

# H2-1

## HUNTER series

### 20KM-Class Standard Edition

### Technical specification V1.0



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## Catalogue

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## Introduction

Please read this article carefully to ensure proper use of the product, and failure to follow and operate in accordance with the instructions in this manual may damage the product. Do not disassemble or install the video& data transmission module by yourself. Due to our inability to control the specific use, installation, modification and improper use of users, our company will not bear the corresponding loss and compensation liability for the direct and indirect loss or damage caused by the above. We are not responsible for any indirect or direct loss or injury caused by the use of this product.

# 1. Packing list

| Name×Number                            | Physical picture  | Accessory  |
|--|---|--|
| HUNTER 20KM-class standard edition × 2 |  |  |
| 60cm 2.4G fiberglass antenna × 2       |  |  or  |
| Sky end glue stick antenna × 2         |  |  |
| 3pin test cable×2                      | /   |  |
| TTL to USB configuration cable ×1      | /   |  |
| Micro USB configuration cable × 1      | /   |  |

Optional\*(One out of three)

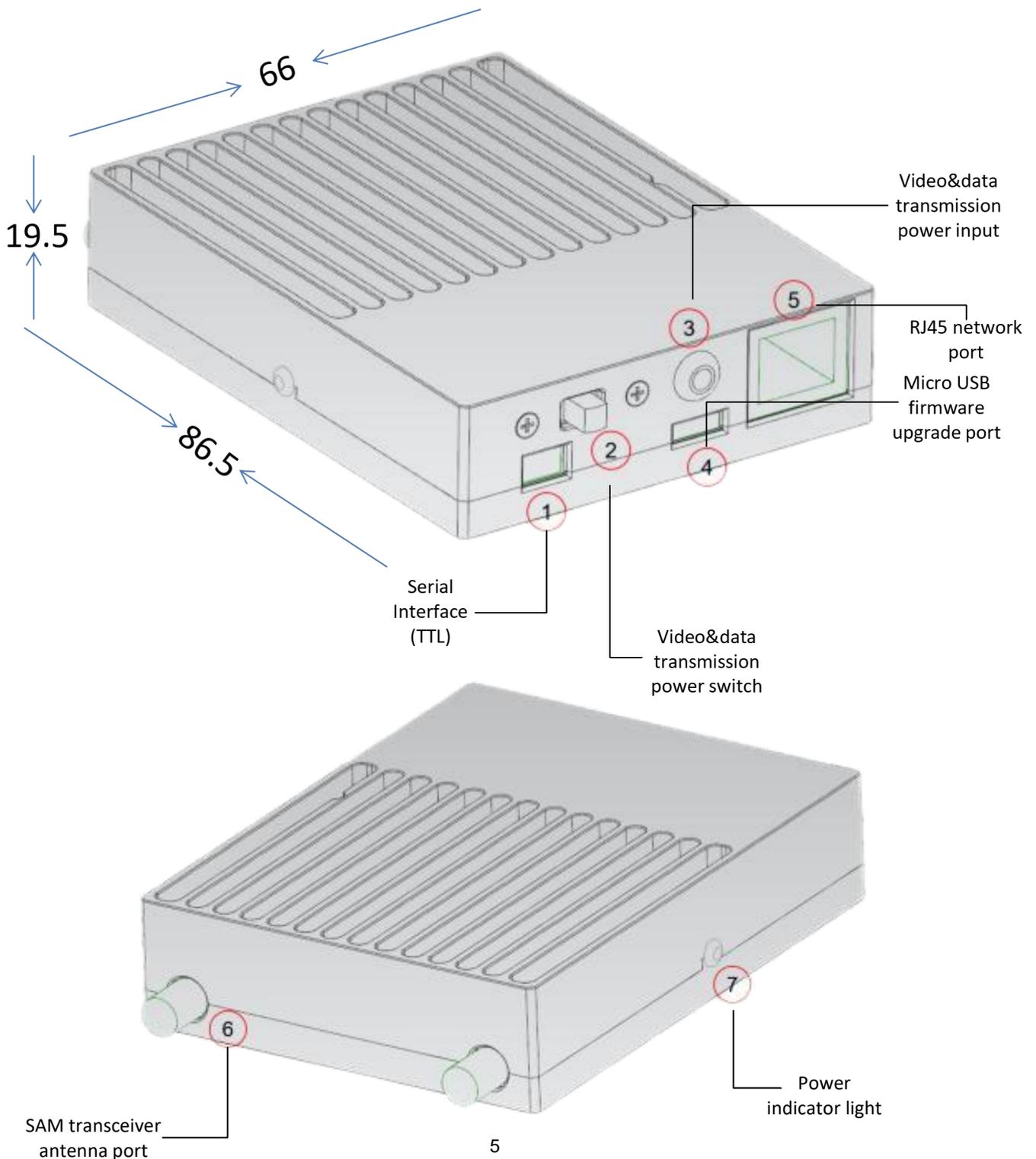
| Name×Number                                  | Physical picture  | Accessory  |
|--|---|--|
| 1.25m fiberglass omnidirectional antenna x 1 |  |   |
| 1.5m fiberglass omnidirectional antenna x 1  |  |   |
| 1.8m fiberglass omnidirectional antenna x 1  |  |  and  |

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## 2. Connection guide

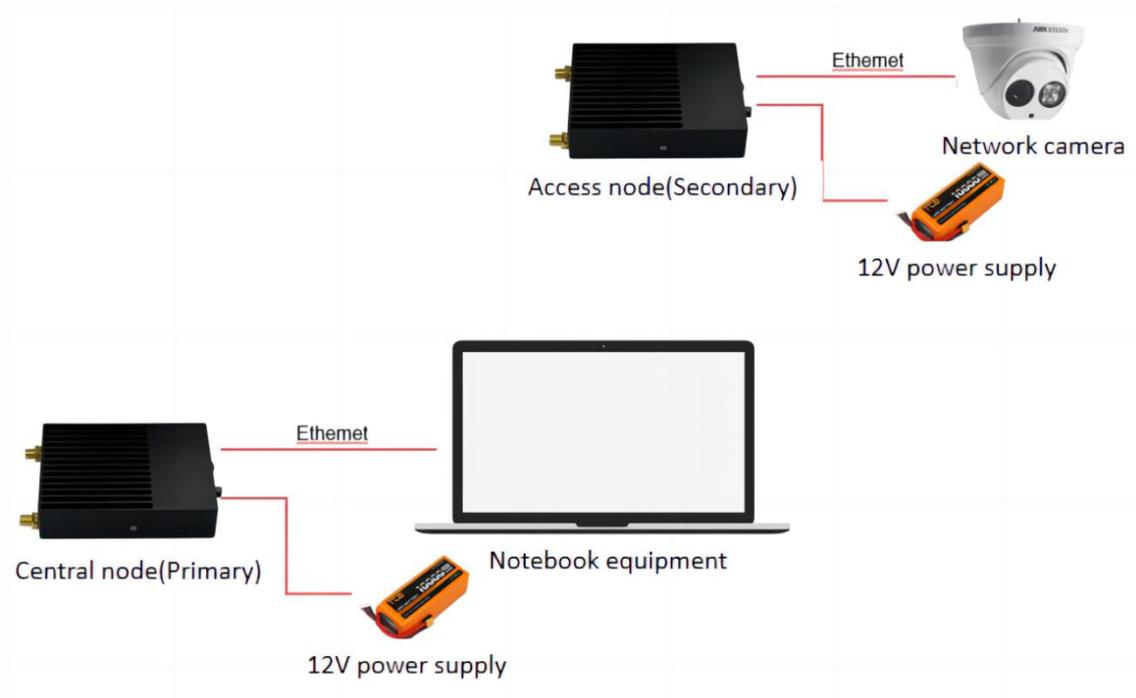
### 2.1 Dimension diagram and interface definition

Unit: mm



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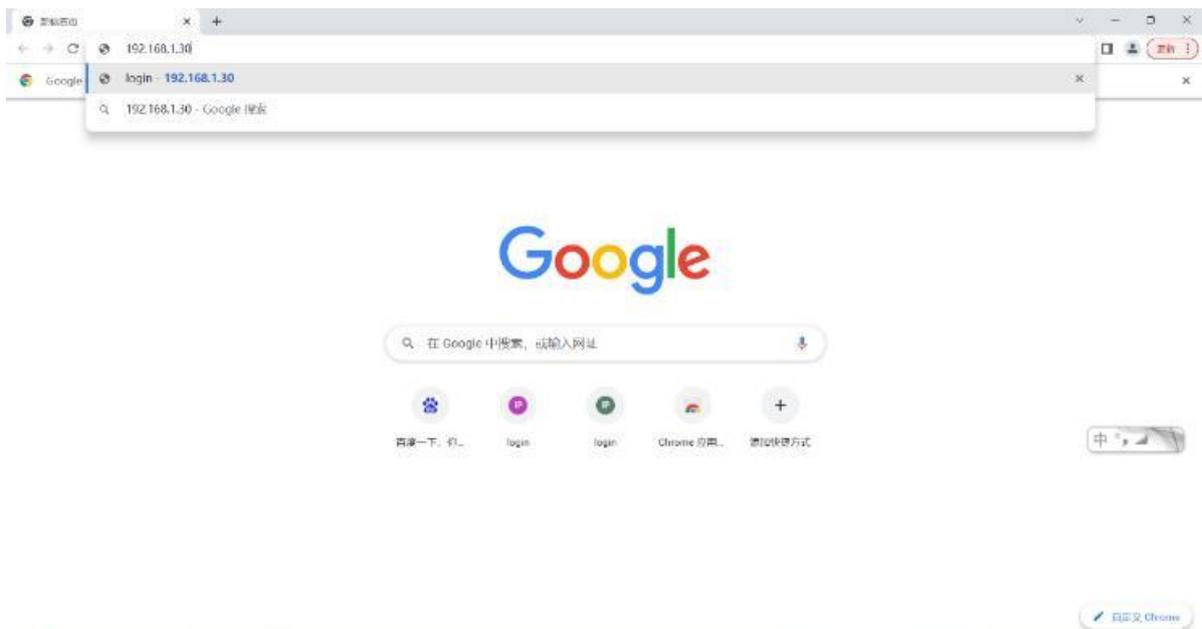
## 2.2 Connection diagram



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## 3. Modify settings on the web page

3.1 Open the browser web page and enter the IP address of the video transmission module



3.2 Log with an administrator ID and password

Account number: admin123 Password: admin123

### Log in

Account number

Password

[Change password](#)

[Administrator login](#)

Powered by @ 2015

[简体](#) [繁體](#) [Engilsh](#)

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The image shows a web-based login interface for an administrator. It features a title bar 'Administrator Login' with a light gray background. Below the title bar, there are two input fields: 'Administrator account' and 'Administrator password'. A 'Log in' button is positioned below the password field. At the bottom of the form, there is a copyright notice 'Powered by @ 2019' and three language links: '简体', '繁體', and 'English'.

## 3.3 Debug switch

### 3.3.1 Turn on/off the device

A vertical navigation menu with five items: 'Debug switch', 'Turn on/off the device', 'Restart the device', 'Secret key device', and 'Master-slave setup'. The 'Debug switch' item is highlighted with a blue background and a white border.

#### Modem switch configuration

A dialog box titled 'Modem switch configuration'. It contains the text 'Debug switch' and 'Current status: [on]'. To the right of the status text are two buttons: 'Selection operation' and 'OK'.

### 3.3.2 Restart the device

A vertical navigation menu with five items: 'Debug switch', 'Turn on/off the device', 'Restart the device', 'Secret key device', and 'Master-slave setup'. The 'Restart the device' item is highlighted with a blue background and a white border.

#### Modem restart

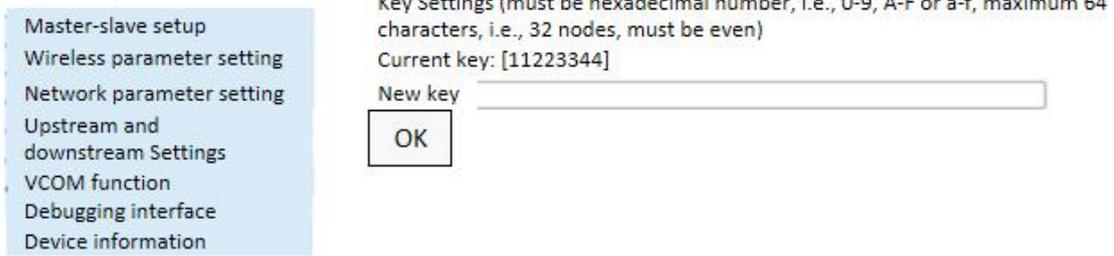
A dialog box titled 'Modem restart'. It contains the text 'Restart the device' and 'Current status: [on]'. To the right of the status text is a button labeled 'Restart the device'.

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## 3.4 Secret key setting

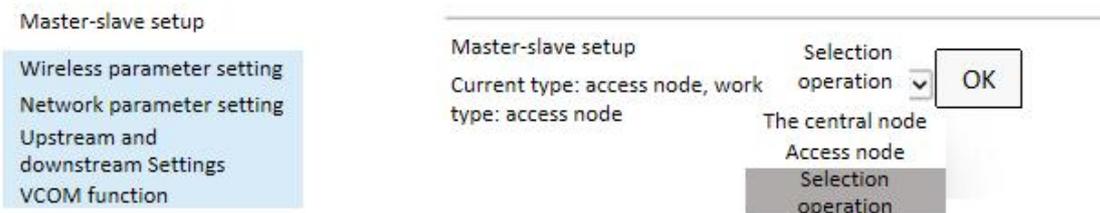
Set the central node and access node to be connected with the same key, and the default key is 11223344. Generally, users are not advised to change the key, and the pair has been made before delivery. It should be noted that if a user changes the key of one device, the corresponding device needs to be changed to the same key before chain building decryption. Click the input window, enter the customized key, and click OK. Wait about 3 seconds, restart the device, and enter the screen again to verify whether the change is successful.

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## 3.5 Master-slave setup

Set the central node and access node. There can only be one central point in a LAN, but there can be multiple access points. The center point and all the access points can communicate with each other, and the access points and the access points can also communicate with each other.

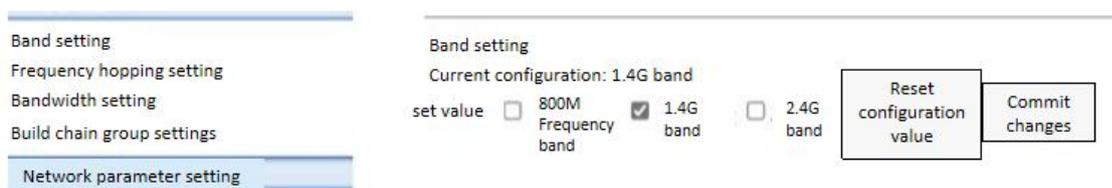


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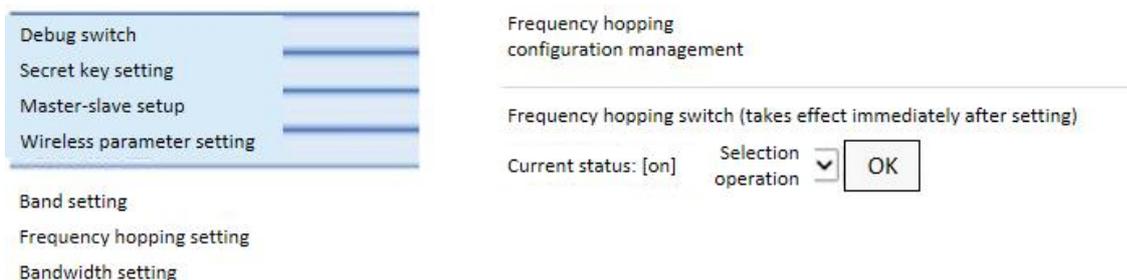
## 3.6 Wireless parameter settings

### 3.6.1 Frequency band setting

The frequency band cannot be changed for the time being



### 3.6.2 Frequency hopping setting



### 3.6.3 Bandwidth setting

3M, 5M, 10M, 15M, 20M(The 15M bandwidth cannot be changed). Adjust the channel bandwidth based on transmission requirements. Wider bandwidth can provide higher transmission rates, but may increase interference

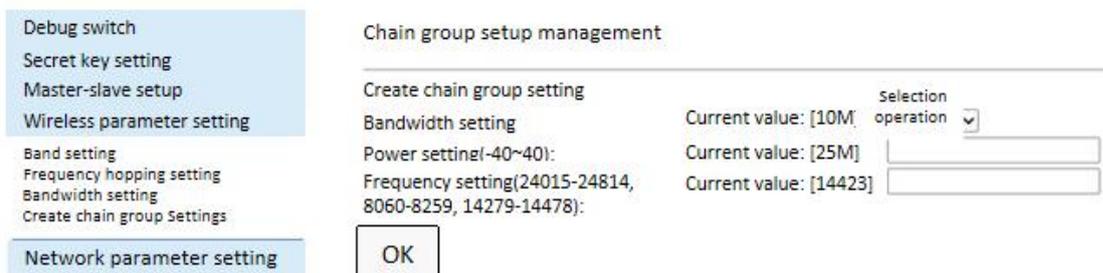
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and packet loss rate.



## 3.6.4 Create chain group settings

The web side does not support power change.



## 3.7 IP address setting

Set an IP address for video & data transmission. The IP addresses of the two devices must be different. The PC and the device can communicate only on the same network segment.

It is not recommended to change the IP address

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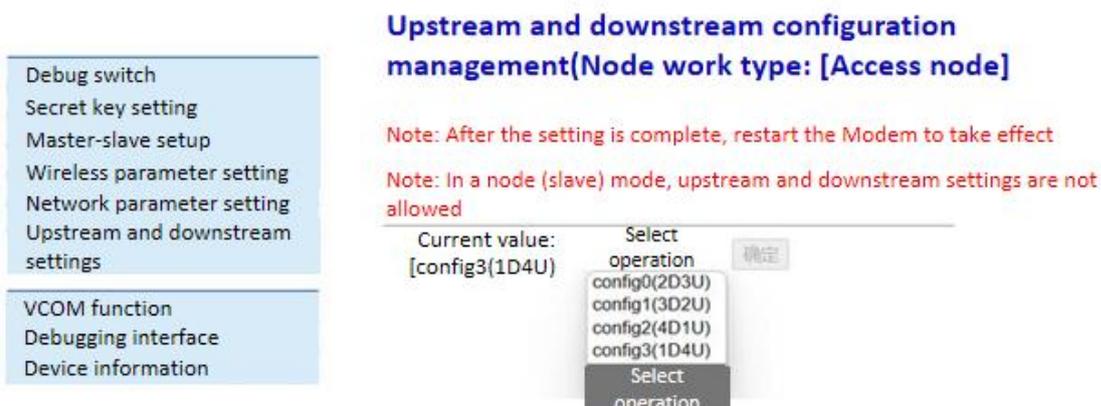
that has been configured before delivery. If you want to change the IP address yourself, remember the new IP address.

## 3.8 Upstream and downstream settings

Set the ratio of uplink and downlink data transmission to optimize transmission performance. D is Download, U is Upload, and the ratio of D to U is 1:4, indicating that the upper and lower ratio of 1:4 is configured according to the current bandwidth. Set the ratio of uplink and downlink data transmission to optimize transmission performance. D is Download, U is Upload, and the ratio of D to U is 1:4, indicating that the upper and lower

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ratio of 1:4 is configured according to the current bandwidth. In this mode, the upload speed will be increased while the download speed will be reduced accordingly. You can switch between 1D4U/2D3U/3D2U/4D1U based on the actual environment.



## 3.9 VCOM functions

The factory defaults to the closed state, You are not advised to change the value unless required.

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- Debug switch
- Secret key setting
- Master-slave setup
- Wireless parameter setting
- Network parameter setting
- Upstream and downstream settings
- VCOM function**
- Debugging interface

## VCOM function configuration management

Note: The settings take effect after a power failure and restart

Current value: Off

Select operation

Off

On

Select operation

OK

## 4.0 Debug interface

### 4.0.1 Active reporting and inspection

- Debug switch
- Secret key setting
- Master-slave setup
- Wireless parameter setting
- Network parameter setting
- Upstream and downstream settings
- VCOM function
- Debugging interface**

## Proactively report information collection

On Off

Proactively report for inspection and collection



### 4.0.2 DRPR report

- Debug switch
- Secret key setting
- Master-slave setup
- Wireless parameter setting
- Network parameter setting
- Upstream and downstream settings
- VCOM function
- Debugging interface**

Aactivate

Pause

|                 |            |
|-----------------|------------|
| RSRP极差 < -124   | SNR极差 < 0  |
| RSRP差 -124~-104 | SNR差 0~6   |
| RSRP低 -103~-85  | SNR低 7~12  |
| RSRP中 -84~-65   | SNR中 13~18 |
| RSRP高 > -64     | SNR高 > 19  |

| IP | RSRP | SNR | DISTANCE |
|----|------|-----|----------|
|----|------|-----|----------|

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## 4.0.3 Shell debugging interface

Debug switch  
Secret key setting  
Master-slave setup  
Wireless parameter setting  
Network parameter setting  
Upstream and downstream settings  
VCOM function  
Debugging interface

### Shell command debugging

Enter the shell command

Output result

## 4.0.4 AT debugging interface

Debug switch  
Secret key setting  
Master-slave setup  
Wireless parameter setting  
Network parameter setting  
Upstream and downstream settings  
VCOM function  
Debugging interface

### Debug with the AT command

Enter the AT command

Output result

## 5.0 Version information

Debug switch  
Secret key setting  
Master-slave setup  
Wireless parameter setting  
Network parameter setting  
Upstream and downstream settings  
VCOM function  
Debugging interface  
Device information

### Version information query

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System-wide version  
CX6602\_1.00.00.R11\_20200421

High level version  
484C535F534F4E4D5F56322E31302E30305F5235305F32303230303430370000000000000000  
◀──▶

Physical layer version  
0D504C5F534F4E4D5F56322E31302E30305F5235345F32303230303431305F5041000A0A0A0A0A  
◀──▶

## 4. List parameter



| <b>HUNTER 20KM-Class Standard edition</b> |  |
|---|--|
| Transmission distance                     | 20KM   |
| Dimensions (L×W×H)                        | 86.5×66×20(mm)   |
| Weight                                    | 145g   |
| Enclosure                                 | Aluminum alloy   |
| RF frequency band                         | 1427.9~1447.9MHz (Available customization:<br>806~826MHz/1427.9~1447.9 MHz/2401.5~2481.5MHz) |
| Power class                               | 25dBm±2  |
| Sensitivity                               | 10MHz (-103dBm) /5MHz (-104dBm) /3MHz (-106dBm)  |
| Transmission mode                         | Unicast, Broadcast, Roaming  |

|                                   |  |
|-----------------------------------|--|
| Transceiver mode                  | Single antenna transimission and recepetion/<br>Single antenna transimission and dual antennas reception |
| Operating bandwidth               | 1.4MHz/3MHz/5MHz/10MHz/<br>20MHz   |
| Rate                              | 30Mbps(One-way maximum rate), 45Mbps(Two-way maximum rate of single node suppoeted)                      |
| Number of network nodes supported | Supporting $N \geq 2$ network nodes and up to 16 access nodes  |
| Video transmission                | Communicate with external terminals through ethernet port  |
| Data transmission                 | Communicate with external terminals through RS232 port   |

|                               |   |
|-------------------------------|---|
| Link establishment time       | Cold start $\leq 20s$                                     |
| Input voltage                 | 10V~36V   |
| Anti-interference performance | Support frequency hopping across frequency bands          |
| Air latency                   | Transmission delay from node to central node $\leq 200ms$ |
| Peak power consumption        | 150ma $\pm 15\%$ at the maximum rate                      |
| WEB configuration             | Support basic configuration/reporting/query functions     |
| Modulation mode               | QPSK、16QAM、64QAM  |
| Storage temperature           | -40°C~+85°C   |
| Operating temperature         | -20°C~+75°C   |

|                                       |   |                         |                                   |
|---------------------------------------|---|-------------------------|-----------------------------------|
| <b>60cm 2.4G fiberglass antenna</b>   |    | Model                   | TQJ-1400AT-7                      |
|                                       |   | Frequency               | 1425~1450MHZ                      |
|                                       |   | Gain                    | 7dBi                              |
|                                       |   | Length                  | 62cm                              |
|                                       |   | Diameter                | 1.85cm                            |
|                                       |   | Radiation direction     | 360° omnidirectional              |
|                                       |   | Port                    | NK female /N male                 |
| <b>Ground end antenna sucker base</b> |  | Frequency rage-MHz      | 0-6.0GHz                          |
|                                       |   | Standing-wave ratio     | ≤1.2                              |
|                                       |   | Nominal impedance-Ω     | 50                                |
|                                       |   | Maximum bearing power   | 100                               |
|                                       |   | Suction cup fixed joint | N Female socket N-K female socket |
|                                       |   | Chassis diameter        | 11cm                              |
|                                       |   | Lead length             | 46cm                              |

|   |   |           |              |
|---|---|-----------|--------------|
| <b>Sky end<br/>glue stick<br/>antenna</b> |  | Length    | 23.5cm       |
|   |   | Frequency | 1425~1450MHZ |

|   |   |                        |                         |
|---|---|------------------------|-------------------------|
| *Optional*  |   |                        |                         |
| <b>1.25m<br/>fiberglass<br/>omnidirecti-<br/>onal antenna</b> |    | Model                  | TQJ-1400AT-11           |
|   |   | Frequency              | 1425 ~1450MHZ           |
|   |   | Gain                   | 11dBi                   |
|   |   | Length                 | 1250mm                  |
|   |   | Diameter               | 20mm                    |
|   |   | Radiation<br>direction | 360°<br>omnidirectional |
|   |   | Port                   | NK female head          |
| <b>1.25m<br/>fiberglass<br/>omnidirecti-<br/>onal antenna</b> |  | Model                  | TQJ-1400AT-12           |
|   |   | Frequency              | 1425 ~1450MHZ           |
|   |   | Gain                   | 12dBi                   |
|   |   | Length                 | 1500m                   |
|   |   | Diameter               | 20mm                    |
|   |   | Radiation<br>direction | 360°<br>omnidirectional |
|   |   | Port                   | NK female head          |

|  |   |                        |                                      |
|--|---|------------------------|--------------------------------------|
| <b>1.8m fiberglass omnidirectional antenna</b> |    | Model                  | TQJ-1400G-14                         |
|  |   | Frequency              | 1425 ~1450MHZ                        |
|  |   | Gain                   | 14dBi                                |
|  |   | Length                 | 1800m                                |
|  |   | Diameter               | 44mm@max                             |
|  |   | Radiation direction    | 360° omnidirectional                 |
|  |   | Port                   | SMA-N connector                      |
| <b>RG58 adapter</b>                            |  | Line length            | 20cm                                 |
|  |   | Frequency band applied | 6000MHZ                              |
|  |   | Wire rod               | RG58 line<br>Outer diameter<br>5mm   |
|  |   | Interface type         | SMA male<br>needle /N male<br>needle |
|  |   | Attenuation            | 0.15db/m                             |
|  |   | Resistance             | 50Ω                                  |

|  |   |                         |       |
|--|---|-------------------------|-------|
| <b>Glass fiber reinforced plastic antenna fixing kit</b> | <br> | <b>1. Fixed plate</b>   |       |
|  |   | Length                  | 8cm   |
|  |   | Wide                    | 6cm   |
|  |   | Hole diameter           | 0.9cm |
|  |   | Hole center spacing     | 60.5m |
|  |   | <b>2. U-shaped part</b> |       |
|  |   | Overall length          | 8.3cm |
|  |   | Screw length            | 4.8cm |
|  |   | Wide                    | 6cm   |
|  |   | Nut                     | M8    |
|  |   | Shard                   | M8    |
|  |   | Gasket                  | M8    |