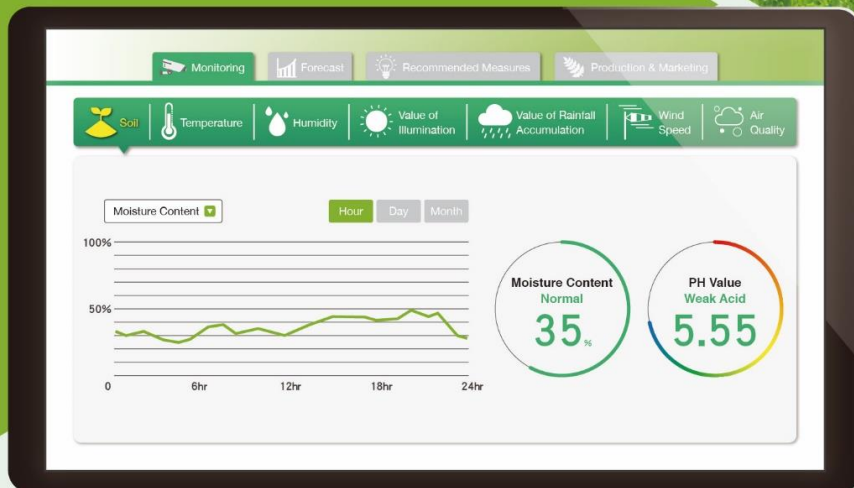


# Internet of Things for Smart Agriculture

Real-time control of Crop Growth Model to create a comfort zone for crops

Realize smart precision farming through **Mobile Internet of Things (NB-IoT / Cat-M1)** and **environmental monitoring instruments**

## Smart Monitoring Diagram



Ambient Temperature and Humidity Monitoring

Soil Monitoring  
(Temperature / Humidity / Electrolyte)

Illumination Monitoring

## What are the advantages ?

- Real-time control of Crop Growth Model to create a comfort zone for crops.
- Collect data through IoT for Smart Agriculture to adjust crop growth environment settings in a timely manner and increase production capacity in a highly efficient manner.
- Reduce workload through IoT for Smart Agriculture to meet the requirements for the best growth condition for crops.

# Equipment Features

## Soil EC / Temp. / Moisture Sensor

This product measures soil conductivity, soil temperature and soil moisture, which can have farmers know the farm status and make better field management.



## Ambient Temp. / Humidity Sensor

This product measures air temperature and relative humidity. The information plays an important role in farming, such as getting effective temperature accumulation which is a basic parameter affecting the growth progress of crops.



## Water Temperature Sensor

This product measures underwater environmental temperature, which can be used in any circumstances monitoring water temperature. And it can also be the reference data to take care of field environment.



## Solar Radiation Sensor

This product measures solar radiation, which helps farmers take control of the basic growth essentials. And it can even foresee when to harvest farmers' crops, allowing them to make better predictions about the distributions of production.



- ▶ State-of-the-art NB-IoT communication network technology.
- ▶ Rated as IP66, "dust tight" and protected against heavy seas or powerful jets of water.
- ▶ Gateway-free solution with easy installation.
- ▶ Multiple types of power supplies available, including battery, adapter or solar cell.

## Outdoor Solar 4G LTE Camera

This product can get real-time or historical crops growth record, pest and disease analysis, and environmental monitoring, and effectively decrease farming management costs by AI. Images can be referred to Good Agricultural Practice for higher price.

- ▶ **Site Security** : Activity zone / AI object detection ; Motion sensors ; Push up notifications ; Built-in 100db alarm
- ▶ **Time lapse Monitoring** Crops monitoring ; Set image acquisition schedule ; Automated daily time-lapse
- ▶ **Surveillance** : AI object recognition ; Full HD pictures ; Video Streaming ; SD card storage ; Night Vision



## Weather Station

Meteorological environment monitoring and control complete solution, powerful and scalable, you can choose a variety of sensors such as air temperature, humidity, wind direction, wind speed, rainfall, illuminance, light radiation, atmospheric pressure, carbon dioxide, VOC, etc. Integrate the collected data through the Internet to the cloud for big data analysis, providing a variety of environmental monitoring applications for agricultural farming and outdoor environments.

- ▶ Users can choose NB-IoT/Cat-M1/4G/WiFi and other communication technologies to connect to cloud services for recording and big data analysis.
- ▶ The control box is IP65 protective box, suitable for all kinds of environments.
- ▶ One controller can connect up to 32 industry standard sensors and provide 4 controllable outputs
- ▶ Solar or mains power can be selected depending on the environment.



# Success Stories



### Miaoli Strawberry

- ▶ Soil EC / Temp. / Moisture Sensor
- ▶ Ambient Temp. / Humidity Sensor



### Changhua Tomato, Piper beetle

- ▶ Weather Station
- ▶ Soil EC / Temp. / Moisture Sensor
- ▶ Ambient Temp. / Humidity Sensor



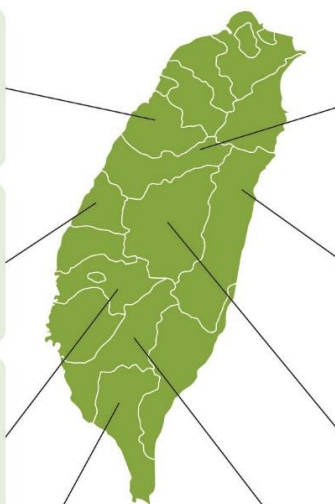
### Chiayi Tomato

- ▶ Weather Station
- ▶ Soil EC / Temp. / Moisture Sensor
- ▶ Ambient Temp. / Humidity Sensor



### Pingtung Orchid

- ▶ Ambient Temp. / Humidity Sensor



### Taichung

Rice, Tea tree, Milk vetch

- ▶ Weather Station
- ▶ Soil EC / Temp. / Moisture Sensor
- ▶ Ambient Temp. / Humidity Sensor



### Hualien Aquaculture

- ▶ Weather Station
- ▶ Water Temperature



### Nantou Tea tree

- ▶ Soil EC / Temp. / Moisture Sensor



### Kaohsiung Green soy beans

- ▶ Weather Station
- ▶ Soil EC / Temp. / Moisture Sensor



More Advantages  
of CHT