

SDI-12 to LoRaWAN/NB-IoT Converter

OVERVIEW:

The Dragino SDI-12 series outdoor end node is a **SDI-12 to LoRaWAN/NB-IoT Converter** designed for Smart Agriculture solution.

The Dragino SDI-12 (Serial Digital Interface at 1200 baud) is an asynchronous serial communications protocol for intelligent sensors that monitor environment data. SDI-12 protocol is widely used in Agriculture sensor and Weather Station sensors.

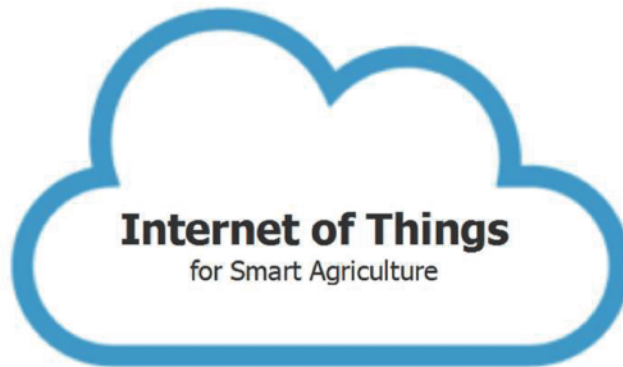
The Dragino SDI-12 series have SDI-12 interface and support 12v output to power external SDI-12 sensor. It can get the environment data from SDI-12 sensor and sends out the data via **LoRaWAN** and **NB-IoT** wireless protocol.

The Dragino SDI-12 series supports **BLE configure** and **OTA update** which make user easy to use.









The Dragino SDI-12 series 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.



Applications:



Model Variants

| Variants | SDI-12-LB | SDI-12-LS | SDI-12-NB | SDI-12-NS |
|-----------------------|--|---|---|---|
| Appearance |  |  |  |  |
| Connectivity |  |  |  |  |
| Configure Method | TTL, BLE, LoRaWAN | TTL, BLE, LoRaWAN | TTL, BLE, NB-IoT | TTL, BLE, NB-IoT |
| Upgrade Method | TTL, BLE, LoRa | TTL, BLE, LoRa | TTL, BLE | TTL, BLE |
| Hardware | MCU: 48Mhz ARM Flash: 256KB RAM: 64KB | MCU: 48Mhz ARM Flash: 256KB RAM: 64KB | MCU: 32Mhz ARM Flash: 196KB SRAM: 20KB | MCU: 32Mhz ARM Flash: 196KB SRAM: 20KB |
| Features | <ul style="list-style-type: none"> * Ultra-low power consumption * Controllable 3.3v, 5v and 12v output to power external sensor * SDI-12 Protocol to connect to SDI-12 Sensor * Support Bluetooth v5.1 remote configure and OTA update firmware * Uplink on periodically * Downlink to change configure | | | |
| Battery & Power | * Li/SOCI2 Battery | * Solar + Li-on Battery | * Li/SOCI2 Battery | * Solar + 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 |
| Supply Voltage | 2.5v ~ 3.6v | 3.7v ~ 4.2v | 2.5v ~ 3.6v | 3.7v ~ 4.2v |
| Operating Temperature | -40 ~ 85°C | -40 ~ 85°C | -40 ~ 85°C | -40 ~ 85°C |

Battery & Enclosure Option:



Li-SOCI2 Battery:

- 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:

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

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



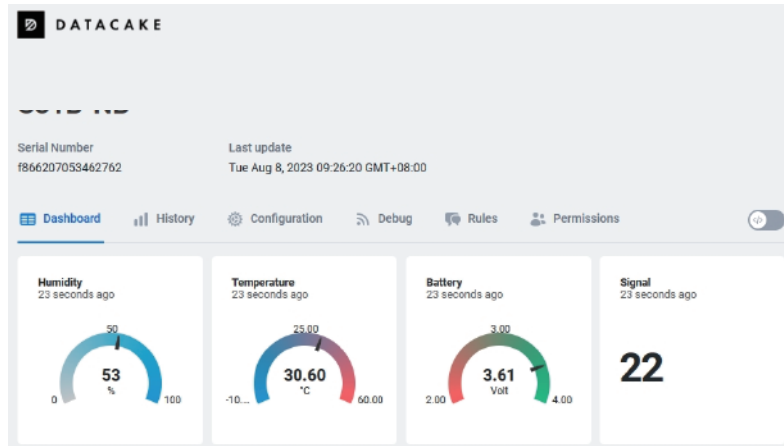
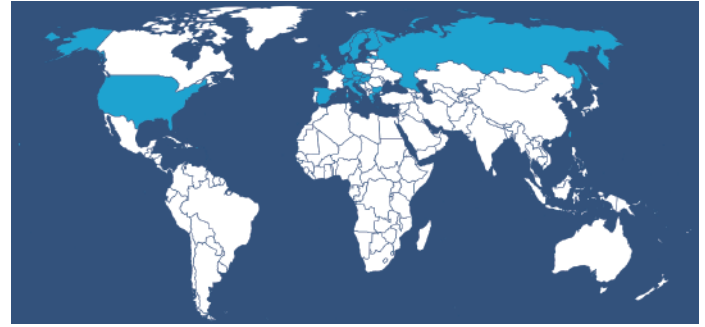
- NB-IoT Bands, B1/B2/B3/B4/B5/B8/B12/B13/B17/B18/B19/B20/B25/B28/B66/B70/B85 @H-FDD
- Uplink via MQTT, MQTTs, TCP, or UDP
- Multiply Sampling and one uplink

What is 1D version for NB-IoT version?

The 1D version of SDI-12 NB-IoT is with 1NCE SIM Card and DataCake IoT Service.

1NCE card provides 10 years lifetime for NB-IoT connection and Includes 500MB data traffic which is enough for 10 years normal uplink for the NB-IoT Sensor.

Coverage of 1NCE card is NB-IoT network coverage: Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Latvia, Malta, Netherlands, Norway, Puerto Rico, Russia, Slovak, Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, USA, US Virgin Islands.



1D version with DataCake 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 DataCake.

Order Info:

Part Number: SDI-12-LB-XX-YY

XX: The default frequency band

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

YY: The grand connector hole size

- M12: M12 hole
- M16: M16 hole

Part Number: SDI-12-NB-XX-YY

XX:

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

YY: The grand connector hole size

- M12: M12 hole
- M16: M16 hole

Part Number: SDI-12-LS-XX-YY

XX: The default frequency band

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

YY: The grand connector hole size

- M12: M12 hole
- M16: M16 hole

Part Number: SDI-12-NS-XX-YY

XX:

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

YY: The grand connector hole size

- M12: M12 hole
- M16: M16 hole