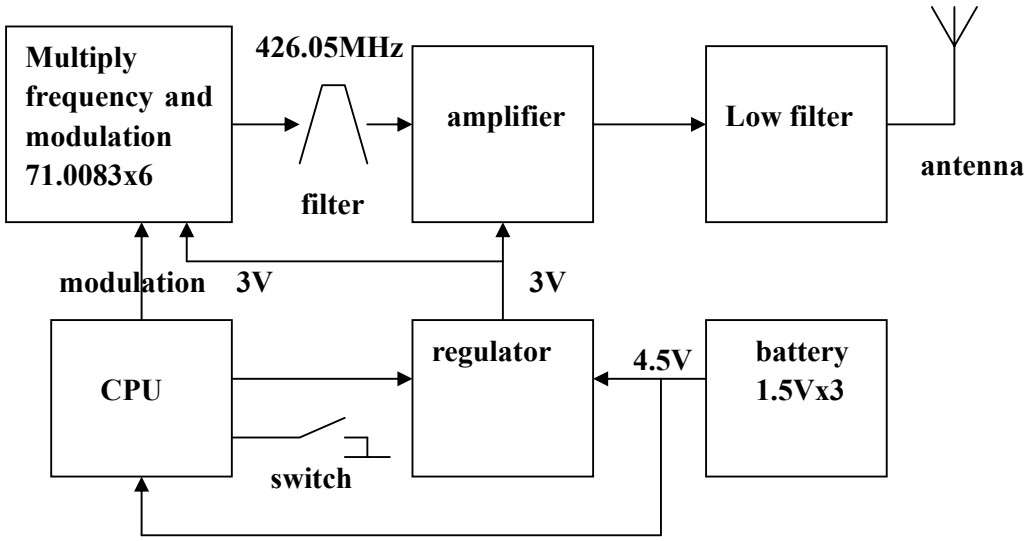
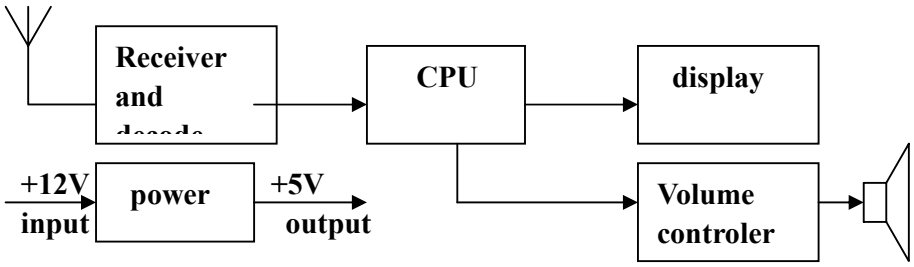
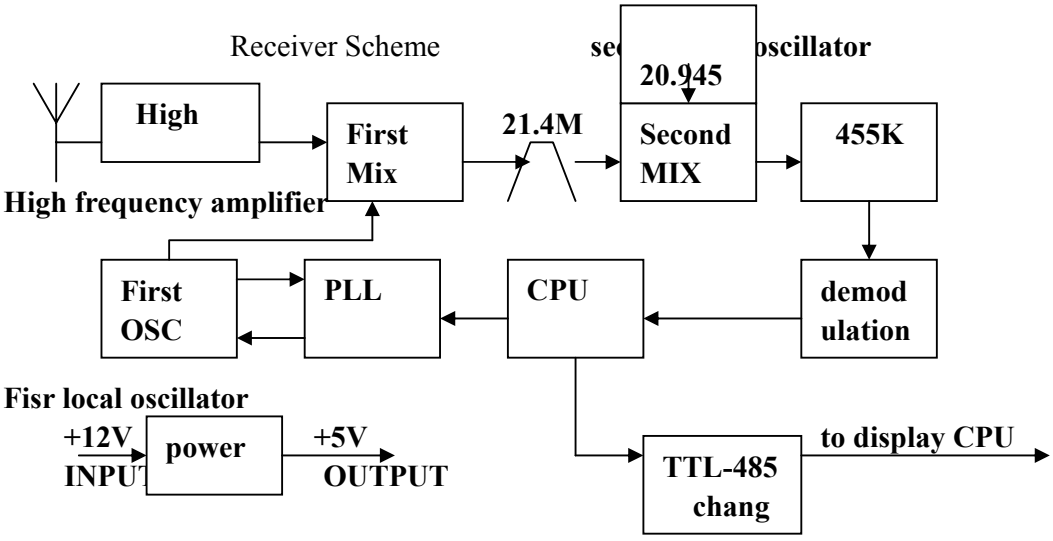
Requester scheme



Receiver and display scheme



Receiver Scheme



Requester

1.：Operation of requester (pager):

The wireless part of requester is a direct crystal multiply oscillator. When power on the requester, the single-chip(CPU) is in rest state and the transmit part of requester does not work. When the switch is pressed，the single-chip is turned on, power supply gives power to oscillator and output circuit to make it work. The single-chip controls modulation output to the crystal oscillator, creating a ±3K Frequency shift keying modulation signal（FSK) of about 600Hz，generating a 6 times harmonic（71.00833MHzX6） of the oscillator，eliminates other harmonic signals by surface acoustic wave filter（SAW），and transmits using a loop antenna after the output is amplified and filtered using a low pass filter. After finishing one call or cycle, the single-chip will return to the rest state, the transmit part of requester will stop work, and waits for next call by press the switch. There is about 600mS to finish one call.

1. Antenna type:

Requester antenna type: loop antenna, gain 0db.

Host (receiver) antenna type: spiral antenna, gain 0db

Connect to ground type: independent connect to ground system.

2. This equipment is not pulse width modulated. It is FSK (frequency shift keying).

3. This equipment is not period transmissions。It transmits only by pressing key, then only transmits for at most 1.6 seconds in 5 seconds and the min. interval between two transmitting is 2S.

Receiving equipment

The operation of receiving equipment

When power is turned on in the receiving equipment, CPU sends a series pulse to synthesizer U2 to make sure that lock frequency is on. First local oscillator frequency will be 404.65MHz which is setup in advance.（first local oscillator frequency is 21.4MHz lower than receiving frequency）.When the antenna of the receiving equipment receives 426.05MHz frequency signal ， it is amplified via the high-frequency amplifier, filtered using a surface acoustic wave filter (SAW)，down converted using a first mixer and first local oscillator to a first middle-frequency signal of 21.4MHz. at the middle-frequency 21.4MHz a crystal oscillator filter deletes undesired signals，down converted again using a second mixer and second local oscillator mix and make the second middle-frequency signal 455KHz，filtered at the second middle-frequency of 455Khz using a porcelain filter to delete undesired signals，amplified by a second middle-frequency amplifier, demodulated， modified by a tidy wave circuit to a square wave for the CPU to decode. After being correctly decoded, the identity of the particular requestor or pager is displayed on the display via a display driver.