

# H5-1

## HUNTER series

### 50KM-Class Standard Edition

### Technical specification V1.0



# H5-1

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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 50KM-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)

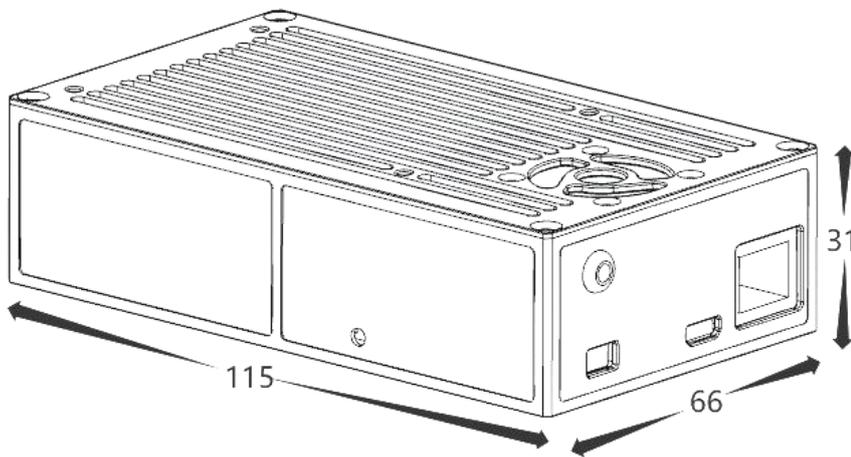
Name×Number	Physical picture	Accessory
1.25m fiberglass omnidirectional antenna x 1		
1.5m fiberglass omnidirectional antenna x 1		
1.8m fiberglass omnidirectional antenna x 1		 and 

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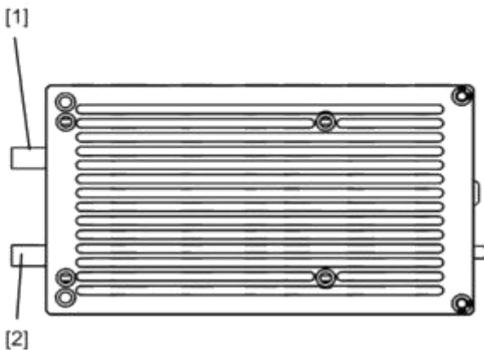
## 2. Connection guide

### 2.1 Dimension diagram and interface definition

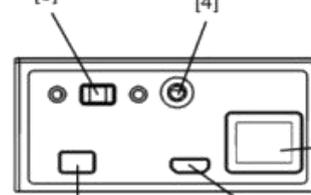
Unit: mm



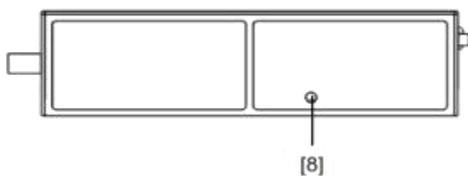
SAM receiving antenna port



Video data transmission power input (12V JST-2P male head)

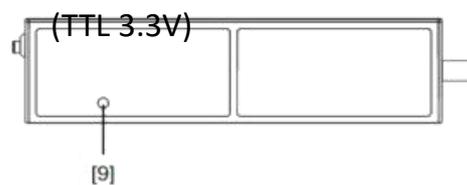


SAM transceiver antenna port



Network port data light

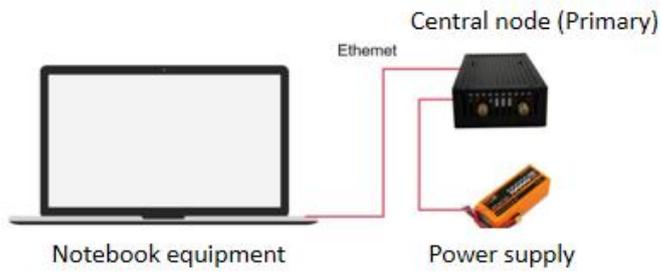
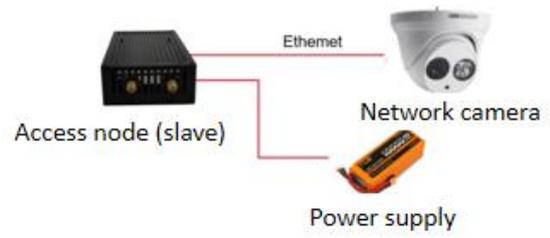
Serial interface (TTL 3.3V)



Power indicator light

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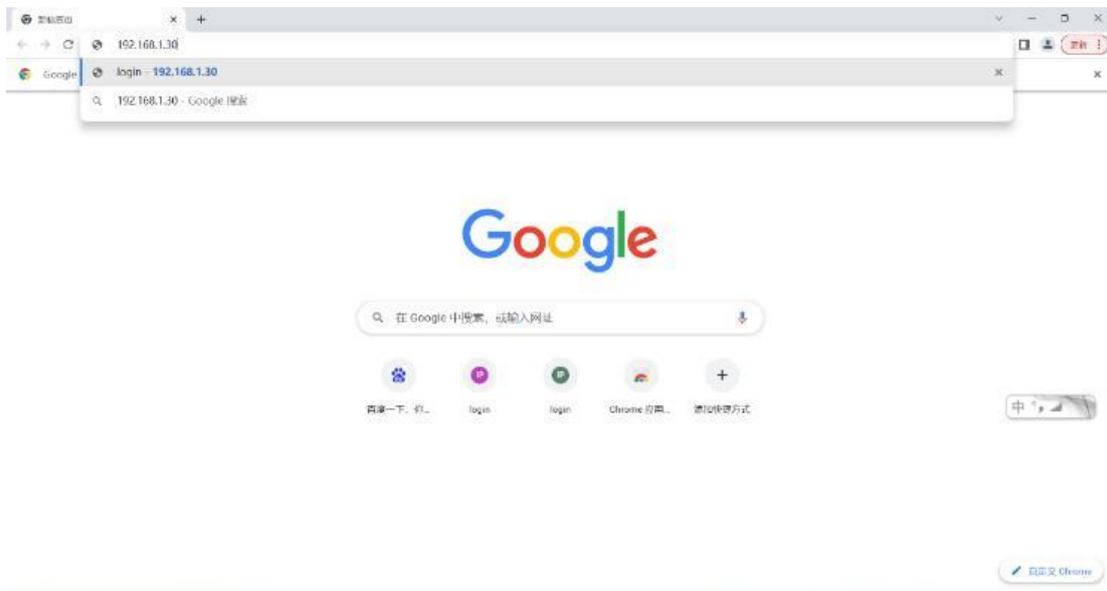
## 2.2 Connection diagram



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## 3. Modify settings on the web page

2.1 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](#)

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[简体](#) [繁體](#) [English](#)

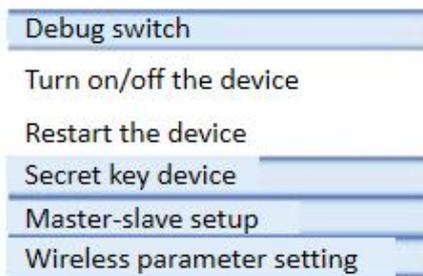
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The image shows a web-based login form titled "Administrator Login". It features two input fields: "Administrator account" and "Administrator password". Below these fields is a "Log in" button. At the bottom of the form, there is a copyright notice "Powered by @ 2019" and three language links: "简体", "繁體", and "English".

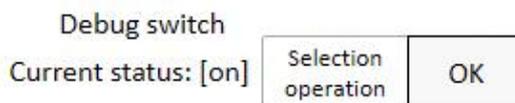
## 3.3 Debug switch

### 3.3.1 Turn on/off the device



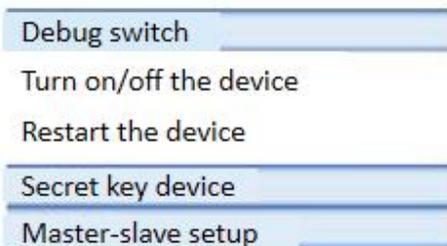
A vertical menu with five items: "Debug switch", "Turn on/off the device", "Restart the device", "Secret key device", and "Wireless parameter setting". The "Debug switch" item is highlighted with a blue bar.

### Modem switch configuration



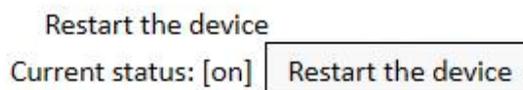
A dialog box titled "Modem switch configuration". It contains the text "Debug switch" and "Current status: [on]". To the right of the status text are two buttons: "Selection operation" and "OK".

### 3.3.2 Restart the device



A vertical 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 bar.

### 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".

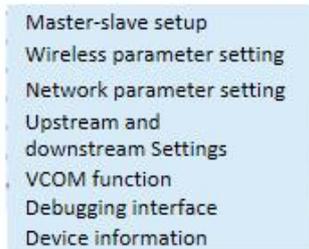
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## 3.4 Secret key setting

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

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successful.



Key Settings (must be hexadecimal number, i.e., 0-9, A-F or a-f, maximum 64 characters, i.e., 32 nodes, must be even)

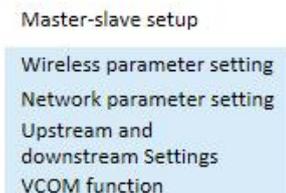
Current key: [11223344]

New key



## 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.



Master-slave setup

Current type: access node, work type: access node

Selection operation



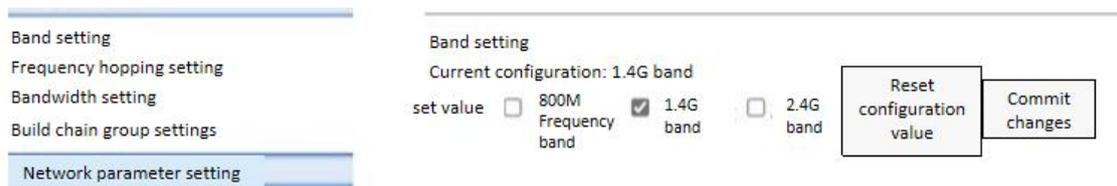
The central node  
Access node  
Selection operation

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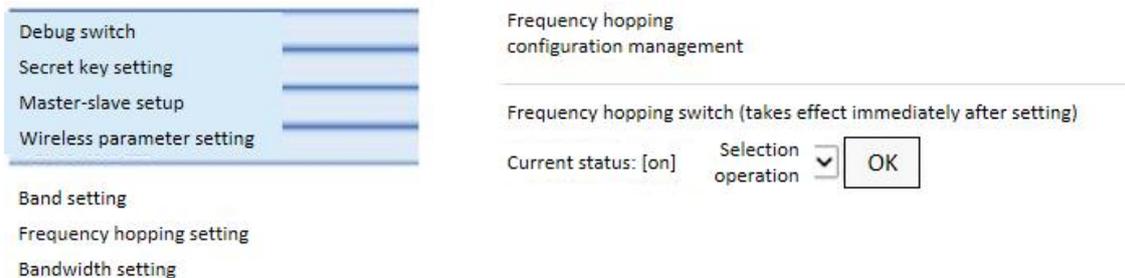
## 3.6 Wireless parameter settings

### 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

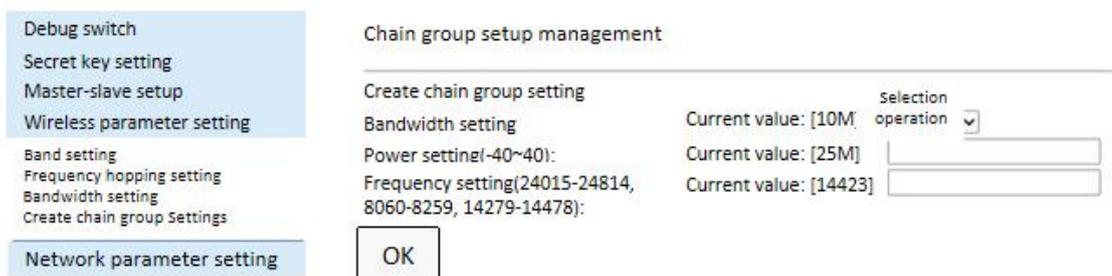
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higher transmission rates, but may increase interference and packet loss rate.



## 3.6.4 Create chain group settings

The web side does not support power change.



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## 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 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

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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. 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.

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

## Upstream and downstream configuration management(Node work type: [Access node])

Note: After the setting is complete, restart the Modem to take effect

Note: In a node (slave) mode, upstream and downstream settings are not allowed

Current value: [config3(1D4U)]

Select operation

- config0(2D3U)
- config1(3D2U)
- config2(4D1U)
- config3(1D4U)

Select operation

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## 3.9 VCOM function

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

- 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 Debugging 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

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## 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

## 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

OK

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

OK

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

CX0602\_1.00.00.R11\_20200421

High level version

484c535f534f4e4d5f56322e31302e30305f5235305f32303230303430370000000000000000

Physical layer version

0d504c5f534f4e4d5f56322e31302e30305f5235345f32303230303431305f5041000a0a0a0a0a

## 4. List parameter



<b>HUNTER 50KM-Class Standard edition</b>	
Transmission distance	50KM
Dimensions (L×W×H)	115×66×29(mm)
Weight	245g
Enclosure	Aluminum alloy
RF frequency band	1427.9~1447.9MHz (Available customization: 806~826MHz/1427.9~1447.9 MHz/2401.5~2481.5MHz)
Power class	33dBm±2
Sensitivity	10MHz (-103dBm) /5MHz (-104dBm) /3MHz (-106dBm)
Transmission	Unicast, Broadcast, Roaming

mode	
Transceiver mode	Single antenna transmission and reception/ Single antenna transmission and dual antennas reception
Operating bandwidth	1.4MHz/3MHz/5MHz/ 10MHz/20MHz
Rate	30Mbps(One-way maximum rate), 45Mbps(Two-way maximum rate of single node supported)
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	12V
Anti-interference performance	Support frequency hopping across frequency bands
Air latency	Transmission delay from node to central node $\leq 50ms$
Peak power consumption	$450ma \pm 15\%$ 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 range-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 glue stick antenna</b>		Length	23.5cm
		Frequency	1425~1450MHZ

\*Optional\*

<b>1.25m fiberglass omnidirectional antenna</b>		Model	TQJ-1400AT-11
		Frequency	1425 ~1450MHZ
		Gain	11dBi
		Length	1250mm
		Diameter	20mm
		Radiation direction	360° omnidirectional
		Port	NK female head
<b>1.5m fiberglass omnidirectional antenna</b>		Model	TQJ-1400AT-12
		Frequency	1425 ~1450MHZ
		Gain	12dBi
		Length	1500m
		Diameter	20mm
		Radiation direction	360° 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 Outer diameter 5mm
		Interface type	SMA male needle /N male needle
		Attenuation	0.15db/m
		Resistance	50Ω

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