

# 2GIG Engineering

## Displays for Inclinometers

2GIG Engineering, established in 2015 out of Maine, has been manufacturing inclinometers (also known as tilt sensors) for companies in many different industries. These inclinometers are made to accurately sense angular movement in stable to harsh conditions and provide feedback data to the end user in degrees. The inclinometer creates an artificial plane defined at zero degrees and measures the change in angle with respect to this plane.

2GIG has found the PanelPilotACE ideal for displaying position information from their inclinometers for products serving a number of different industries. Jody Knowles, Owner of 2GIG Engineering explains, ***“We have used PanelPilotACE in conjunction with our tilt sensors in numerous applications. The PanelPilotACE is used to provide the touchscreen interface in a wireless control system for our sensor. By touchscreen command we can modify trip angles, delays, output rates, adjust analog ranges and log data.”***

2GIG Engineering has developed products for the medical industry, being commissioned by Trinity Orthopedics to create an inclinometer for a new piece of spinal surgery equipment.



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Jody explains, ***“Trinity Orthopedics in California has created an accessory for a C-arm X-ray machine. This is used to place pins accurately for spinal surgery without the need to take excessive X-rays for placement. If the machine needs to move just 1 mm or .1 degrees, a person cannot move the machine with enough precision. We helped them with the drive motor system, along with one of our tilt sensors for rotation of the C-arm. Lascar’s PanelPilotACE SGD 43-A was used to display the tilt angle from sensor data obtained over a wireless connection. This allows the surgeon to place pins more accurately, using less radiation, and to communicate better with other staff helping with the pin placement. Prototyping has been great so far.”***

Another use has been for Alpha Stabilized, to help stabilize filming cameras. The 2GIG inclinometer provides tilt and roll feedback to the operator, to ensure the camera is at the proper angle for filming. An XBee wireless module was used to send data from the inclinometer, and Lascar’s PanelPilotACE SGD 43-A provided the custom HMI (human machine interface) to display the data in real-time. Owner Jody explains, ***“This was one of my favorite projects we have worked on recently in which we have used the PanelPilotACE. Thanks to the drag and drop feature of the Design Studio, it is very quick and easy to create a project. The software is very user friendly.”***

A 2GIG inclinometer has been used by MD Helicopters to monitor the helicopter’s angle whilst in flight.

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For this, 2GIG displayed output from their dual axis analog sensor on Lascar's PanelPilotACE SGD 70-A, with the 0-5V outputs from the sensor connected to PanelPilotACE's two analog inputs and converted to a digital reading.

Another unique project for 2GIG was to create

a dredge with a simple display to provide the digging depth for suction cutter dredges. 2GIG chose the SGD 70-A to be paired with their wireless battery-operated tilt sensors. The package will allow the dredging operator to set the ladder length and target dig depth along with over and under dredging tolerances.



PanelPilot ACE displays allow you to rapidly develop a custom panel display or touchscreen interface. They offer a wealth of analogue and digital I/O, making them suitable for use in

automation control and as HMIs. The Design Studio PC software provides an easy way to develop your interface using drag-and-drop software.

For further details on the capabilities of PanelPilotACE displays, please visit <https://www.lascarelectronics.com/panelpilot-displays/>

