W132-2 Circuit Description

MCU EM78P458N

It is the main control unit which control the measurement unit and transfer the measured data to the RF unit for 433Mhz RF transmission.

Humidity sensor

Humidity is measured by humidity sensor using charging and discharging method. Then the discharging time is measured by MCU to calculate the actual humidity reading. The humidity reading is measured for every 3 minutes.

Temperature sensor

Temperature is measured by thermistor using charging and discharging method. Then the discharging time is measured by MCU to calculate the actual temperature reading. The temperature reading is measured for every 3 minutes.

Wind speed sensor

Wind speed is measured by reel switch and magnet that the windmill turn 1 round, the reel will switch on 1 time. MCU counts the reel switch on time and then calculate the actual wind speed. The wind speed is measured for every 31s.

Wind direction sensor

Wind direction is measured by the phototransistors. There is 8 directions with infrared emitting diode inside wind vane, wind vane masks all direction but remain 1 direction which vine pointed. Then MCU will find out which phototransistor receive the infrared signal to map with the referred direction. The wind speed is measured for every 31s.

RF Tx board

After MCU received the data from wind speed/direction sensor, temperature and humidity sensor, it will transmit the data to RF Tx board. Then the data will transmit to receiver unit thru 433MHz RF by it.