

herelink

User Manual

For Beta Version and Production Final Batch

Please check on our website to find the latest user manual:
<http://www.hes.aero>.

Hardware Parameter

1). Accessories

- 1 x Herelink Air Unit
- 1 x Herelink Controller
- 2 x Air Unit Antenna
- 1 x Controller Directional Antenna
- 1 x Controller Omni-directional Antenna
- 1 x HDMI Cable
- 1 x Power Cord
- 1 x Telem Cable
- 1 x S.b.us Cable
- 1 x USB Cable
- 1 x Mounting Plate
- 5 x M1.6 (for fan), 16mm
- 5 x M1.6 Nut (for fan)
- 5 x Washer (for fan)
- 20 x Silicon Ring (for fan)
- 5 x M1.6, 3mm (for air unit and mounting plate)
- 3 x M3, 10mm (for mounting plate and drone)
- 3 x M3 Nut (for mounting plate and drone)

*Fan is not included and is not required for normal use.

2). Technical Specifications

Air Unit and Controller Hardware Information:

Processor: SoC – Pinecone S1
AP: 4 x large core, Cortex A53, 2.2GHz
4 x small core, Cortex A53, 1.4GHz
GPU: 4 core, Mali-T760
SDR: A7 + DSP
Storage: Air Unit LPDDR3 1GB, Controller LPDDR3 2GB
Air Unit/Controller: EMMC 4 GB
Transmission Range: FCC20km, CE/SRRC 12km
Latency: Min 110ms
Resolution: 720p@30fps, 1080p@30/60fps
Frequency Band: 2.4GHz ISM
Receive sensitivity: -99dBm@20MHz BW
Interference recovery: < 1s

Air Unit

Interfaces:

- ② HDMI 1: Micro HDMI, for video input
- ② HDMI 1: Micro HDMI, for video input (preferred)
- ③ Power: 5V - 12.6V max (3s Lipo supported) power input
- ④ Micro USB: For debug or upgrade, support OTG
- ⑤ Pair/Reset: For pairing and reset
- ⑥ LED 1, 2: To indicate pairing status and transmission status
- ⑦ UART: 3.3V / 5V UART
- ⑧ S.b.us: Two 3.3V RC output
- ⑨ ANT 1, 2: MMCX, for signal transmission and communication

Housing: Aluminum Weight: 95g (w. antennas)
Dimension: 78.5x30x15mm (w/o antennas)
Antenna: 2 x omni-directional antennas (2dBi)
Signal Bandwidth: 20MHz/10MHz
Power Consumption: < 4W

1. Air Unit Status Indication and Buttons

LED 1 (left)

Steady Green Light: Receiving HDMI1 signal

Steady Red Light: Receiving HDMI2 signal

Steady Yellow Light: Receiving flight control data signal

Changing Green-Red Light: Receiving two video signals

Changing Green-Yellow-Red Light: Receiving two video signals and flight controller signal

No Light: Receiving no valid video signal or flight controller signal

LED 2 (right)

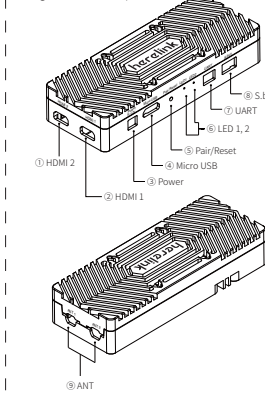
Flashing Green Light: Pairing

Steady Green Light: Receiving valid controller signal, and power is normal

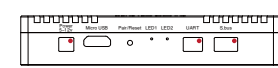
Steady Yellow Light: Unpaired/no valid signal received

Flashing Red Light: Unstable power

No Light: Air unit is not powered



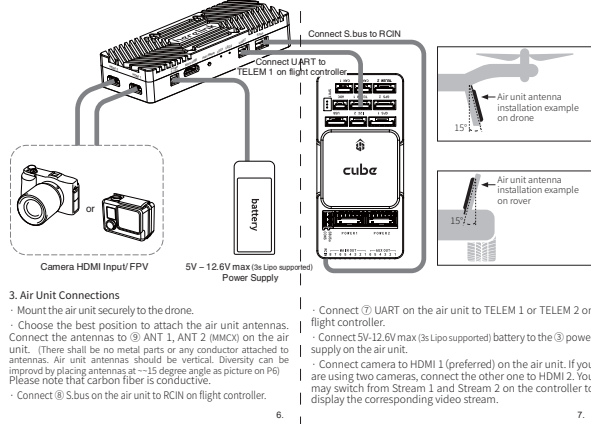
2. Air Unit Interfaces Definition



Pin #	Name	Description
1	Power	Power IN (5V - 12.6V max (3s Lipo supported))
2	GND	Ground pin

Pin #	Name	Description
1	RXD	RX of air module 3.3V / 5V TTL
2	TXD	TX of air module 3.3V / 5V TTL
3	GND	Ground pin

Pin #	Name	Description
1	S.b.us out 1	RC output
2	GND	Ground pin
3	RSVD	For future use
4	GND	Ground pin



3. Air Unit Connections

- Mount the air unit securely to the drone.
- Choose the best position to attach the air unit antennas.
- Connect the antennas to ⑨ ANT 1, ANT 2 (MMCX) on the air unit. (There shall be no metal parts or any conductor attached to antennas. Air unit antennas should be vertical. Diversity can be improved by placing antennas at ~15 degree angle as picture on P6) Please note that carbon fiber is conductive.
- Connect ⑧ S.b.us on the air unit to RCIN on flight controller.
- Connect ⑦ UART on the air unit to TELEM 1 or TELEM 2 on flight controller.
- Connect 5V-12.6V max (3s Lipo supported) battery to the ③ power supply on the air unit.
- Connect camera to HDMI 1 (preferred) on the air unit. If you are using two cameras, connect the other one to HDMI 2. You may switch from Stream 1 and Stream 2 on the controller to display the corresponding video stream.

Controller

Housing: Plastic Weight: 516g (w. antennas)

Dimensions: 21x17x106.5x31mm (w/o antennas, joysticks)

Screen: 5.46 inch, 1080P, 16 million colors, capacitive touch screen

Audio: 1 x built-in speaker, 2 x built-in microphone

Remote control: 2 x joystick, 1 x wheel, 6 x button (w. backlight), 1 x upper right button

Communication: WIFI/GPS 2.4GHz on the controller side

LED: 2 x tricolor LED (left, right)

Interface: 1 x MicroUSB, 1 x Micro SD card slot (extendable to max 64GB)

Antenna: 1 x detachable directional (5dBi), 1 x detachable omni-directional (2dBi), built-in WIFI antenna, built-in GPS antenna, external GPS antenna interface

Power: 950mAh built-in Lipo Battery

Charging: Support micro USB 5V 2A charging

Power consumption: < 4W average (With transmission on, medium screen brightness, WIFI off, GPS off)

1. Controller LEDs/ Buttons/ Interfaces

Controller Buttons

① Upper Left Wheel: Control gimbal

② Upper Right Button: Take photo (configurable)

③ Button A: N/A (configurable)

④ Button B: Return to previous page (configurable)

⑤ Power Button: Power on/off and unlock screen

⑥ Home Button: Return to the ground control station

⑦ Button C: N/A (configurable)

⑧ Button D: N/A (configurable)

Re-pairing:

① Click on [Q] icon on the controller

② Click [D2D Info] to enter pairing UI

③ Click [Calibrate] to start pairing

④ After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2). Getting Video Stream to Work

1. After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

2. Problems that may arise during transmission

① After pairing is completed, the air unit and the controller are connected successfully. Connect the air unit/HDMI, turn on 1080P video input source in "Video Stream Settings" (refers to P12). The video will be displayed at the lower left corner of QGC. Click the video frame to display in full screen.

Q1: Why is there no video transmission after the camera is connected to Herelink via HDMI? Meanwhile the controller screen shows "WAITING FOR VIDEO" and video stream at the upper right corner is changing around a few kbps?
Solution: Check if HDMI output resolution is 1080P (QGC resolution setting must be consistent with camera resolution setting). Please also check HDMI connection, or replace the HDMI cable with a new one.

Q2: The link rate in the upper right corner display 0kbps Solution: Re-pair or restart machine.

3). Video Stream Settings

Click on the airplane icon at the upper left corner and select [Video Stream] from the drop-down menu on the right.



① Rate: Configure link rate (related to environment and current working mode).

② Stream 1: HDMI 1 (closer to power supply interface)

③ Stream 2: HDMI 2

④ Enable Stream: Turn on/off video display

⑤ 1080P Video: Choose between video resolution. When the radio button is on: 1080P; off: 720P

⑥ Grid Lines: Grids on video display
⑦ Record Stream: Recording switch
Video storage directory:
PC: This PC\Optimus\Internal shared