



## **Toba Magic Fountain – Technical Description**

Spray water function – when the “W” button on fountain panel is pressed, the U3 IC Atmega88 will turn on the MOSFET Q11 IRFZ46N and the water pump is turned on. The water would be pumped out through the fountain head. The water height level is controlled by the PWM output from the IC U3 ATMEGA88. The current draw would be detected by the resistor R26 0.02ohm. The fountain would be stopped by U3 IC ATMEGA88 and the Red LED at the top panel would be turned on if the pump current is too high.

Change spray head – the water will move from one to another spray head by the motor MG1. The motor MG1 is controlled by the H-Bridge with transistor Q13, Q14, Q15 and Q16. The Q13 & Q14 are transistor 2SB772 and Q15 & Q16 are transistor 2SD882. The M2L and M2G pin is used to control the motor running at forward or backward direction.

Infra red sensor –There are 3 fountain heads and water would be go out from either one head which controlled by the distributor. The distributor is also running when motor MG1 is running. When MG1 motor is running, the U3 IC ATMEGA88 will send signal to Infra diode D4 and the photo transistor Q12 will detect the IR signal to stop the distributor. If Q12 could not detect the IR signal produced by D4 for a long time, the red LED on top panel will be turned on and IC U3 will stop all other functions.

Lamp function – lamp could be turned on only when water is going out from the fountain. Press the “L” button from the top panel to turn on the lamps. The Q7, Q8, Q9, Q10 MOSFET IRL2703 are used to control the lamps on and off. Each IRL2703 will drive 2 lamps simultaneously.

Receiver – the U1 SPN860018 is a receiver IC from the ‘FNT\_receiver’ schematic. This U1 receiver IC receives the 433.92MHz RF signal by the antenna and then demodulates the data from RF signal to the U3 IC from the Mainboard schematic.

Code setting- a Dip switch is located at the Fuse compartment. It connected with U2 74HC165 to tell IC U3 to change the code setting. The code should be the same as the remote control in order to receive commands. If code is not the same with remote control, the fountain could not be activated by the remote control.

Low voltage detection – the supply voltage will be detected by resistor R21 from the Mainboard schematic. The fountain operation will be stopped when IC U3 detected the voltage lower than 10.5Volt and then Red LED would be flash continuously until the user turn off the power.