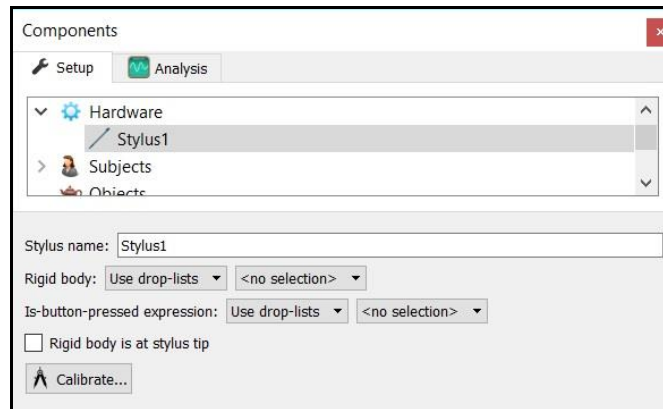
- Clicking on any of the Force plate channels will bring up the properties panel, which includes their filtering parameters. Each channel can be filtered independently, and filters can be applied either before data collection or in post processing.



- If a stylus is not already defined in the current Workspace, go to the Hardware node in the Setup Components window add the Stylus device through Add button at the bottom of the Components window or right-click on the Hardware node to add the device.

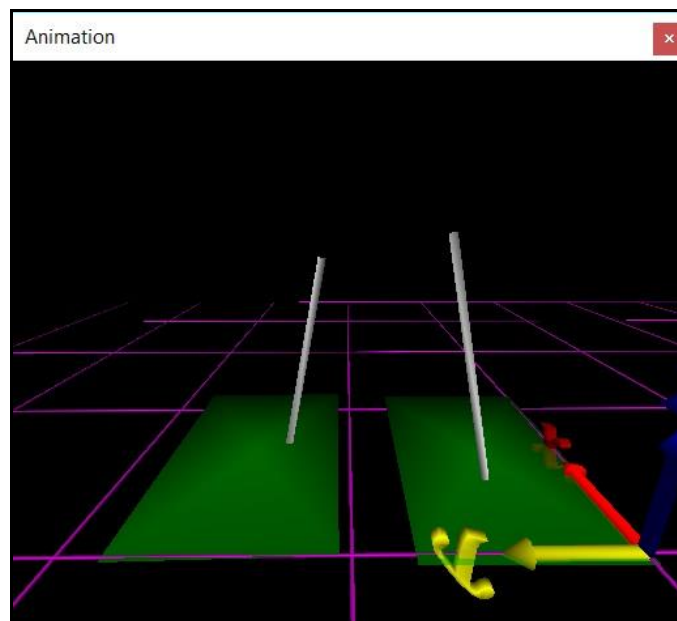


18. Before calibration of the stylus can be performed, the rigid body affixed to the object being used as the stylus needs to be selected through the “Rigid body” drop-list menu. If a remote OK button is to be used during the digitizing process, that Boolean expression would need to be defined through the “Is-button-pressed expression” drop-list menu or formula field. If the origin for the rigid body is at the tip of the stylus, as can be the case for certain kinematic tracking systems, the “Rigid body is at stylus tip” check box should be enabled.



Once all parameter fields are completed, click the “Calibrate” button and follow the prompts to calibrate your stylus. A tutorial video for configuring the stylus can be found at <https://themotionmonitor.com/support/>.

19. Once the Calibration and Alignment procedures have been completed, the force plate footprint and force vector should appear in the Animation window.



20. Force plate 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/>.

