

# Robotical Axiom Tech Specs

Plug and play low level sensors & actuators  
 ROS compatible via WiFi, USB or directly as pi hat

Axiom is a system for auto-identifying i<sup>2</sup>c sensors and actuators, and then providing data streaming and command transmission over WiFi, BLE, UART or USB serial.



You get sensor data into ROS without needing to do any complex wiring, soldering or embedded code

It's compatible with almost any i<sup>2</sup>c device, including loads of Adafruit STEMMA QT and Sparkfun QWIIC sensors. Robotical also provide smart servos, LED rings and more  
 Axiom ports can also be manually configured as UART ports for higher data rate sensors

## Hardware Features

Connectivity	Example Sensors & Transducers	Key Features
<ul style="list-style-type: none"> <li>4-pin magnetic connector or JST SH</li> <li>I<sup>2</sup>C or UART</li> <li>Inbuilt MUX and individual port power management with lockup detection - no issues with addressing or hung buses</li> </ul>	<ul style="list-style-type: none"> <li>6 DoF IMU - accel and gyro (built-in)</li> <li>ToF distance sensors</li> <li>Smart servos</li> <li>Temperature,</li> <li>Thermal Camera</li> <li>Moisture sensing</li> <li>IR proximity</li> <li>RGB LEDs</li> <li>Force sensors</li> <li>I2c screens</li> <li>Buttons, switches &amp; relays</li> <li>Hall effect sensors</li> </ul>	<ul style="list-style-type: none"> <li>Designed for hot-swapping connected devices</li> <li>Auto device identification</li> <li>Pub/sub model</li> <li>Provides device descriptor to allow interpretation of data</li> <li>Add new devices via simple .json file</li> <li>Optional Li-Ion battery w/ charger, speaker connection, microphone</li> <li>Will be Open Source Hardware OSHW</li> </ul>

## Interfaces

Web Dashboard	ROS	Python	Raspberry Pi
<ul style="list-style-type: none"> <li>Via BLE, WiFi or USB</li> <li>Full data acquisition and export platform</li> </ul>	<ul style="list-style-type: none"> <li>Topics and services created automatically when devices detected</li> <li>Sensor polling frequency can be adjusted</li> </ul>	<ul style="list-style-type: none"> <li>WiFi or USB serial or UART connection</li> <li>Library being developed now</li> <li>Make additional custom device descriptors</li> </ul>	<ul style="list-style-type: none"> <li>Passthrough header</li> <li>Connects over UART</li> <li>Mag ports can be right-angled</li> </ul>

**Axiom is in beta and we're looking for user testers!**

**Interested? Email me at [alexander@robotical.io](mailto:alexander@robotical.io) and you might get some free prototype hardware!**