<u>Circuit descriptions of Digital Door Lock FD-2100</u>

Step 1: Sleep mode A

This mode means awaiting for sensing material approach.

(Photo coupler(U2) is cutoff state and U3 maintains checking the sensing RF-card approach.)

Step 2: Wake-up mode

This mode means period of the system goes into the operation status after detection sensing RF-card. (Power switching TR(Q4) is turned-on and this logic level drives the RF generation device IC(U4: RC-500). RF 13.56Mhz signal is triggered and transmitted to the RF antenna terminal by this logic level on and off, simultaneously.)

Step 3: Operation mode

If the sensing RF card approaches to this terminal, the inductive RF current in RF-card makes the chip in this card generates its own ID & data which will be interpreted by CPU.

This data is transferred to the CPU (ATmega8515) which compares two data whether input data is correct with registered data in memory or not.

If the data coincides with registered data then CPU sends the command to motor driver(Q10) that let the action motor releases the locking arm. Same time, door sensor detects the states of door opened and it sends the detection data to the CPU.

Step 4: Sleep mode B

After door open status, memorized melody signal drives the audio amplifier(Q9) that makes the alarm buzzer rings. Then Digital Door Lock goes into the sleep mode again.

Attached: circuit diagram of FD-2100