AP-6

User Manual

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IMPORTANT!

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- The product is used in accordance with the instructions for use.

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- Malfunction or damage caused by improper operation or repair by unqualified or unauthorized service people.
- Malfunction of the instrument or part whose serial number is not legible enough.
- Others not caused by instrument or part itself.

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Preface

Manual Purpose

This manual contains the instructions necessary to operate the product safely and in accordance with its function and intended use. Observance of this manual is a prerequisite for proper product performance and correct operation and ensures patient and operator safety.
This manual is based on the maximum configuration and therefore some contents may not apply to your product. If you have any question, please contact us.
This manual is an integral part of the product. It should always be kept close to the equipment so that it can be obtained conveniently when needed.

Intended Audience

This manual is geared for clinical professionals who are expected to have a working knowledge of medical procedures, practices and terminology as required for monitoring of critically ill patients.

Illustrations

All illustrations in this manual serve as examples only. They may not necessarily reflect the setup or data displayed on your equipment.

Conventions

- ***Italic text*** is used in this manual to quote the referenced chapters or sections.
- **Bold text** is used to indicate the screen texts.
- → is used to indicate operational procedures.

Contents

1 Product Overview

1.1 Intended Use

This product is applicable to the wireless access point where the telemetry monitoring device connects to the central monitoring system.
The product is intended to be used in animal medical institutions, such as wards, postoperative observation rooms, and ICU/CCU.

1.2 Appearance

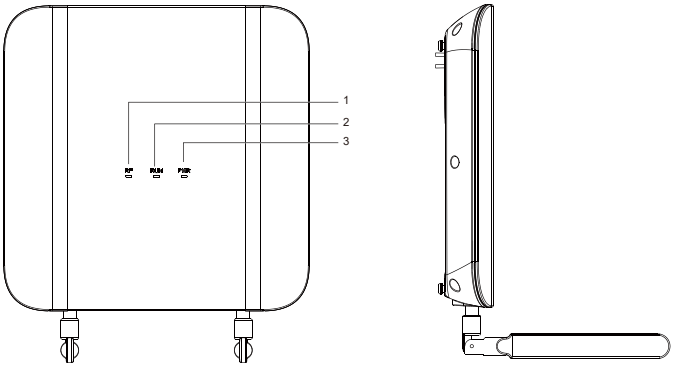

Figure 1 Front and Side view

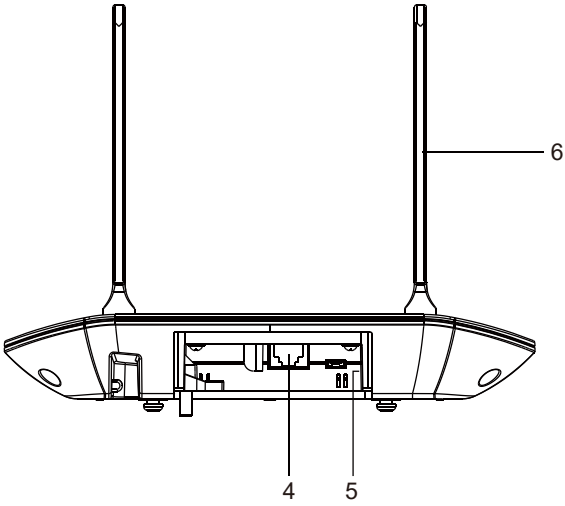

Figure 2 Back View

No.	Components	Description
1.	RF indicator	For details, see "."1.3 Indicator Status
2.	Run indicator	For details, see "."1.3 Indicator Status
3.	PWR indicatotheR indtheindicatorpower:	For details, see "."1.3 Indicator Status
4.	LAN port	For POE input power supply and Ethernet communication
5.	Key	In the connected switch state, press and hold the key to restore the AP to the default network configuration.
6.	Antenna	Used for communication with the telemetry transmitter, sending and receiving data.

1.3 Indicator Status

The indicator status is stable after AP power-on. The color change is as follows:

Indicator name	Description
PWR indicator	AP power connection: ■ On: Steady green ■ Off: Off

Indicator name	Description
	AP power disconnection: ■ On: Off ■ Off: Off
RF indicator (Load indicator)	To connect the telemetry transmitter: ■ On: Steady blue ■ Off: Off
	Not connecting the telemetry transmitter: ■ On: Steady green ■ Off: Off
Run indi:ator (Status indicator)	DHCP failure: ■ On: Steady red ■ Off: Steady red
	Connection with ACconnected ■ On: Steady red ■ Off: Steady red
	AC Connected Successfullswitch ■ On: Steady green ■ Off: Off
	Power-on self-test failed ■ On: Steady red ■ Off: Steady red

2 Getting Started

2.1 Environmental Requirements

The operating environment of the equipment must comply with the environmental specifications of the telemetry monitoring system for livestock use. Avoid noise, vibration, dust, corrosive, flammable and explosive substances.
After the installation of this device is completed, it is forbidden to transfer the device to another environment to avoid that the device cannot work normally due to environmental reasons. To transfer the device, please contact the service engineer or your agent.

2.2 Power Supply Mode

The device is powered by POE through a switch and is connected to the switch using a network cable.
Input voltage: 36-57 V DC
Input current: 0.35-0.1 A

2.1 Connection

See the AC Configuration Tool Installation and Use Guide and Wireless Survey Tool Installation and Use Guide.

2.2 Startup

After connecting to a switch that supports POE power supply, the device automatically starts up. After startup, the LED on the front of the device flashes and the status of the LED is red in the middle and green on both sides.

2.3 Work Mode

The device can operate in two modes:

- Normal work mode: Run indicator: Green. In this mode, the AP provides hotspots for connection. The user uses the TMS30 Vet and TMS30A Vet to

connect the AP, and the AP transmits the wireless received data to the central monitoring system through a network cable.

- Abnormal mode: The RUN indicator is red. In this mode, the AP cannot connect to the telemetry monitoring device. The user needs to configure the channel and SSID in the AC configuration tool and turn on the RF switch.

3 Networked Monitoring

This device is connected to the CMS through a switch and AC. After the CMS is connected, the real-time data detected on the telemetry box will be uploaded to the CMS through this device and displayed on relevant screens of the CMS.

4 Troubleshooting

The following table lists some of the most common failures that may occur with this device. If the problem persists, contact our customer service engineer or your local distributor.

Symptom	Possible Cause	Improvement Measures
The startup indicator is off.	■ The POE power supply of the exchanger verification ■ Network cable failure	1. Replace thSSIDsettingidoesnotmatchthatthetelemetrybox 2. Replace the network cable.
The telemetry box cannot be connected in Work Mode mode.	■ There is interference from other devices of the same frequency band in the operating environment. ■ Thdistancebetween of AP does not match that of the telemetry boxAPtoolong,resultingtoolowoftelemetrybox.	1. Turn off other devices in the current environment. 2. Restart the telemetry box.
The CMS data is disconnected continuously.	■ There is interference from other devices of the same frequency band in the operating environment. ■ The distance between the telemetry box and the AP is too long, resulting in too low Signal Level of the telemetry bonormal	1. Turn off other devices in the current environment. 2. Pport the telemetry box close to the AP to check whether it is normal.

5 Product Specifications

5.1 Product Classification

Degree of protection against electrical shock	Information technology equipment, class III
Degree of protection against harmful ingress of water	IPX1

5.2 Environmental Specifications

Item	Operating Environment	Storage Conditions
Temperature	0 °C ~ 40 °C	-20 °C ~ 60 °C
Relative Humidity(Non-condensing)	15% ~ 95%	10% ~ 95%
Barometric Pressure	57.0 kPa ~ 107.4 kPa	16.0 kPa ~ 107.4 kPa

5.3 Power Specifications

Input voltage	36-57V DC
Input current	0.35-0.1 A and POE power supply

5.4 Physical Specifications

Components	Weight	Size
AP	≤ 1000g	≤ 300 mm X 300 mm X 60 mm

5.5 Hardware Specifications

Key	
Reset key	1
External interfaces	

LAN port	1
Micro USB Interface	1
Antenna	2

5.6 WMTS Specifications

Protocol	Private protocol
Operating frequency	608~ 630MHz
Data Security	Private protocol
Transmission Delay	Data delay of the telemetry transmitter transmitting to central monitoring system: ≤ 3 s
System capacity	Maximum capacity in single AP:: 3 leads, 16 sets
Wireless coexistence	The TMS30 Vet and its co-channel interference power works properly when the value is -85 dBm. The TMS30 Vet and its adjacent channel interference power works properly at -40 dBm.
Network interruption alarm	When the network is interrupted, the CMS triggers a related alarm no more than 8s. After the network recovers, the wireless connection can be restored automatically.

6 EMC and Radio Management Compliance

See ***Veterinary Telemetry System Operator's Manual***.

Caution:

This device complies with Part 15 and Part 95 of the FCC rules and Industry Canada license-exempt RSS standard(s). 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. Any changes or modifications to this equipment not expressly approved by Shenzhen Mindray Animal Medical Technology Co., Ltd. may cause harmful radio frequency interference and void your authority to operate this equipment.

Installation of this telemetry device is permitted in hospitals and health care facilities only. This device shall not be operated in mobile vehicles (including ambulances and other vehicles associated with health care facilities). The installer/user of this device shall ensure that it is at least 80 km from the radio astronomy observatories listed below.
(i) National Astronomy and Ionosphere Center, Arecibo, Puerto Rico: 18° －20′ －38.28′ North Latitude, 66° －45′ －09.42′ West Longitude;
(ii) National Radio Astronomy Observatory, Socorro, New Mexico: 34° －04′ －43′ North Latitude, 107° －37′ －04′ West Longitude; or
(iii) National Radio Astronomy Observatory, Green Bank, West Virginia: 38° －26′ －08′ North Latitude, 79° －49′ －42′ West Longitude.
For medical telemetry systems not meeting this 80 km separation (e.g. the Okanagan Valley, British Columbia) the installer/ user must coordinate with, and obtain the written concurrence of, the National Science Foundation (NSF) before the equipment can be installed or operated. The National Science Foundation (NSF) point of contact for coordination is: Division of Astronomical Sciences, Electromagnetic Spectrum Management Unit, 2415 Eisenhower Avenue, Alexandria, VA 22314; Email: esm@nsf.gov.

The manufacturer is not responsible for any radio or TV interference caused by unauthorized modifications or change to this equipment. Such modifications or change could void the user’s authority to operate the equipment.
This radio transmitter (identify the device by certification number or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 and Part 95 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.

The device has been evaluated to meet general RF exposure requirement.

To maintain compliance with FCC's RF exposure guidelines, this equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.