IoT-Hardware Platform for Smart Farm

Specification of Wireless Sensor Network for Management and Remote control (WIMARC) system

Features of System

- Internet of Things hardware system
- Data and image collection system
- Backup local data server
- Realtime monitoring and remote control
- Over The Air (OTA)-update

Wireless Sensor Network System Specification

System	Specification	
Main Station (Data acquisition system + Internet Gateway	Data acquisition system Electrical supply : 12 VDC Analog Input : 7 channels, A/D: 10 bit, input voltage : 0-5V Digital Input : 2 channels, input voltage : 0-5V Interface : UART Wireless Communication: RF 433.92 MHz, LORA 433.92 MHz, (LORA 920MHz in test) Number of connected Substation : up to 10	Gateway Electrical supply : 12 VDC Hardware : Raspberry Pi3+ OS : Linux(Stretch)
Substation	Electrical supply : 12 VDC Analog Input : 7 channels, A/D: 10 bit, input voltage : 0-5V Digital Input : 2 channels, input voltage : 0-5V Interface : UART Wireless Communication: RF 433.92 MHz, LORA 433.92 MHz, (LORA 920MHz in test)	

Sensors Specification

Sensors	Specification
Wind speed sensor	Speed Range = 0 ~ 30 M/S
Wind direction sensor	Direction: 0 – 359 degree
Rain gauge	Each 0.2 mm of rain causes one momentary contact closure
Temperature sensor	Temperature: -40 to +120 Celsius
Humidity sensor	Humidity: 0 to 100 %RH
Sunlight intensity sensor	Range: 0 klux – 100klux
Moisture sensor	Range: 0% - 100% Volumetric Moisture Content