Internet of Things    Intelligent Life

Lierda Tracker
NB-IoT Tracker

NB-IoT Tracker is very suitable for locating and preventing missing of the old and young, positioning of valuable assets and pets; timely reporting position information to track logistics turnover of circulation boxes, pallets and containers.
Structure

- NB-IoT module
- GPS
- MCU
- PMU

Battery
SENSOR
Button
Ultrasonic welding
Various wearing methods
Cooperating with China Telecom, PICC and local government of Bei Lun District, Lierda provide trackers for old people lost insurance project.
User case 2 Trackers for assets tracking

XX Logistics company use the tracker to trace its trucks.
User case 3 Visitor tracker

- Monitor tracks of the visitors from backend
- With Geo-fencing, you can set the areas that can be entered or not.
- Long battery life.

Visitor management is not difficult any more
User case 4 Trackers for children

Parents can know whether the kid has get on/off the school bus and safely get to school or home.
Main features

1. Support NB network, ultra low power consumption, super long standby, positioning report per hour can last for more than 50 days (24 hours).
2. Ultra small volume  52*37.5*12.5mm matchbox size
3. Support a variety of ways of wearing
4. Support GPS /BeiDou Navigation Satellite System /GLONASS (either two can be chosen)
5. SOS button
6. Chargeable
7. LED light status indication
8. Support iOS and Android APP background management
9. Easy to view tracking, set up electronic fence
10. Multiple trackers can be bound to one APP, and a tracker can be bound by multiple APPs.
Functions introduction

App function introduction
1. Sign up: via e-mail address or cellphone number
2. Device binding: one cellphone can bind to multiple devices, one device can be bound by multiple cellphones
3. Work mode can set up via APP
   Findnow mode: normally not report position, only report when APP send a request
   Tracker mode: timely report GPS position based on report frequency set by APP (range from 5 minutes to 24 hours).
4. Report frequency (7*24*60) can be set via APP.
5. View newest and history position information on APP.
# Hardware Specification

<table>
<thead>
<tr>
<th>Spec.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Frequency</td>
<td>H-FDD;NB05-01(B5 850MHZ);NB08-01(B8 900MHZ);NB86(multi-band)</td>
</tr>
<tr>
<td>Location</td>
<td>BDS/GPS/GLONASS (GPS or GPS+BDS or GLONASS)</td>
</tr>
<tr>
<td>Working voltage</td>
<td>3.8V</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GPS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cold start/Hot start/Recapture</td>
<td>≤35s ≤5s ≤5s</td>
</tr>
<tr>
<td>Cold/Hot capture/recapture/tracking sensitivity</td>
<td>-148dBm -156dBm -160dBm -162dBm</td>
</tr>
<tr>
<td>Location/Speed/timing accuracy</td>
<td>&lt; 5m (1σ) &lt; 0.1 m/s (1σ) &lt; 50 ns (1σ) (Open air)</td>
</tr>
</tbody>
</table>
# Hardware Specification

<table>
<thead>
<tr>
<th>Other spec.</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working temperature</td>
<td>-20°C~60°C</td>
</tr>
<tr>
<td>Humidity</td>
<td>95% ; No condensation</td>
</tr>
<tr>
<td>Battery Capacity, chargeable</td>
<td>590mah ;</td>
</tr>
<tr>
<td>Size</td>
<td>52<em>37</em>12.5 ( mm )</td>
</tr>
<tr>
<td>IP Level</td>
<td>IP66</td>
</tr>
<tr>
<td>Drop without broken</td>
<td>1 meter</td>
</tr>
<tr>
<td>Certificate</td>
<td>3C</td>
</tr>
</tbody>
</table>
Product advantage-Low power consumption

Currently, most of the anti lost products use GPRS for tracking, the power consumption is high which needs to charge in 2-3 days, and the user experience is very bad. Based on HUAWEI Boudica120/150 chip, our NB-IoT tracker can greatly extend standby time, which is a perfect substitution solution that can solve the pian point of constant charging of traditional ones.

<table>
<thead>
<tr>
<th></th>
<th>NB-IoT+GPS</th>
<th>GPRS+GPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby current</td>
<td>5uA</td>
<td>4-5mA</td>
</tr>
<tr>
<td>Emission current</td>
<td>60-200mA</td>
<td>250mA</td>
</tr>
<tr>
<td>Battery capacity</td>
<td>400mAh</td>
<td>400mAh</td>
</tr>
<tr>
<td>Standby time</td>
<td>More than 3 years</td>
<td>150 hours for long-running connection, 280 hours for short-running connection</td>
</tr>
<tr>
<td>GPS position report per hour</td>
<td>50 days</td>
<td>2-3 days</td>
</tr>
<tr>
<td>GPS position report per 24 hours</td>
<td>More than 1 years</td>
<td>timing start-up for about 2 months</td>
</tr>
</tbody>
</table>
Communication links

Different communication links based on various business scenario

1. Connect to application systems via third-party systems (such as HUAWEI OC, China Telecom, China Mobile)

2. UDP directly connects to application systems
APP Screenshot

Sign up page

Binding device

Selecting device

Account management
### APP Screenshot

#### Device Info
- **Priority**: OFF
- **Moving Alarm**: OFF
- **Device Name**: device_19001
- **IMEI**: 865353030019001
- **Battery Level**: 90%
- **Available Days**: 9041 days
- **Status**: ON
- **Binding Time**: 2018-10-09 22:35:13
- **Firmware Version**: 01
- **Binding Role**: Sub-account
- **Signal Strength**: 

#### Configuration Information
- **Tracking**: OFF
- **FindNow**: ON
- **Upload Frequency**: 24 hours
- **Schedule**: OFF

<table>
<thead>
<tr>
<th>Duration</th>
<th>1 min</th>
<th>5 mins</th>
<th>10 mins</th>
<th>15 mins</th>
<th>30 mins</th>
<th>1 hour</th>
<th>2 hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>Duration: 5 days</td>
<td>Duration: 24 days</td>
<td>Duration: 47 days</td>
<td>Duration: 69 days</td>
<td>Duration: 131 days</td>
<td>Duration: 236 days</td>
<td>Duration: 392 days</td>
</tr>
</tbody>
</table>

#### Schedule Select
- **Test**: System mode
- **GO**: System mode
- **F5**: System mode

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**Image 1**: Device info details.
**Image 2**: Configuration information.
**Image 3**: Schedule select options.
**Image 4**: Additional details and location.
Test in Vancouver
Test in China and overseas
Test in China and overseas
1. Personnel management:
Multiple devices can be registered through backend.

2. Device management:
Review information and location of each device.

3. Daily record:
Historic track will be automatically generated into a report.
4. Custom mode:
Report frequency can be customized.

5. Message service:
Alert will be sent by message to related persons when there is an abnormal.

6. Other value added service.
THANK YOU
尽心尽力 成就您我