MINI UBILINK X1 P1

Product Manual

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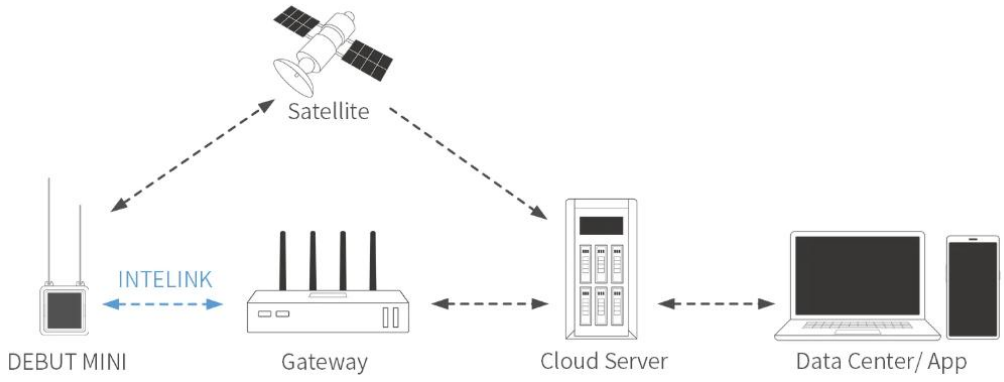
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BASIC INTRODUCTION

DEBUT MINI UBILINK is a low-power GNSS-ACC tracker for wildlife. It is equipped with GNSS, UBILINK, Bluetooth, temperature/pressure sensors, light intensity sensor, accelerometer, and a separate 16 MB storage. It collects animals' location data, ODBA (calculated based on raw acceleration data) and environment data and transmit the data to the satellite using UBILINK.

In addition to scheduled UBILINK transmission, MINI utilizes patented technology to transmit data to smartphones or DEBUT series gateway devices. This facilitates ground search operations, retrieval of data stored onboard (often exceeding the capacity for UBILINK transmission), and enables real-time modeling based on raw acceleration data downloading and tagging using specialized tools.

The illustration below shows how the data is transmitted among MINI UBILINK, the gateway and the cloud server.



A gateway can be DEBUT HUB, DEBUT TAG III or a smartphone with Mootune app installed. These gateways vary in performance

- DEBUT HUB offers the highest performance but comes at a higher cost and is limited to fixed installations.
- DEBUT TAG III is incredibly lightweight, weighing only 30 grams, making it highly portable.
- Smartphones are universally available, while offers the least capability among the three.

You can choose the option that best suits your needs.

KEY FEATURES

- Data collecting and transmitting at customizable intervals

  Setting the working interval from few seconds to 2 days as needed.
- Animal location and movement track display

  Displaying animal locations and movement tracks on the interactive map.
- Behavior analysis

  Analyzing the raw acceleration data through onboard algorithms and output the results, helping you understand the animals' physical signs.
- Global coverage

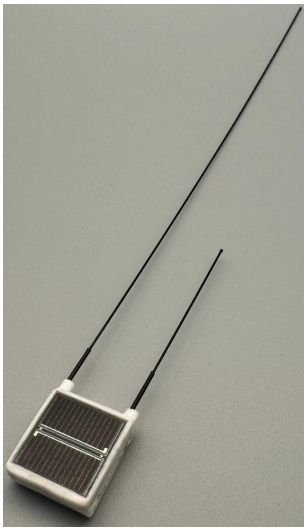
  Transmitting data anywhere on earth with UBILINK satellite transmission module.
- Animal counting

  Counting the animals automatically when covered by a gateway (A gateway is required)
- Group management

  Allocating animals to different groups for easier management.
- Multi-dimension data analysis

  Displaying various combinations of data from different perspectives.

BASIC SPECIFICATIONS

Appearance	
Dimensions	20.6 mm × 20.6 mm × 11.5 mm (antenna not included)
Standard Weight	4.1±0.5 g
Housing/Sealing	Nylon injection molding, available in white or custom colors
Antenna	External titanium alloy, ϕ 0.4 mm, length 54 mm / 185 mm
Battery	37 mAh lithium polymer rechargeable battery
Charging method	Solar panel
Working Temperature	–20°C~60°C
Waterproof	IP 68 (7 ATM for the main part)
Data Storage	Collected data will be stored in memory before transmission. – Flash memory: 16 MB – Regular data storage: 460 days at default setting
Data Type	– GNSS data

	– Environment data (ENV) ▪ Temperature ▪ Air pressure (internal) ▪ Light intensity ▪ Battery voltage – ODBA
Working Schedule	Programmable from 1 min, changeable via INTELINK (Bluetooth)
Firmware Upgrade	Remotely via INTELINK (Bluetooth)

UBILINK X1 MODULE

Frequency	400 MHz
Maximum Output Power	31 dBm
Maximum Data Rate	5 packets / 15 seconds, max. 120 bytes in on packet

LoRa MODULE

Frequency Bands	150~960 MHz
Maximum Output Power	22 dBm
Maximum Data Rate	62.5 kbps

Transmission Distance (ideal condition in field)	10 km

INTELINK MODULE

Frequency	2.4 GHz
Maximum Output Power	8 dBm
Maximum Data Rate	1 Mbps
Maximum Coverage (in ideal environment)	500 m

GPS MODULE

Sensitivity	Tracking: –163 dBm Acquisition: –147 dBm
Time to First Fix	Cold Start: < 28 s Hot Start: 1 s Reacquisition: 1 s
Maximum Update Rate	10 Hz
Precision	Horizontal: < 3 m CEP Speed: 0.1 m / s

SOLAR MODULE

Material	Gallium Arsenide (GaAs)
Size	17mm × 16mm × 1.2mm

Voltage	5 V
Current	13.12 mA
Rated Power	65.62 mW
Efficiency	30%