

Union Robotics

HereLink Blue



HereLink Blue

Overview

Herelink Blue is an integrated remote controller, ground station and wireless digital transmission system designed to be used with the Cube Autopilot, Ardupilot or PX4.

HereLink Blue allows RC control, HD video and telemetry data to be transmitted up to 20km between the ground station and air unit, the HereLink Blue remote controller features a custom UR/Solex TX application and both air unit and ground station feature an integrated 8 core SOC for custom application development.

Features

- Android based smart device with 5.46 inch 1080P capacitive touch screen.
- Integrated digital transmission system simultaneously transmitting video, telemetry and control.
- Custom UR/Solex TX ground station software with MAVlink support for Ardupilot and PX4.
- Dual hall effect self centering gimbals with removable sticks.
- 1080P HD video with dual digital video inputs.
- Dual S.bus signal output for simultaneous control of autopilot and pan/tilt cameras.

• Dual 5MP digital camera for omnidirectional control of take-off and landing cameras.

- 6 customizable Mavlink buttons and Mavlink/Sbus hardware wheel.
- Tether and share video and telemetry via wifi ground station such as Mission Planner.
- Onboard Arm Cortex A53 & Cortex A53 SOC in both air and ground units for custom applications.
- Precision machined 6061 aluminum housing, hard-anodized
- Waterproof hard storage case

Accessories

- 1x HereLink Blue Air Unit
- 1x HereLink Blue Ground Station
- 2x Joystick
- 2x Air Unit Antenna
- 2x Ground Station Antenna
- 1x HDMI Cable
- 1x USB/Micro USB Cable
- 1x 2-Pin JST-GH Power Cable
- 1x 3-Pin JST-GH UART Cable
- 1x 4-Pin JST-GH S.bus Cable
- 1x Neck Strap
- 1x 5V 2A USB Wall Charger
- 1x Waterproof Hard Shell Storage Case

Technical specifications

| Feature | Specification |
|-----------------------|--|
| Model Name | HereLink Blue |
| C2/RF Link Encryption | AES 128 |
| SOC: | ARM Cortex A53 4 core 2.2GHz + Cortex A53 4 core 1.4GHz |
| Processor: | SoC Pinecone S1 |
| AP: | 4x large core Cortex A53 2.2GHz, 4x small core Cortex A53 1.4GHz |

| | |
|------------------------|--|
| GPU: | 4 core, Mali-T860 |
| SDR: | A7 + DSP |
| Memory: | Air Unit LPDDR3 1GB, Ground Station LPDDR3 2GB |
| Transmission Range: | FCC20km, CE/SRRC 12km |
| Frequency Band: | 2.4GHz ISM |
| Receive Sensitivity: | -99dBm@20MHz BW |
| Interference recovery: | <1s |
| Latency: | Min 110ms |
| Resolution: | 720p@30fps, 1080p@30/60fps |
| | |
| | |

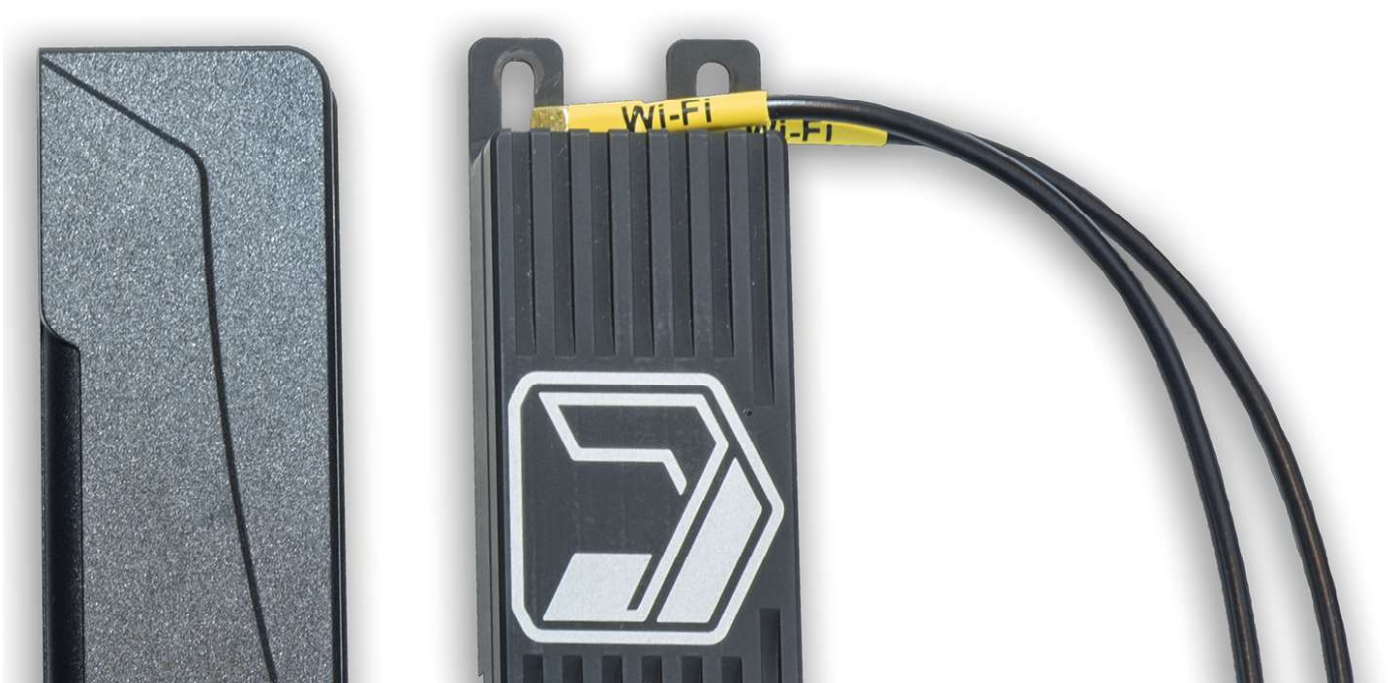
Ground Station



HereLink Blue Ground Station

| Feature | Specification |
|--------------------|--|
| Screen: | 5.46 inch 1080P, 16 million colors, capacitive touch screen |
| Audio: | Built-in speaker × 1, built-in microphone × 2 |
| Remote control: | Hall affect gimbals with removable sticks × 2, scroll wheel × 1, bottom button × 6 with backlight, top button × 1 (right) |
| Wireless: | Bluetooth / WIFI / GPS / 2.4G map transmission ground |
| Inputs: | MicroUSB × 1, Micro SD × 1 (supports maximum 64GB) |
| Antenna: | 2.4GHz (1.9dBic) × 2 detachable ,built-in wifi antenna, built-in GPS antenna, external GPS antenna interface × 1 (optional) |
| Power : | Built-in 4950 mAh Li-ion Battery |
| Charging : | Support micro USB port 5v 2A current charging |
| Power consumption: | The average power consumption does not exceed 4W (only picture transmission work, medium screen brightness, WiFi off, GPS off) |
| Size: | 245mm × 116mm × 40mm not including external antenna and joystick |

Air Unit





HereLink Blue Air Unit

| Feature | Specification |
|-----------------|--|
| Video-Input: | Micro HDMI x 2: Input for external camera video, supports 720P 30fps & 1080P 30/60fps |
| Power Input: | 2 Pin interface x 1: Recommended supply voltage ~7V: minimum 6V: maximum 12V and avoid sharing BEC with servos, the average power consumption of the single-sided module is less than 4W |
| Telemetry: | 3 Pin interface x 1: 3.3V / 5V level UART interface Mavlink Compatible |
| Control Output: | 4 Pin interface x 1: Two 3.3V level RC output connectors (S.bus in phase, S.bus inverting or PPM signal output, ground terminal control) |
| USB: | Micro USB x 1: for debugging upgrades, support OTG mode |
| Antenna: | MMCX antenna jack x 2: used for signal transmission and ground communication |
| Size: | 104.5mm x 30.5mm x 16mm |

HereLink Blue User Guide

Air Unit





Air Unit Specifications

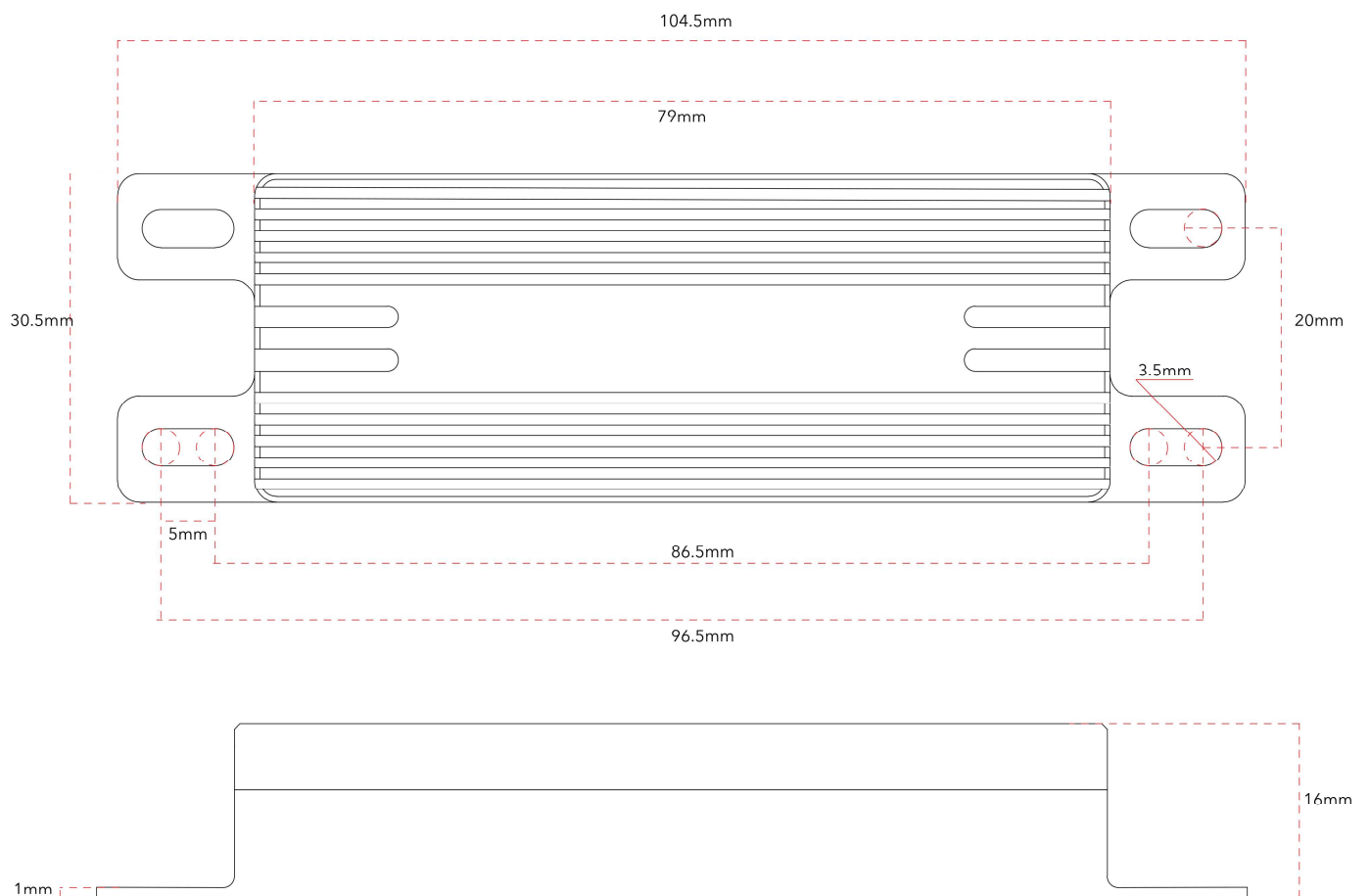


Air Unit LEDs



Air Unit Interface & Installation

Air Unit Specifications



HereLink Blue Air Unit Dimensions

| Feature | Specification |
|-------------|-------------------------|
| Housing: | 6061 Aluminum |
| Dimensions: | 104.5mm x 30.5mm x 16mm |
| Weight: | 90g (w/ antennas) |

| | |
|--------------------|---|
| Antennas: | 2x circularly polarized antenna 1.9dbic |
| Signal Bandwidth: | 20MHz/10MHz |
| Power Consumption: | <4W |

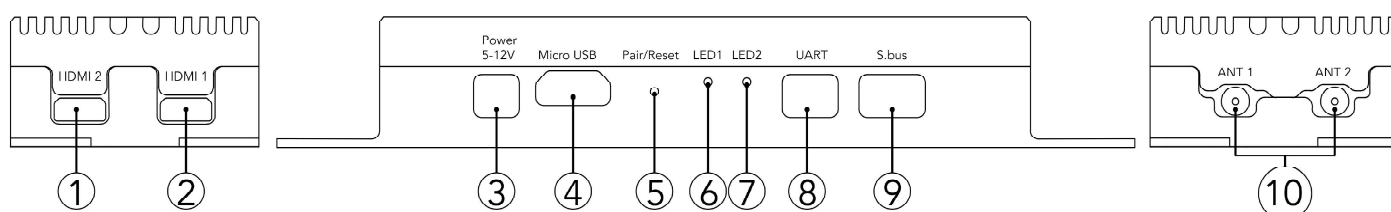
Air Unit LEDs

LED 1 (left)

| Feature | Specification |
|----------------------------------|---|
| Steady Green Light: | Receiving HDMI 1 Signal |
| Steady Red Light: | Receiving HDMI 2 Signal |
| Steady Yellow Light: | Receiving flight control data signal |
| Changing Green-Yellow-Red Light: | Receiving two video signals and flight controller signal |
| No Light: | Receiving no valid video signal or flight controller signal |

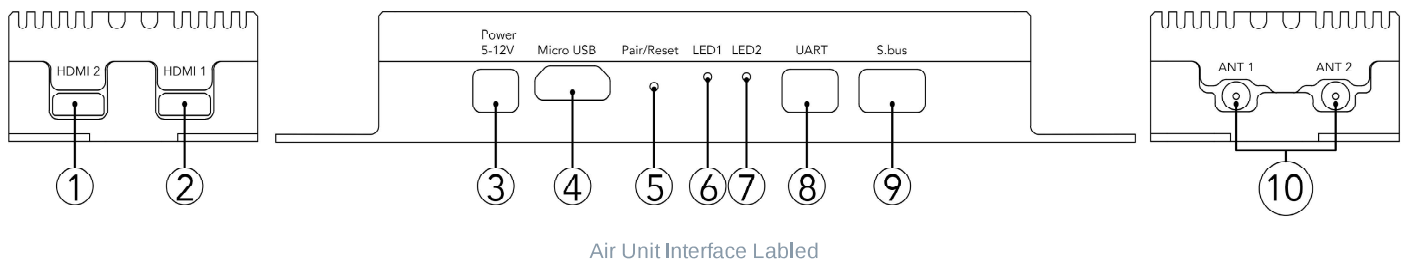
LED 2 (right)

| Feature | Specification |
|-----------------------|--|
| 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: | Rover Unit is not powered |



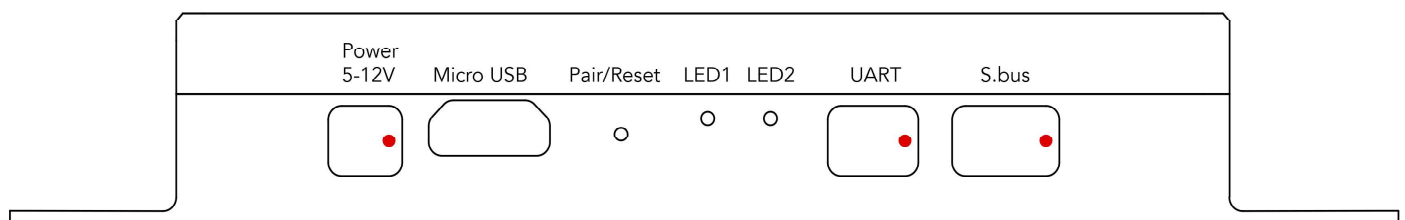
Air Unit Interface & Installation

Connector Inputs

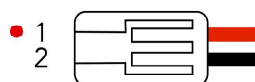


1. HDMI 2: Micro HDMI, for video input
2. HDMI 1: Micro HDMI, for video input (preferred)
3. Power: 6V - 12.6V max (3s Lipo supported) power input **avoid sharing BEC with servos*
4. Micro USB: For debug or upgrade, support OTG
5. Pair/Reset: For pairing and rest
6. LED 1,2: To indicate pairing status and transmission status
7. UART: 3.3V / 5V UART
8. S.bus: Tow 3.3V RC output
9. Antenna 1,2: MMCX, for signal transmission and communication

Pin Out

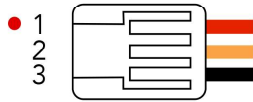


Power (2-Pin JST-GH)



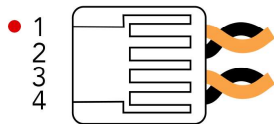
| Pin # | Name | Description |
|-------|-------|--|
| 1 | Power | Power In 5V - 12.6V max (3s Lipo supported) |
| 2 | GND | Ground Pin |

UART (3-Pin JST-GH)



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

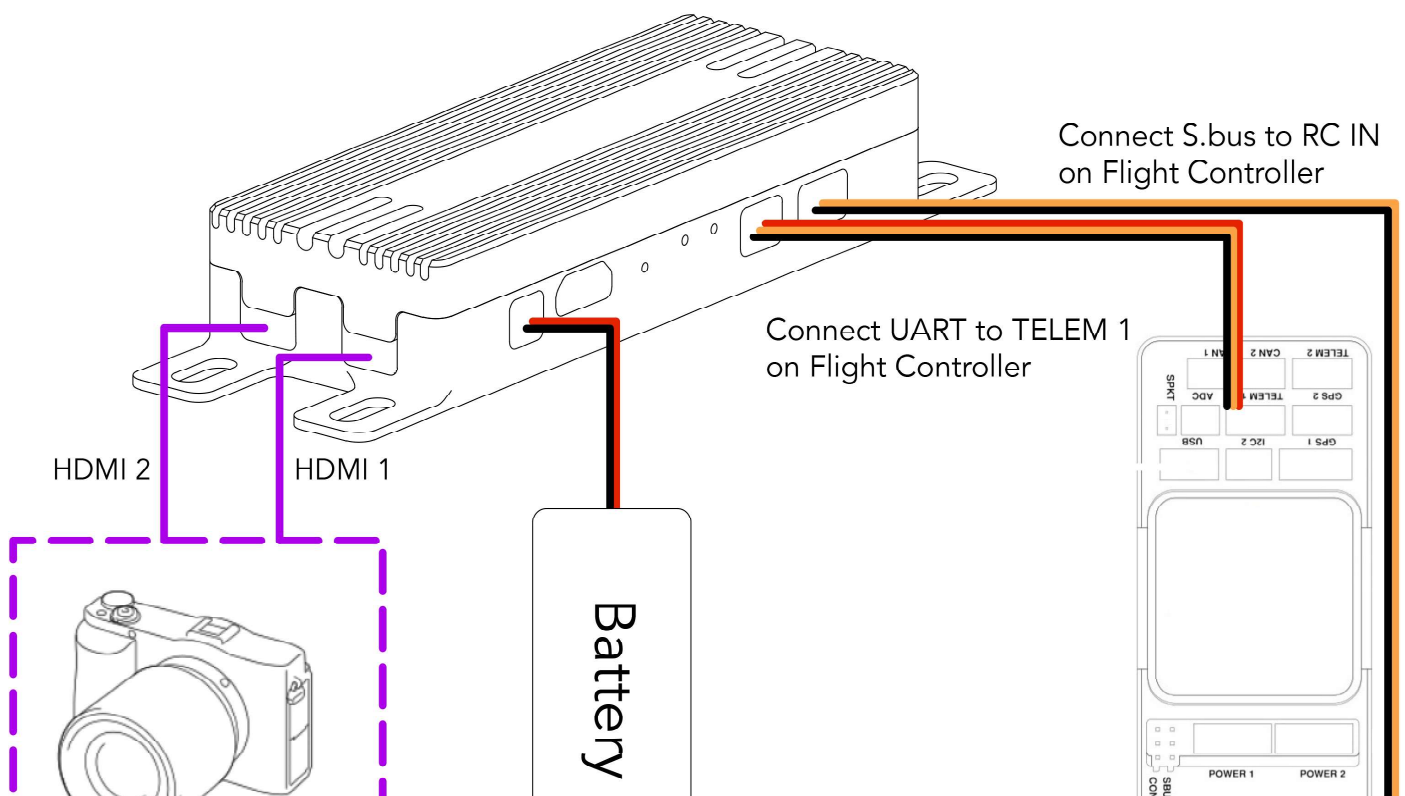
S.bus (4-Pin JST-GH)

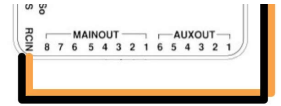
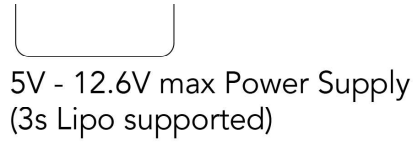


| Pin # | Name | Description |
|-------|-------------|-------------------------------------|
| 1 | S.bus out 1 | RX of rover module 3.3V / 5V TTL |
| 2 | GND | Ground Pin |
| 3 | RSVD | For future use |
| 4 | GND | Ground Pin |

Air Unit Pin Out

Connector Routing





Air Unit Connection

Installation

- Mount the Rover Unit securely to the drone
- Choose the best position to attach the rover unit antennas.
- Connect the antennas to ANT 1, ANT 2 (MMCX) on the Rover unit. There shall be no metal parts or any conductor attached to the antennas.
- Connect S.bus on the Rover Unit to the RC IN on the Flight Controller.
- Connect UART on the Rover unit to the TELEM 1 or TELEM 2 on the Flight Controller.
- Connect 5V - 12.6V max (3s Lipo supported) battery to the power input on the Rover Unit.
- Connect a camera to HDMI 1 (preferred) on the Rover Unit. If you are using two cameras, connect the second camera to HDMI 2. You may switch from Stream 1 and Stream 2 on the Ground Station to display the corresponding video stream.

Ground Station





Ground Station Specifications

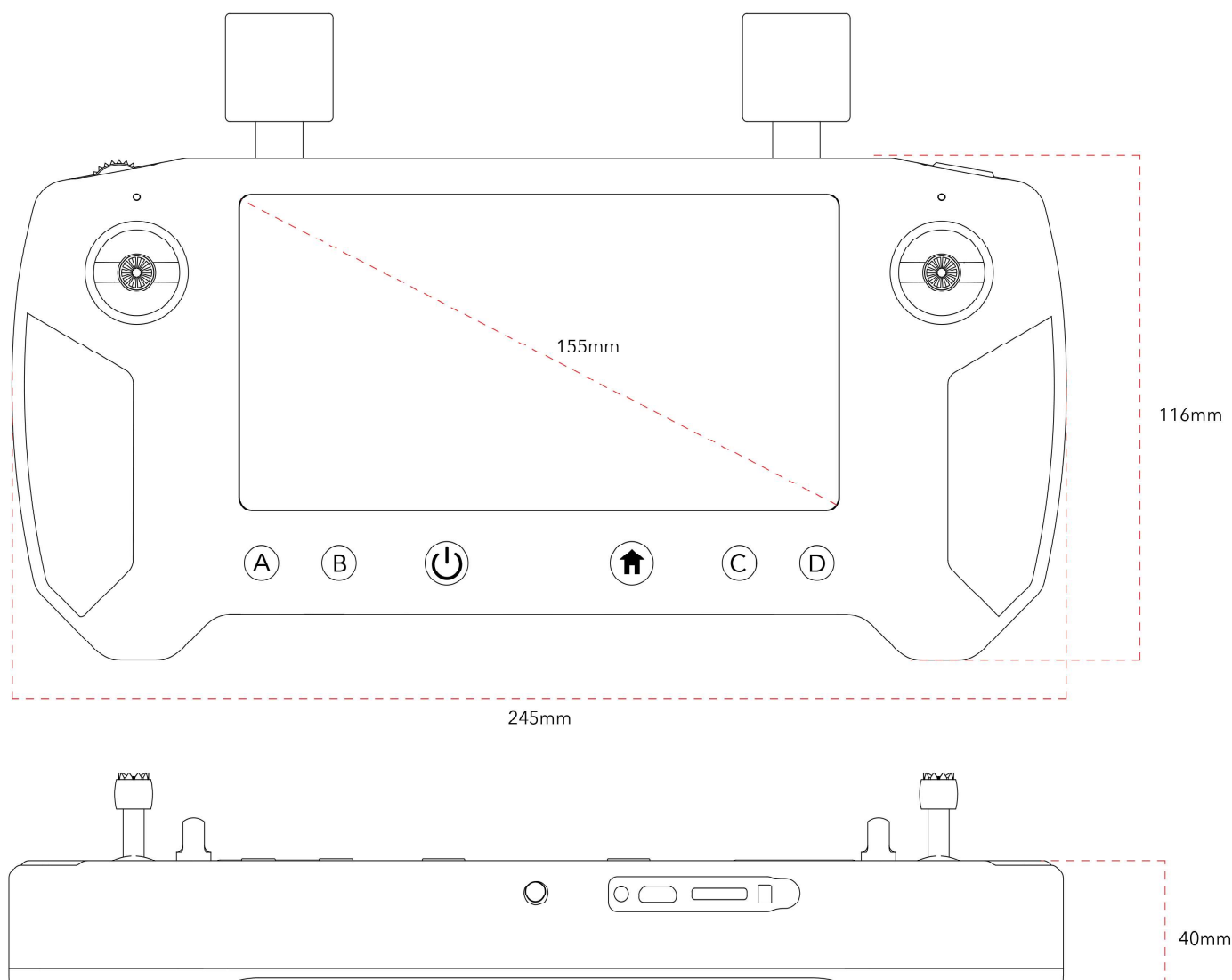


Ground Station Buttons & LED



Ground Station Charging

Ground Station Specifications



HereLink Blue Ground Station Dimensions

| Feature | Specification |
|--------------------|---|
| Housing: | 6061 Aluminum |
| Dimensions: | 245mm × 116mm × 40mm not including external antenna and joystick |
| Weight: | 920g (w/ antennas) |
| Screen: | 5.46 inch, 1080P, 16 Million Colors, Capacitive Touch Screen |
| Audio: | 1x Built-in Speaker, 2x Built-in Microphone |
| Remote Control: | 2x Joystick, 1x Wheel, 6x Button, 1x Upper Right Button |
| Communication: | WIFI/GPS 2.4GHz |
| LED: | 2x tricolor LED (left, right) |
| Interface: | 1x MicroUSB, 1x Micro SD Card Slot (extendable to max 64GB) |
| Antenna: | 2.4GHz (1.9dBic) × 2 detachable ,built-in wifi antenna, built-in GPS antenna, external GPS antenna interface x 1 (optional) |
| Power: | 4950mAh built-in Li-ion battery |
| Charging: | Support Micro USB 5V 2A |
| Power Consumption: | <4W Average (with transmission on, medium screen brightness, WIFI off, GPS off) |

Ground Station Buttons & LED

