

## Circuit Description

After the installation of battery, the CPU starts the initialization. BP monitoring interface is displayed on the LCD. It is in auto measuring mode and measures BP data automatically according to preset interval. If the preset time does not arrive, the CPU will cut off the power of measuring and viewing circuit, and switch to the sleep state. In sleep state, RTC inside the CPU keeps on working. The CPU is activated periodically and drives the LCD to flash to indicate that the whole machine is in the state of power on and monitoring. If the preset time arrives, the CPU switches to the working state. It powers on the measuring circuit, then drives bladder and solenoid valve to work. BP monitor begins to inflate the cuff. The pressure sensor inside BP monitor transforms BP change inducted by cuff to weak voltage signal. Then the signal is sent to AD transformer inside the CPU to transform into digital signal after being amplified by transmittal circuit. The CPU analyzes and processes pressure change; figures out BP data; displays values on the LCD, and then save them. After measuring, the CPU powers off the measuring circuit. BP data is transmitted to Bluetooth communication module by UART. Then the CPU switches to the sleep mode again. At this time, communication module turns on the power of Bluetooth module and requests for connection to matched mobile phone. BP data is uploaded to the mobile phone after connection. When the uploading is finished, the Bluetooth module is powered off. Communication module is in sleep mode until new measuring data are generated next time. At most cases, the CPU is in sleep state. When the preset time arrives or a user presses the manual measuring button, the CPU starts to work and enables measuring. Data are saved and uploaded after measuring. Then the CPU switches to the sleep state again. Press the power off button for a long time, the CPU will cancel the executing task. Then the collector is power off. The CPU uses external 8 MHz and 32.768 KHz crystal oscillator to work. 32.768 KHz crystal oscillator is the clock source of RTC inside CPU. Because RTC uses button battery as the auxiliary power supply, when the power is cut off in a short time, it can also keep the accuracy of RTC time, and ensure the normal running of the system.