
S1400-P40 User manual (P2P/P2MP)

SwiftLink series: 1.4GHz
Version: 20250704V4.0



Version history

Date	Version	Modification description
20231219	V1.0	Initial version
20240315	V2.0	Modify the weight dimensions, modify the total data in Table MCS & Sensitivity
20240405	V3.0	Add multiple sets of coexistence switches. Modify the serial-to-network configuration mode. Modify the ID number length and modify the English words of background noise detection. Added the frequency matching function
20240701	V3.1	supports 2 SBUS channels. Optimized antenna selection
20250704	V4.0	Merge point-to-multipoint functionality

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1.Product overview

S1400-P40 is a self-developed TDD bidirectional graph integrated wireless transmission device. The product has the functions of real-time interference detection, adaptive frequency selection, adaptive stream, automatic retransmission, and automatic power control, which greatly improves the ability of anti-multipath and anti-interference, and has the characteristics of high reliability, good stability, and low delay.

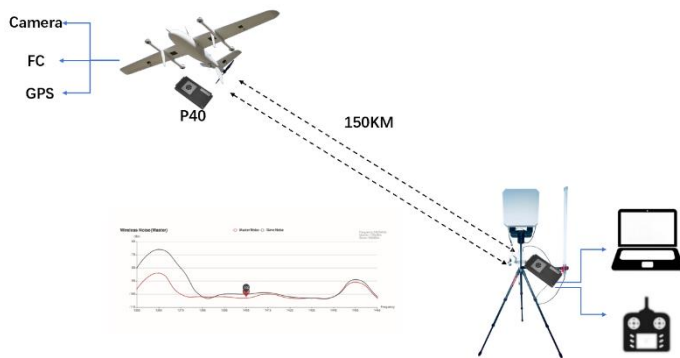
This product is suitable for firefighting, inspection, monitoring, and other scenarios, and can transmit 150KM under good air-to-ground vision.

2.Product characteristics

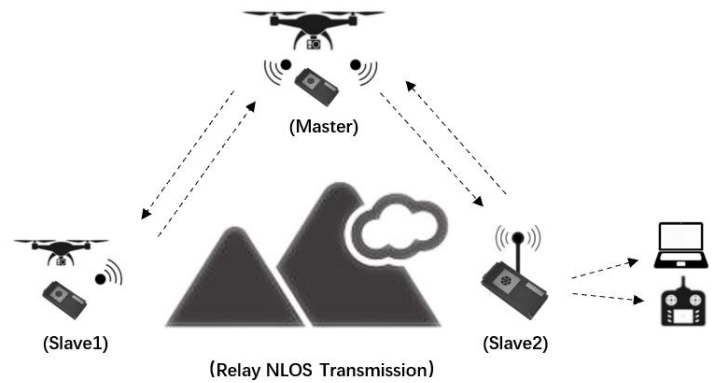
- The maximum transmission distance : 150 kilometers.
- Maximum support for 26.4Mbps@20MHz@P2MP.
- Support P2P, P2MP, and Repeater.
- Supporting RS232/TTL/RS422/SBUS.
- Support automatic frequency selection (AFS)
- Support for automatic retransmission
- Support adaptive bitstream
- Support automatic power control (APC)
- Support for automatic antenna selection (AAS)
- Support for frequency alignment function

3.Application

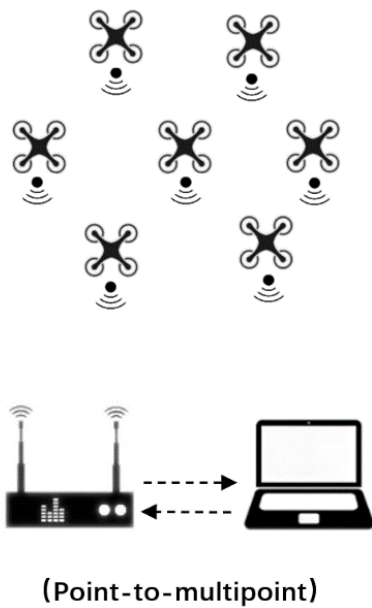
Application 1 (P2P)



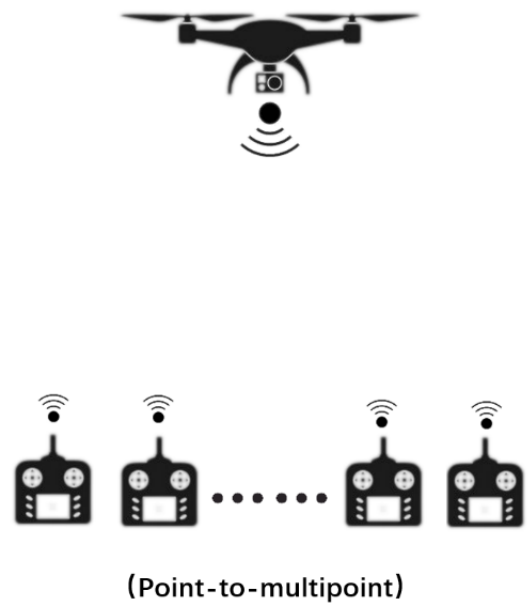
Application 2 (repeater)



Application 3 (P2MP)



Application 4 (P2MP)



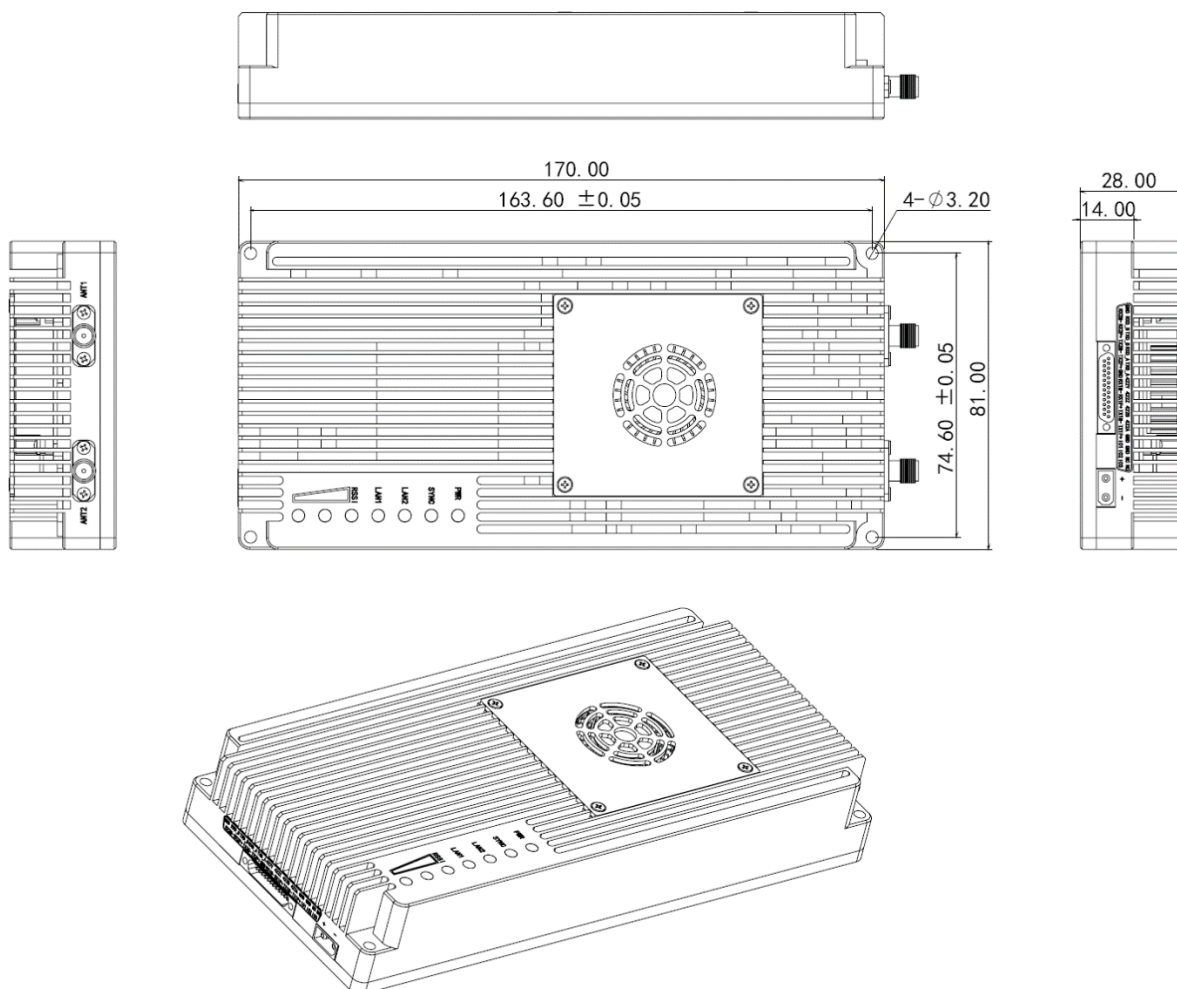
4.Product index

System parameter	Technical index
Equipment model	S1400-P40
Working frequency	1350~1470MHz (customizable)
Radio frequency	2T2R
Transmission power	40dBm (10W)
Transmission distance	LOS : 150KM
Channel bandwidth	10MHz/20MHz
Modulation mode	QPSK/16QAM
Transmission mode	P2P; P2MP; Repeater
Maximum rate	15.7Mbps@10M (P2P) 26.4Mbps@20M (P2MP)
Communication encryption	AES256
Transmission delay	≤10ms
Radio frequency interface	SMA*2
Equipment interface	XT30PW-M
Device interface	Ethernet*2; TTL/RS232*2; RS422*1; SBUS*2/TTL*1
Power Consumption	≤66W@4Mbps (Air unit); ≤15W@1Mbps (Ground unit)
Dimension(L*W*H)	180*81*28mm
Weight	415g
Working voltage	DC22~30V, Typical value: +28V@3A
Working temperature	-40~+65℃

Table 2 MCS and Total Throughput (P2P/P2MP)			
No	MCS	Total P2P throughput (Mbps)	Total P2MP throughput (Mbps)
1	BPSK1/3	Not supported	3.5
2	BPSK1/2	Not supported	5.1
3	BPSK2/3	Not supported	6.1
4	BPSK3/4	Not supported	7.3
5	QPSK1/3	3.8	7.3
6	QPSK1/2	5.6	10.6
7	QPSK2/3	6.8	12.8
8	QPSK3/4	7.8	15.0
9	16QAM1/3	7.6	13.0
10	16QAM1/2	11.1	18.7
11	16QAM2/3	13.7	22.7
12	16QAM3/4	15.7	26.4

5.Product dimension and weight

5.1 Dimension diagram

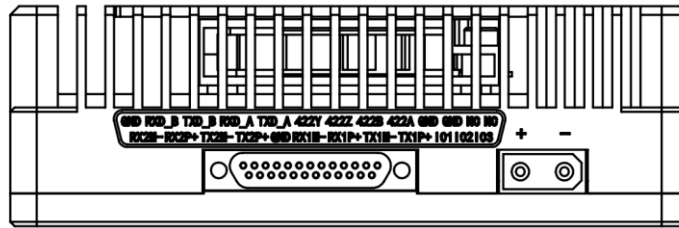


5.2 Dimension and weight

- ◆ Dimension (L*W*H): 180mm*81mm*28mm(including SMA 10mm)
- ◆ Weight : 415g

6.Product interface definition

6.1 Interface diagram



The interface of the S1400-P40 device includes the XT30PW-M power interface and J30J-25pin data interface. The interface has RS232/TTL*2 , RS422*1, SBUS*2 or TTL*1 and 100 Mbit/s Ethernet*2.

6.2 Interface definition

Power interface: XT30PW-M. Power supply range: DC22-30V Typical value:28V@3A

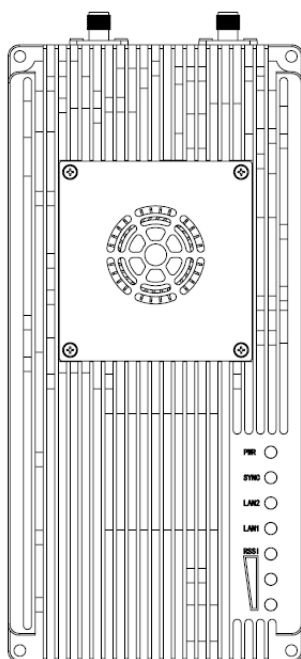
Linear order	Pin name	Interface definition	Interface description	Signal direction
1,2,3,4	GND	Ground	Ground	
5	422A	Serial port 3 RS-422	Receiving data RX+	I
6	422B		Receiving data RX-	I
7	422Z		Transmitting data TX-	O
8	422Y		Transmitting data TX+	O
9	TXD_A	Serial port 1 RS232/TTL	Transmitting data TX	O
10	RXD_A		Receiving data RX	I
11	TXD_B	Serial port 2 RS232/TTL	Transmitting data TX	O
12	RXD_B		Receiving data RX	I
13	GND		Serial port 2 ground	O
14	SBUS /TTL TX	Serial port 4 SBUS*2/TTL*1 (Note 2,3)	SBUS/TTL Transmitting data	O
15	SBUS /TTL RX		SBUS/TTL Receiving data	I
16	TTL GND		TTL ground	O
17	TX1P+	Network port 1	Transmitting data TX+	O
18	TX1M-		Transmitting data TX-	O
19	RX1P+		Receiving data RX+	I
20	RX1M-		Receiving data RX-	I
21	GND	Ground	Serial port 1 ground	O
22	TX2P+	Network port 2	Transmitting data TX+	O
23	TX2M-		Transmitting data TX-	O
24	RX2P+		Receiving data RX+	I
25	RX2M-		Receiving data RX-	I

Note1: Signal direction I indicates radio input and direction O indicates radio output.

Note2: SBUS 14 and 15pin are input on the ground side, and SBUS14 and 15pin are output on the air side

Note3: If you need to use two SBUS, you need to configure 14-pin > 14-pin for the air server SBUS mapping. 15pin->15pin.

7.Product indicator meaning



Power light PWR (green)

When the PWR light is on, the device is powered on.

SYNC (green)

Out of sync state, light flashing.

After synchronization, the light is steady on.

Network port light : LAN1, LAN2 (green)

The network port light blinks when data is being sent or received.

Receiving signal energy light(RSSI 3 green lights)

The greater the number of energy lights, the greater the signal reception strength.

The RSSI light represents the strength of the received signal	
Number of RSSI energy lights on	Received energy dBm
3 RSSI lights on	about -50dBm
2 RSSI lights on	about -80dBm
1 RSSI light on	about -95dBm

Module type	Mode	S1400-P40 light status				
		PWR	SYNC	LAN 1 LAN 2	RSSI 123	Working mode
master	Un-sync	Powered on	Flashing	Data sending and receiving, flashing	Off	P2P/P2MP
master	Sync	Powered on	Steady on	Data sending and receiving, flashing	Proportional to the strength of the received signal	P2P/P2MP
repeater	Un-sync	Powered on	Flashing	Data sending and receiving, flashing	Searching	P2P
repeater	Sync	Powered on	Steady on	Data sending and receiving, flashing	Display the received slave energy	P2P
slave	Un-sync	Powered on	Flashing	Data sending and receiving, flashing	Searching	P2P/P2MP
slave	Sync	Powered on	Steady on	Data sending and receiving, flashing	Proportional to the strength of the received signal	P2P/P2MP