XLINK-30 Long Range Video/Data Wireless Transmitting System

User Manual

V1.0 2020.09

FOXTECH

Disclaimer

1. Please read the user's manual carefully before use. Be sure to pay attention to the warnings and understand all points completely.
2. Please strictly abide by the local radio frequency management regulations.
3. Please follow the installation steps in the manual to use this product. Foxtech will not take legal responsibility for the damage of equipment or casualty caused by improper operation.
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Caution

1. Do not power on before installing antennas, otherwise it could cause damage to the device.
2. Make sure that the voltage is within the range of use.
3. Please pay attention to the EMC of all the electronic equipments on your aircraft.
4. It is suggested that the antenna should be installed downward and keep the antenna away from the metal parts of the aircraft.
5. Use the matching antennas.

Before Use

1. Make sure that all cables are connected correctly and firmly.
2. No foreign objects (e.g. liquids, sand, etc.) can enter inside the device.
3. Please ensure that the environment in which the equipment is used is free from electromagnetic interference.
4. When the signal weakens, you can enhance signal by changing the heading direction of the antenna.

Contents

Package Includes

1x XLINK-30 Long Range Datalink/ Videolink Air Unit

1x XLINK-30 Long Range Datalink/ Videolink Ground Unit

2x Antenna Feeder

2x J30J Cable Set

2x Transmitter Antenna for Air Unit

1x High-gain Panel Antenna

Overview

XLINK-30 is a point-to-point data/video wireless transmitting system designed for industrial UAVs, ground robots and other data communication applications, featuring 30km long transmission distance.

XLINK-30 integrates the technology of 4G, 5G, WIFI, and adopts OFDM technique and multi-path anti-interference technology, which has the advantages of long distance transmission, low latency, strong diffraction performance, and big data bandwidth communications.

A great highlight of XLINK-30 is that it supports multi-node interlinked to form a communication mesh, in which one node is too far from the ground station to receive signals, it is able to transmit data to its nearest node, by which data can be sent back to the ground station.

Key Features

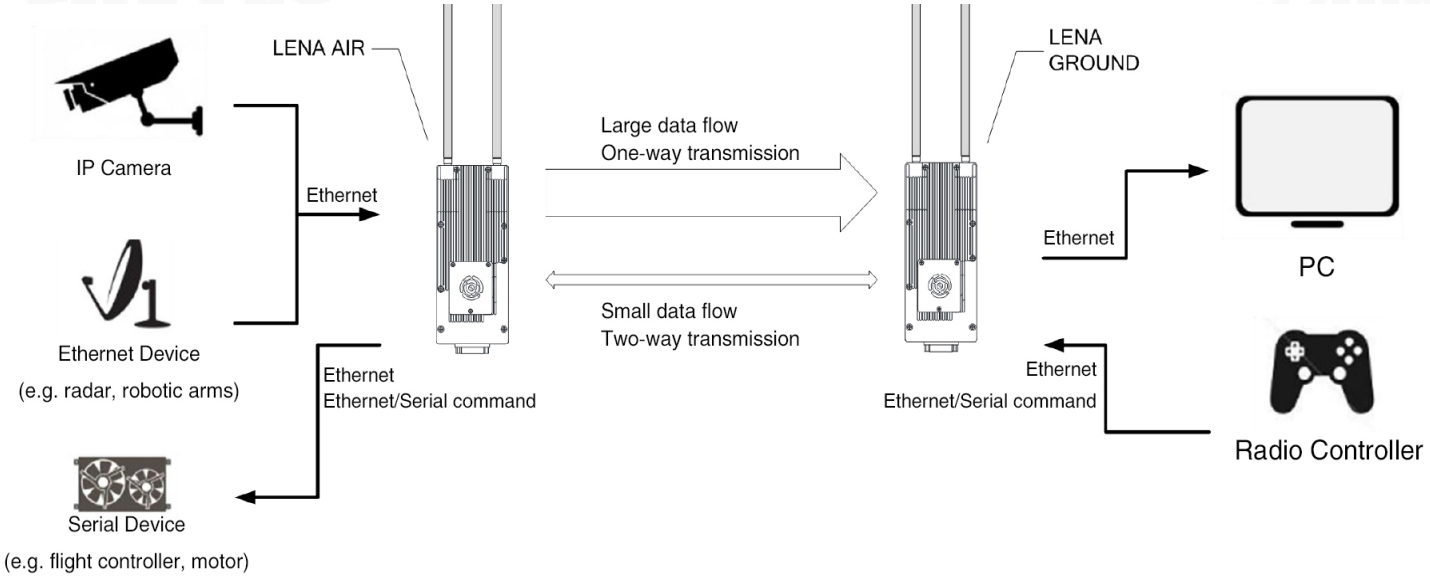
- 1410MHz ~ 1470MHz frequency band
- 2*0.5W transmitting power
- 2T2R
- OFDM technology
- Multi-path anti-interference technology
- Latency≤200ms
- Physical layer encryption
- Ethernet and serial control
- Wireless mesh network transmission

Transmission Distance

- 30km transmission: Unmanned aerial vehicles+antenna tracker+ high-gain panel antenna
- 1km~2km transmission: Unmanned ground vehicles+omni-directional FRP antenna

Air/Ground Unit Introduction

XLINK-30 needs to be used in pairs. The selection of antenna is determined by the scenarios that it is applied to. When used on aircraft, the sky end is referred to as the Air Unit, whereas the ground end is called the Ground Unit.



Air Unit to Ground Unit(A2G)							
1.2Mbps~12Mbps							
Bandwidth	4MHz	8MHz		10MHz		14MHz	20MHz
Bit rate	1.2Mbps	2.5Mbps	5.2Mbps	5.2Mbps	6.2Mbps	9.2Mbps	12Mbps
Modulation scheme	QPSK	QPSK	QPSK	QPSK	QPSK	QPwSK	QPSK
Power level	-105dBm	-103.5dBm	-98.5dBm	-100dBm	-98.4dBm	-96dBm	-95.5dBm

Ground Unit to Air Unit(G2A)							
Bandwidth	4MHz	8MHz@2.5Mbps	10MHz	10MHz14MHz/8MHz@5.2Mbps			20MHz
Bit rate	115Kbps			115Kbps	300Kbps	1Mbps	115Kbps
Modulation scheme	QPSK	QPSK	QPSK	QPSK			QPSK
Power level	-107dBm	-106.5dBm	-105dBm	-105.5dBm /-106.5dBm	-103dBm /-104dBm	-100dBm /-101dBm	-105dBm

Specification

Transmission Distance: 30km

Frequency Band: 1410MHz ~ 1470MHz

Transmitting Antenna: 2*Tx & 2*Rx

Transmitting Power: ANT1, 0.5W

ANT2, 0.5W

Voltage: DC 9V ~ 36V; Typical Value 12V

Power Consumption: Air Unit:≤12W

Ground Unit:≤6W

Bandwidth: 4MHz; 8MHz; 10MHz; 14MHz; 20MHz

Bit Rate: Air Unit to Ground Unit 1.2Mbps ~ 12Mbps

Ground Unit to Air Unit 115Kbps ~ 1Mbps

Transmission Delay: <200ms

Encryption Method: AES 128bit, Physical Layer Encryption

Communication Port: 1*RJ45(Ethernet)

1*RS232(UART)

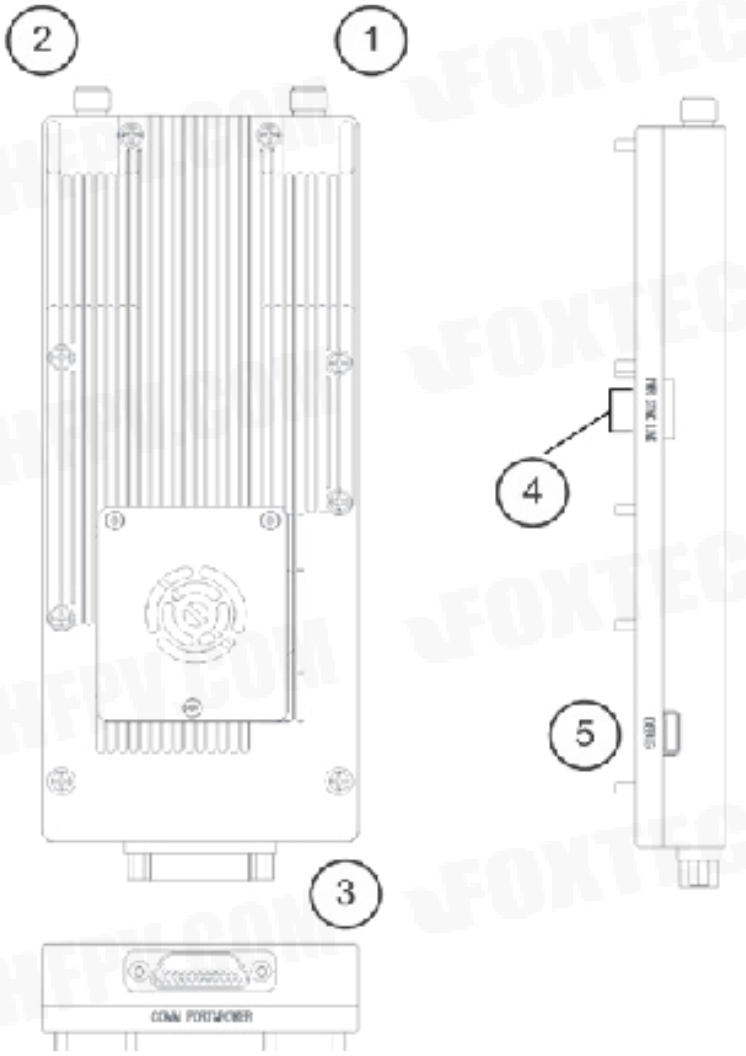
2*TTL(UART)

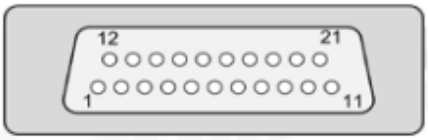
Size: 135mm*57mm*16.4mm

Weight: 174g

Working Temperature: -40°C ~ + 55°C

Interface



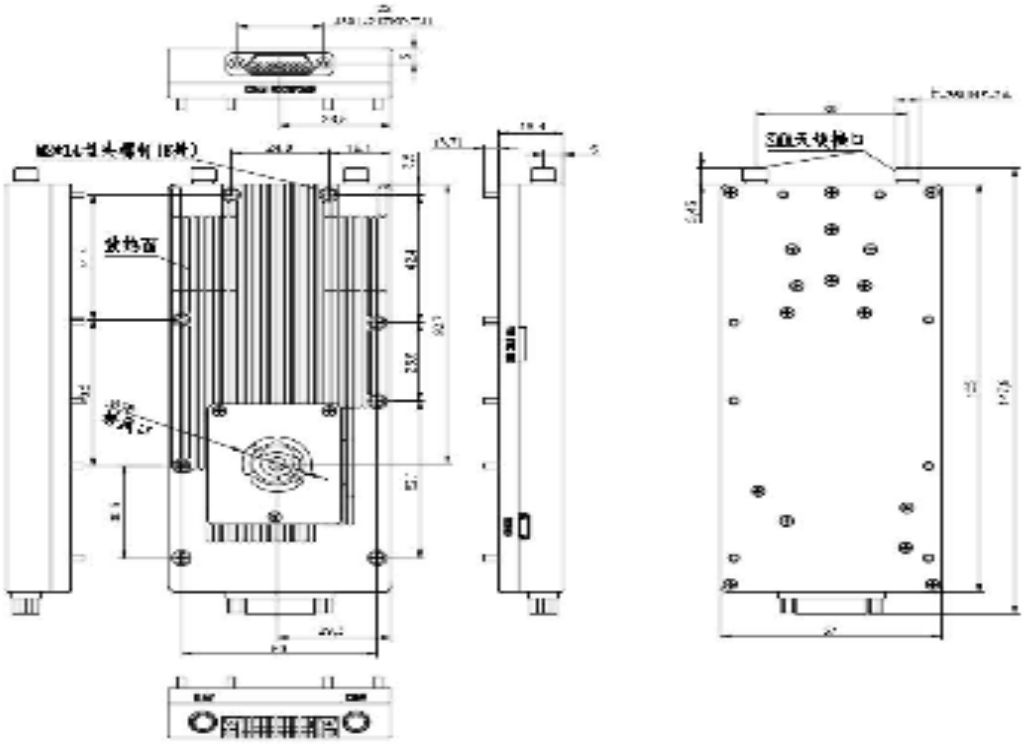
Number	Interface	Description
1	ANT1	SMA-Female
2	ANT2	SMA-Female
3	Power/Communication Port	J30JM-21ZKP, refer to pin definition below 
4	LED Indicator	1.PWR- Green: Power on 2.SYNC- Green: Air unit and ground unit is paired 3.ETH Solid green: Link established Blinks green: Link established and normal communication status LED off: Link lost
5	Debug	System monitor, not used in normal circumstances. Remove the cover before use and put it back after use.

⚠ Warning

Do not power on before installing ANT1/ANT2, otherwise it could cause damage to the device and burn it out.

Pin Number	Pin	Description
1	Tx+(PHY)	Tx from RJ45
2	Tx-(PHY)	
3	Reserved	Reserved Pin
4	Tx-TTL_1	Tx- from TTL 1
5	Reserved	Reserved Pin
6	Tx-TTL_2	Tx- from TTL 2
7	Reserved	Reserved Pin
8	RX(RS232)	RX from RS232
9	Reserved	Reserved Pin
10	VCC	+VCC Input (DC +9V~+36V)
11	VCC	
12	RX+(PHY)	Rx from RJ45
13	RX-(PHY)	
14	RX+TTL_1	Tx+ from TTL 1
15	GND_TTL_1	GND from TTL 1
16	RX+TTL_2	RX+ from TTL 2
17	GND_TTL_2	GND from TTL 2
18	TX(RS232)	TX from RS232
19	GND(RS232)	GND from RS232
20	GND	Ground
21	Pin Number	

Structure View and Installation



Before Install

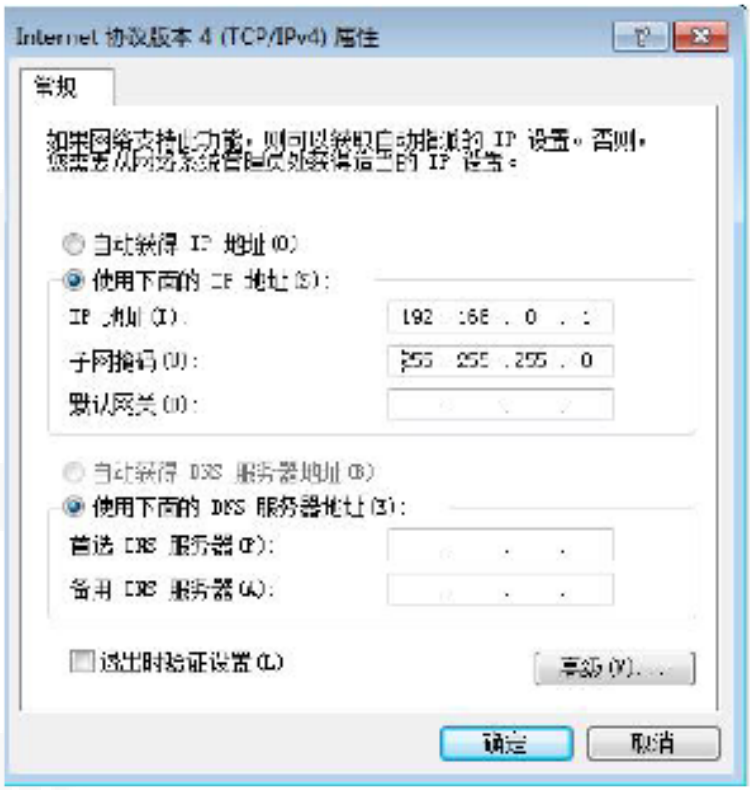
- 8x M2*14(GB/T818), cross head screwdriver
- The depth of threaded hole should be reserved at least 3mm.
- Torque requirement: 2±0.5Kg

NOTES

Do not cover the heat sink or the air inlet.

Quick Start

UI Configuration



⚠ XLINK-30 has different data rates, which needs to be configured as needed.

Step 1

Power on XLINK-30, and link it with PC by Ethernet. Then configure IP Address as shown below:
IP Address：192.168.0.1
Subnet Mask：255.255.255.0

Step 2

Search 192.168.0.9 and enter on browser, next it will show a configuration interface as figure 6. Refer to the chart below for “NOTE”, click “SUBMIT” after configuration is complete.

Step 3

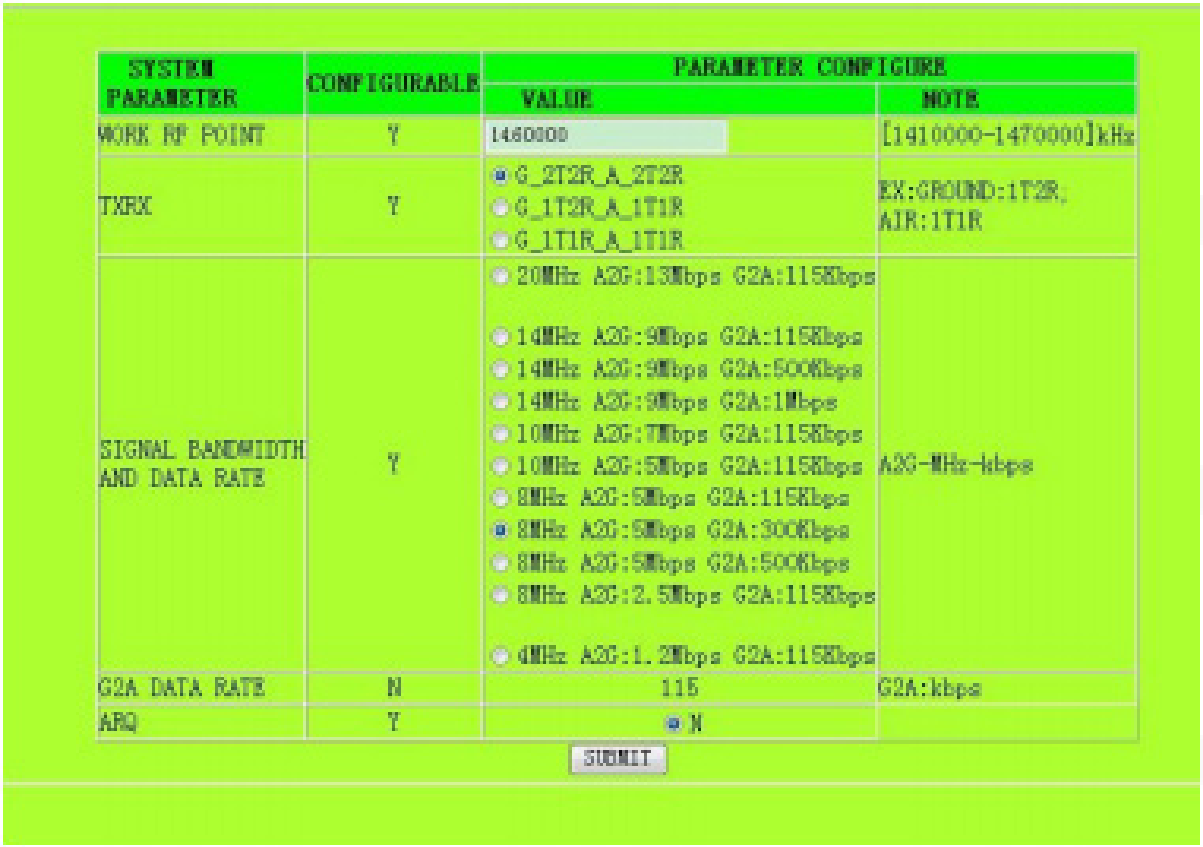
Reboot to activate the configured value.

Step 4

You need to configure the same bandwidth/data rate value for air and ground unit to ensure a

⚠ Attention

If the configuration page fails to load, search 192.168.0.9 and reenter browser (Make sure network cable is well connected).



SYSTEM PARAMETER	NOTE
WORK RF POINT	Center Frequency Point
TXRX	Transmitting Channel 2T2R 1T2R 1T1R
SIGNAL BANDWIDTH AND DATA RATE	Bandwidth and Data Rate Selection A2G: Air Unit to Ground Unit G2A: Ground Unit to Air Unit
ARQ	Automatic Repeat Request: N means request declined

Pairing

Step 1

After one unit powers on, the SYNC LED indicator turns green. About 30s later, it starts to blink, which means it is pairing with the other unit.

Step 2

If two units are powered on and paired, the indicator stops blinking and keeps on.

Step 3

If the pairing is failed, the indicator blinks green, during which the unit is still searching until two devices are successfully paired.

Possible causes of failed pairing

1. One of the unit is powered off.

2. Beyond transmission distance

3. Strong signal interference

FAQ

1.The power indicator light is not on after powering up

- Check the wiring order of the power cable.

- Check the DC power range.

2.Link indicator light is not on after powering up.

- Check that the RF cable is connected properly.

- Check the antenna is OK.

3.The link indicator light is OK. But no data output.

- Check the UART cable wiring order.

- Check the UART baud rate.

- Please contact our company's after-sales service.

4.The ground unit can't output RTSP video streaming.

- Check the cable connection and wireless link is OK.

- Check the IP address of computer is right.

- Check the RTSP server address is correct.

For more questions, please email to Foxtech after-sales service at after-sales@foxtechfpv.com.

