Circuit Description
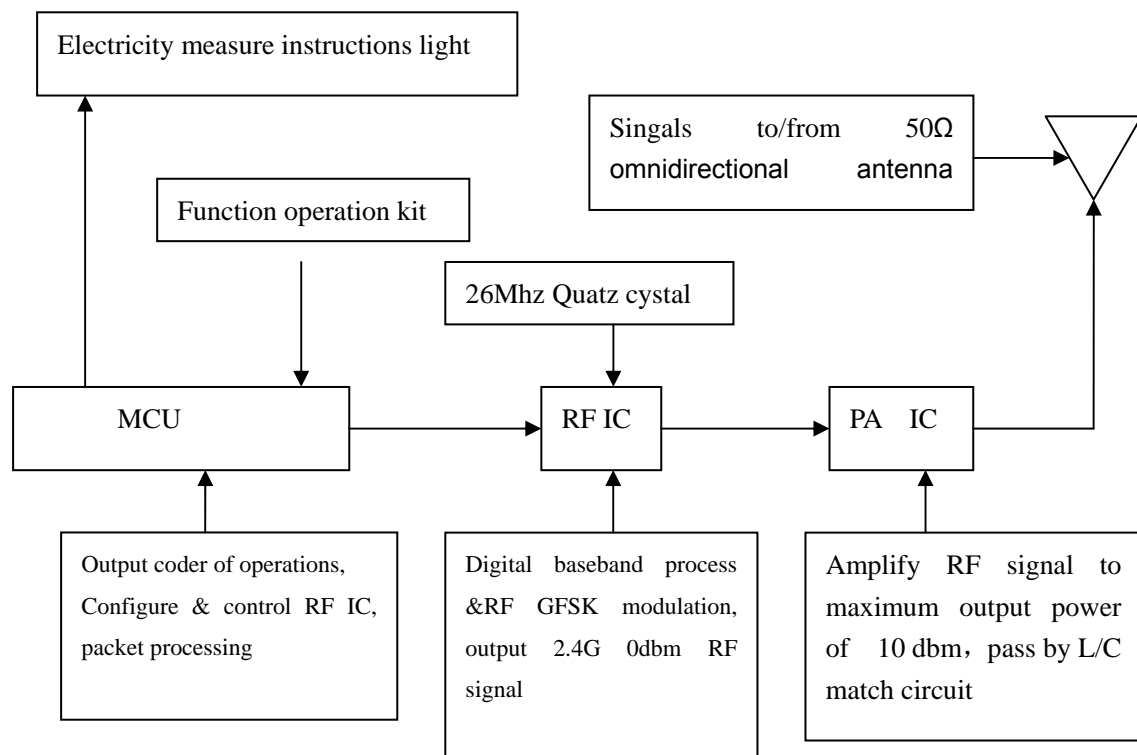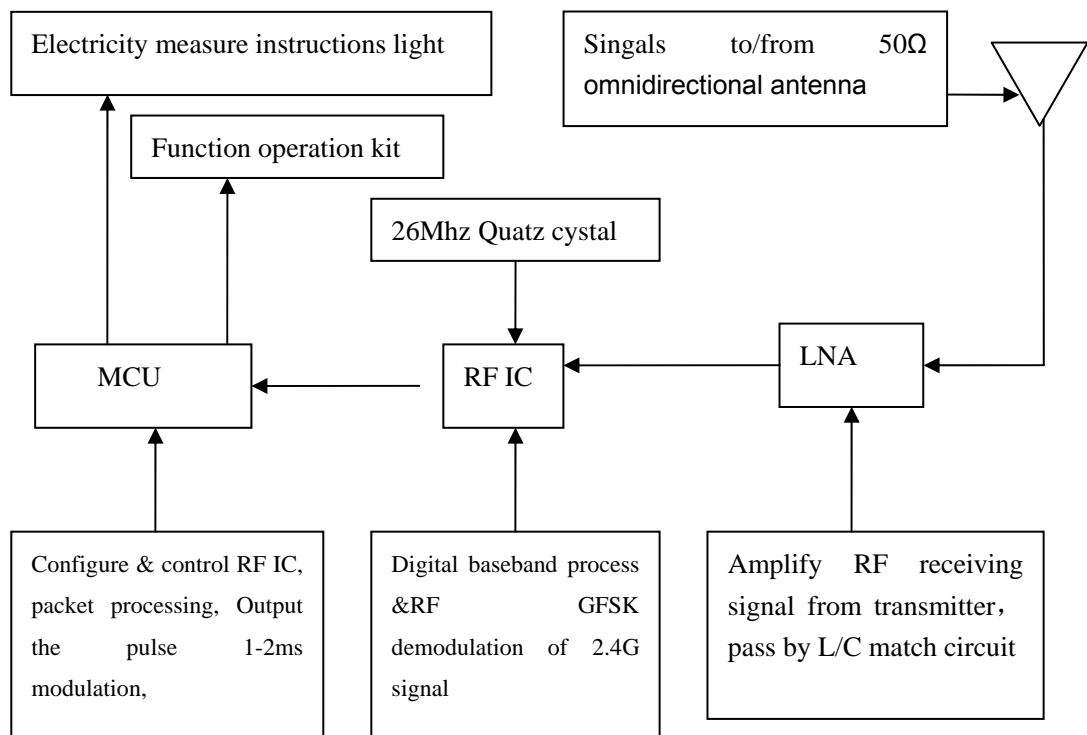
1. Function operation kit such as SW and CH input opeartion codes to Control MCU (U1), U1 through RF MCU （U6）Configure & control RF module with 4 wire SPI connection.
2. RF module inplements digital baseband process including support for channel configuration, packet handling, and data buffering.
3. RF module's transmitting part is based on a direct synthesis of the RF frequency part with an external 16M Crystal Oscillator(X2) .RF module outputs 2.4G 0dbm signal first with FHSS modulation, then PA part of RF module amplifies signal to 10dbm.
4. The received RF signal is amplified by the lownoise amplifier (LNA) and down-converted in quadrature (I and Q) to the intermediate frequency (IF).
5. Transmitting and Receiving signals all pass through sets of LC match circuit linking to a 50Ω omnidirectional antenna which provides about 2dbi gain. The ground of antenna is linked to the ground of RF control system.

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┌─────────────────────────────────────────┐
│ Electricity measure instructions light   │
└─────────────────────────────────────────┘
           ▲
           │                    ┌──────────────────────────────┐        ▽
           │                    │ Singals    to/from     50Ω   │───────▶
           │      ┌───────────────────────┐│ omnidirectional  antenna  │
           │      │ Function operation kit │└──────────────────────────────┘
           │      └───────────────────────┘
           │              │         ┌──────────────────────┐
           │              │         │ 26Mhz Quatz cystal    │
           │              ▼         └──────────────────────┘
  ┌──────────────┐            ┌──────────┐        ┌──────────┐
  │     MCU      │───────────▶│  RF IC   │───────▶│  PA  IC  │
  └──────────────┘            └──────────┘        └──────────┘
         ▲                         ▲                   ▲
  ┌──────────────┐     ┌──────────────────────┐  ┌──────────────────────┐
  │ Output coder │     │ Digital baseband     │  │ Amplify RF signal to │
  │ of operations,│    │ process &RF GFSK     │  │ maximum output power │
  │ Configure &  │     │ modulation, output   │  │ of 10 dbm，pass by L/C│
  │ control RF IC,│    │ 2.4G 0dbm RF signal  │  │ match circuit        │
  │ packet       │     │                      │  │                      │
  │ processing   │     │                      │  │                      │
  └──────────────┘     └──────────────────────┘  └──────────────────────┘
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Transmitting

Electricity measure instructions light		Singals to/from 50Ω omnidirectional antenna

Function operation kit

26Mhz Quatz cystal

MCU		RF IC		LNA

Configure & control RF IC, packet processing, Output the pulse 1-2ms modulation,	Digital baseband process &RF GFSK demodulation of 2.4G signal	Amplify RF receiving signal from transmitter，pass by L/C match circuit

Receiving