HF-1 Controller for PS3
Operation Principle
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The HF-1 controller has two microcontrollers on it, MTB0125B and BC417.

The MTB0125B is an 8-bit MCU that interprets keystrokes, controls the LED indicators and motor, provides USB connectivity and communicates with the wireless module. There are four LED indicators on the controller that displays the status of the controller. When the controller is connected to PS3 with a USB cable, it can be used as a wired controller. Furthermore, the pairing is done when connected via USB.

The BC417 is a single-chip solution integrating radio, baseband, and microcontroller. The data rate is at 3Mbps. The non-removable antenna is an embedded PCB antenna matching is done by using lumped inductors and capacitors. The radio system uses 2.4GHz (the frequency range is 2402 - 2480MHz) FHSS, which consists of 79 channels and the channel spacing is 1MHz.

The controller can be powered by USB bus or 2 AA-size batteries and output voltage is regulated to 3.3V. The total current consumption of controller is about 80mA when connected wirelessly. It will enter sleep mode if no button is pressed after 10 minutes.Its modulation type is FHSS, and the crystal frquency is 12MHz, the antenna type is internal.