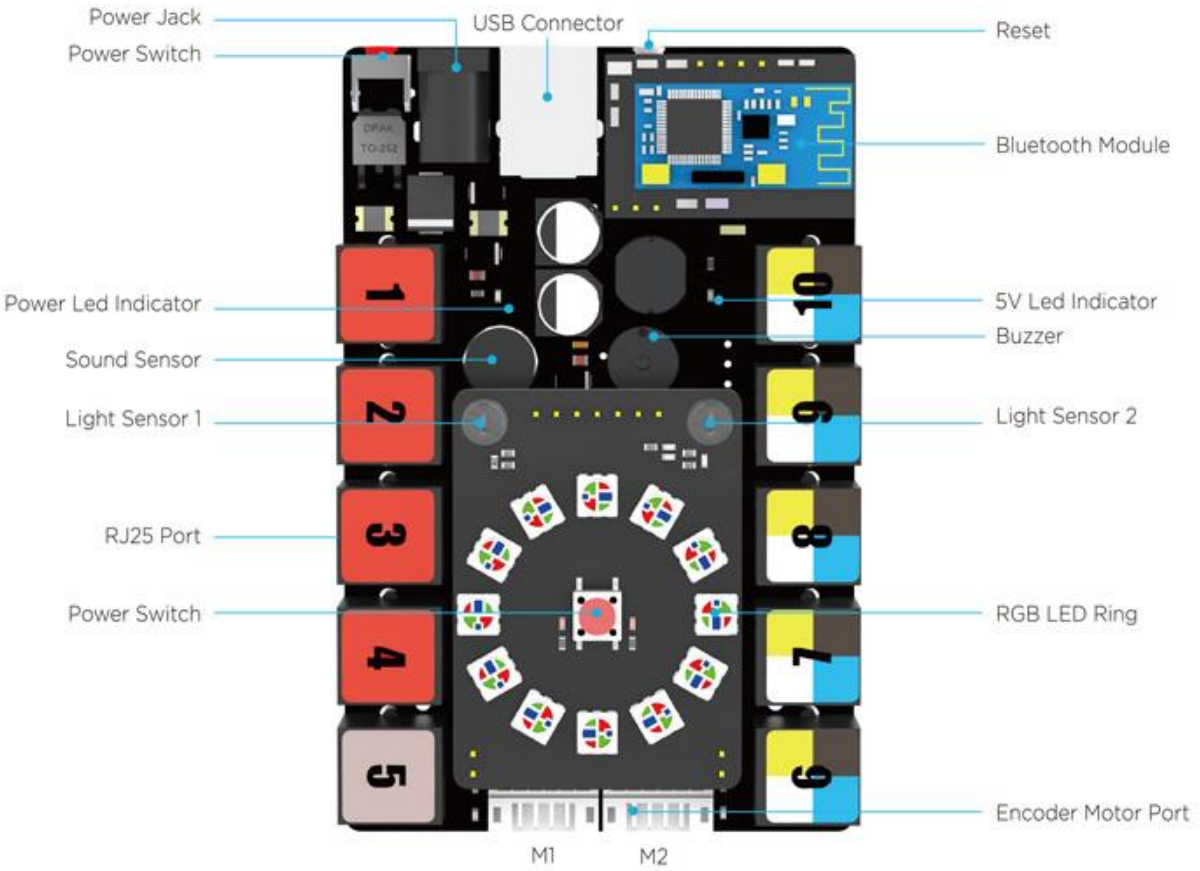
Introduction to ranger

MBot Ranger is an advanced version of mBot, that comes with three preset forms .

With multiple integrated functions Ranger is the ideal companion for children to explore the world

Learn About Auriga



Based on Arduino Mega2560, Me Auriga includes 10 easy-to-use RJ25 ports and 12 RGB LEDs. It integrates various sensors, such as gyro sensor, temperature sensor, light sensor and sound sensor. mBot Ranger Robot Kit also comes with two additional sensors: an ultrasonic sensor and a line follower sensor. These two sensors can be connected to the expansion ports of Me Auriga via RJ 25 port, allowing mBot Ranger to move freely in various scenes. The Bluetooth module in this kit enables you to connect Ranger with smartphones, tablets or computers. You can also add a 2.4G module to realize wireless control over mBot Ranger, which is very suitable for teaching in classroom.

Power Switch: turn on/off the power supply

Power Jack: can be connected with an external 6-12Vpowersupply

USB Connector: can be used for data communication with computer or downloading programs from computer

Reset Button: restart the program on main board Wireless Communication Module: can be used for data communication with computer or be connected with smart devices e.g. smartphones, tablets

Motor Expansion Port: can be connected with all kinds of motors, e.g. stepper motor driver Sensor Expansion Port: can be connected with various sensors, e.g. ultrasonic sensor

Sound Sensor: convert sound vibration to data of voltage variation through a microphone.

Light Sensor: convert light variation to data of voltage variation through a transistor.

Temperature Sensor: convert temperature variation to data of voltage variation through a thermistor **Ultrasonic Sensor:** detect distance between the sensor and the objects in front of it

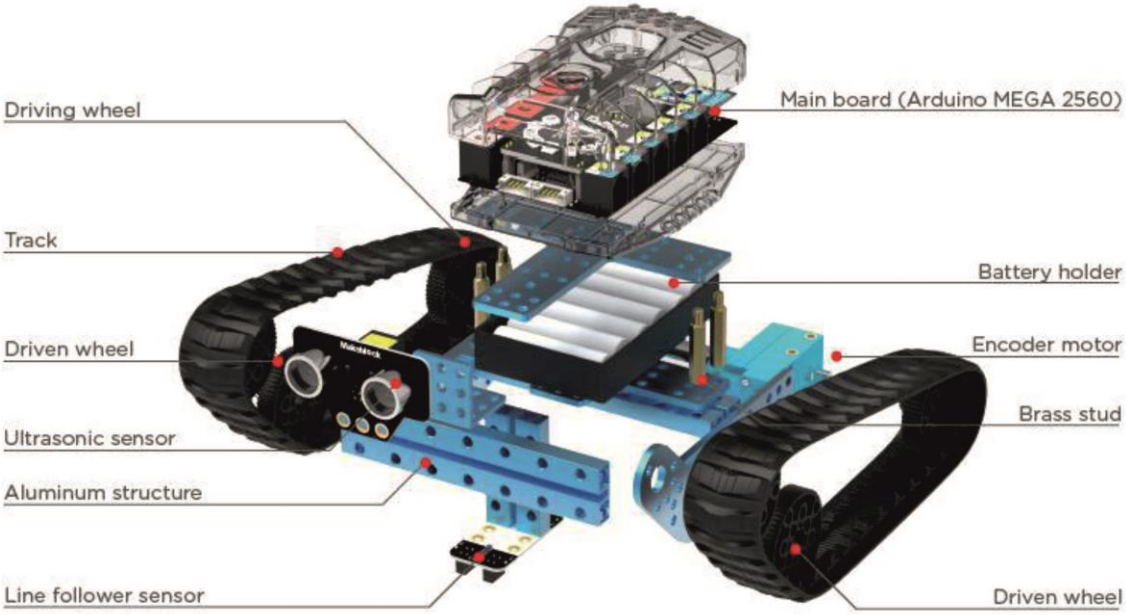
Line Follower Sensor: detect reflected infrared light from objects

Accelerometer and Gyro Sensor: Me3-Axis measure the angular rate and the acceleration information

Buzzer: an electronic module that emits a sound via vibration produced by the varying voltage

RGB LED: every RGB LED can be programmed to combine three colors (red, green and blue) to produce various colors of light Hardware Serial Port.

Classification of components of mBot ranger



We can classify the components in 4 types

1. **Mechanical Components.**
2. **Electronic Components.**
3. **Electrical Components.**
4. **Control System.**

Mechanical Components:

1. Driving wheel
2. Track
3. Driven Wheel
4. Aluminum structure
5. Brass Stud
6. Battery Holder

Electronic Components:

1. Ultrasonic sensor
2. Line Follower Sensor
3. Light Sensor
4. Buzzer