RFS2004 RF-TX sch.

This section mainly includes the UHF PLL(U14),Isolator(U16),Low noise Modulation amplifier(U20),RF power amplifier(U19) and Circulator(U17).

Where U14 provided RF carrier signal source,frequency is 902-928MHz. Fixed frequency or FHSS operation. U14 is 33MHz crystal oscillator.

Where U20 is ASK modulator, It shall modulated tramsmitting digital signal. Where U19 shall amplification digital madulation signal, RF output Power adjustable,from 22dBm to 30dBm. Where U17 is mutual isolation between tramsmitting signal and reception signal.

RFS2004 rx.sch.

The circuit use zero intermediate frequency demodulation(U10,U11) and Differential low noise amplification(U7,U8) scheme. For demodulation use, The local oscillation source take up RF power amplifier output port, via power spliter coupling part carrier energy. The demodulation signal via Buffer interface circuit to DSP process demodulation.

RFS2004 Power sch.

This section provided ICs and transistors circuits operation voltage DC 5V. U5 provided RF power amplifier (U19) operation voltage, It can switched.

RFS2004-cpu sch.

This section function via cpu(in the DSP circuit) controlled digital signal modulate and demodulate. Antennas selected and RF output power adjusted.

DI2812A sch.

This section is digital signal process. The U1(TMS320F2812) is a DSP IC, It main function are following:

Setting basic parameters; RF power controlled; Frequency of carrier controlled; Encode and decode(see EPC protocols); CRC encode and decode; Multiple tags collision arbitration algorithm; Serial communications interface function and others.

Where: U3 provided DSP operation voltage DC 1.8V and 3.3V;

U5 is DC converter, from input 12V to 5V.

D1,D5 are antennas selected circuit.

D2 is antenna deteced circuit.

D6 is RS232 interface circuit.

D8 is Weigan interface circuit.

D9 is RS485 interface circuit.

Transistors V3,V4,V5 controlled K1,K2 relays circuit.

G1 is 20MHz crystal.