Circuit   Description

The radio system is mainly composed of three parts: radio modem, frequency synthesizer and baseband microprocessor. The radio modem is a MSK modem running at 250 kbps. The antenna is an embedded PCB antenna matching is done by using lumped inductors and capacitors.

The microcontroller scans keystrokes on the pad，then packs the data by adding preambles, frame information, and error checking bytes. The radio system uses one of 91 channels (the frequency range is 2.405-2478GHz) to send signal in random, and the channels change frequency is 100HZ per second. Otherwise, there are 4 synchronous channels (distribute in the 91 channels uniformity).

The pad radio is powered by 2-AAA side batteries and DC/DC to 3.0V. The power consumption of RF module is about 8mA, the total power consumption of the pad side radio system is about 14mA in normal working mode. It will enter sleep mode if no key be pressed after 5 minutes, in this mode the total power consumption of pad is only about 10uA*.