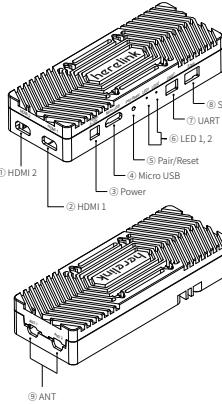


Hardware Parameter
2). Technical Specifications
 Air Unit and Controller Hardware Information:
 Processor: SoC – Pinecone S1
 AP: 4 x large core, Cortex A53, 2.2GHz
 4 x small core, Cortex A53, 1.4GHz
 GPU: 4 core, Mali-T860
 SDR: A7 + DSP
 Storage: Air Unit LPDDR3 1GB, Controller LPDDR3 2GB
 Air Unit/Controller: EMMC 4GB
 Transmission Range: FCC20km, CE/SRRC 12km
 Latency: Min 110ms
 Resolution: 720p@30fps, 1080p@30/60fps
 Frequency Band: 2.4GHz/5GHz
 Receive sensitivity: -99dBm@20MHz BW
 Interference recovery: < 1s

HERELINK Air Unit
 Model: HX4-06074
 Brand: CubePilot
 Frequency: 2400-2483.5 MHz
 Interfaces:
 ① HDMI 2: 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.bus: Two 3.3V RC output
 ⑨ ANT 1, 2: MMCX, for signal transmission and communication
 Housing: Plastic
 Weight: 95g (w. antennas)
 Dimension: 78.5x20.1mm (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



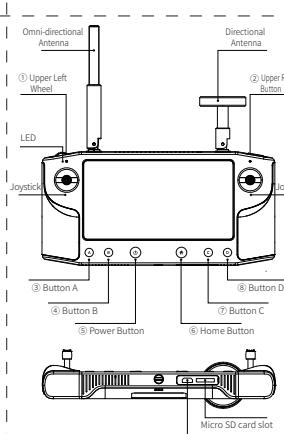
2. Air Unit Interfaces Definition



Pin #	Name	Description
1	Power	Power IN 9V - 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 bus out 1	RC output
2	GND	Ground pin
3	RSVD	For future use
4	GND	Ground pin



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 pixels.
 Solution: Check if HDMI output resolution is 1080P (QGC resolution setting must be consistent with camera resolution). 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 the camera.

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.



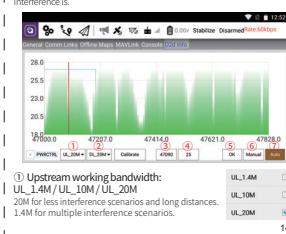
① Rate: Configure link rate (related to environment and current working mode).
 ② Stream 1: HDMI 1 (closer to power supply interface).
 ③ Stream 2: HDMI 2.
 ④ Enable Stream: Turn on/off video display.
 ⑤ 1080P video: Choose between video resolution. When the radio button is on: 1080P; off: 720P

13.

⑥ Grid Lines: Grids on video display
 ⑦ Record Screenshot: Recording switch
 Video storage directory:
 PC/This PC/Optimus/internal/shared storage/Video/Herelink Controller/Storage/Explore/Optimus/QGroundControl/Video
 Screen shot storage directory:
 PC/This PC/Optimus/internal/shared storage/Pictures/Screenshots/Herelink Controller/Storage/Explore/Optimus/Pictures/Screenshots

4. D2d Info Settings

Click on Q icon in the upper left corner and select D2d Info X and Frequency. Red line represents the current working frequency Y-axis; SNR (signal-to-noise ratio). The larger the value is, the smaller the interference is.



⑧ Upstream working bandwidth: UL_1.4M / UL_1M / UL_20M
 20M for less interference scenarios and long distances.
 1.4M for multiple interference scenarios.

14.

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.

FCC & IC Radiation Exposure Statement:

This equipment complies with FCC and Canada radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Déclaration d' IC sur l' exposition aux radiations:

Cet équipement est conforme aux limites d' exposition aux radiations définies par le Canada pour les environnements non contrôlés.

Cet émetteur ne doit pas être installé au même endroit ni avec une autre antenne ou un autre émetteur.

Le présent appareil est conforme aux CNR d' Industrie Canada applicables aux appareils radio exempts de licence. L' exploitation est autorisée aux deux conditions suivantes:

(1) l' appareil ne doit pas causer d' interférence.

(2) l' utilisateur de l' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

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

This equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.

Cet équipement doit être installé et utilisé à une distance minimum de 20 cm entre l' antenne et votre corps.

17.

18.

⑨ Downstream working bandwidth:
 DL_10M / DL_20M
 20M for less interference scenarios and long distances.
 10M for more interference scenarios.

⑩ Current working frequency:

⑪ Current working bandwidth SNR value

⑫ Confirm current setting

⑬ Manual Mode (Frequency Configurable Mode):

User select working frequency according to the current environment.

⑭ Click Manual Mode, it will pop up "success". Then enter the target frequency manually in the red box as shown below, or touch the graph to select. Click OK to confirm.

⑮ Manual input frequency range is as follows:

⑯ Upstream working bandwidth: 10M corresponds to 47050-47735

⑰ Downstream working bandwidth: 20M corresponds to 47100-47820

⑱ After setting, UI will pop up "success". This means target frequency value, which is 47751, has been set.

(This value is for reference only, the actual working frequency should be set according to the environment of its own use)

15.

NCC 警語

A.取得無執照證明之低功率射頻器材，非經核准，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。低功率射頻器材之使用不得影響飛航安全及干擾合法通信；經發現有干擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前述合法通信，指依電信管理法規定作業之無線電通信。低功率射頻器材須符合安全衛生標準。

B.應避免影響附近雷達系統之操作。

C.高增益指向性天線只得應用於固定點對點系統。

16.

17.

3. HERELINK Controller Unit

Model: HX4-06074
 Brand: CubePilot
 Frequency: 2400-2483.5 MHz
 Band 1: 5100 MHz - 5240 MHz
 Band 2: 5260 MHz - 5320 MHz
 Band 3: 5500 MHz - 5720 MHz
 Band 4: 5745 MHz - 5825 MHz
 Housing: Plastic
 Dimensions: 217x10.6x5.3x1mm (w/o antennas)
 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 omnidirectional (2dBi), 1 x built-in GPS antenna, external GPS antenna interface
 Power: 4950mAh 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)

4. Controller LEDs/ Buttons/ Interfaces

Controller Buttons

① Upper Left Wheel: Control gimbal

② Re-pairing:

① Click on [Q] icon on the controller

② Click [D2d Info] to enter pairing UI

③ Click [Calibrate] to start pairing



Then repeat Step2 and Step3 of "Initial Pairing"

5. 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.

6. Problems that may arise during transmission

1. Click on [Q] icon on the controller

2. Click [D2d Info] to enter pairing UI

3. Click [Calibrate] to start pairing



⑦ Auto Mode (Frequency Hopping Mode): It is recommended to work in this mode to automatically select the best working frequency.

Important Notes

1. If you connected a GoPro 6 Black and disconnect it before video is connected to the air unit, the hot swap may result in no video output from GoPro. It is suggested to restart your GoPro or place the GoPro upside down to have the image back.

2. Air unit power input: 5V - 12.6V max (3s Lipo supported). Any power range above that will burn the device.

3. The temperature will rise when the air unit is connected with the controller. Temperature of the air unit can be checked on the controller side, and should be lower than 70 degrees. (If temperature rises over 70 degrees, installing a fan should be considered.)

FAQs

1. Can language on the controller be switched? The system language can be switched in slide down menu, but QGC is default as English and cannot be switched.

2. Why aren't the LEDs lit, even though the air unit are properly correctly connected?

Check the power input. It should be 5V - 12.6V max (3s Lipo supported) and battery should have been charged.

3. Why can't connect to 2.4GHz WiFi?

Currently, Herelink only enables 5.8GHz WiFi for internet connection. Therefore, to load maps, you will need to connect to a 5.8GHz WiFi network.

Table of Contents

Hardware Parameter
Accessories
Technical Specifcations
Air Unit	
Interfaces
Air Unit Status Indication and Buttons	4
Air Unit Interface Definition	5
Air Unit Connections	6
Controller	
Controller LEDs/ Buttons/ Interfaces	8
Controller Antenna Assembly	10
and Disassembly	
Pairing Air Unit and Controller	
Controller and Air Unit Pairing	11
Instruction Initial Pairing	
Getting Video Stream to Work	12
Video Stream Settings	13
D2d Info Settings	14
Important Notes	16
FAQs	16
Warning	17

19.