 The Pololu  
MinIMU-9 v2 is an inertial measurement unit (IMU) that packs an L3GD20  
3-axis gyro and an LSM303DLHC 3-axis accelerometer and 3-axis  
magnetometer onto a tiny 0.8″ × 0.5″ board. An I²C interface accesses  
nine independent rotation, acceleration, and magnetic measurements  
that can be used to calculate the sensor’s absolute orientation. The  
MinIMU-9 v2 board includes a voltage regulator and a level-shifting  
circuit that allows operation from 2.5 to 5.5 V, and the 0.1″ pin  
spacing makes it easy to use with standard solderless breadboards and  
0.1″ perfboards. The Pololu MinIMU-9 v2 is a compact (0.8″ × 0.5″)  
board that combines ST’s L3GD20 3-axis gyroscope and LSM303DLHC 3-axis  
accelerometer and 3-axis magnetometer to form an inertial measurement  
unit (IMU); we therefore recommend careful reading of the L3GD20  
datasheet (2MB pdf) and the LSM303DLHC datasheet (629k pdf) before  
using this product. These sensors are great ICs, but their small  
packages make them difficult for the typical student or hobbyist to  
use. They also operate at voltages below 3.6 V, which can make  
interfacing difficult for microcontrollers operating at 5 V. The  
MinIMU-9 v2 addresses these issues by incorporating additional  
electronics, including a voltage regulator and a level-shifting  
circuit, while keeping the overall size as compact as possible. The  
board ships fully populated with its SMD components, including the  
L3GD20 and LSM303, as shown in the product picture. Visualization of  
AHRS orientation calculated from MinIMU-9 readings. The carrier board  
includes a low-dropout linear voltage regulator that provides the 3.3  
V required by the L3GD20 and LSM303, allowing the module to be powered  
from a single 2.5-5.5 V supply. The regulator output is available on  
the VDD pin and can supply almost 150 mA