

Technical Description

Circuit Operation

Transmitter

1. Encoder for generating code for ASK transmission
2. LC-oscillator with integrated antenna

Receiver

1. Power management circuit for reducing average current
2. Super-regenerative receiver
3. Decoder for decoding the code received by the super-regenerative receiver.
4. Sound chip for generating door chime
5. Speaker driver for driving speaker

Component Description

Transmitter

Category	Part Number	Name	Description
Transistor	MPSH10	LC-oscillator	Generation of RF signal and transmission
Transistor	2SC1959	RF on/off control	Control the LC-oscillator on/off for ASK transmission
IC	HT12E	Encoder	Generating code for ASK transmission

Receiver

Category	Part Number	Name	Description
Transistor	MPSH10 (Q1)	RF pre-amplifier	Amplify the RF signal at the antenna
Transistor	MPSH10 (Q2)	Super-regenerative receiver	Converting the ASK RF signal to baseband signal
IC	LM358	Baseband amplifier	Amplify and shaping the baseband signal recovered by the super-regenerative receiver
IC	HT12D	Decoder	Decode the ASK baseband signal. If the signal matches the setting, it will activate the sound chip
IC	S81330	Voltage regulator	Provide a stable voltage for the electronic circuits to operate
IC	CD40106	Hex Schmitt Trigger	Generating a 0.67 Hz signal to reducing the average current of the RF circuit
Transistor	8550 (Q12) 2SC1959 (Q4)	Speaker driver	Power amplification. Amplify the output of the sound chip in order to drive the speaker
Transistor	2SC1959 (Q5,7) 2SA1015 (Q9)	Low battery detector	Detect the voltage of the batteries. If the battery voltage is low, it will turn on a LED