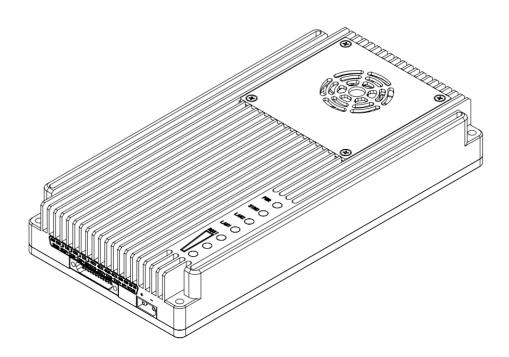
S1400-P39 User manual (P2P/P2MP)

SwiftLlink 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		

Catalogue

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1.Product overview

S1400-P39 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 100KM under good air-to-ground vision.

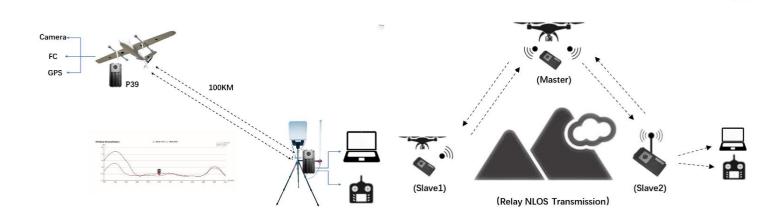
2.Product characteristics

- The maximum transmission distance: 100 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

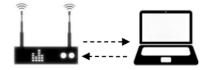
Application 1 (P2P)

Application 2 (repeater)



Application 3 (P2MP)

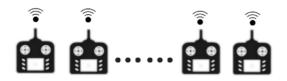




(Point-to-multipoint)

Application 4 (P2MP)





(Point-to-multipoint)

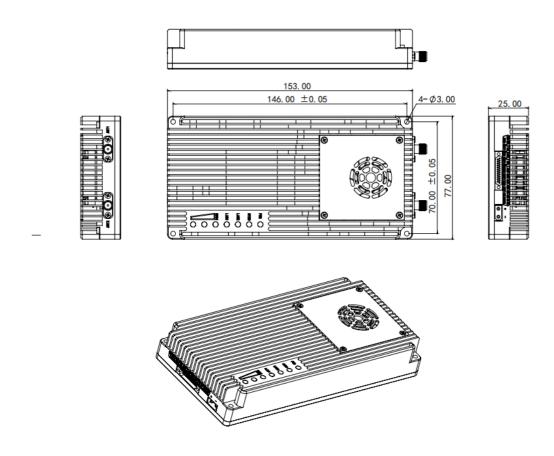
4.Product index

System parameter	Technical index			
Equipment model	S1400-P39			
Working frequency	1350~1470MHz (customizable)			
Radio frequency	2T2R			
Transmission power	39dBm (8W)			
Transmission distance	LOS: 100KM			
Channel bandwidth	10MHz/20 MHz			
Modulation mode	QPSK/16QAM			
Transmission mode	P2P; P2MP; Repeater			
Maximum rate	16.4Mbps@10M (P2P)			
Iviaximum rate	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	≤48W@4Mbps (Air unit);			
Power Consumption	≤12W@1Mbps (Ground unit)			
Dimension(L*W*H)	163*77*25mm			
Weight	340g			
Working voltage	DC22~30V, Typical value: +24V@2A			
Working temperature	-40~+75°C			

	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	4.0	7.3		
6	QPSK1/2	5.8	10.6		
7	QPSK2/3	7.1	12.8		
8	QPSK3/4	8.2	15.0		
9	16QAM1/3	8.0	13.0		
10	16QAM1/2	11.6	18.7		
11	16QAM2/3	14.3	22.7		
12	16QAM3/4	16.4	26.4		

5. Product dimension and weight

5.1 Dimension diagram

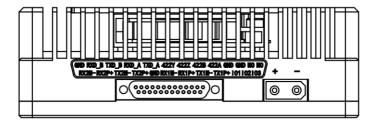


5.2 Dimension and weight

- ◆ Dimension (L*W*H): 163mm*77mm*25mm(including SMA 10mm)
- ♦ Weight: 340g

6.Product interface definition

6.1 Interface diagram



The interface of the S1400-P39 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

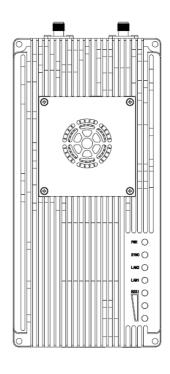
Power interface: XT30PW-M. Power supply range: DC22-30V Typical value:24V@2A

Linear	Pin name	Interface definition	Interface description	Signal
order				direction
1,2,3,4	GND	Ground	Ground	
5	422A		Receiving data RX+	I
6	422B	Serial port 3	Receiving data RX-	I
7	422Z	RS-422	Transmitting data TX-	0
8	422Y		Transmitting data TX+	0
9	TXD_A	Serial port 1	Transmitting data TX	0
10	RXD_A	RS232/TTL	Receiving data RX	I
11	TXD_B	Serial port 2	Transmitting data TX	0
12	RXD_B	RS232/TTL	Receiving data RX	I
13	GND		Serial port 2 ground	0
14	SBUS /TTL TX	Serial port 4	SBUS only Output (Air)	0
15	SBUS /TTL RX	SBUS*2/TTL*1	SBUS only Input (Ground)	I
16	TTL GND	(Note 2,3)	TTL ground	0
17	TX1P+		Transmitting data TX+	0
18	TX1M-	Network port 1	Transmitting data TX-	0
19	RX1P+		Receiving data RX+	I
20	RX1M-		Receiving data RX-	I
21	GND	Ground	Serial port 1 ground	0
22	TX2P+		Transmitting data TX+	0
23	TX2M-	Network port 2	Transmitting data TX-	0
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	Mode	S1400-P39 light status				
type		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	Data sending and	Proportional to the strength	P2P/P2MP
			on	receiving, flashing	of the received signal	
repeater	Un-sync	Powered on	Flashing	Data sending and	Searching	P2P
				receiving, flashing		
repeater	Sync	Powered on	Steady	Data sending and	Display the received slave	P2P
			on	receiving, flashing	energy	
slave	Un-sync	Powered on	Flashing	Data sending and	Searching	P2P/P2MP
				receiving, flashing		
slave	Sync	Powered on	Steady	Data sending and	Proportional to the strength	P2P/P2MP
			on	receiving, flashing	of the received signal	