

**Inner Mongolia jishuo technology co., ltd**

# **Specification of bovine rumen capsule**

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## Text revision record

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## 1. Overview

The rumen capsule is a safe and environmentally friendly material designed and composed of circuit boards, chips, sensors, batteries and other components. It is a cylindrical high-performance long-term biometric acquisition equipment which remain in the rumen in all its life. The bio-capsule collect physiological data of cattle in real time, these data will be processed by our AI algorithm and provide different alert like disease, estrus, calving etc. So as to decrease the economic loss and enhance the output of cows milk production. The bio-capsule uses Lora communication technology which is ultra-low power consumption. Its longevity is three to five years.

### product function

Heating monitoring

Pregnancy monitoring,

Calving Prediction

Health monitoring,

Abnormal alert

Typical

Application

/Large-scale pastures management

/Financial insurance (living loan insurance business)

/Beef and milk enterprise brand building

/Feed company (Formula optimization)

/Veterinary (disease prevention and control), veterinary medicine (special medicine)

/Breeding company

/Research Institute (Scientific Research)

Rumen capsule model lists:

| seria | model   | describe                             | remarks |
|-------|---------|--------------------------------------|---------|
| 1     | JS-0130 | 130.5*32mm service life of 5 years   |         |
| 2     | JS-0103 | 103.5*28.5mm service life of 3 years |         |

## 2. product features

- ✓ Collect accurate biological data of cattles
- ✓ Fully traceable and comparable
- ✓ Traceable drinking behavior and calving status
- ✓ Continuously measure inner body temperature without external environment affected
- ✓ Easy injection into the rumen with scientific shape
- ✓ Corrosion free with the special shell material.
- ✓ UV-resistant, impact-resistant

## 3. Product appearance



## 4. Technical specification parameters

| project                       | Specification/function description                                                                                                     |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|
| Communication mode            | LoRaWAN                                                                                                                                |
| Supportable frequency band    | 915 Mhz                                                                                                                                |
| LoRa output power             | Type (SF9) : 16.30dBm@915MHz ;                                                                                                         |
| Communication distance        | After being put into the rumen, the farthest distance from the gateway is 200- 500m<br>(without interference in the open environment). |
| Temperature sampling accuracy | +/-0.1 C to monitor the internal environment temperature of rumen                                                                      |
| Motion sensor                 | Monitor rumen peristalsis state                                                                                                        |
| Data upload frequency         | Set as required (15 minutes )                                                                                                          |
| Operating current             | quiescent 22uA average:65uA/h                                                                                                          |
| Average power consumption     | < 3.3mW                                                                                                                                |
| Working temperature           | 23~45 ° C (Working temperature in rumen ,It can work according to the normal data upload frequency)                                    |
| Storage temperature           | -40 ° C~22 ° C (Optimum storage temperature outside rumen ,Power saving mode)                                                          |
| measure                       | JS-0130: 130.5*32mm/ JS-0103: 103.5*28.5mm                                                                                             |
| weight                        | 120g-200g                                                                                                                              |
|                               | Comply with RoHs and GB4806.7 (national food safety standard plastic materials and products for food contact)                          |

## 5 Operating instructions

### 5.1 Storage requirements

Store in an environment with a temperature of -40 ° C~24 ° C

Do not open the sealed bottle cap before using



## 5.2 Preparation of bovine rumen capsule

- 1) LORA gateway (prepare the corresponding quantity according to the range and layout).
- 2) SIM card/cable (numbers equal to gateways).
- 3) Rumen capsules (prepared according to the planned quantity and do online testing in the company in advance).
- 4) Capsule gun (no less than two).
- 5) Two veterinarians
- 6) Communicate with ranch to determine the cattles in advance, It is best to place the confirmed cattle in a shed, which is convenient for later management

## 5.3 Inject rumen capsule

- 1) Equipment in place: capsules, gateways, screwdrivers, feeding guns, alcohol, disinfection equipment, disposable gloves, protective clothing, capsule delivery registration form, pens (as appropriate).
- 2) Personnel in place: 2 veterinarians and 1-2 recorders. personnel
- 3) Set up the gateway according to the planned layout.
- 4) Sterilize the balling gun after every injection to avoid the cross infection.
- 5) Log in to the the ranch administrator account with your mobile phone, and scan the QR code of the bio-capsule through the APP to add and save the identification number corresponding to the ear number of the cow,so as to realize the one-to-one correspondence between cows and capsules.
- 6) Take photos of bio-capsules with the numbers of cattle of cattle ear for later verification.
- 7) Confirm that the number of bio-capsules to be injection is the same as the number of cattle ,check the number of capsules on the health management platform and whether they are normal,and confirm that the injection is completed.

## 6. package

| Name                     | Type                        | Quantity | Dimension                    | Carton size       | Carton quantity |
|--------------------------|-----------------------------|----------|------------------------------|-------------------|-----------------|
| rumen capsule<br>JS0130  | Sealed bottle<br>+equipment | 1 /1     | Length 140* Diameter 40(mm)  | 36.9*33*18.9(cm ) | 30 pcs/carton   |
| rumen capsule<br>JS-0103 | Sealed bottle<br>+equipment | 1 /1     | Length 120 * diameter 40(mm) | 36.5*32.2* 27(cm) | 60 pcs/carton   |

## 7. contact us

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### FCC Warning:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.