Product Introduction

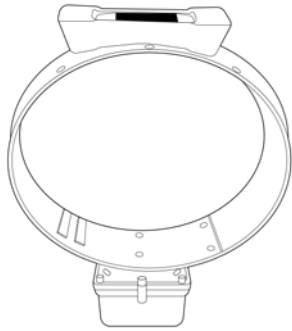# Debut®BADGE CII (Iridium)

BADGE CII (Iridium) is an PMT (Platform Messaging Transceiver) that supports data transmission through the Iridium modules.

It provides GPS data and also equipped with multiple sensors to generate environmental and behavioral data.

Apart from scheduled Iridium transmission, BADGE CII (Iridium) can also transmit data to smart phone or Debut series gateways through patented INTELINK®technology. This enables Tracker recovery as well as the data stored on board, and also in-situ modeling based on real-time raw acceleration data downloading and tagging using our special tool.

BASIC SPECIFICATIONS

Model	BADGE CII (Iridium)
Appearance	
Dimensions (LWD)	109 mm × 56 mm ×35 mm (bandage not included)
Weight	845 g (bandage not included)
Deployment	Collar
Battery Capacity	Charging mode: solar panel Battery type: Lithium polymer battery+Lithium thionyl chloride battery Battery capacity: 2 × 210 mAh (rechargeable)+1900 mAh (primary) Battery overcharge and low battery protection: supported

Working Temperature	-25℃ ~ 60℃
GPS Module	Precision: CEP (50%) 2.5m
Transmission	Band：1616 MHz ~ 1626.5 MHz Rate：2400 bps
Sensors	Light sensor Air pressure and temperature sensor 3-axis acceleration sensor
Data Storage	17,800 Environment data included GPS 107,100 Behaviour data
Firmware Upgrade	Via INTELINK
Working Schedule	Configurable via INTELINK

DATA TYPES

- GPS: longitude, latitude, altitude, altitude (ellipsoid), course, satellite quantity

- ENV: light intensity, temperature, voltage

- BHV: ODBA (overall dynamic body acceleration)

- ACC: x/y/z acceleration data (available only through INTELINK®)

DATA COLLECTION MODES

You can choose from the following two data collection modes, and specify the related parameters to suit the condition and objective of the study.

■ Regular-Interval Mode

- ENV included GPS interval: 5 min ~1 day

- ODBA interval: 10 min/30 min

- ACC interval: 25 Hz, 3 seconds in every 10 min (by default)

Above ranges are selectable on website data platform or App. Contact us if other settings are required.

Sleep Mode

This mode is to deactivate certain type of data collection for:

- a certain period (from minutes to months)

- a regular period each day (up to16 hours)

INTELLIGENT FREQUENCY OPTIMIZATION (BOOST)

The BOOST function intelligently increases the frequency for data collection & transmission when the charging condition is good or the bird is flying.

With BOOST, the device utilizes extra energy complement to record more detailed movement track sand attempts more frequent transmission without manual intervention,keeping long-term energy balance and avoiding the possibility of battery drain caused by radical settings during bad weather.

EXTRA FUNCTIONS brought by INTELINK®

INTELINK®technology enables remote connection to your BADGE CII(Iridium) devices to perform various

operation sand realize many amazing functions.

To establish such connection, you only need an ordinary smart phone or/and a Debut series gateway device.

*Debut gateways could be a HUB, TAG or QUEST. The connection distance is 30~200m depending on environment. For more information about the gateways, please contact Druid or your local distributor.

Tracker Recovery

With ECOTOPIA App, a device and a mobile phone will automatically function as a beacon system. The mobile phone will ring if the device is detected nearby. The closer they are, the louder the ringing sound will be. This provides a convenient way to find lost devices.

Firmware Upgrade& Setting Modification

You can easily upgrade the firmware or change data collection settings and Iridium

transmission schedules for a device nearby using Ecotopia App.

■ Remote Data Downloading

BADGE CII(Iridium) is capable of collecting much more data than the Iridium transmission throughput limitation.

If the animal wearing BADGE CII(Iridium) device goes to somewhere near a Debut gateway*, the data stored in the device memory can be automatically downloaded and sent to the cloud server via network connection of the HUB. Then, the researcher can see the data in their accounts.

■ Raw Acceleration Data Collecting

Raw x/y/z acceleration data could be very useful for behavioral research, especially when the data can be combined with timestamps, GPS, environmental data, and the animal's activity rhythm. However, the raw data can seldom be obtained due to its large size.

With INTELINK, you can not only download the raw data from memory, but also obtain real-time raw acceleration data by connecting a mobile phone to a BADGE device.

■ In-situ Modeling

Duringtheprocessofobtainingreal-timerawdatadescribedasabove, you can also mark the data with behavior tags. Ecotopia App provides comprehensive tools for In-situ modeling, which includes real-time x/y/z acceleration visualization and data downloading, video shooting, and behavior tagging. All these data will be combined under the timestamps and saved for later verification and analysis.

With the help of Druid's AniAct®behavior algorithm platform, you will be able to generate acceleration-based behavior algorithm for different species.

Furthermore, such algorithm can be loaded into the tracker and be conducted on board. Then, the tracker will be able to send back continuous computed result of behavior tags instead of discontinuous raw data. This will expand the data dimensions and bring breakthrough on bird research and ecology conservation.