AKR

As countries around the world compete for marine resources, human beings are about to face the problem of depletion of resources, so aquaculture technologies has become one of the solutions.

NB-IoT (Narrow Band Internet of Things) is a new narrow-band IoT radio communication technology, an international standard defined by the 3GPP organization (3rd Generation Partnership Project). NB-IoT can be deployed directly on LTE networks through a wide range of deployments around the world, low power, low cost, large-scale network connectivity and frequency bands based on licensed spectrum.
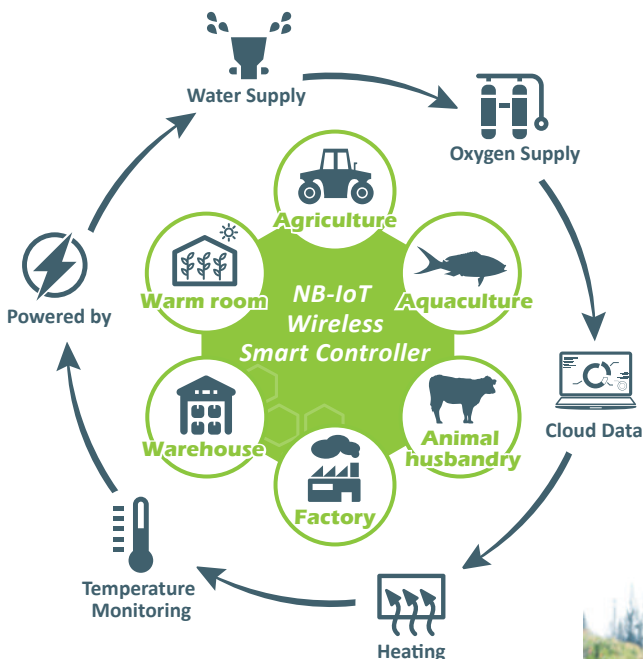
Application of smart farming can reduce manpower, user friendly and reasonable cost, which can meet actual market demand and effectively solve the serious labour shortage of agriculture and aquaculture. NB-IoT is used for network applications such as water quality, water level and water temperature monitoring, providing a complete NB-IoT system solution and promoting the application and development of the wide-area Internet of Things industry.

NB-IoT Wireless Smart Data Acquisition and Supervisory Control

Smart Farming

▶▶ Application

Water Supply
Oxygen Supply
Agriculture
Powered by
Warm room
NB-IoT Wireless Smart Controller
Aquaculture
Cloud Data
Warehouse
Animal husbandry
Factory
Temperature Monitoring
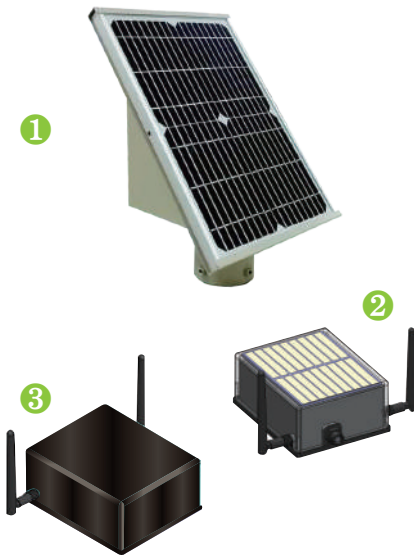Heating

▶▶ Use Environment Characteristics

- NB-IoT and CAT-M1 dual-mode communication interface are optional.
- MQTT protocol architecture software.
- Solar power, open country use, all-in-1, waterproof.
- Service fee are charged via social network service Line Things.
  (including Line Pay + iPass + Line Point)

▶▶ Applications

- Wireless Smart Temperature Sensor (Acquisition/Control/Adjustment/Abnormal Notification)
- Solar power, wireless (NB-IoT) temperature sensing controller.
- Meteorological data acquisition station.
- Electric power monitoring box.
- River water level detection station.
- Groundwater level detection station.
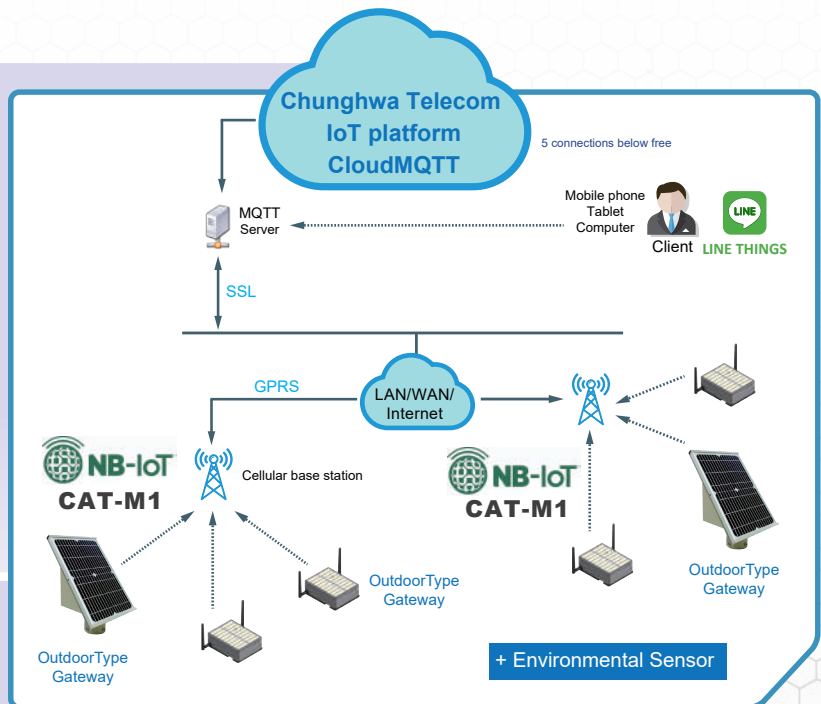
▶▶ Product Features

1. Over limit active data upload.
2. Communication parameters are automatically configured.
3. Mobile device (smart phone) to configure the operating parameters on site, read the temperature value, battery health management and abnormal notification.
4. Can be integrated with Line Things, a mobile application platform, to build a interactive AI applications.
5. Explosion proof certified and International Protection Marking level of IP66 . Optional wall mounting or plug-in mounting.
6. Can be equipped with RS485 communication protocol.
7. Automatic data collection & preservation while the outbound communication is interrupted. Once the communication resumes, it start retransmitting the preserved data.
8. Input：
   - NTC, PT100, PT1000, K type thermocouple temperature sensor.
   - CT current, Voltage Sensor.
   - DO dissolved oxygen, pH, ORP temperature and ORP redox potential.
   - Water level, air Sensor, etc.
9. Remote operation：
   Configure wireless parameters, addresses, and install connectors.
10. Low battery notification.
11. Power supply type (depending on the specific application needs, choose different power supply type)：
    - Battery (Lithium-iron rechargeable)
    - External AC power supply
    - Solar power supply

❶ Large data acquisition and controller (solar).
❷ Environmental data collector (solar).
❸ Environmental data collector (external or battery powered).

▶▶ Control Communication Logic

- Transmits every 6 hours :
  field value, battery status.
- Back-end control panel setting :
  Transmits 1~12H adjustable.
  Abnormal value setting.
- In case of abnormality :
  First output the control signal and report immediately.
- Light signal : working status indication.
- Test reset button

Chunghwa Telecom IoT platform CloudMQTT

5 connections below free

MQTT Server

Mobile phone Tablet Computer

Client LINE THINGS

SSL

GPRS

LAN/WAN/Internet

NB-IoT CAT-M1

Cellular base station

NB-IoT CAT-M1

OutdoorType Gateway

OutdoorType Gateway

OutdoorType Gateway

+ Environmental Sensor

▶▶ Circuit Characteristics

- Overrun active return data.
- Automatic data collection & preservation while the outbound communication is interrupted. Once the communication resumes, it start retransmitting the preserved data.
- Power failure (or low battery) instant notification.
- Explosion proof certified and International Protection Marking level of IP66. Optional wall mounting or plug-in mounting.
- Communication parameters are automatically configured.
- Wide power input : +12V to +24V DC (±10%)

(※ All specifications & features are subject to change without notice)

CANNEX TECHNOLOGY INC.

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Design and manufacture
/ Made in Taiwan

h t t p : // w w w . a k r . c o m . t w
T e l : + 8 8 6 - 4 - 8 6 1 - 3 8 8 3 (R e p) F a x : + 8 8 6 - 4 8 8 2 - 8 2 0 9
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