

OneVDLink R30 Networking Link User Manual

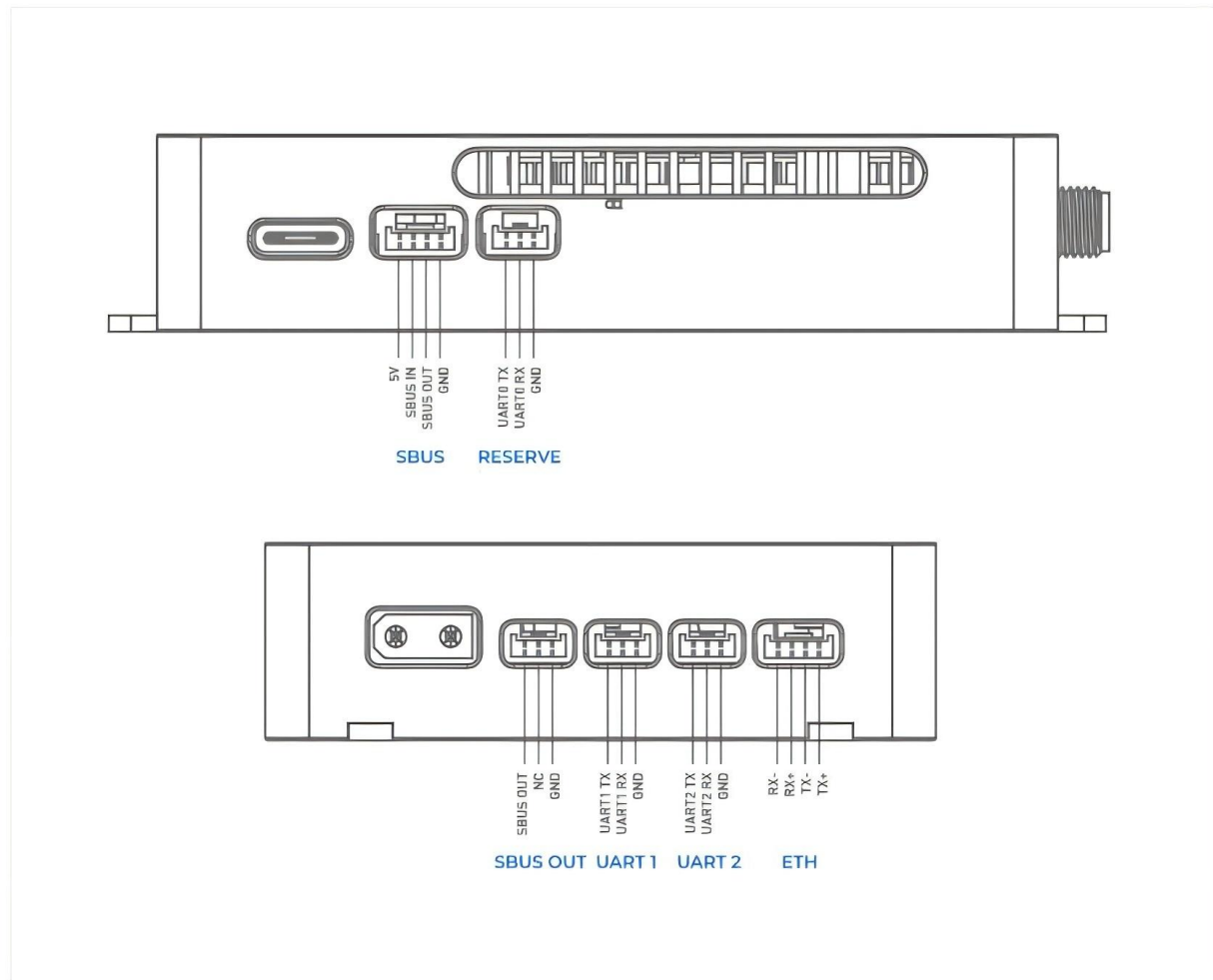
Product Introduction

- 1. 1.4 GHz and 2.4 GHz dual-band communication
- 2. Maximum communication distance: 30 km; bandwidth: 30 Mbps
- 3. Supports up to 32 communication nodes with star networking
- 4. Automatic frequency hopping for strong anti-interference capability
- 5. Built-in active cooling design
- 6. Optimized specifically for the MAVLink protocol

Product Specification

Item	Specification
Communication frequency band	2400-2483.5 MHz 1427.9-1447.9MHz
Communication bandwidth	30Mbps
Anti-jamming	Dynamic Frequency Hopping
Power level	2.4G 25dBm±2 1.4G 25dBm±2 (Optional)
Communication range	Max 30 km (one-to-one, interference-free, line-of-sight environment)
Communication node	Maximum 32
Encryption method	ZUC, SNOW3G, AES — three selectable encryption methods.
Modulation scheme	Supports QPSK, 16QAM, and 64QAM modulation schemes.
Air Interface Latency	UL one-way latency < 25 ms; DL one-way latency < 25 ms
Sensitivity (BLER<=3%)	2.4G(Channel 24415): 20MHz -92dBm(10Mbps) 20MHz -96dBm(5Mbps) 10MHz -89dBm(10Mbps) 10MHz -92dBm(5Mbps) 1.4G(Channel 14379): 20MHz -86dBm(20Mbps) 20MHz -97dBm(5Mbps) 10MHz -88dBm(10Mbps) 10MHz -94dBm(5Mbps)
Web page configuration	Supports browser-based login and configuration (Edge recommended)
Interface details	DC IN ×1, SBUS IN ×1, Serial Port ×2, Ethernet Port ×1
Power consumption	Overall operating power consumption < 6 W
Heat dissipation	Built-in Active Cooling
Operating Temperature	-20°C ~ 75°C
Working voltage	24±10V
Size	91mm×61.2mm×18mm
Weight	132g

Interface Definition



Usage Notes

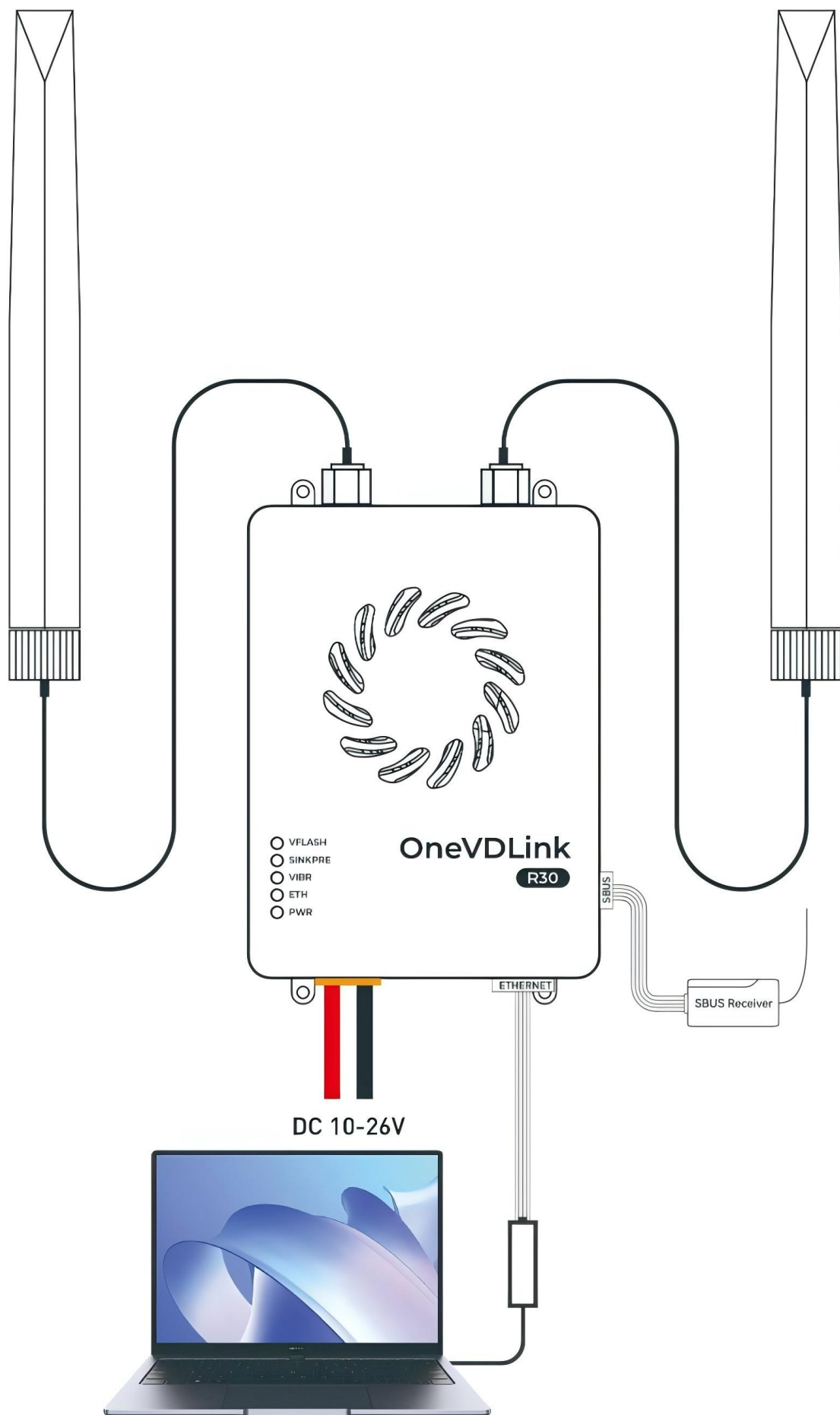
1. The distance between the main antenna (MAIN ANT) and the secondary antenna (SLAVE ANT) should be greater than 20 cm. Antenna extension cables are included.
2. The included omnidirectional antennas should be installed vertically upward on the ground side, and vertically upward or downward on the air side.
3. The VSWR of the included omnidirectional antennas is lower when folded than when unfolded, resulting in better communication performance in the folded state.
4. The antennas must not be placed directly against carbon fiber or metal, and there should be no metal or carbon fiber obstructions nearby.
5. When the ground side and air side are within 2 meters of each other, the flight controller may fail to receive the relayed SBUS signal, and commands uploaded from the ground station may experience significant latency. Please increase the distance between the ground and air links.

Wiring method

Ground Unit Connection Method

Connect the ground unit's Ethernet port to your laptop's Ethernet port. Power the ground unit with a 3-8S battery. The RC receiver can be connected to the SBUS interface of the OneVDLink.

The link supports receiver SBUS signal forwarding.



Using Ethernet Communication

Connect the air unit's Ethernet port to the flight controller's Ethernet port, and connect SBUS OUT to the flight controller's SBUS IN. Refer to the diagram below.

Configure the flight controller network parameters as follows:

net_enable=1

NET_DHCP=0

NET_P1_TYPE=1

NET_P1_PORT=15001 (configurable from 0 to 65535)

NET_P1_PROTOCOL=2

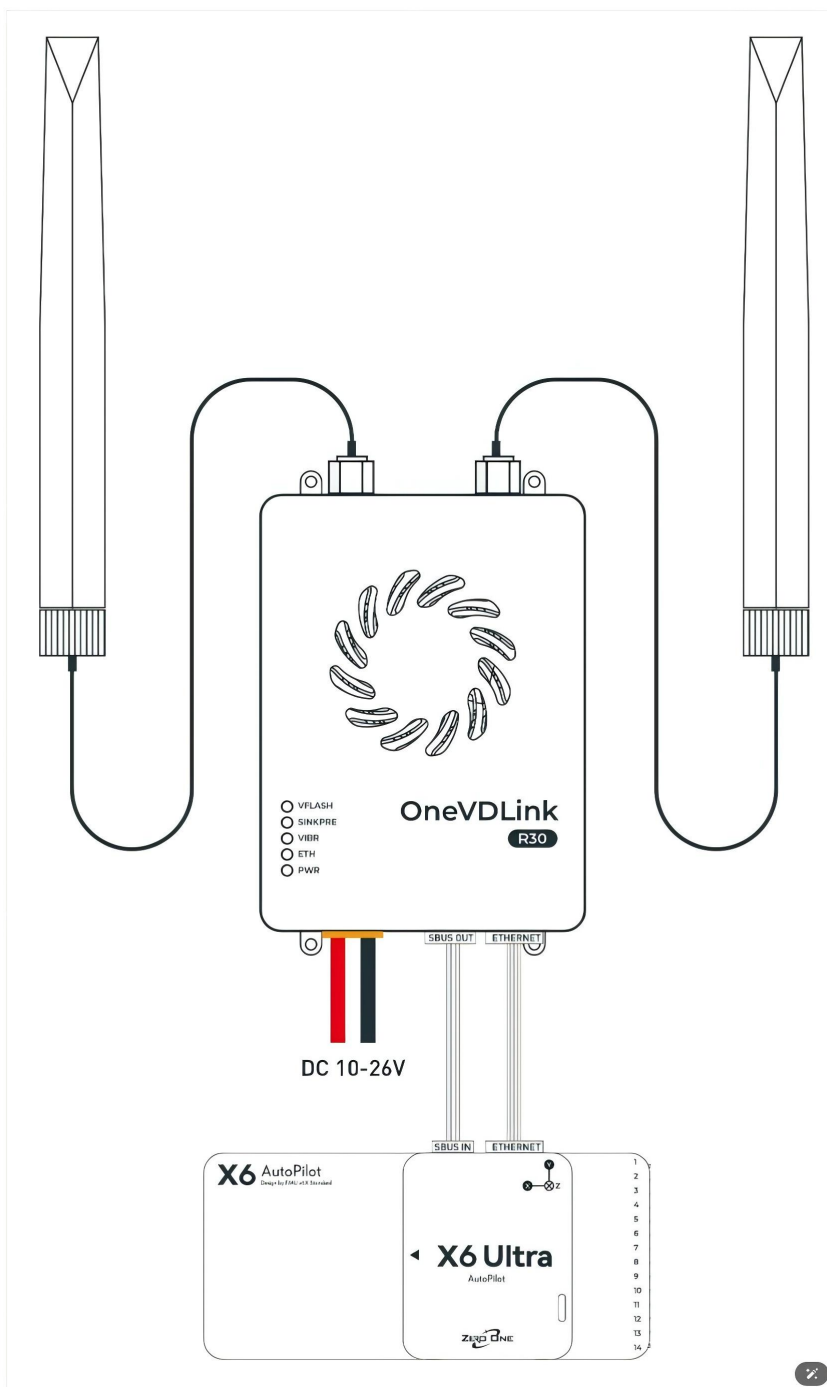
NET_P1_IP0=192

NET_P1_IP1=168

NET_P1_IP2=1

NET_P1_IP3=20 (The link device has already used 11 and 12 by default; do not configure the same IP)

On the ground computer, manually set a static IP address of 192.168.1.20. In Mission Planner, select UDP port 15001 and click Connect.



Default factory configuration: Point-to-point communication, ground unit IP 192.168.1.11, air unit IP 192.168.1.12, key 0001.

UART serial port interface configuration

Interface	Configuration instructions	Para
UART0 Switch <i>It is recommended to keep it always on by default from the factory.</i>	<code>At^uartipfun=1</code>	1 :
UART0 Basic Configuration <i>Configure the baud rate, UDP port, and destination address.</i>	<code>at^UARTIP="B115200",0,1,1,14550,"0.0.0.0",14550,"192.168.1.100"</code>	"B1: 145: Port "0.0 "19: IP ac
UART0 MAVLink 2.0 Protocol Configuration <i>Commonly used, recommended as the factory configuration, though not strictly required in actual testing.</i>	<code>at^Uartipfrs=0</code> <code>at^uartipfrl=0</code> <code>at^Uartipfrs=1,1,fd</code> <code>at^uartipfrl=1,0,1,1,12</code>	Use c conc pars fram
UART1/UART2 Switch <i>It is recommended to keep it always on by default from the factory.</i>	<code>At^uartfun=1</code>	1 : shan
UART1 Configuration <i>Configure the network and serial port parameters for UART1.</i>	<code>AT^UART1SET="192.168.1.100","14551","14551","B115200","8","1","N"</code>	"19: IP "14: port "B1: "8" "1" "N"
UART2 Configuration <i>Configure the network and serial port parameters for UART2.</i>	<code>AT^UART2SET="192.168.1.100","14552","14552","B115200","8","1","N"</code>	"19: IP "14: port "B1: Othe same

2. Link Issue: Web Interface Accessible but Unable to Establish Connection

Troubleshooting steps	Inspection items	Phenomenon/Instruction	Judgment and Solution
Step 1: External Environment	Signal Interference	-	Check whether there is strong interference from nearby 1.4 GHz or 2.4 GHz signal sources.
	Antenna Connection	-	Check that the antennas are correctly and securely connected to the device.
Step 2: LED Indicator	Link Status LED	Central Node: VIBR blue LED steady on . Slave Node: VFLASH green LED steady on , VIBR blue LED flashing .	1. Verify that the device is correctly configured as a Central (Master) node or an Access (Slave) node. 2. Incorrect master/slave configuration will prevent link establishment.
Step 3: Web Configuration	Access Key	-	Ensure the Access Key is exactly the same on all devices. An incorrect key will prevent link establishment.
	Operating Frequency Band	-	Ensure all devices are configured on the same frequency band (e.g., 04 or 08).
Step 4: AT Command Query	Continuous Transmission State	<code>AT^DSOCTX?</code>	Query the current continuous transmission state; it must be OFF .
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