Debut® Series (Satellite)

QUICK START

This guide is for Debut series devices that transmit data via satellites communication. The models include but not limited to MINI (Argos), FLEX M (Argos), TAG (Argos), Badge (Iridium), Badge (Beidou), YACHT, etc.

System Architecture

The flow-chart below shows how data collected by such device is transmitted to you. (Use MINI Argos as an example.)
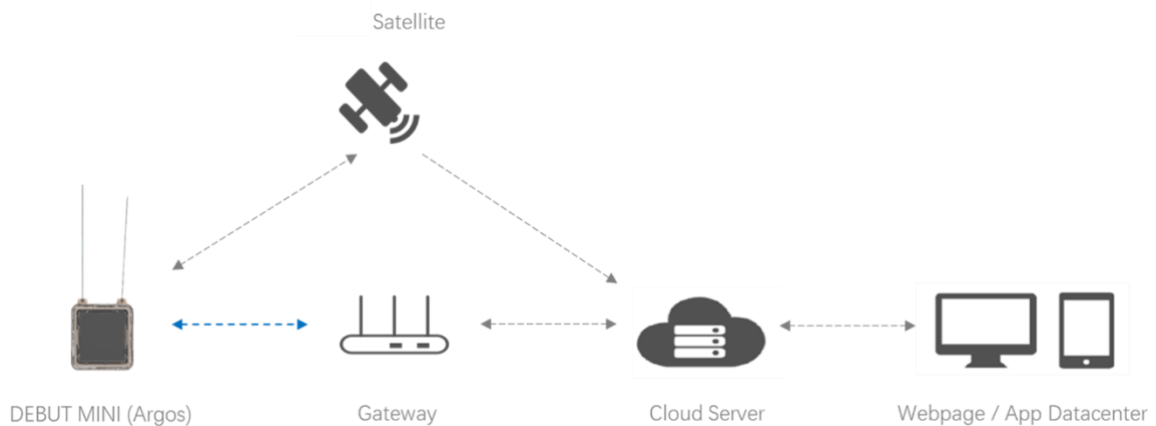
Before Using

Make sure you have an Ecotopia account to log in to Ecotopia App and data center.

*   Ecotopia App: Search "Ecotopia" on App Store or Google Play. This is the App icon:

*   Ecotopia data center: https://www.ecotopiago.com/#/login

You can operate all devices under the account after logging in.

Before test, please switch the device status from the default "**Suspended**" to "**Active**" and subscribe additional data including **ODBA** data if you need.

Getting Started

Step 1: Charge the device (rechargeable devices only)

Place the device under direct sunlight for several hours or longer, depending on the weather.

> Note: Avoid placing the device directly on concrete floor, rock or metal surface, especially in summer, because fast rising temperature of such surface (sometimes could be over 80°C) could cause permanent damage to the device. When deployed on animal, however, the device temperature is influenced by animal body temperature and will not be too high.

Step 2: Turn on the device & deliver settings

We recommend that you always turn on a device with your mobile phone connected to network, especially for the first time of device initialization.

> Note: If you plan to initialize your device in an environment without mobile network, please make sure you have cached all necessary information in your mobile phone beforehand. For details, please read "**Help** > **Data Platform** > **Ecotopia App** > **Cache Management**" on the datacenter (https://www.ecotopiago.com/help/en/#/instruction/App/cache_setting).

(1) Authorize Bluetooth to Ecotopia App, and log in with your account.

(2) Tap INTELINK icon ((※)) on App and wait for 15~ 20 seconds. You will see a list of devices. Those in blue color are detected by App.

(3) Tap to select one device, or tap and hold to select multiple devices. Follow the instructions to turn them on, and deliver the settings after that.

> Note: (1) For some batches of devices, shake a device to see LED blinking (blinking LED light indicates that INTELINK of the device has been activated), then tap INTELINK icon and turn on the device before the LED blinking stops. (2) "Setting delivery" is an important step to initialize your device. By doing this, the device can obtain the fine settings that are suitable for each sub-model. When your App is connected to network, it will obtain the correct settings from the cloud server. Without network connection, the App will use the information you cached in your mobile phone.

Step 3: View the data

Place the device in open space with a sky view, and keep it far from high walls, metal surface, strong magnet, or liquid surface (like wet floor). This provides a favorable environment for GNSS signal receiving and gateway connection.

The device will collect data and transmit data to satellites. Then you can check the data on Ecotopia App and data center.

More operations or information, please refer to **Help** on Ecotopia data center or App.

> Note: Be noted that the device offers more than other way for you to obtain data from the device. Please check "Help > INTELINK > Data synchronization". Data downloaded in this

Before deployment, it is highly suggested to keep the device working for several days. During the period, you can get familiar with the system, get to know the most suitable device settings for local environment and be sure the battery is fully charged before deployment.

We will give you in-time technical support during testing and deployment to ensure the device can work at its best performance.

Advanced Settings of Argos-GNSS Device

Traditional Argos PTTs provide doppler locations, of which the accuracy varies from several hundred meters to several kilometers. Argos GNSS devices provide GNSS locations with much higher accuracy than doppler locations. For such devices, the GNSS module working schedule can be set independently from the Argos transmission schedule.

To better under the device functions, we need to bear in mind some features of the Argos system:

(1) Argos transmission capacity is limited. When a device enjoys sufficient power supply (big battery or good solar charging), it is able to collect hundred pieces of GNSS data per day, which is overwhelming for Argos transmission.

(2) Argos transmission relies on satellite pass, and satellite pass timing varies with latitude. The higher the latitude, the longer the satellite pass periods, thus the more chance for data reception. This means the devices for migrating species should not use a fixed Argos transmission schedule.

(3) Argos satellite reception can be notably affected by weather (e.g., thick cloud could lead to more transmission failures). This means the Argos transmission can fail even during satellite pass period.

(4) Argos satellite will not tell the device whether a piece of data is successfully received or not.

Given the above ground, Debut series Argos-GNSS devices are designed with a scheme described below for researchers to maximum the valid data reception without jeopardizing the device energy balance.

(1) The device is able to use its latest GNSS locations to predict Argos satellite pass. When the timing arrives, the device will make continuous transmissions to the satellites.

(2) The device has an advanced setting called "**GNSS data queue**" which is to help you get more evenly distributed GNSS data.

For example, you set the device to collect GNSS every hour, while at your latitude, the Argos satellite pass happens during 1:10pm~2:50pm and 9pm~11pm. And you set the GNSS data queue to "**8**".

In this situation, when the first satellite pass happens at 1:10pm, the latest 8 pieces of GNSS

data—which should be 6am, 7am, 8am, 9am, 10am, 11am,12am,1pm—will enter the transmission queue. The device will attempt to transmit the GNSS data, one at a time and repeatedly, to the Argos satellites.

Such data queue setting makes sure that the data collected during the blank period (when there's no satellite pass at all) can also have chances to be received.

With appropriate settings and good solar charging conditions, we have seen a lot of our Argos devices uploading over 40 valid GNSS points per day at 38° latitude.

Data Service Fee Management

Data service fee consumption of a device in each month is determined by its device status during that month. To optimize the data service fees for your devices, it is important to manage their device status based on your needs.

In addition, please keep your account balance positive to avoid disruptions to data services. To recharge your data service fee, please contact your sales representative for assistance.

For more info, please read "**Help** > **Device status, data service items and pricing**" on Ecotopia data center.

> Note: Satellite transmission fee for satellite transmission models is priced and collected by satellite service operator.

SATISFACTION GUARANTEE

Druid Technology offers triple satisfaction guarantee to relieve you from any worries.

6-Month Return & Refund (customized products not included)

You can apply for return & refund within 6 months since the date of purchase if you are not satisfied with the device. You will cover data service fee incurred in the period.

Limitations: The device hasn't been deployed, altered or tampered with and should be without any cosmetic damages. It should function properly as remotely tested and confirmed by Druid.

1-Year Limited Warranty

Your device enjoys 1-year limited warranty since the date of purchase. During the period, Druid will repair or replace, depending on the actual case and technical feasibility, any defective devices. You need to return the device to Druid for service.

Limitations: Warranty does not apply to defects resulting from improper maintenance or use [1], physical damage, or operation outside environmental specifications.

Debut Renewal Plan (Optional)

Apart from return & refund and limited warranty, you can purchase Debut Renewal Plan as a lifetime insurance that offers you a new device without condition. You can also purchase renewal plan for the replaced new device. After the service is used, the status of old device will turn to *Terminated*.

[1] Improper maintenance or use may cause permanent damage and affect warranty. Please read the following cautions carefully:

- Keep the surrounding environment temperature of the device under 60℃ in any circumstances. Otherwise, permanent damage may happen to the device;

- Keep the device away from magnetic field or electric field (for example, a transformer);

- Take proper protection measures to prevent the device from falling on hard surfaces;

- Don't dismantle, alter or tamper with the device.

- Be sure to charge the battery periodically (at least 1 day every 2 weeks for models like ULTRA and NANO P1 lite, every 4 weeks for models like NANO/MINI/INTERREX/FLEX II, and every 8~12 weeks for models like FLEX II Argos/FLEX II MAX/FLEX/LEGO, etc.). After that, turn on the device, synchronize data and turn it off for storage. During the process, no need to change device status. This is important to battery maintenance and can affect warranty.

When you dispose your device and/or other batteries, make sure that it is done sustainably.