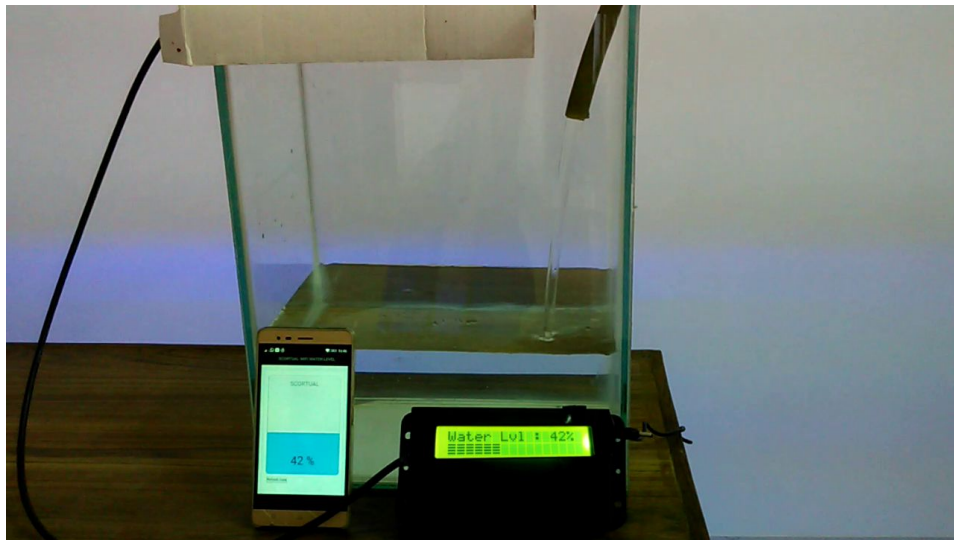




SMART WIFI WATER MONITORING SYSTEM

2.4 GHz WIFI, supports WPA / WPA2 safe mode
(For Normal Consumer and for Industrial Use)



Developed, Designed & Manufactured by,
VISHAL D MASKE
(CEO, FOUNDER, RESEARCHER & SCIENTIST)
SCORTUAL TECHNOLOGIES PRIVATE LIMITED
MIHAN NAGPUR, INDIA



|| We proudly say that our product and microprocessor technology is completely developed in India from scratch without help from any foreign companies. Jai Hind ||

Project Overview

- This WIFI Smart Water Level Monitoring system is designed by **SCORTUAL TECHNOLOGIES PRIVATE LIMITED, MIHAN NAGPUR** for normal consumer and industrial purpose.
- This system measures a minute change in the volume of water and display it quickly using **Mobile App** or **Onboard LCD screen**.
- The applications of the project for normal consumer is to monitor water level in a tank or any liquid or solution for industrial purpose.
- The project research and development is done by **VISHAL D MASKE**, CEO and Founder of **SCORTUAL TECHNOLOGIES PRIVATE LIMITED, MIHAN NAGPUR**.
- This product is a part of **MAKE IN INDIA** initiative and it is completely manufactured and developed in India.
- We always try to bring new innovative products for the consumer to make their life and future better.

ECO-FRIENDLY SYSTEM



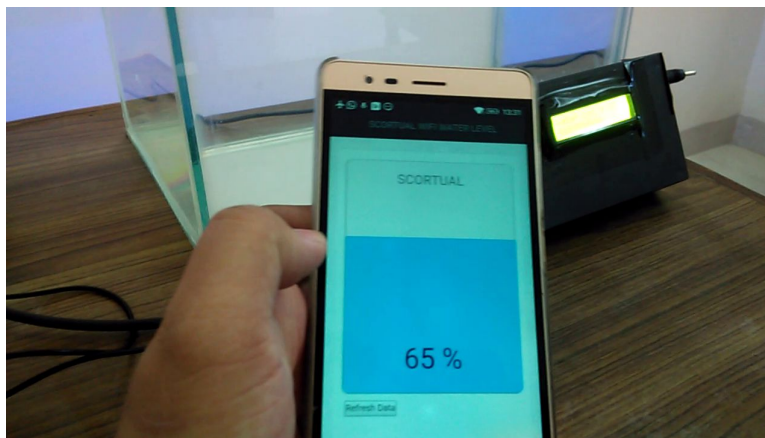
The most important cause for which this system is designed is to **Save Water, Save Earth** and to **Save Future** of our childrens. It prevents wastage of water due to tank overflow by automatically turning of motor using digital circuit breaker.



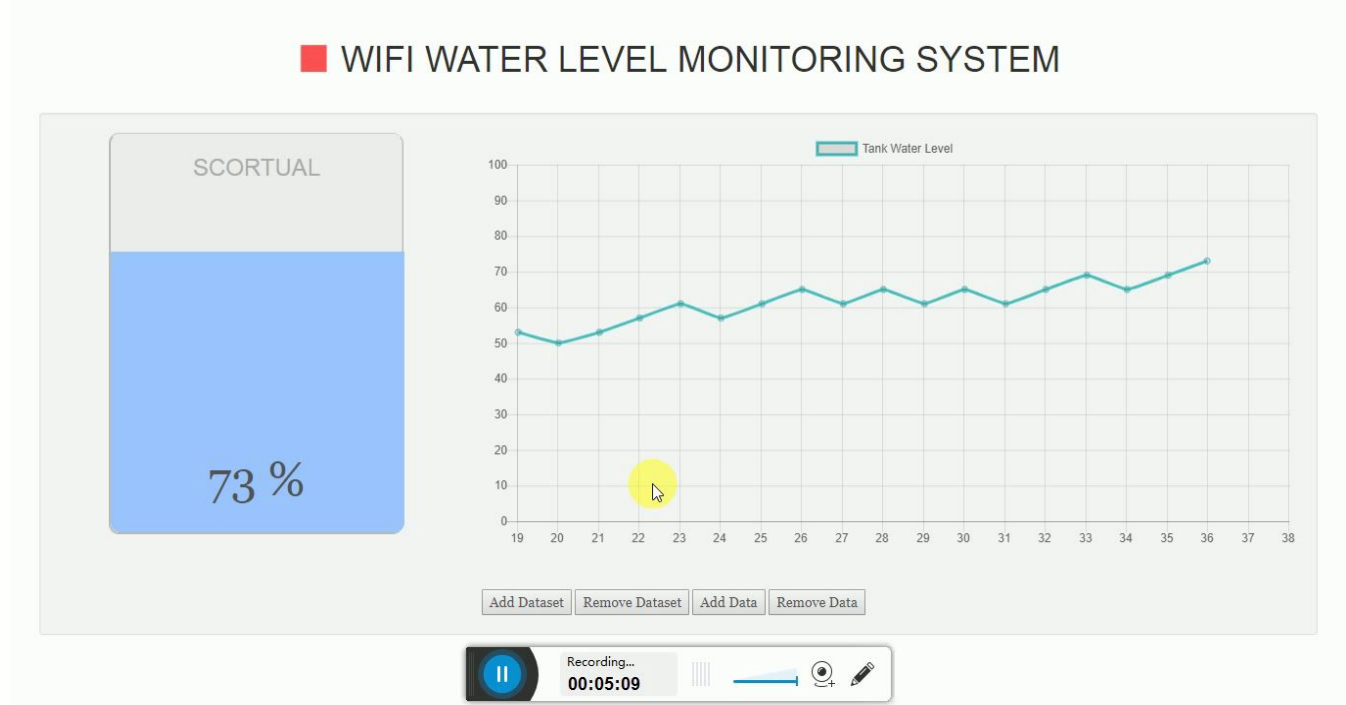
Daily million litres of drinking water gets wasted in our country due to tank overflow.



This cheap and easy to use WIFI device is our small contribution to prevent wastage of water daily. This system automatically shut down the motor to prevent unnecessary water loss. You can monitor water level digitally at any time using mobile app available for both Android and IOS.



If you are a developer or if you want to use this device for industrial purpose then you can easily read the device using techniques such as **AJAX** or **Websocket**.



General Features:

- Easy to install and easy to connect using **WIFI**.
- Generally our tanks height is not more than 15 feet. But we have designed this system for high end industrial and military applications and can read giant and huge tank with a height **100 Ft**.
- Onboard **LCD screen** for Water level Display.
- **Mobile App** to view the water level at any time.
- **Semi-Automatic**. Manual motor start is needed. Motor will be turned off automatically by **circuit breaker**.
- **Buzzer sound** for 10 sec indicating Tank is full.
- Device is **developer friendly**. You can easily read device data using any high level programming language for industrial applications.

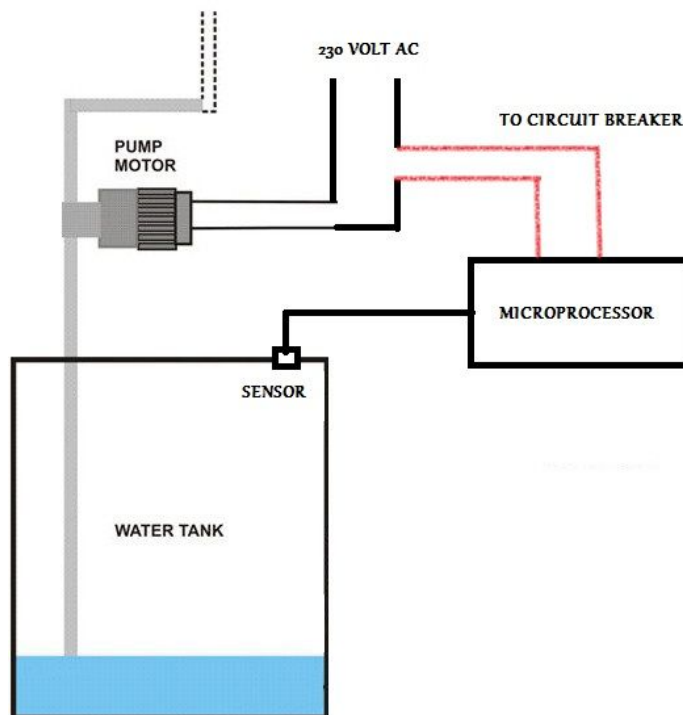
WiFi Features

- 802.11 b/g/n
- Built-in Tensilica L106 ultra-low power consumption 32-bit micro-MCU, dominant frequency support 80 MHz and 160 MHz, support RTOS
- Built-in TCP/IP protocol stack
- Built-in TR switch, balun, LNA, power amplifier and matching network
- Built-in PLL, voltage regulator and power supply management components, 802.11b mode +20 dBm output power
- A-MPDU&A-MSDU aggregation and 0.4 μ s guard interval
- WiFi @ 2.4 GHz, supports WPA / WPA2 safe mode
- Support cloud OTA upgrade
- Support STA/AP/STA + AP mode
- Standby power consumption is less than 1.0 mW (DTIM3)
- Operating temperature range: -40 $^{\circ}$ C~125 $^{\circ}$ C

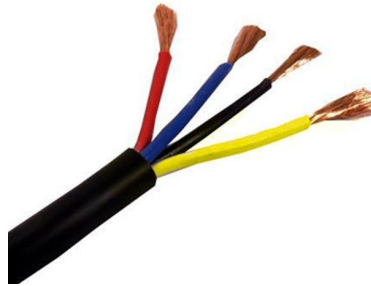
Installation

This system consists of 2 units.

- Microprocessor
- Water Sensor



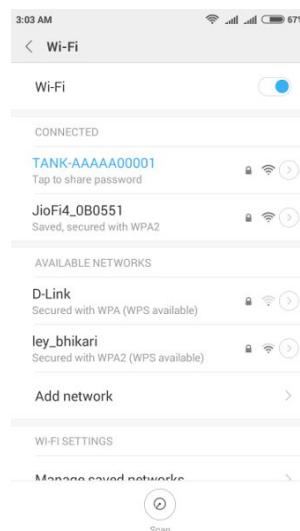
Water Sensor is connected to Microprocessor using 4-core cable.



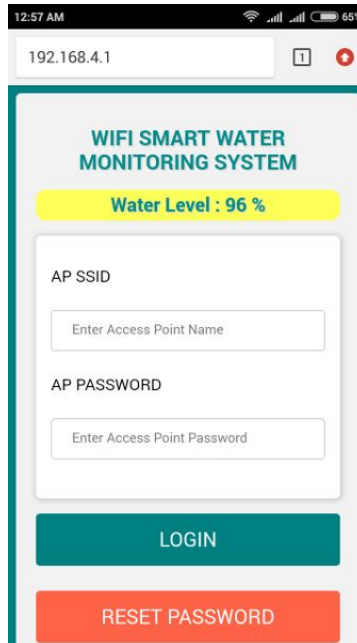
- You can place Microprocessor unit anywhere in your house.
- Water sensor should be attached to your tank lead or cover in a perpendicular direction with tank bottom.
- With this package we have provided 4-core wire of length 30 feet for a duplex apartment. If you want to extend the wire, you can purchase 4-core wire from electric shop and extend your connection.
- To turn off your motor automatically after tank is full. Attach your motor connection to circuit breaker as per shown in diagram.

Device Software Configuration

- Device **AP SSID** and **PASSWORD** is stored in the device **ROM** at the time of manufacturing.
- It will be displayed every time when device starts.
- Using this **SSID** and **Password**, go to WIFI Setting option in your smartphone and connect to device WIFI Network using your smartphone as shown below.



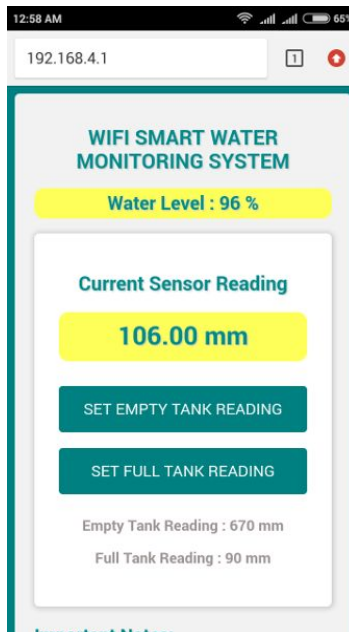
- After connecting, open any browser in your smartphone and type **192.168.4.1** as shown below.



After login Successfully. You will see the following screen having **Water Sensor Reading** with 2 buttons.

1. **SET EMPTY TANK READING**
2. **SET FULL TANK READING**

This 2 settings help device to determine the scanning region in a tank.



Device will scan every time defined region and will display the amount of water in percentage on a LCD screen and on mobile app.



This device will also broadcast change in water level. You can listen this broadcast message in your computer program using Websocket Technique.

How to set EMPTY TANK READING ?

Empty your water tank and refresh the page. You will notice some sensor reading corresponding to empty tank. Click on **SET EMPTY TANK** reading. It will configure the device for Empty tank state.

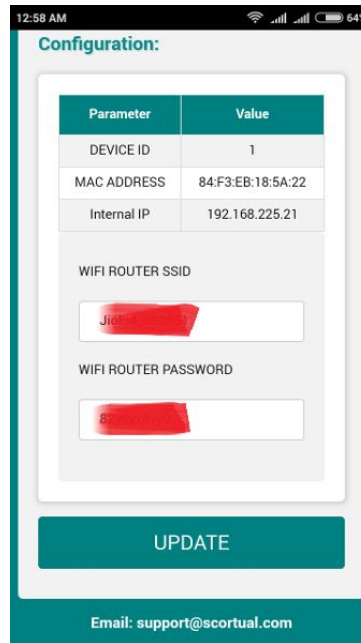
How to set SET FULL TANK READING ?

Full tank reading is by default set to 100 mm. But if you want to set different upper point. Then please fill the water in a tank upto your desired mark. After filling water, refresh the page. You will see the corresponding sensor reading. Click on **SET FULL TANK**. It will configure the device for Empty tank state.

Note: Your Upper tank reading should be greater than 100 mm. Don't set Upper tank reading below 100 mm. Since device uses HIGH FREQUENCY SONAR ECHO method it wont work properly for reading less than 100mm.

Now device basic software configuration is complete and device is ready for use.

Connecting Device to WIFI Router and Internet

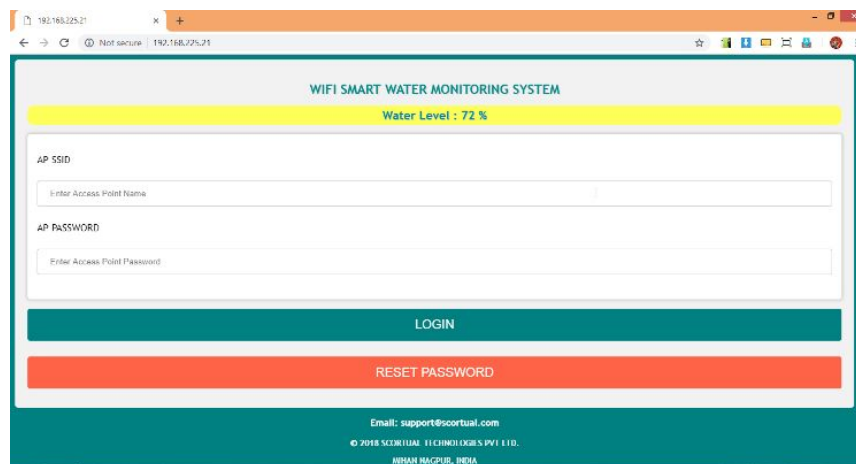


The image shows a smartphone screen with a configuration interface. At the top, the status bar shows the time as 12:58 AM, signal strength, Wi-Fi, and battery at 64%. The main heading is "Configuration:". Below it is a table with two columns: "Parameter" and "Value".

Parameter	Value
DEVICE ID	1
MAC ADDRESS	84:F3:EB:18:5A:22
Internal IP	192.168.225.21

Below the table are two input fields: "WIFI ROUTER SSID" and "WIFI ROUTER PASSWORD". Both fields contain redacted text. At the bottom of the configuration area is a teal "UPDATE" button. Below the button is the email address "Email: support@scortual.com".

- To connect this device to your local wifi router. Enter your WIFI router SSID and Password in the fields and click update. After saving changes, restart the device.
- This device will automatically connect to internet and will display its Internal IP.
- You can easily access the device from your any devices such as Laptop, computer, smartphone or tablet by typing this device IP address in the browser.
- To access this device using external network or from anywhere in the world you can Port forward device Internal IP address from your WIFI Router admin panel settings. This device IP Address remains constant after every start. So you wont feel any problem in accessing it from outer network.



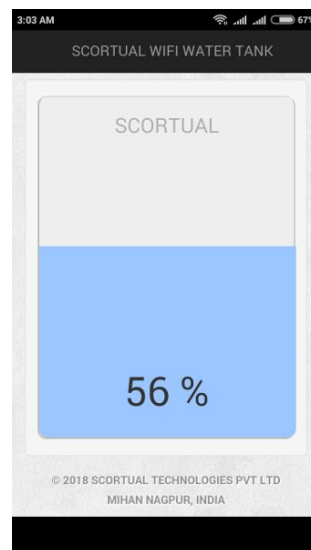
The image shows a web browser window displaying the "WIFI SMART WATER MONITORING SYSTEM" interface. The browser address bar shows "192.168.225.21". The page title is "WIFI SMART WATER MONITORING SYSTEM". Below the title, a yellow banner displays "Water Level : 72 %".

The main content area contains two input fields: "AP SSID" with the placeholder "Enter Access Point Name" and "AP PASSWORD" with the placeholder "Enter Access Point Password". Below these fields are two buttons: a teal "LOGIN" button and a red "RESET PASSWORD" button. At the bottom of the page, the email address "Email: support@scortual.com" is displayed, along with the copyright notice "© 2018 SCORTUAL: ECHINOLOGIES PVT. LTD. BHIMAR BAGPUR, BINA".

Device Security

- To access this WIFI device using your smartphone you will need device AP SSID and PASSWORD. This SSID and PASSWORD is stored in device ROM and it is displayed every time when device starts.
- If you feel someone knows your device password and wants to prevent him from accessing the device then simply click RESET PASSWORD button on the browser and restart the device.
- After resetting the password. That person will not be able to access the device and you can get new password when device will start again.

Reading Device using Mobile App



- You can easily read your WIFI Water Tank anytime using your smartphone.
- Just connect your smartphone to device WIFI network.
- And start our app **SCORTUAL WIFI WATER TANK**.
- App will take about 5-10 sec to connect to device and will display the water level accurately on your phone.

Precautions

- After you here buzzer sound of tank full. Turn off the motor using main switch.
- Device will prevent motor start until it is in active mode.
- As soon as you switch off device motor will start again.

Contact us

For any queries, information, demo or order request. We are always there for you. Reach us by our following contact details.



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