



INFIIOT TECHNOLOGIES
PVT. LTD.

Are you...

Worried about efficient ways to fertilizing & pest protect your plants??

Concerned about
optimizing crop
yeild??

Troubled about
inefficient Water
usage??



Want to take charge and minimize soil degradation??

Introducing the most viable agricultural solution

InfiSense

A Practical Approach to IoT

InfiSense is a one stop solution in agricultural industry solving most of farmer's concerns in sophisticated and practical ways. InfiSense uses a fleet of in-house developed precision sensors and InfiIoT Platform solutions to achieve maximize yeilds, ensure safety & save dollars.

The purpose of the InfiSense Agriculture Kit is to enable you to build your complete IoT solution from sensors and actuators, through a gateway up to cloud and mobile apps just in a matter of a couple of hours and use your solutions for proof-of-concept for your projects.



302, Shubham
Park, Anand Tirth Nagar
Kondhwa Pune-411048



9405435681
7020818025



infiiottechnologies
@gmail.com



www.infiiot.com

Features:

- ✓ Quick and Easy Installation and Setup
- ✓ Configure and control via built-in API's
- ✓ Easy Plug-and-Play Phoenix connection for sensors and actuators
- ✓ Comprehensive working and principle of all sensors
- ✓ Easy to use API's with elaborative example codes
- ✓ On-the-fly InfiIOT Cloud Platform Integration
- ✓ Interfacing of many important sensors and actuators for agricultural IOT
- ✓ Portable Kit- test real field parameters
- ✓ Easy programmable/replaceable microcontroller
- ✓ Interface, indication and controls using Indication Led, button and lcd
- ✓ On-board I2C based LCD module for real-time display of important Data
- ✓ Provision for Deep Sleep modes for real on-field testing of your project.
- ✓ On-board 16-bit Analog-to-Digital Converter for precise measurements.

Sensors & Modules:

- ✓ **InfiSense:**
 - Microcontroller: Tensilica 32-bit RISC CPU Xtensa LX106
 - On-board 16-bit precision Analog to Digital Converter module (ADS1115)
 - Motherboard with in-built display, controls and sensor connectors.
- ✓ **Capacitive Soil Moisture Sensor:**
 - Output Voltage 0-3 Vdc corresponds to 100% to 0% water content in soil
 - Corrosion resistant material gives exact soil water amount for longer life
- ✓ **UV Sensor:**
 - Output Voltage 1-3 Vdc corresponds to 0-15 mW/cm² @365nm wavelength
 - Photodiode Sensitive to UV-A and UV-B useful for keeping out pests
- ✓ **Leaf Sensor (InfiLeaf):**
 - Output Voltage 0-3 Vdc corresponds to 100% to 0% water content in soil
 - Mimics an actual Leaf, along with its heat exchange properties
 - Can sense milligram levels of water condensing on leaf surface to save plant from guttation diseases

- ✓ **Temperature Probe(DS18B20):**
 - Measures -55°C to +125°C with $\pm 0.5^\circ\text{C}$ Accuracy on one-wire interface.
 - Stainless steel tube 6mm diameter to sense soil temperature at depths
 - Monitors soil temperature essential for healthy plant growth
 - Multiple probes interfaced on single pin using unique 64-bit ID burned on-chip
- ✓ **Rain Sensor:**
 - Output Voltage 1-3 Vdc corresponds to dry and wet rain conditions
 - Anti-Oxidation and Anti-Conductivity
 - Provides accurate rain pattern, vital to healthy plants
- ✓ **Air Sensor(BME280):**
 - Outputs: 0 to 100% (+/-3%) R. Humidity, 300-1100hPa (+/-1hPa) Pressure and -40°C to 85°C (+/- 1.0°C) Temperature
 - High Linearity and high accuracy sensor provides long-term stability in parameter readings
 - Accurate Air Parameters helps monitor and predict crop growth, bacterial growth and rate of gas exchange
- ✓ **ADC (ADS1115):**
 - 4 ADC (Analog to Digital) channels
 - 16-bit precision ADC, for precision sensor readings
- ✓ **High Power Control:**
 - Control higher loads with small trigger voltage
 - Provides Isolation to microcontroller from higher loads
- ✓ **Water Submersible Pump:**
 - Submersible pump works on 9Vdc 10mA, with Adjustable flowrate
 - Pumps water to heights upto 5-6 meters, suitable for different terrains

Applications:



Crop Health Monitoring

Greenhouse M&C



Crop Yield Monitoring

Educational Purposes



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