H-RTK F9P GNSS

Descriptions

H-RTK F9P is the latest differential high-precision GNSS positioning system series from Holybro. This system provides multi-band RTK with fast convergence times and reliable performance, concurrent reception of GPS, GLONASS, Galileo and BeiDou, and fast update rate for highly dynamic and high volume applications with centimeter-accuracy. It uses a UBLOX F9P module, a IST8310 compass, and a tri-colored LED indicator. It also has a integrated safety switch for a simple and convenient operation.

Features

We have designed three models of H-RTK F9P for you to choose, each with different antenna design to meet different customer needs.

1) *H-RTK F9P Rover lite (SKU12017)* & *H-RTK F9P Rover lite 2nd GPS (SKU12025)* - This model is lower cost, light weight, and has high performance, It can meet the needs of general DIY users. Due to the lower cost, this model can also greatly minimize the cost of large swarm drone projects such as swarm light shows. It has a integrated safety switch and a tri-colored LED indicator, and it is compatible with the open source *Pixhawk* series flight controller.

2) *H-RTK F9P Helical (SKU12018)* - This model uses a helical antenna, which has better performance than the lite version. This model can be used both on rover (aircraft) or as base station. The aluminum alloy shell design also has a integrated safety switch and a tri-colored LED indicator, and it is compatible with the open source *Pixhawk* series flight controller.
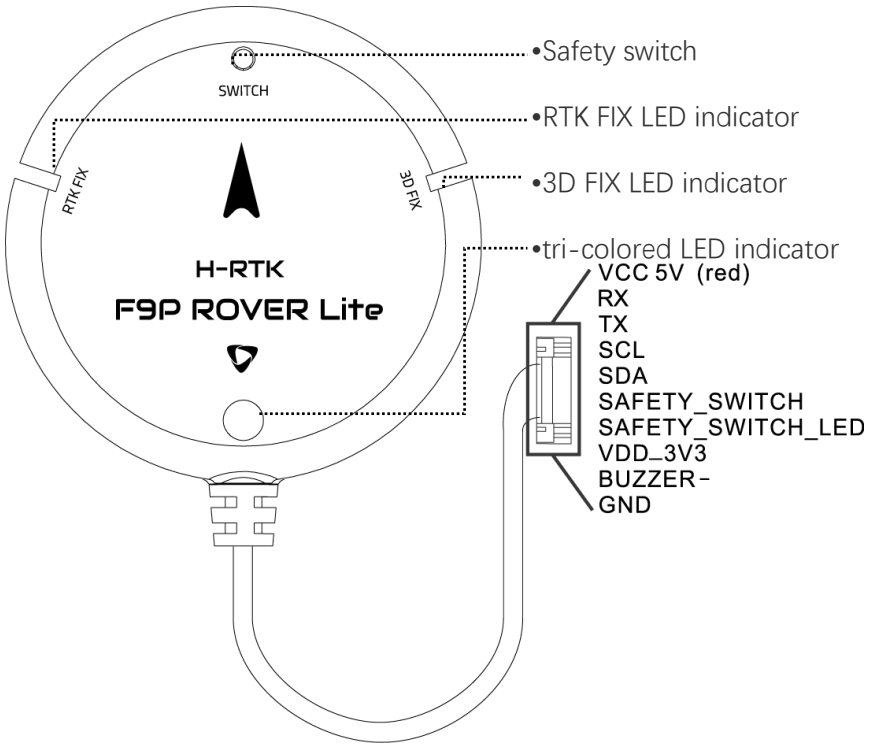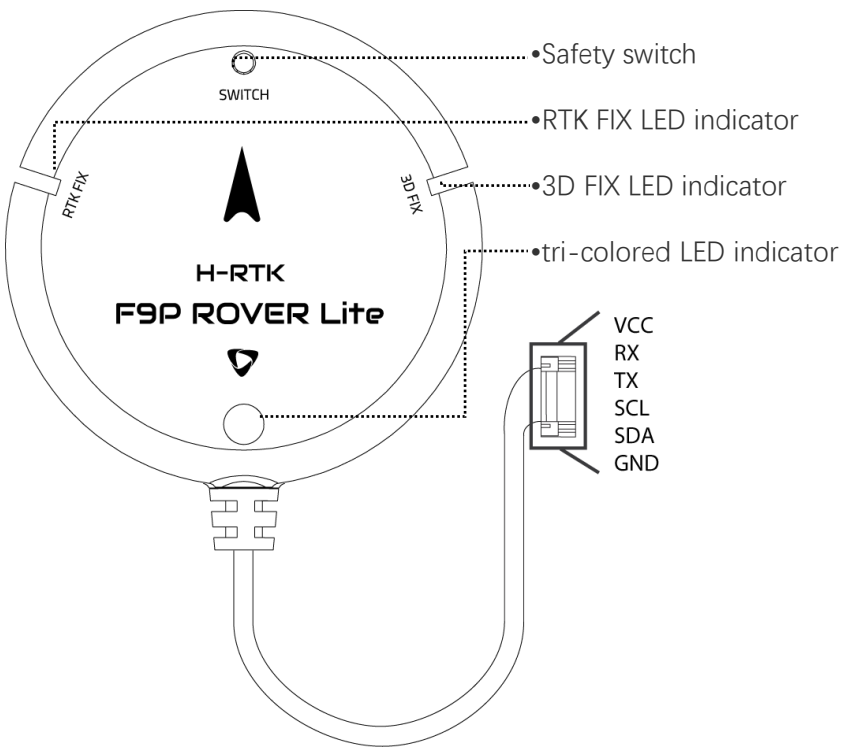

3) *H-RTK F9P Base (SKU12022)* - The board is the same as number 2 above, but it is equipped with a high-gain antenna. This model is best suited to use as base station. The search speed and positioning accuracy are the highest among the three models.
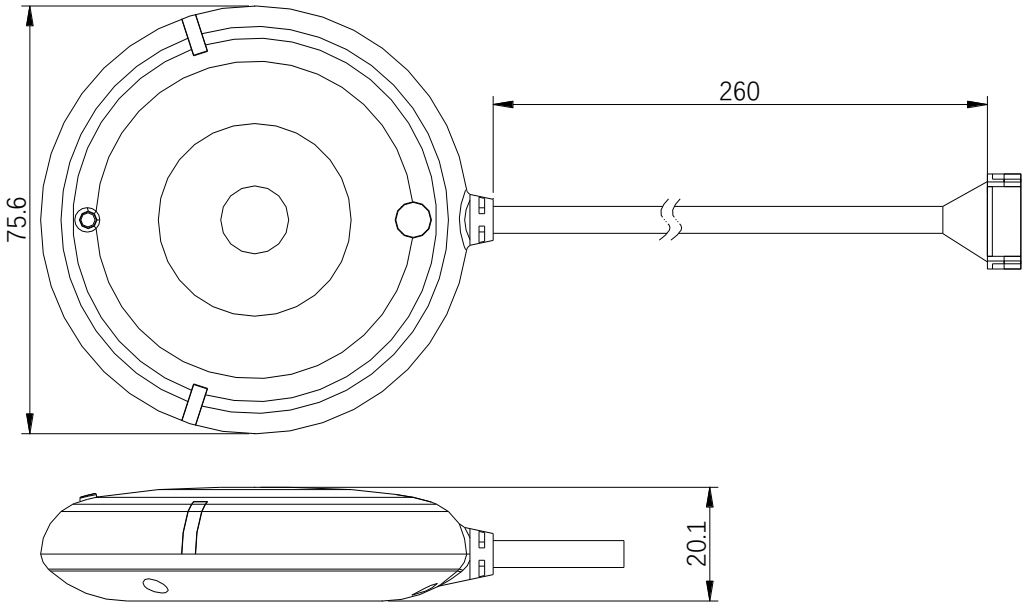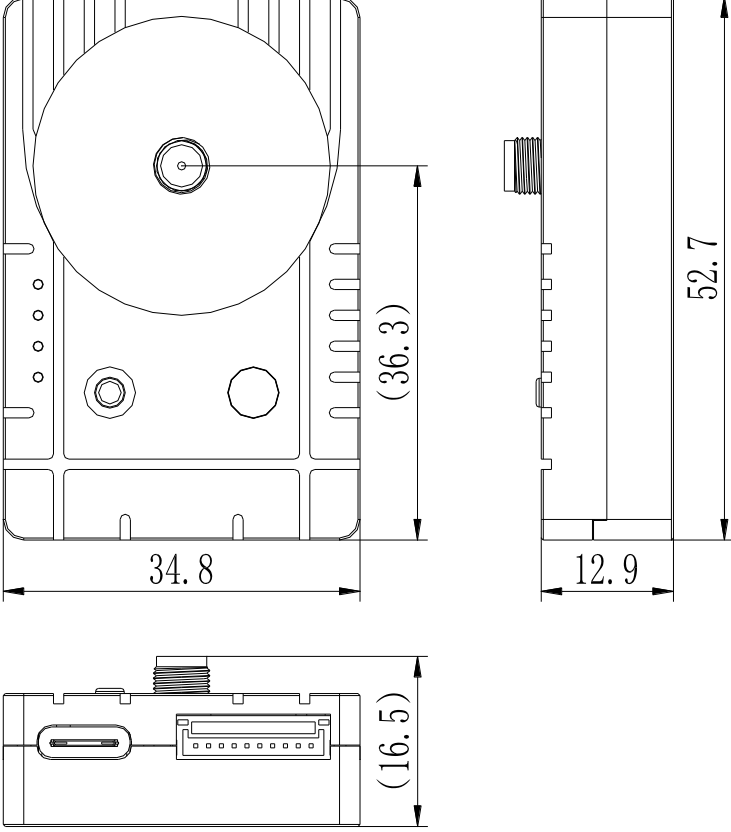
Specification

SKU	SKU12017 & SKU12025	SKU12018	SKU12022
Photo			
Product Model	H-RTK F9P Rover lite H-RTK F9P Rover lite 2nd GPS ※	H-RTK F9P Helical	H-RTK F9P Base
Application	Rover (aircraft) only	Rover (aircraft) or base station	Base station only
GNSS	GPS L1C/A(1575.42MHz) GPS L2C(1227.60MHz) GLONASS L1OF(1602MHz) GLONASS L2OF(1246MHz) BeiDou B1(1561.098MHz) BeiDou B2(1207.140MHz) Galileo E1-B/C(1575.42MHz) Galileo E5b(1207.140MHz)	GPS L1C/A(1575.42MHz) GPS L2C(1227.60MHz) GLONASS L1OF(1602MHz) GLONASS L2OF(1246MHz) BeiDou B1(1561.098MHz) BeiDou B2(1207.140MHz) Galileo E1-B/C(1575.42MHz) Galileo E5b(1207.140MHz)	GPS L1C/A(1575.42MHz) GPS L2C(1227.60MHz) GLONASS L1OF(1602MHz) GLONASS L2OF(1246MHz) BeiDou B1(1561.098MHz) BeiDou B2(1207.140MHz) Galileo E1-B/C(1575.42MHz) Galileo E5b(1207.140MHz)
Antennas Peak Gain (MAX)	L1: 4.0dBi L2:1.0 dBi	2dBi	5.5dBi
LNA Gain(typical)	20.5±1dB	33±2dB	40±2dB
Time-TO-First Fix	Cold start:≤29s Hot start:≤1s	Cold start:≤25s Hot start:≤1s	Cold start:≤24s Hot start:≤1s
RTK-SurveyIn-Time	N/A	≤5 minute @2.0mCEP	≤5 minute @1.5mCEP
Data and Update Rate	RAW:20Hz Max RTK:8Hz Max	RAW:20Hz Max RTK:8Hz Max Moving Base RTK:5Hz Max	RAW:20Hz Max RTK:8Hz Max Moving Base RTK:5Hz Max
Port	26cm Pixhawk4 compatible GH1.25 10pin cable included / GH1.25 6pin cable included ※	Port 1: GH1.25 10-pin Port 2: USB Type-c Port 3: UART 2 GH1.25 6-pin	Port 1: GH1.25 10-pin Port 2: USB Type-c Port 3: UART 2 GH1.25 6-pin
Antenna Connection Type	N/A	Board: SMA female Antenna: SMA male	Board: SMA female Antenna: TNC female Male-male SMA-TNC cable length: 5m (included)
Baud rate:	115200 5Hz (default) can be set	115200 5Hz (default) can be set	115200 5Hz (default) can be set
Working voltage Current consumption:	4.75V~5.25V 250mA	4.75V~5.25V 250mA	4.75V~5.25V 250mA
Dimensions	Diameter: 76mm Height: 20mm	Board: 34.8*52.7*12.9mm Antenna Diameter: 27.5mm Antenna height: 59mm	Board: 34.8*52.7*12.9mm Antenna Diameter: 152mm Antenna height: 62.2mm
Weight	106g	49g	469g

Note：

※SKU12017 H-RTK F9P Rover lite: GH1.25 10pin cable included. connect to GPS1 port

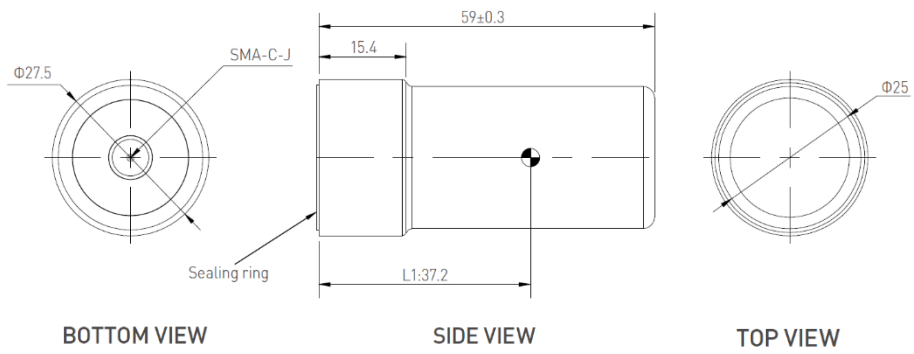   SKU12025 H-RTK F9P Rover lite 2nd GPS: GH1.25 6pin cable included. connect to GPS2 port
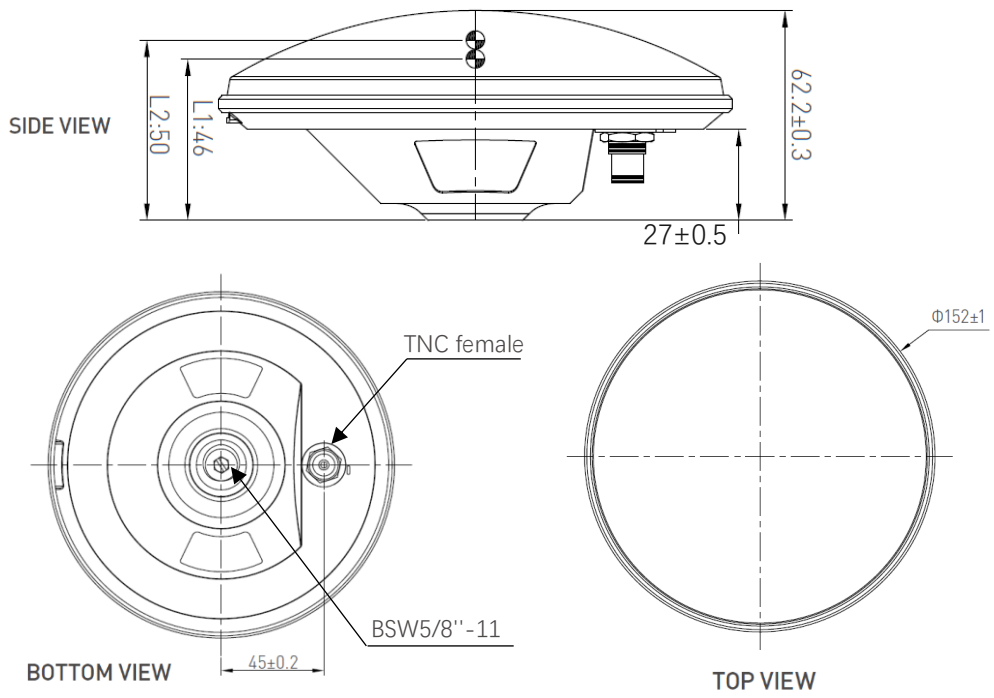
Pin Map

H-RTK F9P Rover lite(SKU12017)	 • Safety switch • RTK FIX LED indicator • 3D FIX LED indicator • tri-colored LED indicator VCC 5V (red) RX TX SCL SDA SAFETY_SWITCH SAFETY_SWITCH_LED VDD_3V3 BUZZER- GND
H-RTK F9P Rover lite 2nd GPS(SKU12025)	 • Safety switch • RTK FIX LED indicator • 3D FIX LED indicator • tri-colored LED indicator VCC RX TX SCL SDA GND

H-RTK F9P	

	Pin	Signal	Volt
GPS Port	1(red)	VCC	Power +5V
	2	RX(in)	TTL 3.3V
	3	TX(out)	TTL 3.3V
	4	SCL1	TTL 3.3V
	5	SDA1	TTL 3.3V
	6	SAFETY_SWITCH	TTL 3.3V
	7	SAFETY_SWITCH_LED	TTL 3.3V
	8	VDD_3V3	Power +3.3V
	9	BUZZER-	Open drain Output 0~5V
	10	GND	GND

Dimensions

H-RTK F9P Rover lite(SKU12017) & H-RTK F9P Rover lite 2nd GPS(SKU12025)	 DIMENSIONS IN MILLIMETERS
H-RTK F9P	 DIMENSIONS IN MILLIMETERS

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Antennas: CH7604A (Applicable for H-RTK F9P Helical)	DIMENSIONS IN MILLIMETERS
Antennas: CS7624A (Applicable for H-RTK F9P Base)	DIMENSIONS IN MILLIMETERS

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