

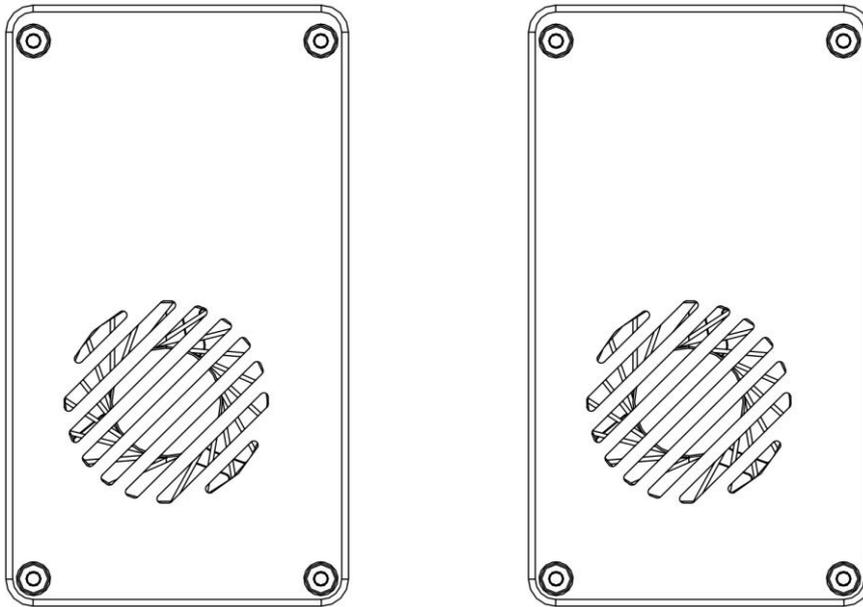
**HEIGHT Pro Multi-band
User Manual**

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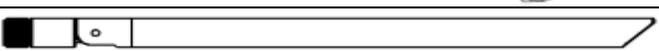
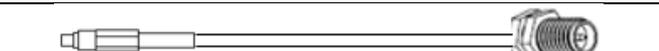
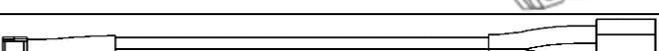
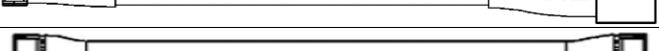
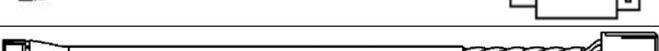
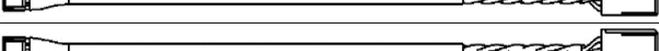
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1. Package Contents

Air unit & Ground Unit

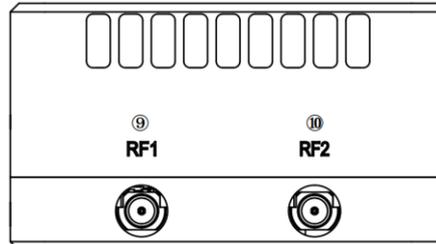
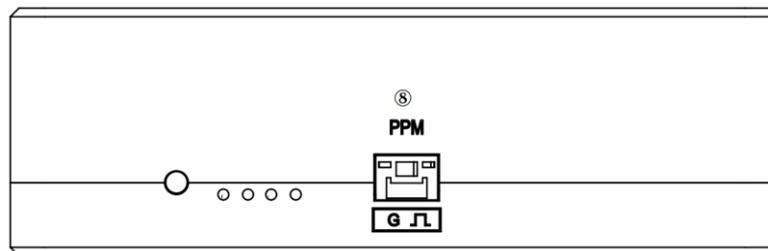
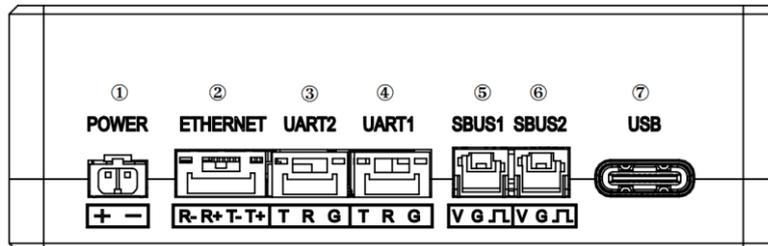


Accessories

Air antenna x 2	
Feed cable x 2	
Ground antenna x 2	
Feed cable x 2	
Power cable x2	
Serial cable(Air Unit) x 2	
Serial cable(Ground Unit) x 2	
RC cable(Air Unit) x 2	
RC cable(Ground Unit) x 2	
RJ45 cable x 2	

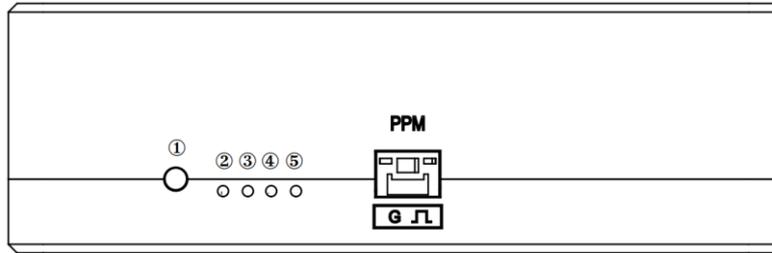
2. Introduction

2.1. Air Unit Ports



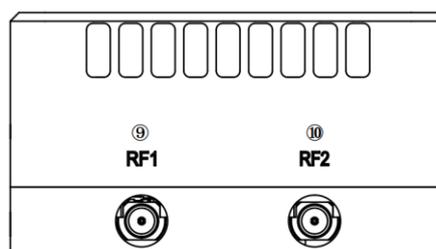
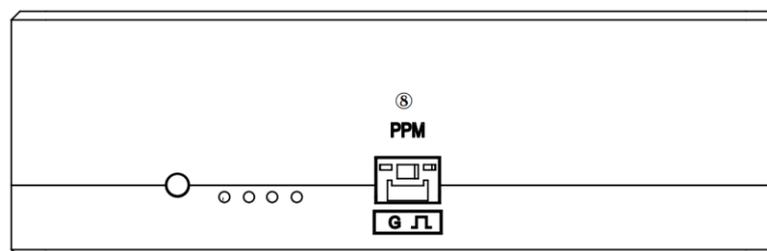
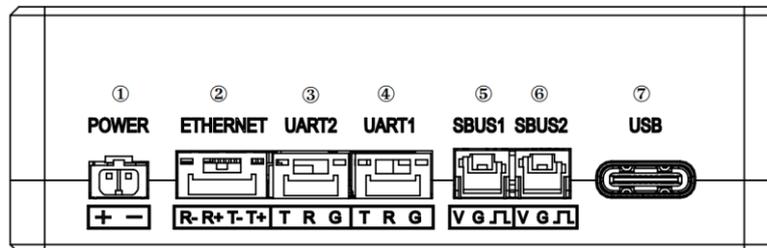
- ① Power input (DC12V, 3S battery).
- ② Ethernet video input from a camera, and web-page management interface.
- ③ Serial(TTL) port for telemetry.
- ④ Serial(TTL) port for telemetry.
- ⑤ S.Bus port connected to a flight controller.
- ⑥ S.Bus port connected to a flight controller.
- ⑦ Type-C USB port reserved.
- ⑧ PPM port connected to a flight controller.
- ⑨ MMCX connector for antenna/feed cable.
- ⑩ MMCX connector for antenna/feed cable.

2.2. Air Unit LEDs & Button



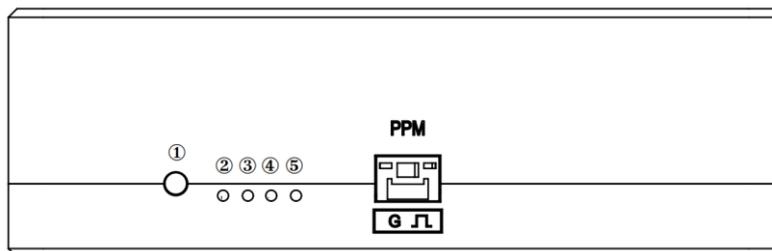
- ① Bind button: press-and-hold till LED1&LED2 are flashing, it's bound already before factory delivery.
- ② It's off when radio link established.
- ③ It's off when radio link established.
- ④ Solid on in orange: 100Mbps Ethernet physical link connected.
- ⑤ Flickering in green: when there's data transmission.

2.3. Ground Unit Ports



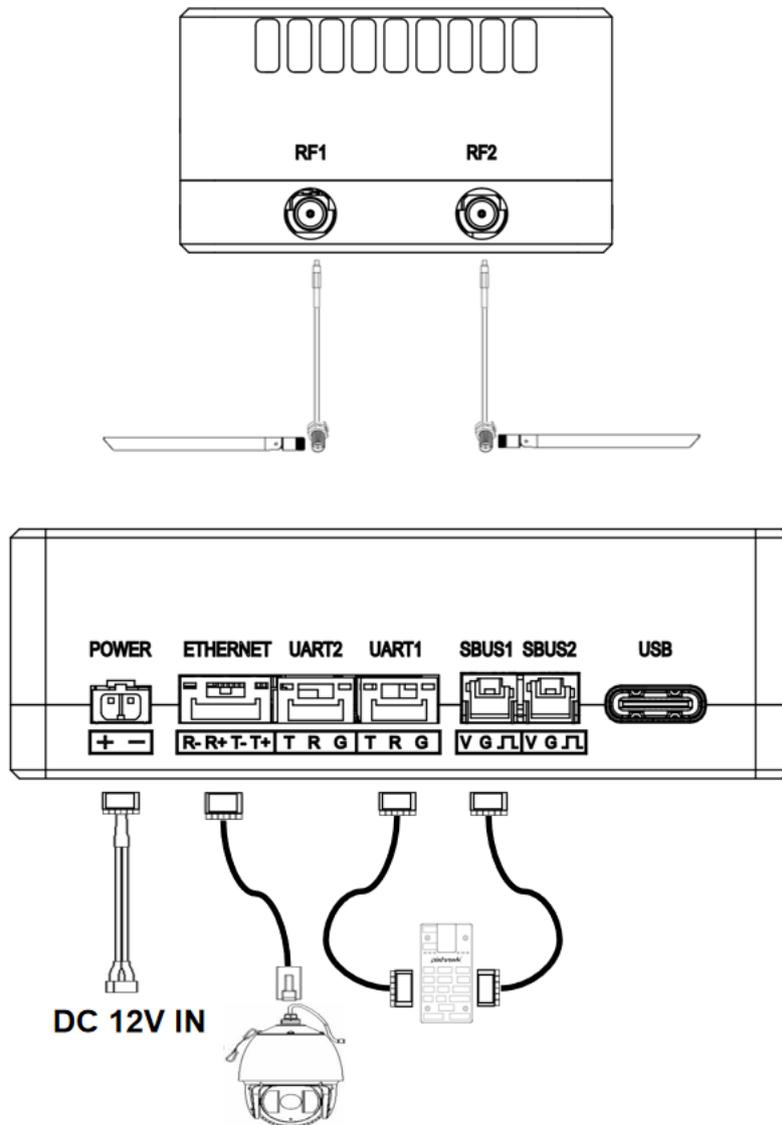
- ① Power input (DC12V, 3S battery).
- ② Ethernet video output to a laptop/PC, and web-page management interface.
- ③ Serial(TTL) port for telemetry.
- ④ Serial(TTL) port for telemetry.
- ⑤ S.Bus port connected to a S.Bus receiver.
- ⑥ S.Bus port connected to a S.Bus receiver.
- ⑦ Type-C USB port reserved.
- ⑧ PPM port connected to a flight controller.
- ⑨ MMCX connector for antenna/feed cable.
- ⑩ MMCX connector for antenna/feed cable.

2.4. Ground Unit LEDs & Button



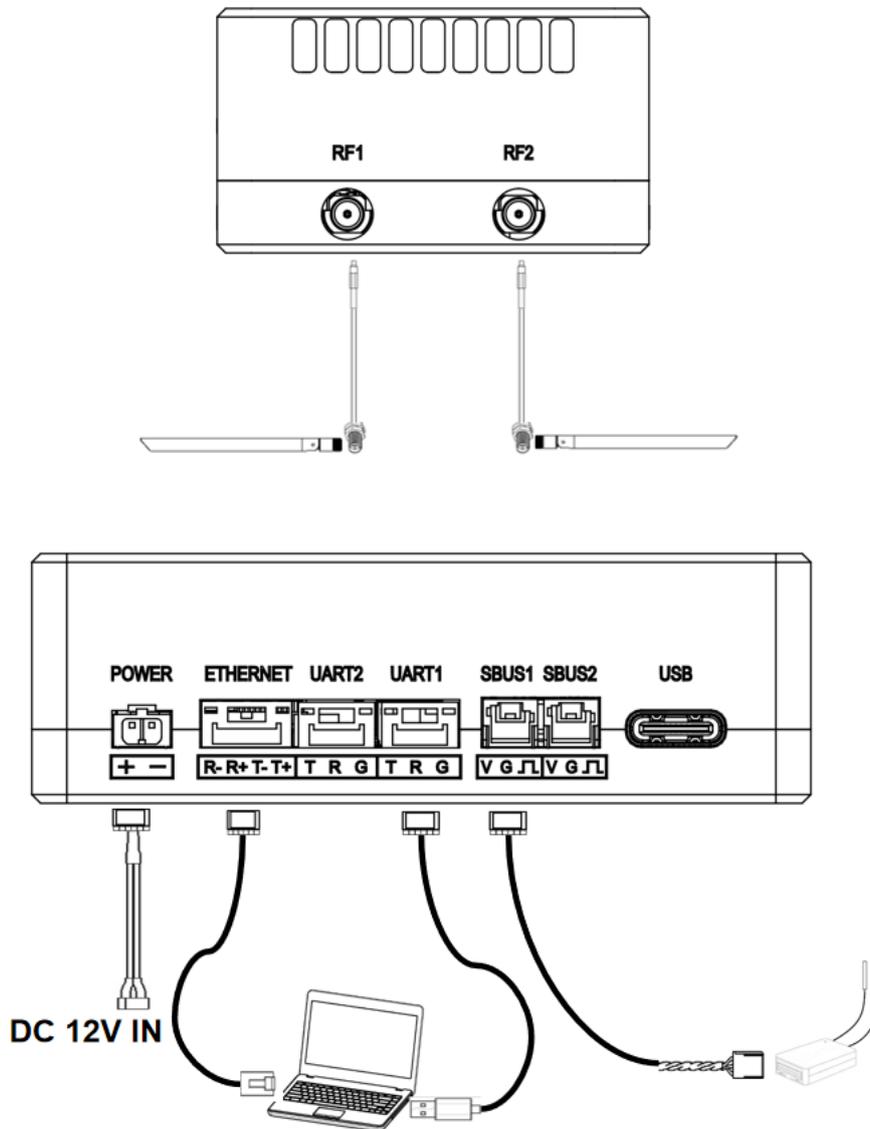
- ① Bind button: press-and-hold till LED1&LED2 are flashing, it's bound already before factory delivery.
- ② It's solid on in orange when radio link established.
- ③ It's solid on in green when radio link established.
- ④ Solid on in orange: 100Mbps Ethernet physical link connected.
- ⑤ Flickering in green: when there's data transmission.

2.5. Setting up Air Unit



1. Connect antennas to RF ports of the air unit.
2. Connect camera to Ethernet port of the air unit.
3. Connect the PPM/S.bus port of the flight controller to the RC port of the air unit.
4. Connect the flight controller telemetry port to the serial port of the air unit.
5. Connect a 12V DC power to the power port of the air unit and turn on the power.

2.6. Setting up Ground Unit



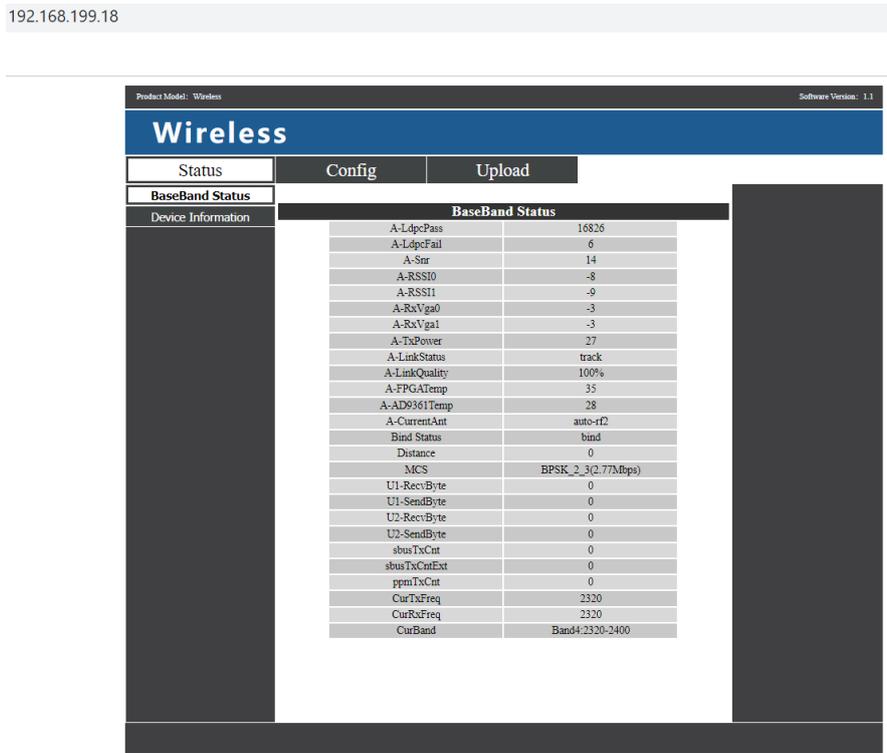
1. Connect antennas to RF ports of the ground unit.
2. Connect the remote controller's PPM/S.bus output to the RC port of the ground unit.
3. Connect the USB port of GCS/PC to the serial port of the ground unit with Serial-USB cable.
4. Connect Ethernet output port of ground unit to the GCS/PC.
5. Connect a 12V DC power to the power port of the ground unit.

3. Web-page Management

HEIGHTPro Multi-band has web-page management interface. Directly connect PC to air unit/ground unit by Ethernet cable, set PC IP address as 192.168.199.33/24, and visit 192.168.199.18 (air unit)/192.168.199.16 (ground unit) through web-page.

3.1. Manage Air Unit

Status→Baseband status, there's detailed real-time information like RSSI, SNR, TxPower, LDPC stats, telemetry stats, etc.



Status→Device information, there's information of SN, firmware version, bandwidth, and max range etc.

192.168.199.18

The screenshot shows the 'Wireless' configuration page. At the top, it displays 'Product Model: Wireless' and 'Software Version: 1.1'. Below this is a navigation bar with 'Status', 'Config', and 'Upload' tabs. The 'Status' tab is active, and a sub-menu on the left includes 'BaseBand Status' and 'Device Information'. The 'Device Information' sub-menu is selected, displaying a table of device details.

Device Information	
SN	
version	8C20221010-2200341
firmwareVersion	3.4.1.0_20221031
basebandVersion	20221010
antennaMode	DUAL_ANT_1T2R
radio	MultiFreq 2000MHz-2400MHz
maxRange	15KM
band	10M-10M

Config→Net settings, this is IP address of unit itself, it can be changed as per user's request.

192.168.199.18/config.html

The screenshot shows the 'Wireless' configuration page with the 'Config' tab selected. The left sub-menu includes 'Net Settings', 'Radio Settings', 'Bind Settings', and 'System Settings'. The 'Net Settings' sub-menu is selected, displaying a table of network configuration options and a 'set' button.

Net Settings	
IP Address	192.168.199.18
Subnet Mask	255.255.255.0

Config→Radio settings, There are options of auto/antenna1/antenna2 for air antenna select, this will decide the RF power transmitting port/antenna. There are options of Band1/Band1-a/Band1-b/Band2/Band2-a/Band2-b/Band3/Band4 for band select, band select must keep the same as that of ground unit.

192.168.199.18/config.html

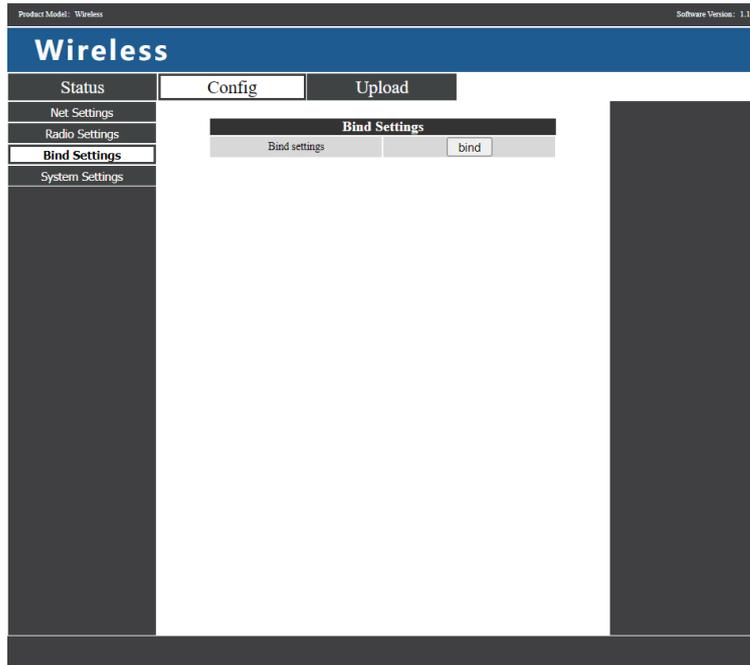
The screenshot displays a web interface for configuring wireless settings. At the top, it shows 'Product Model: Wireless' and 'Software Version: 1.1'. The main heading is 'Wireless'. Below this, there are three tabs: 'Status', 'Config', and 'Upload'. The 'Config' tab is active, and it contains a sidebar with 'Radio Settings' selected. The main content area is divided into two sections: 'Radio Settings' and 'Band Settings'. The 'Radio Settings' section has a dropdown menu for 'Air Antenna Select' set to 'auto' and a 'set' button. The 'Band Settings' section has a dropdown menu for 'Band Select' set to 'Band4:2320-2400MHz', and a table with four rows for 'ScanFrequency' (1, 2, 3, 4) with values 2320, 2320, 2360, and 2360 respectively. A 'set' button is located below the table.

Radio Settings	
Air Antenna Select	auto
<input type="button" value="set"/>	

Band Settings	
Band Select	Band4:2320-2400MHz
ScanFrequency1	2320
ScanFrequency2	2320
ScanFrequency3	2360
ScanFrequency4	2360
<input type="button" value="set"/>	

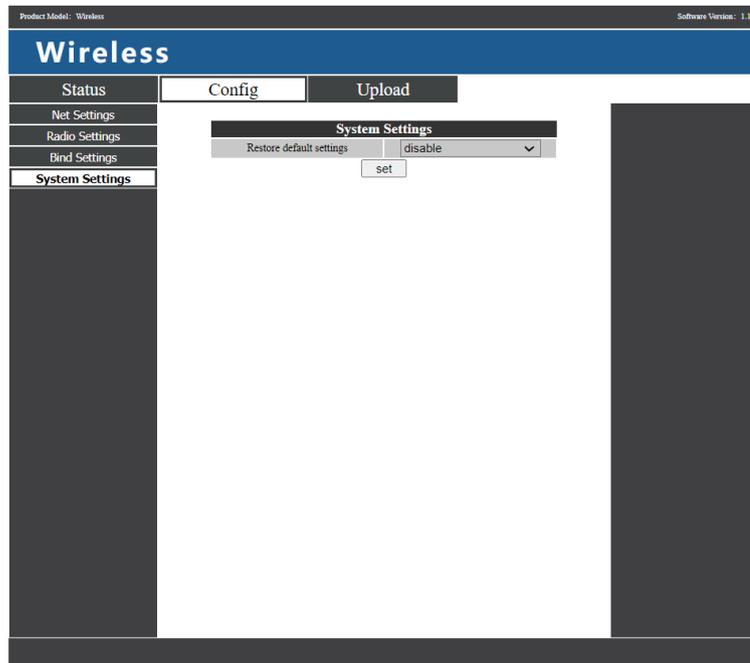
Config→Bind setting, bind process can be triggered by clicking bind instead of physical bind button.

192.168.199.18/config.html



Config→System settings, Restore unit to factory settings by “enable”.

192.168.199.18/config.html



Upload→Upload, browser and select file to be upgraded first, then click “send” to trigger the process.

192.168.199.18/upload.html

Product Model: Wireless Software Version: 1.1

Wireless

Status	Config	Upload
Upload		

File Choose File No file chosen

Progress

send

3.2. Manage Ground Unit

Status→Baseband status, there’ s detailed real-time information like RSSI, SNR, TxPower, LDPC stats, telemetry stats, etc.

192.168.199.16

Status		Config	Upload	
BaseBand Status				
BaseBand Status				
Device Information				
A-LdpcPass	134698	G-LdpcPass	489246	
A-LdpcFail	6	G-LdpcFail	83	
A-Snr	14	G-Snr	15	
A-RSSI0	-9	G-RSSI0	-10	
A-RSSI1	-9	G-RSSI1	-9	
A-RxVga0	-3	G-RxVga0	-3	
A-RxVga1	-3	G-RxVga1	-3	
A-TxPower	27	G-TxPower	27	
A-LinkStatus	track	G-LinkStatus	track	
A-LinkQuality	100%	G-LinkQuality	100%	
A-FPGAtemp	41	G-FPGAtemp	50	
A-AD9361Temp	33	G-AD9361Temp	45	
A-CurrentAnt	auto-rf2	G-CurrentAnt	auto-rf2	
downlinkDataRate	0kbs	uplinkDataRate	0kbs	
Bind Status	bind	U1-RecvByte	0	
Distance	0	U1-SendByte	0	
UAV	online	U2-RecvByte	0	
MCS	BPSK_5_6(3.33Mbps)	U2-SendByte	0	
CurTxFreq	2320	sbusRxCnt	0	
CurRxFreq	2320	sbusRxCetEst	0	
CurBand	Band4:2320-2400	ppmRxCnt	0	

Status→Device information, there’ s information of SN, firmware version, bandwidth and max range etc.

192.168.199.16

The screenshot shows the 'Wireless' configuration page. At the top, it displays 'Product Model: Wireless' and 'Software Version: 1.1'. The main header is 'Wireless'. Below the header, there are three tabs: 'Status', 'Config', and 'Upload'. The 'Status' tab is selected, and it contains a sub-menu with 'BaseBand Status' and 'Device Information'. The 'Device Information' sub-menu is expanded, showing a table of device details.

Device Information	
SN	
version	C20221010-2201341
firmwareVersion	3.4.1.0_20221031
basebandVersion	20221010
antennaMode	DUAL_ANT_1T2R
radio	MultiFreq 2000MHz-2400MHz
maxRange	15KM
band	10M-10M

Config → Net settings, there are IP address of unit itself, telemetry destination IP address and UDP ports, all of these parameters can be changed as per user request.

192.168.199.16/config.html

The screenshot shows the 'Wireless' configuration page with the 'Config' tab selected. The 'Config' tab has three sub-menus: 'Net Settings', 'Radio Settings', and 'System Settings'. The 'Net Settings' sub-menu is expanded, showing a table of network configuration parameters.

Net Settings	
IP Address	192.168.199.16
Subnet Mask	255.255.255.0
Mavlink Host IP	192.168.199.33
Mavlink UDP Port	15000
Mavlink UDP Port Ext	15001

Below the table, there is a 'set' button.

Config→Radio settings, there are hop, frequency, antenna selection, and band selection can be set. When hop is auto, user do not need to/cannot set frequency, system dynamically selects the best frequency to use by itself, in other words, when hop is manual, user can set frequency manually. There are options of auto/antenna1/antenna2 for air/ground antenna select, this will decide the RF power transmitting port/antenna. There are options of Band1/Band1-a/Band1-b/Band2/Band2-a/Band2-b/Band3/Band4 for band select, band select must keep the same as that of air unit. Hop/Frequency/Work region/Air antenna select only can be changed when radio link between air unit and ground unit is securely established.

192.168.199.16/config.html

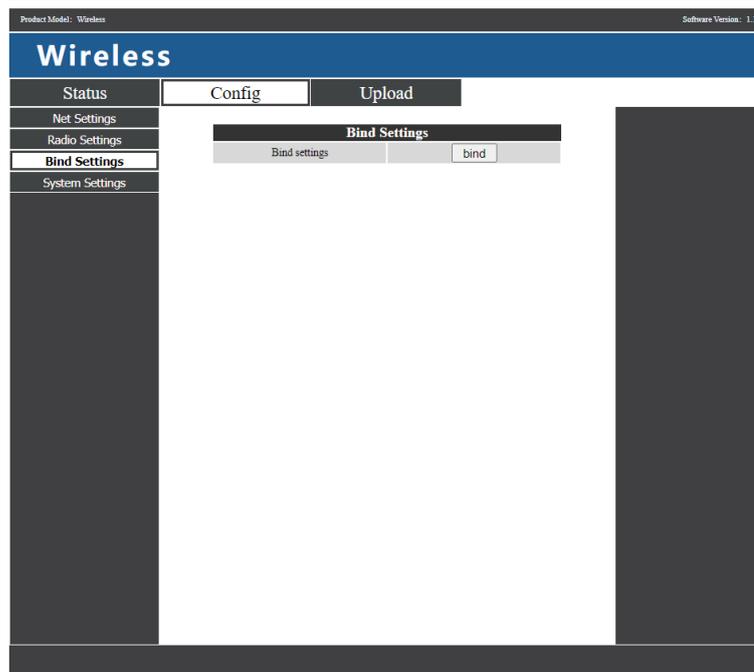
The screenshot displays a web interface for configuring a wireless device. The main title is "Wireless". Below the title, there are three tabs: "Status", "Config", and "Upload". The "Config" tab is active. On the left side, there is a navigation menu with the following items: "Net Settings", "Radio Settings", "Bind Settings", and "System Settings". The "Radio Settings" section is expanded, showing two sub-sections: "Radio Settings" and "Band Settings".

Radio Settings	
Hop	auto
Frequency	2320
Air Antenna Select	auto
Ground Antenna Select	auto
<input type="button" value="set"/>	

Band Settings	
Band Select	Band4:2320-2400MHz
ScanFrequency1	2320
ScanFrequency2	2320
ScanFrequency3	2360
ScanFrequency4	2360
<input type="button" value="set"/>	

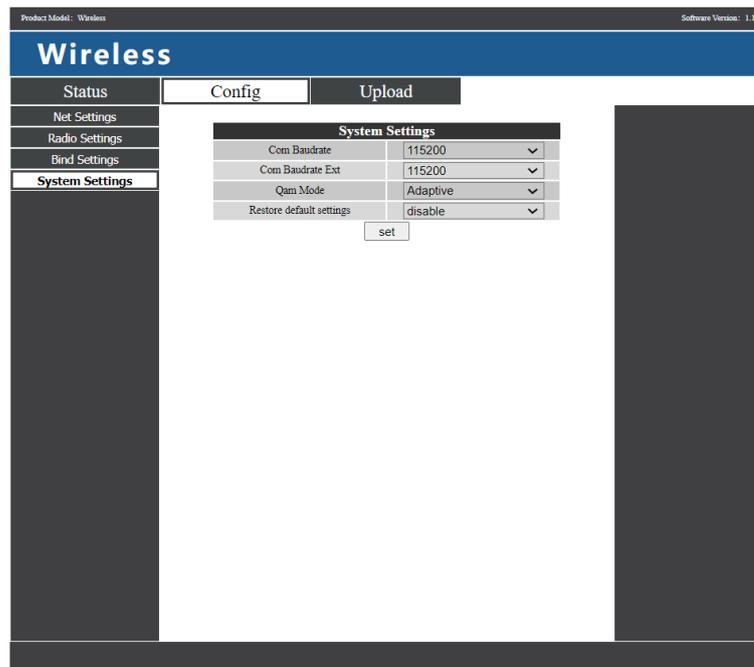
Config→Bind setting, bind process can be triggered by clicking bind instead of physical bind button.

192.168.199.16/config.html



Config→System settings, baud rate of U1/U2 two serial ports can be set independently. QAM mode can be set as fixed options or adaptive. When it is set as adaptive, unit will dynamically change modulation scheme based on real-time signal quality. Baud rate and QAM mode can be set only when radio link established between air unit and ground unit.

192.168.199.16/config.html



Upload→Upload, browser and select file to be upgraded first, then click “send” to trigger the process.

192.168.199.16/upload.html

Product Model: Wireless Software Version: 1.1

Wireless

Status	Config	Upload
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Upload

File Choose File No file chosen

Progress

send