

SparkFun Basic Autonomous Kit for Sphero RVR

KIT-15302

The SparkFun Basic Autonomous Kit for Sphero RVR provides an expansion set of sensors to the Sphero RVR platform. Based around Raspberry Pi's small yet powerful Zero W model, the kit provides both global positioning and Vision to the Sphero RVR.

A pan-tilt device allows a camera to not only provide video from the viewpoint of the RVR, but provide the ability to look around it as well. In addition, the Raspberry Pi Zero W and the Camera provide enough power to run most of the machine vision programs that will run on the Raspberry Pi platform.

The GPS board provides global position capabilities to the RVR. Whether you're setting up a geofence which the RVR must stay inside or mapping where the RVR has been, the board has the accuracy and capability to work for a small object such as the RVR. Pair these items with the already stellar sensor set of the RVR and the device has all the crucial sensing abilities for autonomous mobility. The kit itself comes with all the cables and mounting hardware to mount these boards and devices to the RVR cover plate along with an interface cable connection the Raspberry Pi Zero W to the RVR.

Note: A Sphero RVR is *not* included with this kit and will need to be purchased separately.

INCLUDES

- Raspberry Pi Zero W (Male Headers Pre-Soldered)
- SparkFun Servo HAT
- Raspberry Pi Camera V2
- GPS Breakout UBlox SAM-M8Q (Qwiic)
- Pi Zero Camera Interface Cable
- 16GB MicroSD card with custom firmware pre-loaded
- Pan-Tilt Servo and Hardware Kit
- All the mounting hardware and cables required for working with the Sphero RVR

FEATURES

- Raspberry Pi Zero WH
    - 802.11 b/g/n wireless LAN
    - Bluetooth(R) 4.1
    - Bluetooth Low Energy (BLE)
    - 1GHz, single-core CPU
    - 512MB RAM
    - Mini HDMI and USB On-The-Go ports
    - Micro USB power
    - HAT-compatible 40-pin header pins
    - Composite video and reset headers
    - CSI camera connector
- Servo HAT
    - 16 Servo motor Pin Headers
    - Qwiic Header for Qwiic Interface
    - 4 Pin UART interface
    - MicroUSB B Connector
- Raspberry Pi Camera Module V2
    - Image Sensor: Sony IMX219
    - Maximum Photo Resolution: 3280 x 2464 pixel
    - Supported Video Resolution: 1080p30, 720p60 and 640x480p90
    - Interface: CSI connector (15cm ribbon cable included)
    - Supported OS: Raspbian (latest version recommended)
- GPS Breakout Ublox SAM-M8Q
    - 72-Channel GNSS Receiver
    - 2.5m Horizontal Accuracy
    - 18Hz Max Update Rate
    - Time-To-First-Fix:
        - Cold: 26s
        - Hot: 1s
    - Max Altitude: 50,000m
    - Max G: ≤4
    - Max Velocity: 500m/s
    - Velocity Accuracy: 0.05m/s
    - Heading Accuracy: 0.3 degrees
    - Time Pulse Accuracy: 30ns
    - 3.3V VCC and I/O
    - Current Consumption: ~29mA Tracking GPS+GLONASS
    - Software Configurable
        - Geofencing

- Odometer
- Spoofing Detection
- External Interrupt
- Pin Control
- Low Power Mode
- Many others!

o Supports NMEA, UBX, and RTCM protocols over UART or I2C interfaces



https://www.sparkfun.com/products/15302//3-28-19