

ATV Automatic Gate Opener

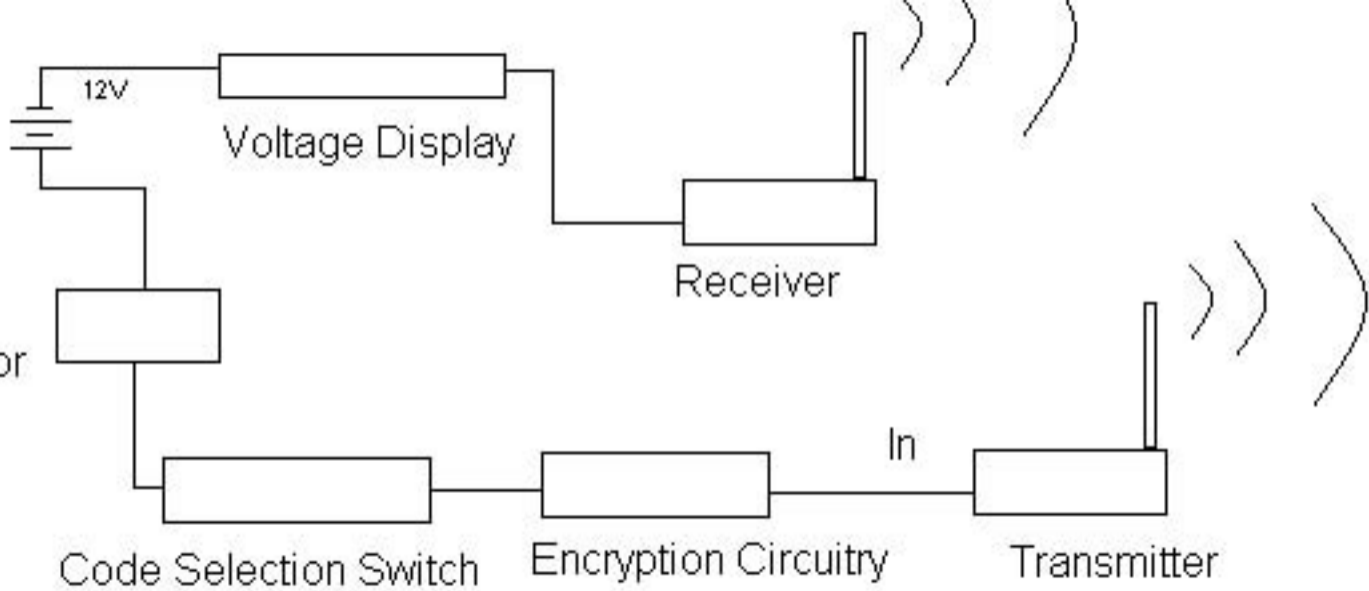
By
Brandon Beltram

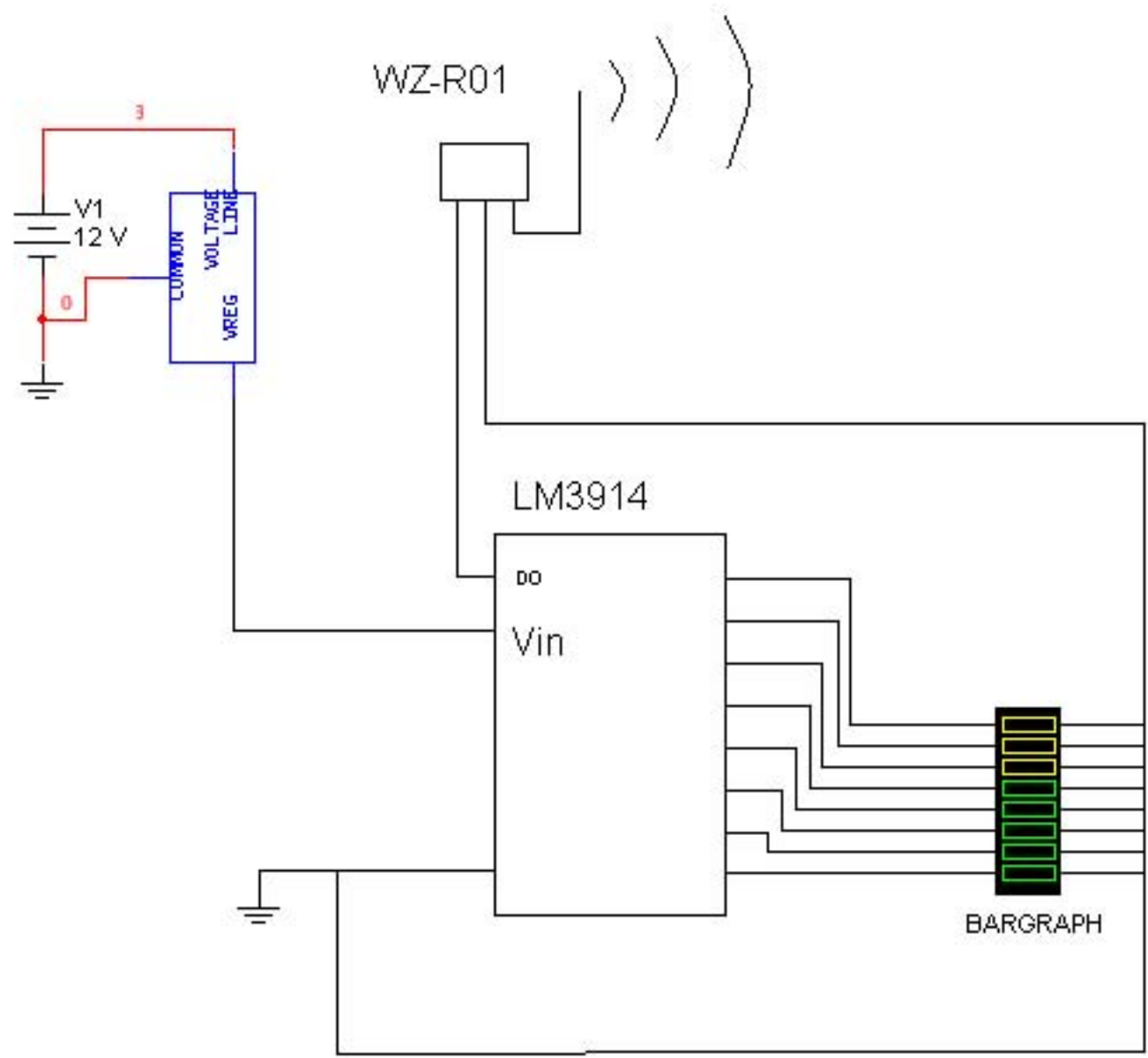
ATV's are becoming more widely used on farms and other work places. However, there has not been any type of gate opening system designed specifically for ATV's. This project's design will have an automatic gate opening system that can be permanently attached to the ATV. When the ATV approaches the gate the signal being broadcast will automatically open the gate. The code that is broadcast to open the gate will be encrypted for security. The gate opening unit will be operated by a 12 V battery with a solar panel recharging circuit. The status of the battery will be sent to a battery meter located on the ATV when it is within range.

The transmitter circuit that sends the code to open the gate is fully tested and seems to be working. It encodes the chip address and the four bit open code. The signal is then broadcasted. The receive circuit will only decode the incoming data if its address matches the address of the transmitter address. Once the address is verified, the receiving chip will decode and output the four bit open code. The code is then taken to a comparator chip that will make sure that the correct code has been received. Once the comparator verifies that the code is correct, it will turn on an output that will activate the transistor switching circuit that will open the gate. Once the signal goes away, the transistors will go off and a different set will activate to close the gate.

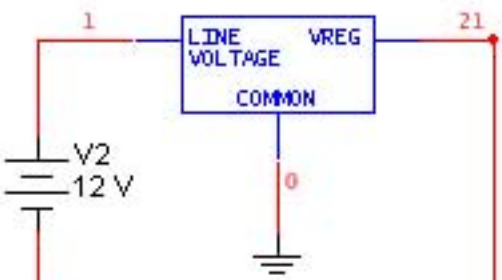
The battery voltage monitor circuit is designed to take proportional voltage of battery and transmit it to a circuit that is tuned to the voltage that is being sent to it. This will allow the rider to tell if the battery has run down. Even when the battery will not be able to open the gate, it will be able to operate the transmitter. The receive circuit will display an analog approximation of the battery voltage. It will indicate that the battery is dead when the battery voltage drops to 11.5 volts.

ATV's
power
source

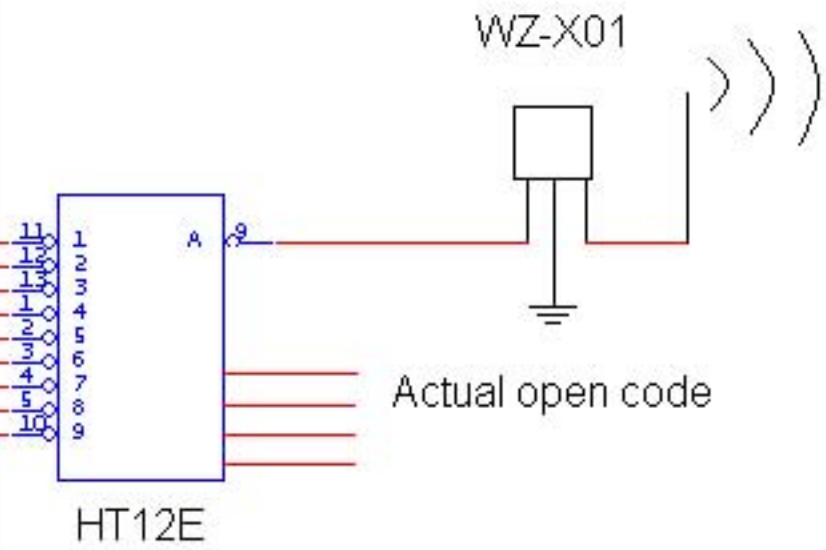
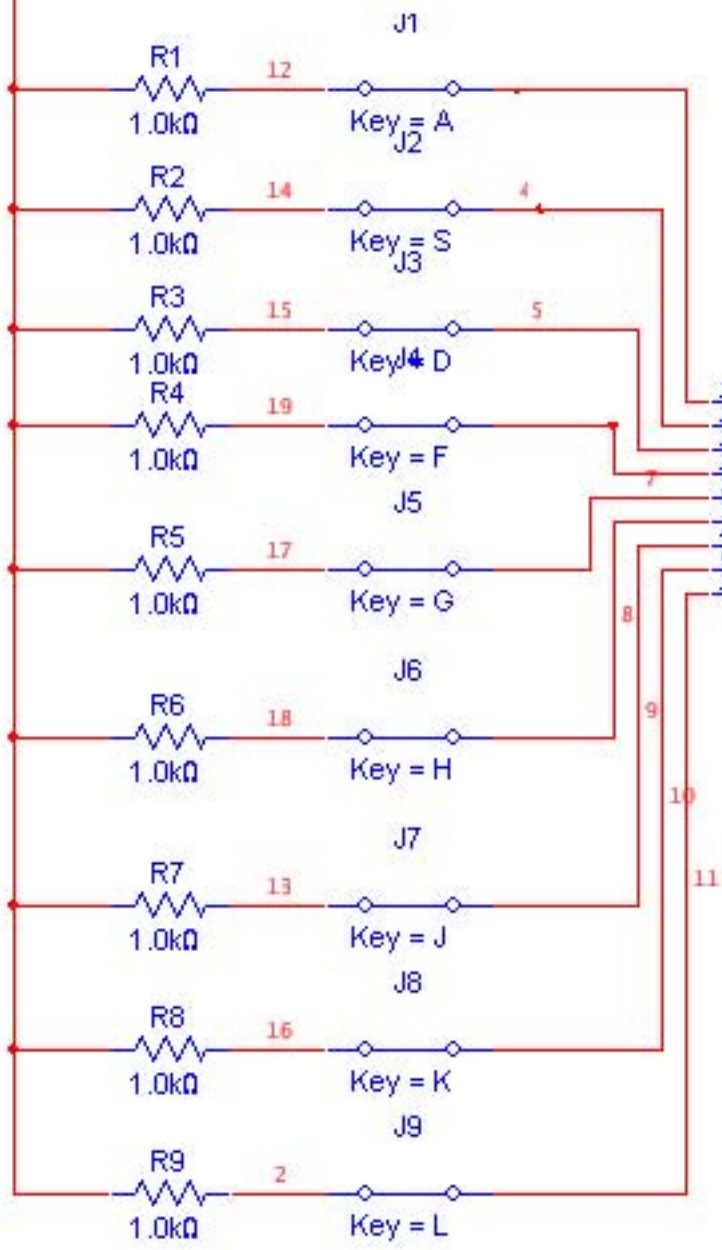


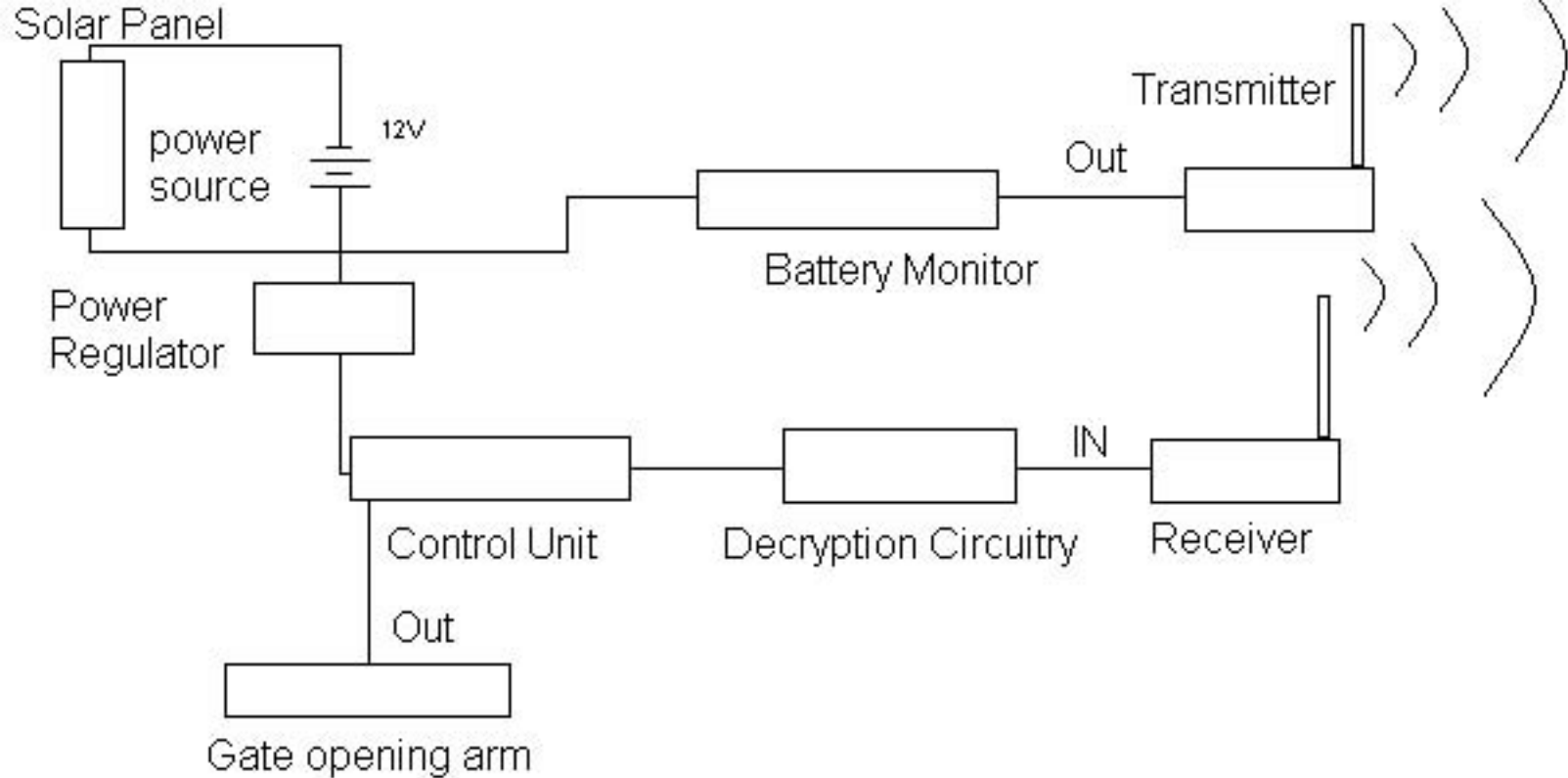


LM340T-5



8-bit security address select





8-bit security code

