NAVIECARE

GA5201 User Manual

Version: V1.0.0

Date: 2018-9-27

NAVIECARE LIMITED

1. Description

GA5201 series is a LoRa based (NB-IoT optional) GPS tracking device for cattle tracking with Li-SOCl2 battery. The Collar's GPS location data will uplink to LoRaWAN gateway according to the schedule you choose , The collar is programmed wirelessly by the network server. You can control how often GPS location data are collected, can also remotely command program changes to the fix rate and mortality schedule, fix duration time, and GPS location data transmission interval.

2. Specification

Parameters	Specification
Frequency Band	433~510MHz/868~928MHz , Optional
Battery Specs	38000mah Li – SOCl2 battery, Non rechargeable
Temperature	-45~+75℃
Dimensions	185*57*53mm (Weight 360g)
Communication range	9~12KM LoS 3~6KM in dense environment
Transmit Power	+18dBm
Modulation	LoRa Modulation Patented by Semtech
Protection Requirements	IP67
Collar size	5 cm wide Neoprene Belting
GPS positioning solution	REALTEK MG1009R,Sensitive down to -148dB
GPS accuracy	5M

3. Features

✓ Communicate via LoRa , No SIM card required

✓ Build in pedometer, support step counting .

✓ Geo-fencing

✓ Low power alert , collar cut alert

✓ Communication range 9~12KM LoS ）， 3~6KM in dense environment.

✓ Low power consumption: battery life as long as 3 years @ 1 location per hour

✓ Wide application : can be widely used in cattle, sheep , horses and camels tracking

4. Get to know your cattle tracker

4.1 Buttons

Buttons	Description
Power button	Power on:Press power button 1 second, Yellow LED lit
	Power off: Press power button 3 seconds, Yellow LED extinguish
Reset button	Reset device：Press reset button 3 seconds

4.2 LED Indicator

Green LED indicator--GPS indicator

LED indicator status	Description
Green LED not lit	Power off/Sleeping states
Green LED blinking every 3 seconds	GPS Location failed
Green LED stays on for 5 seconds and then goes out	GPS Location successful

Blue LED indicator--LoRa indicator

LED indicator status	Description
Blue LED not lit	Power off/Sleeping states
Blue LED blinking every 2 seconds	Send network access requirement
Blue blinking quickly	Device failed to connect to LoRaWAN^{TM}network(The buzzer will bleep 2 times)
Blue LED stays on for 5 second and then goes out	Device successfully connected to LoRaWAN^{TM} network
Blue LED blinking 3 times	Data transmit

Yellow LED indicator--Battery indicator

LED indicator status	Description
Yellow LED not lit	Power off/Sleeping states
Yellow LED constantly lit	Battery level of device is enough
Yellow LED blinking every 3 seconds	Battery level of device is low
Yellow LED Blinking quickly	Device is out of battery

5. Installation Guide

5.1 Device installation

Attached tracker to the collar and install on cattle before power on.

a. Avoid all metal environment to make sure device is able to receive GPS signal.

b. Avoid high temperature environment like above the car engine

5.2 Power on

Press power button 1 second to power on the device. The device begins to search GPS signal and

access LoRaWAN^{TM} network in 10 to 40 seconds .

Blue LED stays on for 5 second and then goes out means device successfully connected to LoRaWAN

network.

Green LED stays on for 5 second and then goes out means GPS location successfully .

In Power-on state , an alert is sent to platform when the tracker is removed.

5.3 Power off

Long press power button 3 seconds to power off the device

6. Operation Commands Guide

6.1 Data transmit frequency

● Adaptive mode(Default)

a. Customize data uplink frequency at different periods

eg: Positioning every 2 hours from 8:00 to 22:00; and positioning   every 4 hours from 22 to 8:00

b. Positioning according to the cumulative number of steps:

eg: the device will automatically start positioning when the cumulative number of steps exceed

1200 since last successful positioning.

● Fixed positioning mode

The device uplink data according to a fixed period

If the reporting period >5 minutes, GPS will be closed after successful positioning;

If the reporting period <5 minutes, GPS will keep working.

6.2 Activation method

- **OTAA**(Over-The-Air Activation)

- **ABP**(Activation By Personalisation)

7. Package

Model.No	Package	QTY	Weight	Accessories
GA5201	Giftbox package	1pcs/box	430g	Antenna , Collar, User manual , warranty card