

Normal Operation

- 1) Initialization: Bluetooth protocol and sensor detect for initialization complete after powering on. The Bluetooth signal is off for power saving purpose. System is in deep sleep mode, waiting for magnetic sensor interrupt to be woken up.
- 2) Trigger Sensor: When a magnetic element is within 0.5cm of the sensor (the actual distance depends on the performance of the magnetic element), the Bluetooth sensor triggers an interrupt, and wake up the Bluetooth processor.
- 3) Bluetooth Signal Transmission: For power saving considerations, when the Bluetooth signal is triggered, the Bluetooth processor wakes up from deep sleep mode; turns on the Bluetooth radio and keeps broadcast in channel 37, 38 and 39, at intervals of 3s, 20ms for loop cycle. The broadcast content includes unique Bluetooth identifier (UUID). Mobile application will use identification code to determine the status of the sensor. When the sensor signal disappears, the broadcast stops instantly; the Bluetooth processor turns into deep sleep mode, and turn off the Bluetooth broadcast signal.

Factory Test

- 1) The Bluetooth initialization completes after powering on and turns into standby mode. At this mode, the Bluetooth signal is off, and the sensor detection is in interrupt-trigger mode.
- 2) When the sensor is triggered by the magnetic sensor, the Bluetooth wakes up and the broadcast turns on. The device connection is then checked with a separate Bluetooth device.
- 3) The condition for disabling advertisement mode is to remove the magnet from the sensor. The controller exits immediately and the Bluetooth turns off to standby mode.

No other testing or calibration is performed at the factory.