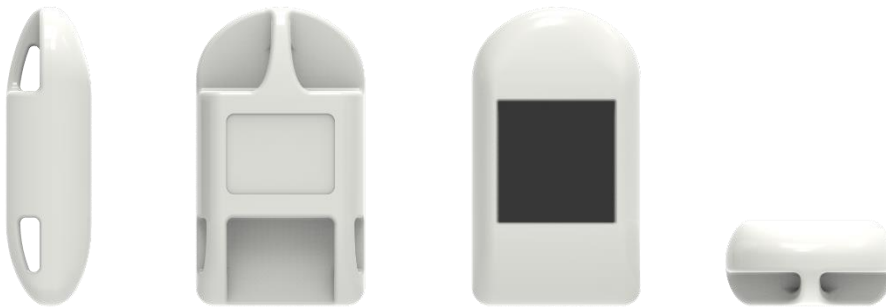# Debut® OMNI 2G

OMNI 2G is a solar-powered GPS-GSM-ACC tracker suitable for backpack deployment.
It is a model customized from the Debut OMNI hardware development platform.

Appearance & Measurement

- Dimensions: 42.7 mm x 24.7 mm x 12.2 mm
- Weight: 8.7±0.2g
- Antenna: Internal
- Housing: 3D printed housing from nylon material, with multiple harness threading holes.

Data Types

- GPS: longitude, latitude, altitude, geoid height, course, satellite quantity
- ENV: voltage, light intensity, temperature
- BHV: ODBA (overall dynamic body acceleration)
- ACC: x/y/z acceleration data (upon request)
- BSS: longitude, latitude, altitude (alternative locating method for extreme situation)

Power Supply

- Solar type: GaAs solar unit (30% efficiency) with good performance under weak light
- Battery type: Lithium polymer rechargeable battery with under-and-over-charge protection
- Battery capacity: 30mAh

Fully charged battery is sufficient for logging over 1000 GPS positions without recharge under optimal GPS satellite view. On-bird tests with 5 min GPS interval and no recharge generate 200 GPS positions in average.

GPS Module

- GPS precision: CEP（50%）5m
- Maximum update rate: 10 Hz

Transmission Module

Band	Uplink（MHz）	Downlink（MHz）	Output Power（dBm）
GSM850	824.2 ~ 848.8	869.2 ~ 893.8	33
EGSM900	890.0 ~ 914.8	935.0 ~ 959.8	33
	880.2 ~ 889.8	925.2 ~ 934.8	33
DCS1800	1710.2 ~ 1784.8	1805.2 ~ 1879.8	30
PCS1900	1850.2 ~ 1909.8	1930.2 ~ 1989.8	30

- Maximum uplink/downlink data rate: 85.6 Kbps/85.6 Kbps
- Global Roaming: Support
- SMS function: Support (upon request)

Data Collection & Transmission Setting:

- Regular-Interval Mode
    - GPS interval: 5 min ~1 day
    - ENV interval: 5 min ~1 day
    - ODBA interval: 10 min/30 min
    - ACC interval: 25 Hz, 3 seconds in every 10 min (by default)
    - Transmission interval: 5 min ~1 day

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

- On-Time Mode
    - Transmission: Up to three times at fixed hours per day (such as 13:00/14:00/18:00)
    - GPS/ENV/BHV: Regular-interval model or on-time model follow each transmission
- 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 (a maximum of 16 hours)

Intelligent Frequency Optimization & Flight Detection (BOOST)

The BOOST function intelligently increases data collection & transmission frequency when the charging condition is good or the bird is flying. The default setting is as below:

- Frequency Optimization: every 10 min/1 min
- Flight Detection: every 20 sec

With BOOST, the device portrays detailed movement tracks without manual intervention and avoids the possibility of battery drain due to radical settings in bad weather.

Data Storage

Logged data will be stored in memory if network is unavailable.

- Flash memory: 16 MB
- Regular data storage: 460 days at default setting (1h GPS+1h ENV+10 min BHV)
- BOOST data storage: 280,000 pieces
- ACC data storage: 28,700 pieces

Operational Environment

- Working temperature: -10°C~60°C
- Waterproof: IP 68

Firmware Upgrade

Over the air (OTA)