

AI Image End Node

OVERVIEW:

AIS01 series is a **AI Image End Node**. AIS01 has a **camera and AI processor** in the probe. It can take photo, analyze the photo to get digital reading and send the info to IoT server via **LoRaWAN, NB-IoT** or **CAT-M1** Network.

The Dragino AIS01 series is pre-trained to support image recognized of **water meter, gas meter and power meter**. It can be trained to support more image recognized for different application.

AIS01 series can send the digital reading after recognized and it can also send the original photo via IoT server as well.

It supports **BLE configure** and **wireless OTA update** which make user easy to use.

The Dragino AIS01 is powered by **8500mAh Li-SOCI2 battery** or **solar panel with li-on battery**, it is designed for long-term use up to several years.



Application:



Gas Meter















Water Meter



Electricity Meter

Model Variants

| Variants | AIS01-LB | AIS01-LS | AIS01-NB | AIS01-NS | AIS01-CB | AIS01-CS |
|-----------------------|--|---|--|--|--|---|
| Connectivity |  |  |  |  |  |  |
| Configure Method | TTL, BLE, LoRaWAN | TTL, BLE, LoRaWAN | TTL, BLE, NB-IoT | TTL, BLE, NB-IoT | TTL, BLE, NB-IoT, LTE-M | TTL, BLE, NB-IoT, LTE-M |
| Upgrade Method | TTL, BLE, LoRa | TTL, BLE, LoRa | TTL, BLE | TTL, BLE | TTL, BLE | TTL, BLE |
| Features | <p>Sensor /Probe:</p> <ul style="list-style-type: none"> * AI Image Sensor * Mono: black & white * Angle: 110° * Image size: 64kb * Image resolution: 640x480 * Send image to IoT server * Recognize digits from Image and send data to IoT server * Trained for common reading for Water Meter, Gas Meter, Power Meter <p>General Features:</p> <ul style="list-style-type: none"> * Ultra-low power consumption * Support Bluetooth v5.1 remote configure and OTA update firmware * Uplink on periodically * GNSS for Location Report (for -CB & -CS models only) * Downlink to change configure | | | | | |
| Battery & Power |  * 8500 mAh Li/SOCI2 Battery |  * Solar + 3000 mAh Li-on Battery |  * 8500 mAh Li/SOCI2 Battery |  * Solar + 3000 mAh Li-on Battery |  * 8500 mAh Li/SOCI2 Battery |  * Solar + 3000 mAh Li-on Battery |
| Power Consumption | * Sleep Mode: 5uA @ 3.3v * LoRa Transmit Mode: 125mA @ 20dBm, 82mA @ 14dBm | * Sleep mode: 74uA@3.8V * LoRa Transmit Mode: 206mA@14dBm, 236mA@20dBm | * Sleep mode: 14uA@3.3V * Max Transmit power: 350mA@3.3V | * Sleep mode: 74uA@3.4V * Max Transmit power: 350mA@3.4V | * Sleep mode: 14uA@3.3V * Max Transmit power: 350mA@3.3V | * Sleep mode: 74uA@3.4V * Max Transmit power: 350mA@3.4V |
| Supply Voltage | 2.5v ~ 3.6v | 3.7v ~ 4.2v | 2.5v ~ 3.6v | 3.7v ~ 4.2v | 2.6v ~ 3.6v | 3.7v ~ 4.2v |
| Operating Temperature | -40 ~ 85°C | -40 ~ 85°C | -40 ~ 85°C | -40 ~ 85°C | -40 ~ 85°C | -40 ~ 85°C |

Battery & Enclosure Option:

Li-SOCI2 Battery & Enclosure:



- Li/SOCI2 un-chargeable battery
- Capacity: 8500mAh
- Self-Discharge: <1% / Year @ 25°C
- Max continuously current: 130mA
- Max boost current: 2A, 1 second

Solar Version & Enclosure:



- 3000mAh Re-chargeable battery
- 0.9W on board solar pannel Suitable to used in the place where sun is sufficient



- This icon means support location feature by: GPS/ GLONASS/BDS/Galileo/ QZSS

Wireless Option:



- LoRaWAN 1.0.3 Class A
- Bands: CN470/EU433/KR920/US915/EU868/AS923/AU915/IN865
- OTAA or ABP Mode.
- World Wide Unique LoRaWAN Key
- RX sensitivity: down to -139 dBm.
- Max +22 dBm - 100 mW RF output



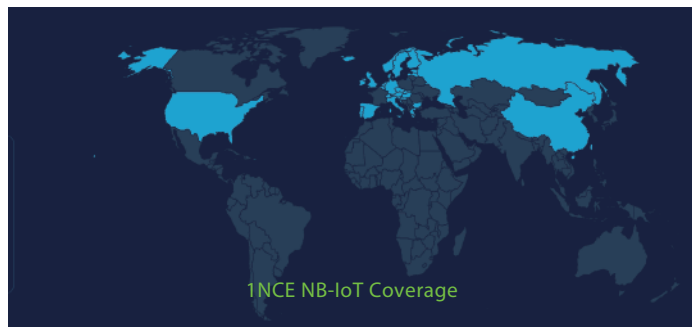
- CAT NB2 Bands:
- For -NB & -NS: B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B28/B66/B70/B85
- For -CB & -CS: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85
- Uplink via MQTT, MQTTs, TCP, UDP or CoAP
- Multiply Sampling and one uplink



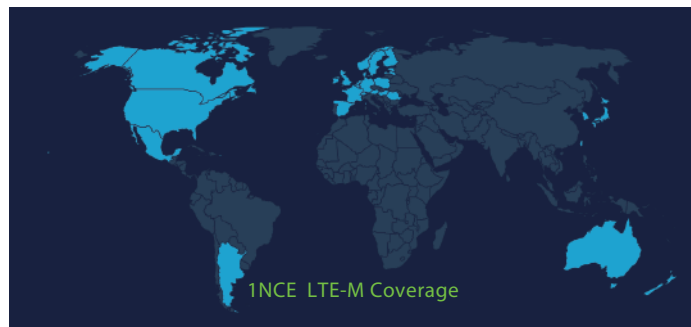
- CAT-M1 / LTE-M Bands: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85
- Uplink via MQTT, MQTTs, TCP, UDP or CoAP
- Multiply Sampling and one uplink

What is 1T version for NB-IoT version?

The 1T version of NB-IoT AI Image End Node is with a) 1NCE SIM Card & 2) ThingsEye Pre-configured.
1NCE SIM Card (10 Years Cellular service with 500MB Data Traffic, Enough for devices to uplink 10 years at 1hour interval).



NB-IoT Network : Austria, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, Estonia, Finland, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Malta, Netherlands, Norway, Portugal, Puerto Rico, Russia, Slovak, Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.



LTE-M Network : Argentina, Austria, Australia, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Great Britain, Hungary, Ireland, Japan, Jersey, Korea, Republic of, Latvia, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Poland, Puerto Rico, Romania, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.

ThingsEye.io platform:

1T version with ThingsEye IoT service pre-installed. This save a lot of work from user side to configure IoT server.

Below is Dash Board is the demo in ThingsEye.io.



Order Info:



Part Number: AIS01-LB-XX

XX: The default frequency band

- XX: Frequency Bands, options: EU433,CN470, EU868,IN865,KR920,AS923,AU915,US915

Part Number: AIS01-LS-XX

XX: The default frequency band

- XX: Frequency Bands, options: EU433,CN470, EU868,IN865,KR920,AS923,AU915,US915



Part Number: AIS01-NB-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1T:** with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

Part Number: AIS01-NS-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1T:** with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server



Part Number: AIS01-CB-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1T:** with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server



Part Number: AIS01-CS-XX

XX:

- **GE:** General version (Exclude SIM card)
- **1T:** with 1NCE* 10 years 500MB SIM card Pre-configure to ThingsEye server

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