Product Catalog

Holybro

Build Your Drone From Here

UAV Component Manufacturer

Autopilot Flight Controller	Development Drone Kit	GPS & RTK System	Telemetry Radio
Power Module	FPV	ESC	UAV Peripherals

Company Profile

Holybro is a leading company specializing in the research, development, and manufacture of essential electronic systems for unmanned vehicles. Focusing on the best known open-source based autopilots in the world, as well as GPS & RTK systems, telemetry radio, and much more.

Holybro products are trusted by a diverse range of users, from hobbyists and commercial drone manufacturers to public and private aerospace research institutes and defense organizations worldwide. Our mission is to innovate and deliver high-quality products that meet the highest standards of performance and reliability, serving our customers across the globe.

Our commitment to excellence drives us to collaborates with UAV open-source communities, developers, end-users, and the drone industry worldwide to meet the needs of the fast-changing world of UAVs while contributing to different open-source projects and standards, such as PX4, Ardupilot, Betaflight, Pixhawk, and more

Our manufacturing facilities are certified to ISO9001-2015 quality standards, and the majority of our products have achieved both CE and FCC certification.

CERTIFICATE

ACM

Quality Management System
ISO 9001:2015

Holybro Tech Co., Ltd

Certificate No.:	24CN34504561Q
Unified social credit code:	91440300MA5HM48DXG
Registered Address:	407, Block B, Kaicheng High-tech Park Taoyuan Community, Dalang Subdistrict Longhua District, Shenzhen
Office Address:	407, Block B, Kaicheng High-tech Park Taoyuan Community, Dalang Subdistrict Longhua District, Shenzhen, Guangdong, China
Certification Scope:	Design (including testing) and sales of PCBA

IAF 19/29
This is to certify that the quality management system established and implemented by the above organization meets the standard requirements.
During the validity period of the certificate, the surveillance audit should be carried out once a year and pass the audit, the certificate will continue to be valid.
The certificate can be checked out at the certification body website (www.acmchina.com) and CNCA website (www.cnca.gov.cn).

Date of first registration	09/04/2024
Date of this certificate	13/08/2024
Date of expiry	08/04/2027

Certificate query

IAS ACCREDITED Management Systems Certification Body MSCB-345

IAF

General Manager

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AUTOPILOT FLIGHT CONTROLLER

pixhawk® 6x pro

Features

- High performance H7 Processor with clock speed up to 480 MHz
- Specially formulated material for optimal IMU vibration isolation
- Analog Device ADIS16470 Industrial IMU
- Modular: separated FMU and Base system
- Redundancy: 3x Temp Controlled IMU sensors & 2x Barometer
- Triple redundancy domains: Isolated sensor do mains with separate buses and power control
- Ethernet interface
- Pixhawk Autopilot Bus, FMUv6X, and Connector Standards.
- Fully Supported in PX4 & Ardupilot

Product URL

Inside the Pixhawk® 6X Pro , you can find an ARM based STM32H753, paired with sensor technology from Analog Device, Bosch®, and InvenSense®, giving you the flexibility and reliability for controlling any autonomous vehicle. It has triple redundancy: 3 temperature-controlled IMU sensors and 2 barometer sensors on separate buses.

Its modular form factor allows ultimate flexibility, user have the ability to use any baseboard design for the project's needs. Holybro has provided several different baseboards. You can use a baseboard from any manufacturer as long as it follows the Pixhawk Autopilot Bus standard.

Specification

FMU Processor	STM32H753 - Arm® Cortex®-M7 480MHz, 2MB memory, 1MB SRAM
IO Processor	STM32F103 - Arm® Cortex®-M3 72MHz, 64KB SRAM
Accel/Gyro	ADIS16470
	IIM-42652
	ICM-45686
Compass	BMM150
Barometer	1x BMP388
	1x ICP20100

Interface

PWM out	16 (8 From IO, 8 From FMU)
UART	6 (Telem1 & 2 & 3, GPS1 & 2, UART4)
I2C	2 Bus (1 standalone, 1 in GPS2 Port)
CAN	2 Bus
Debug	Pixhawk FMU Debug Full
	Pixhawk I/O Debug Full
Power input	2 Power Input Ports (Digital)
USB	2 (Type-C & 4P JST GH)
Ethernet	Supported (4P JST GH)
Others	SPI, AD & IO, SBUS Out
R/C Input	Dedicated R/C input for Spektrum / DSM and S.BUS, CPPM, analog / PWM RSSI

Electrical Data

Max Input Voltage	6V
USB Power Input	4.75~5.25V
Servo Rail Input	0-36V (Unpowered)
Current Ratings	Telem 1 Max output current limiter: 1.5A.
	All other port combined output current limiter: 1.5A

Mechanical Data

Operating Temp	-40 ~ 85°c
Dimension	38.8 * 31.8 * 30.1mm
Weight	48.6g

AUTOPILOT FLIGHT CONTROLLER

pixhawk® 6x

Features

- High performance H7 Processor with clock speed up to 480 MHz
- Modular: separated FMU and Base system
- Redundancy: 3x Temp Controlled IMU sensors & 2x Barometer
- Triple redundancy domains: Isolated sensor do mains with separate buses and power control
- Ethernet interface
- Pixhawk Autopilot Bus, FMUv6X, and Connector Standards
- Fully Supported in PX4 & Ardupilot

Product URL

Inside the Pixhawk® 6X, you can find an ARM based STM32H753, paired with sensor technology from Bosch® and InvenSense®, giving you flexibility and reliability for controlling any autonomous vehicle. It has triple redundancy: 3 temperature-controlled IMU sensors and 2 barometer sensors on separate buses.

Its modular form factor allows ultimate flexibility due to the ability to use any baseboard design for the project's needs. Holybro has provided 3 different baseboards to choose from: the standard, mini, and CM4 baseboards. You can use baseboard by any manufacturer as long as it follows the Pixhawk Autopilot Bus standard.

Specification

FMU Processor	STM32H753 - Arm® Cortex®-M7 480MHz, 2MB memory, 1MB SRAM
IO Processor	STM32F103 - Arm® Cortex®-M3 72MHz, 64KB SRAM
Accel/Gyro	ICM-45686 x3
Compass	BMM150
Barometer	1x BMP388 1x ICP20100

Interface

PWM out	16 (8 From IO, 8 From FMU)
UART	6 (Telem1 & 2 & 3, GPS1 & 2, UART4)
I2C	2 Bus (1 standalone, 1 in GPS2 Port)
CAN	2 Bus
Debug	Pixhawk FMU Debug Full Pixhawk I/O Debug Full
Power input	2 Power Input Ports (Digital)
USB	2 (Type-C & 4P JST GH)
Ethernet	Supported (4P JST GH)
Others	SPI, AD & IO, SBUS Out
R/C Input	Dedicated R/C input for Spektrum / DSM and S.BUS, CPPM, analog / PWM RSSI

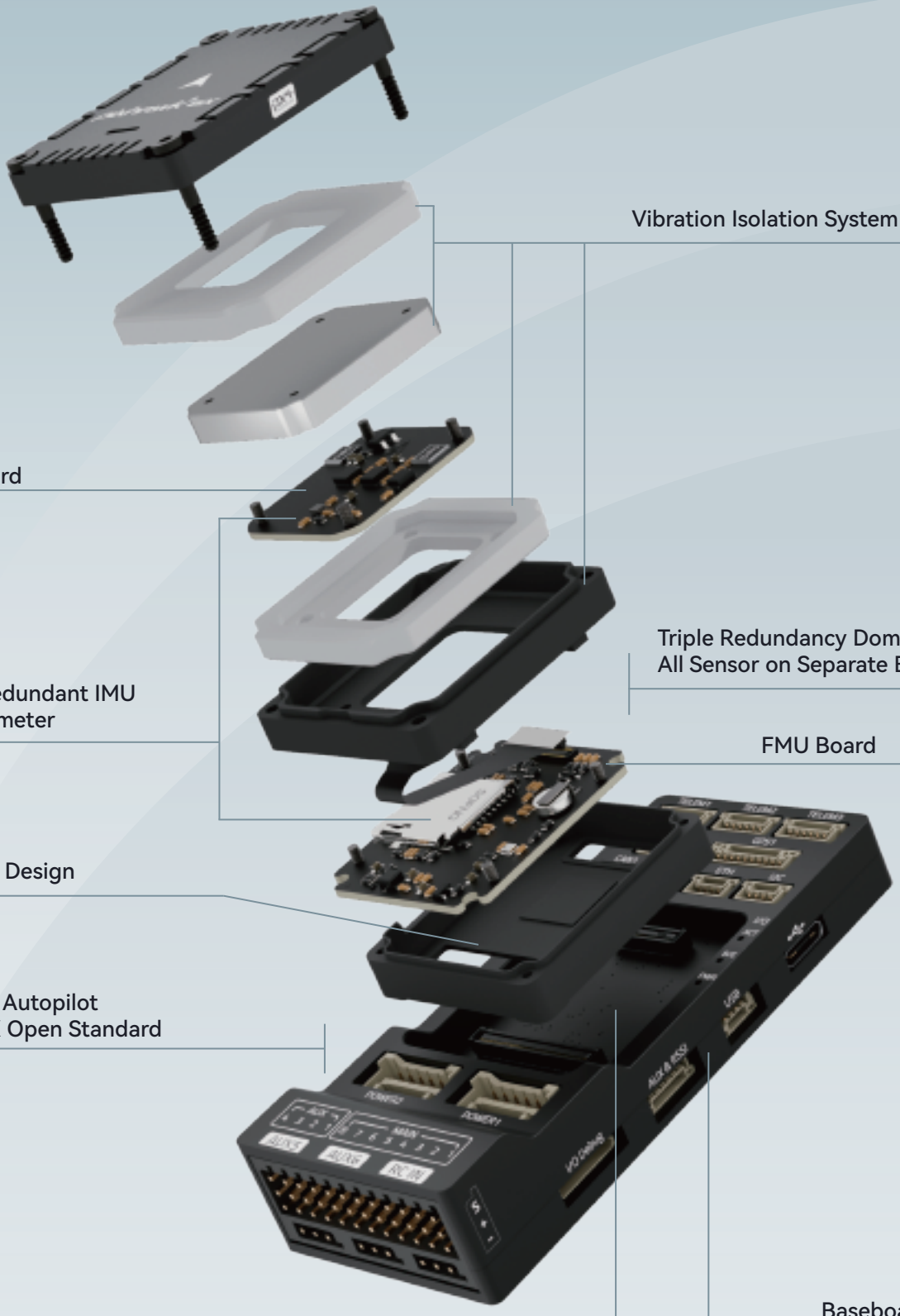
Electrical Data

Max Input Voltage	6V
USB Power Input	4.75~5.25V
Servo Rail Input	0-36V (Unpowered)
Current Ratings	Telem 1 Max output current limiter: 1.5A. All other port combined output current limiter: 1.5A

Mechanical Data

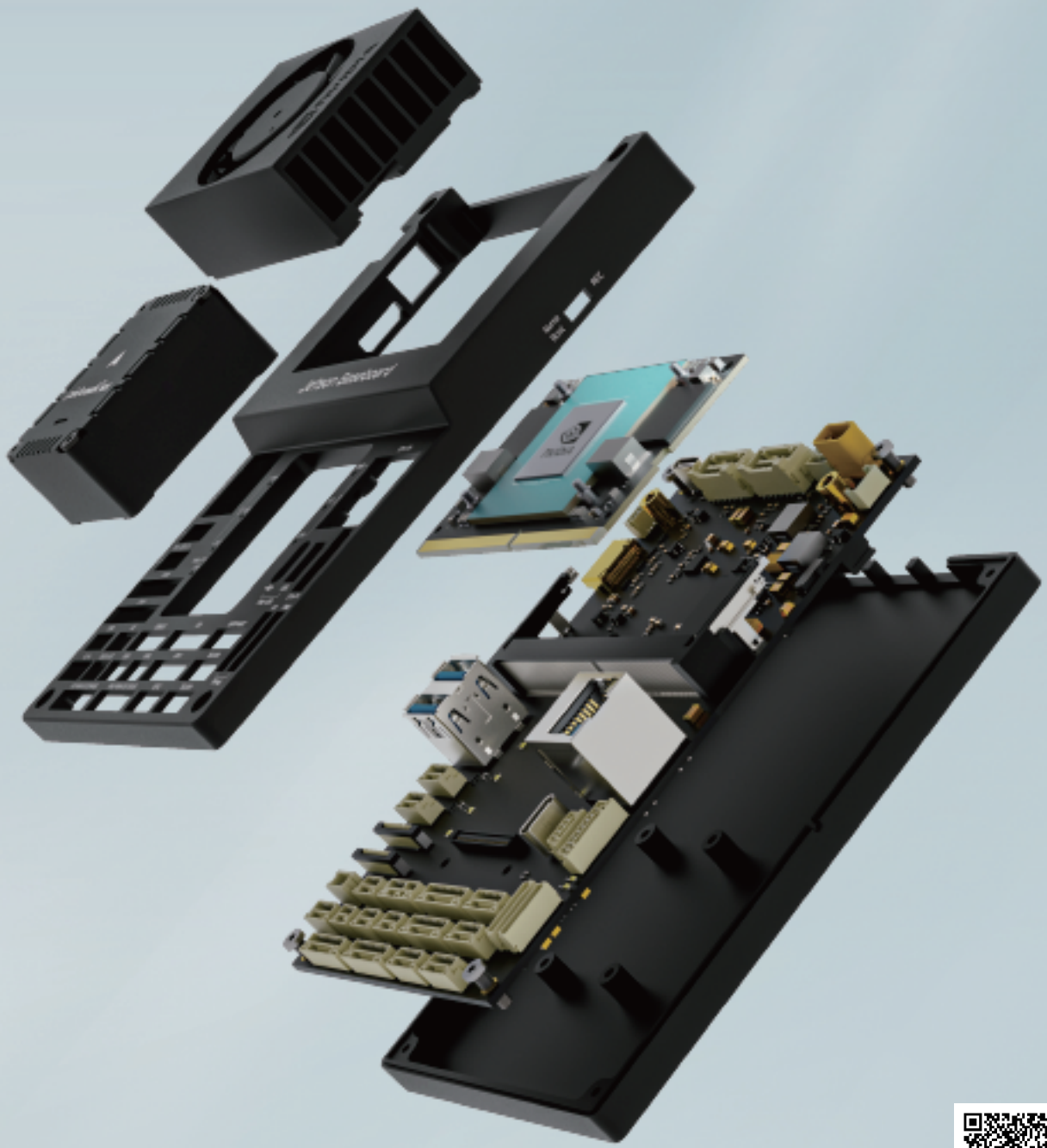
Operating Temp	-40 ~ 85°c
Dimension	38.8 * 31.8 * 16.8mm
Weight	30.4g

PIXHAWK 6X INTERNAL STRUCTURE



Pixhawk Jetson Baseboard

- Combines the power of Pixhawk & Jetson in a small form factor
- Fully compatible with Jetson Orin NX & Orin Nano
- Pixhawk Autopilot Bus (PAB) open source specification
- Jetson & Autopilot connected via UART, CAN, and Ethernet Switch
- 2x M.2 Key For WiFI/BT & NVMe SSD



NVIDIA

Product URL

Pixhawk Raspberry Pi Baseboard

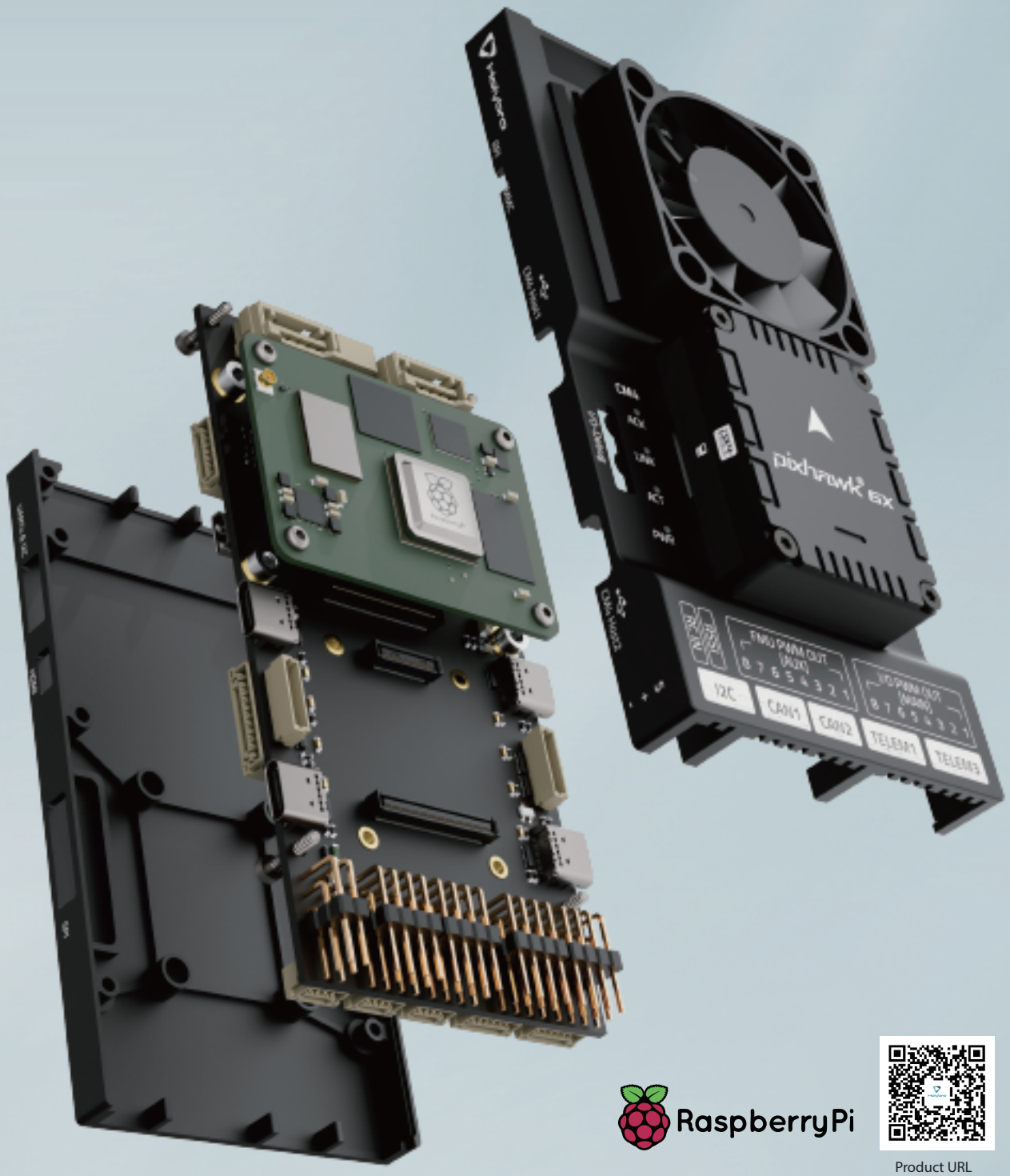
» Combines the power of Pixhawk & Raspberry Pi in a small form factor

» Aluminum case and fan for heat dissipation

» Pixhawk Autopilot Bus (PAB) open source specification

» Connected via UART & ethernet (optional)

» Compatible with Raspberry Pi CM4 or CM5



RaspberryPi

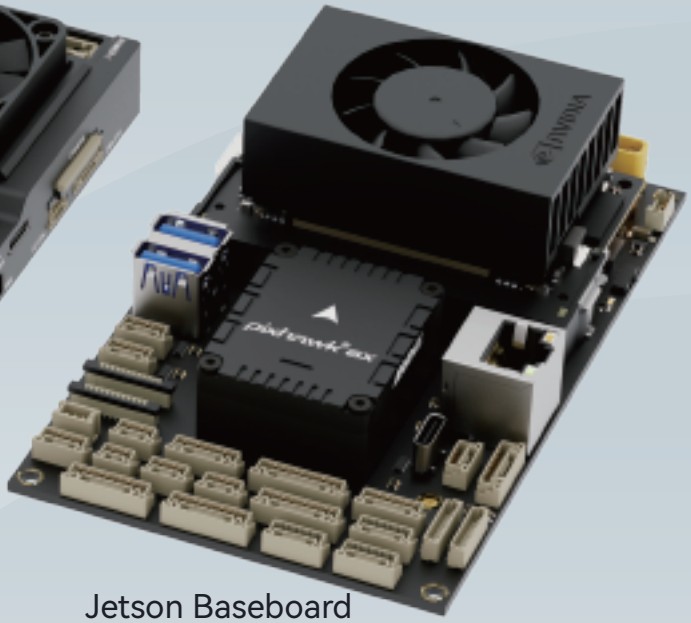
Product URL

pixhawk® 6X

Pixhawk Autopilot Bus & Baseboard

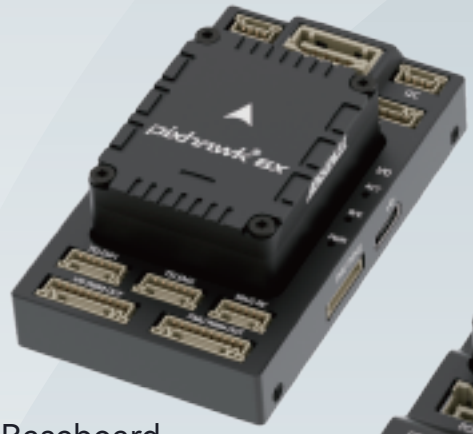
RPI CM4 Baseboard

RaspberryPi



Jetson Baseboard

NVIDIA



Mini Baseboard

Pixhawk Baseboard v2A

Pixhawk Baseboard v2B

AUTOPILOT FLIGHT CONTROLLER

pixhawk® 6C

Features

- High performance H7 Processor with clock speed up to 480 MHz
- New cost-effective design with low-profile form factor
- Redundant inertial measurement unit (IMU) from Bosch® & InvenSense®
- Integrated vibration isolation system
- IMUs are temperature-controlled by onboard heating resistors
- Follows Pixhawk FMUv6C & Connector Standard
- Fully Supported in PX4 & Ardupilot open source autopilot system

Product URL

The Pixhawk® 6C is the latest update to the successful family of Pixhawk® flight controllers, based on the Pixhawk® FMUv6C Open Standard and Connector Standard. The FMUv6C open standard includes high-performance, low-noise IMUs on board, designed to be cost effective while having IMU redundancy.

Inside the Pixhawk® 6C, you can find an ARM based STM32H743, paired with sensor technology from Bosch® & InvenSense®, giving you flexibility and reliability for controlling any autonomous vehicle, suitable for both academic and commercial applications. Support by PX4 and Ardupilot open source.

Specification

FMU Processor	STM32H743 - Arm® Cortex®-M7 480MHz, 2MB memory, 1MB SRAM
IO Processor	STM32F103 - Arm® Cortex®-M3 72MHz, 64KB SRAM
Accel/Gyro	ICM-42688-P BMI055
Compass	IST8310
Barometer	MS5611

Interface

PWM out	16 (8 From IO, 8 From FMU)
UART	5 (Telem1&2&3, GPS1 & 2)
I2C	2 Bus (1 standalone, 1 in GPS2 Port)
CAN	2 Bus
Debug	Pixhawk FMU Debug Full Pixhawk I/O Debug Ful
Power input	2 Power Input Ports (Analog)
SBUS Output	Available
R/C Input	Dedicated R/C input for Spektrum / DSM and S.BUS, CPPM, analog / PWM RSSI

Electrical Data

Max Input Voltage	6V
USB Power Input	4.75~5.25V
Servo Rail Input	0-36V (Unpowered)
Current Ratings	Telem 1 Max output current limiter: 1.5A. All other port combined output current limiter: 1.5A

Mechanical Data

Operating Temp	-40 ~ 85°c
Dimension	84.8 * 44 * 12.4 mm
Weight	34.6g (Plastic) or 59.3g (Aluminum)

AUTOPILOT FLIGHT CONTROLLER

pixhawk® 6C mini

Features

- High performance H7 Processor with clock speed up to 480 MHz
- New cost-effective design in a even smaller form factor
- Redundant inertial measurement unit (IMU) from Bosch® & InvenSense®
- Integrated vibration isolation system
- Temperature-controlled IMU
- Follows Pixhawk FMUv6C & Connector Standard
- Fully Supported by PX4 & Ardupilot open source autopilot system

Product URL

The Pixhawk® 6C Mini is the latest update to the successful family of Pixhawk® flight controllers, based on the Pixhawk® FMUv6C Open Standard and Connector Standard. It shares the same STMH743 microprocessor and internal sensors as the Pixhawk 6C.

Compared to the standard Pixhawk 6C, this Mini version has a built-in PWM header, and only keeping the essential ports to achieve the mini form factor

Specification

FMU Processor	STM32H743 - Arm® Cortex®-M7 480MHz, 2MB memory, 1MB SRAM
IO Processor	STM32F103 - Arm® Cortex®-M3 72MHz, 64KB SRAM
Accel/Gyro	ICM-42688-P BMI055
Compass	IST8310
Barometer	MS5611

Interface

PWM out	16 (8 From IO, 8 From FMU)
UART	4 (Telem1, 2, GPS1 & 2)
I2C	2 Bus (1 standalone, 1 in GPS2 Port)
CAN	2 Bus
Debug	Pixhawk FMU Debug Mini
Power input	1 Power Input Ports (Analog)
R/C Input	Dedicated R/C input for Spektrum / DSM and S.BUS, CPPM, analog / PWM RSSI

Electrical Data

Max Input Voltage	6V
USB Power Input	4.75~5.25V
Servo Rail Input	0-36V (Unpowered)
Current Ratings	Telem 1 Max output current limiter: 1.5A. All other port combined output current limiter: 1.5A

Mechanical Data

Operating Temp	-40 ~ 85°c
Dimension	85.3 * 39 * 16.2 mm
Weight	39.2g

AUTOPILOT FLIGHT CONTROLLER

pix32 v6

Features

- High performance H7 Processor with clock speed up to 480 MHz
- New cost-effective design with low-profile form factor
- Redundant inertial measurement unit (IMU) from
- Bosch® & InvenSense®
- Integrated vibration isolation system
- IMUs are temperature-controlled by onboard heating resistors
- Effortless baseboard customization

Product URL

Pix32 v6 a variant of the Pixhawk 6C. It is comprised of a separate flight controller and carrier board which are connected by a 100 pin connector. This flight controller is perfect for people that is looking for a affordable and modular flight controller that can use a customized baseboard.

We have made the pix32 v6 base board schematics public. By using a customize baseboard, you can make sure that the physical size, pinouts and power distribution requirements match your vehicle perfectly, ensuring that you have all the connections you need and none of the expense and bulk of connectors you don't.

Specification

FMU Processor	STM32H743 - Arm® Cortex®-M7 480MHz, 2MB memory, 1MB SRAM
IO Processor	STM32F103 - Arm® Cortex®-M3 72MHz, 64KB SRAM
Accel/Gyro	ICM-42688-P BMI055
Compass	BMM150
Barometer	2x BMP388

Interface

PWM out	16 (8 From IO, 8 From FMU)
UART	5 (Telem1&2&3, GPS1 & 2)
I2C	2 Bus (1 standalone, 1 in GPS2 Port)
CAN	2 Bus
Debug	Pixhawk FMU Debug Mini
Power input	2 Power Input Ports (Analog)
SBUS Output	Available
R/C Input	Dedicated R/C input for Spektrum / DSM and S.BUS, CPPM, analog / PWM RSSI

Electrical Data

Max Input Voltage	6V
USB Power Input	4.75~5.25V
Servo Rail Input	0-36V (Unpowered)
Current Ratings	Telem 1 Max output current limiter: 1.5A. All other port combined output current limiter: 1.5A

Mechanical Data

Operating Temp	-40 ~ 85°c
Dimension	44.8 * 44.8 * 13.5mm
Weight	36g

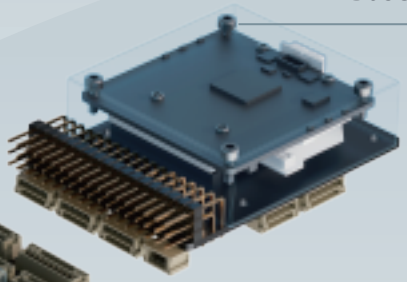
PIX32 V6 BASEBOARDS

pix32 v6

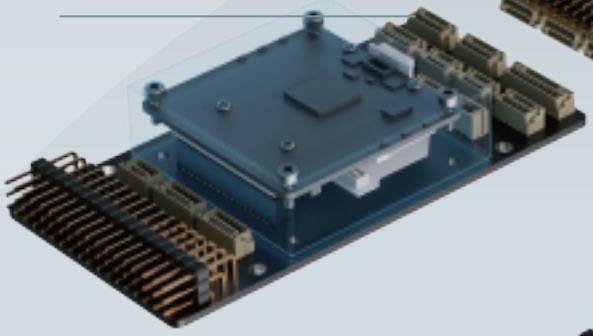
Flight Controller

Create Your Own Custom Baseboard Design

Pix32 v6
Mini-Baseboard



Pix32 v6
Standard Baseboard



Using the reference design file provided by Holybro, this drastically minimize your engineering R&D time

Your Own Custom Baseboard Designed for Your Vehicle

AUTOPILOT FLIGHT CONTROLLER

Durandal®

Features

- High performance H7 Processor with clock speed up to 480 MHz
- Built-in Vibration isolation system to filter out high frequency vibration and reduce noise to ensure accurate readings
- IMUs are temperature-controlled by onboard heating resistors, allowing optimum working temperature of IMUs
- 2 power ports & 5 general purpose serial ports
- Two Power ports for redundancy

Product URL

Durandal is a fight controller designed by Holybro utilizing the STM32H7 microcontroller series. it comes with built-in vibration isolation system and integrated IMU heater for sensors temperature control.

Specification

FMU Processor	STM32H743 - Arm® Cortex®-M7 480MHz, 2MB memory, 1MB SRAM
IO Processor	STM32F100/F103 32 Bit Arm® Cortex®
Accel/Gyro	ICM-20602
	BMI088
Compass	1ST8310
Barometer	MS5611

Interfance

13 PWM outputs (8 from IO, 5 from FMU)
5 general purpose serial ports
3 12C ports
4 SPI buses
Up to 2 CAN Buses for dual CAN
Analog inputs for voltage / current of 2 batteries
6 dedicated PWM/Capture inputs on FMU
Dedicated R/C input for Spektrum/ DSM
Dedicated R/C input for CPPM and S.Bus
Dedicated S.Bus servo output and analog / PWM RSSI input
2 additional analog inputs

Electrical Data

Max Input Voltage	6V
USB Power Input	4.75~5.25V
Servo Rail Input	0-36V
Current Ratings	Telem 1 Max output current limiter: 1.5A.
	All other port combined output current limiter: 1.5A

Mechanical Data

Operating Temp	-40 ~ 85°c
Dimension	80 * 45 * 20.5mm
Weight	68.8g

AUTOPILOT FLIGHT CONTROLLER

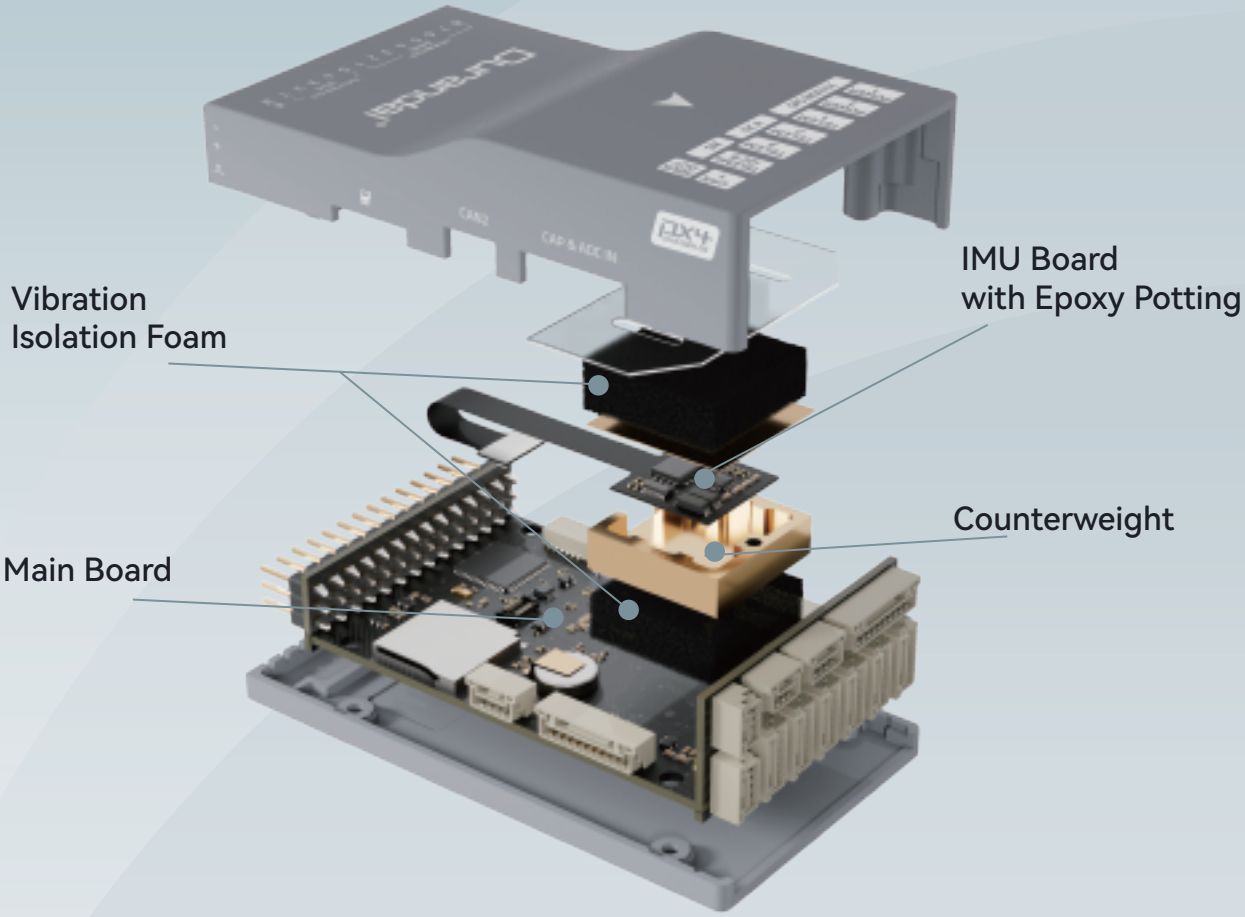
Durandal®

H7 Processor

High Performance IMU

IMU Redundancy

Built-In Vibration Isolation



POWER MODULE (DRONECAN)

PM08-CAN

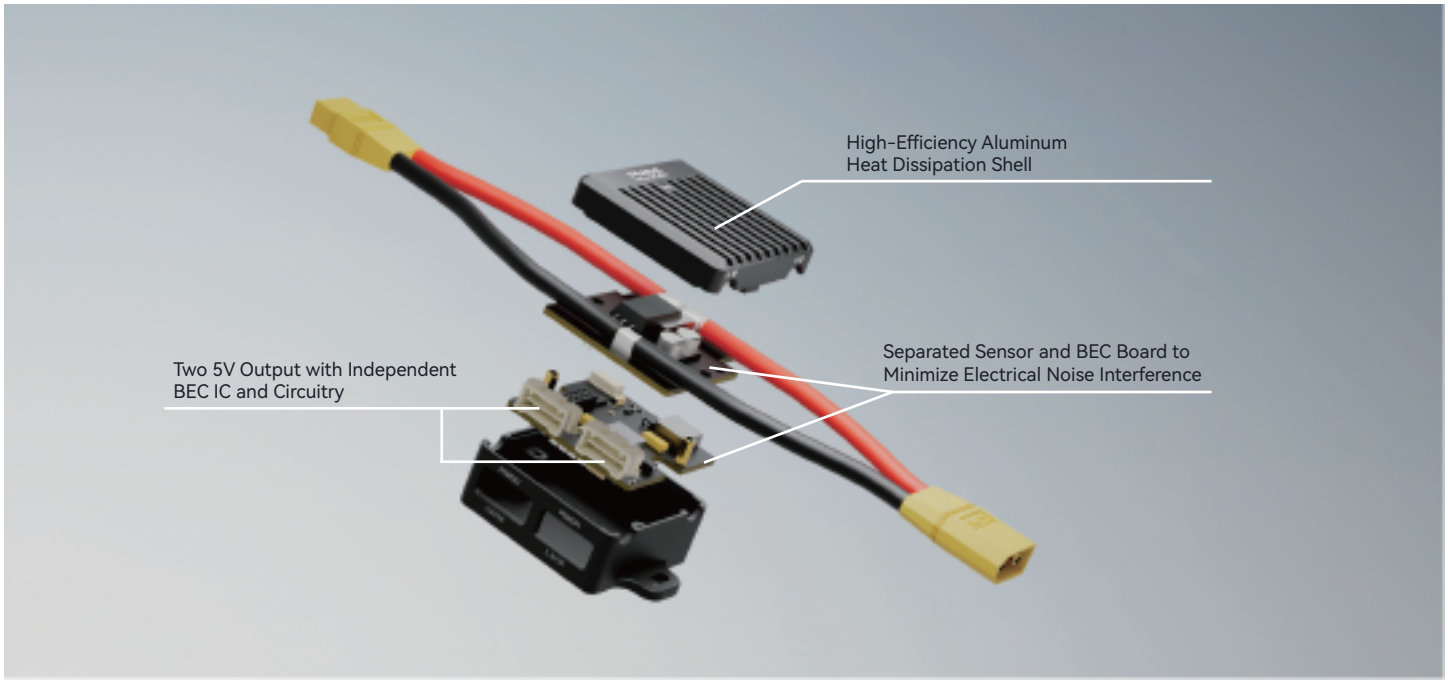
Features

- Supports 2-14S & 200A Cont, 400A Burst
- DroneCAN Communication Protocol
- Small & Compact Design
- Two 5V Output with Independent BEC and IC Circuitry
- Separated Sensor and BEC Board to Minimize Electrical Noise Interference
- Galvanically Isolated Current Sensor IC (AEC-Q100 Grade 1 qualified)
- High Accuracy Temperature Sensor for Temperature Monitor
- High-Efficiency Aluminum Heat Dissipation Shell

Product URL

Specifications

- Processor: STM32F405RG 168MHz 1024KB Flash 196KB RAM
- Voltage input: 7~60.9V (2S~14S)
- Continuous current:200A
- Burst current
  - 400A @ 25℃ 1 sec
  - 1000A @ 25℃ < 1 sec
- Max current sensing: 376A
- Voltage accuracy: ±0.1V
- Current accuracy: ±5%
- Temperature accuracy:±1℃
- Power port output: 5.3V/3A each port
- Protocol: DroneCAN
- Operating temperature :-25℃~105℃
- Firmware upgrade: Support
- Calibration: Support



POWER MODULE (DIGITAL)

PM02D

PM03D

PM06D

Model	PM02D	PM03D	PM06D
SKU	15011, 15013	15011, 15013	15020
Input Voltage	LV: 2~6S HV: 2~12S	2~6S	2~14S
PCB Cont./Burst Current Rating	60A/100A	60A/120A	70A/120A
Max Current Sensing	LV: 164A / HV:327A	164A	327A
Output Voltage	5.2V/3A Max	5.2V/3A Max 8V/12A 3A Selectable	5.2V/3A Max
Ports	XT60 6Pin Molex 2.0mm	XT60 6Pin Molex 2.0mm XT60 *4 (optional) 10 B+ Pads	XT60 6Pin Molex 2.0mm B+ Pads *4
Built-in Power Distribution	No	Yes	Yes
PWM Header	No	No	No
Dimensions	25 x 25 x10 mm	84 x 78 x 12 mm	35 x 35 x10 mm
Weight	20g	59g	24g
Mounting Hole	N/A	45 x 45 mm	30.5 x 30.5 mm
Applicable Products	Pixhawk 5X & 6X	Pixhawk 5X & 6X	Pixhawk 5X & 6X

POWER MODULE (ANALOG)

PM02

PM06

PM07

Model	PM02 V3	PM06 V2	PM07
SKU	15010	15019	15008
Input Voltage	2~12S	2~14S	2~14S
PCB Cont./Burst Current Rating	60A/100A	70A/120A	90A/140A
Max Current Sensing	120A	120A	120A
Output Voltage	5.2V/3A Max	5.2V/3A Max	5.2V/3A Max *2
Ports	XT60 6Pin GHR 1.15mm	XT60 6Pin GHR 1.15mm B+ Pads *4	XT60 6Pin GHR 1.15mm *2 B+ Pads *4 PWM Header
Built-in Power Distribution	No	Yes	Yes
PWM Header	No	No	Yes
Dimensions	25 x 25 x10 mm	35 x 35 x10 mm	68 x 50 x 10 mm
Weight	20g	24g	43.8g
Mounting Hole	N/A	30.5 x 30.5 mm	45 x 45 mm
Applicable Products	Pixhawk 6C & 6C Mini, Pix32 V6 etc	Pixhawk 6C & 6C Mini, Pix32 V6 etc	Pixhawk 6C & 6C Mini, Pix32 V6 etc

HIGH PRECISION GPS SYSTEMS (H-RTK SERIES)

H-RTK Unicore UM982

Features

- Dual antennas allow Moving Baseline Yaw (GPS Heading) with just one module
- Can replace the traditional compass/magnetometer
- Perfect for system/environment with high magnetic interference
- Excellent RTK performance

Product URL

Specification:

Application	Rover, Moving Baseline Rover, Base Station (Recommend using H-RTK F9P-Base as base station)
Compass	IST8310
GNSS	BDS B1I/B2I/B3LGPS L1C/A/L2P(Y)/L2C/L5, GLONASS L1/L2,Galileo E1/E5a/E5b,QZSS L1/L2/L5
Antennas Peak Gain (MAX)	2dBi
LNA Gain (typical)	33+2dB
Time-TO-First Fix	Cold start: ≤ 30s Hot start: ≤ 5s
RTK-SurveyIn-Time	≤5 minute @2.0mCEP
Data and Update Rate	20 Hz Positioning & Heading 20 Hz Raw Data observation
Port	Port 1: GH1.25 10-pin Port 2: USB Type-c Port 3: UART 2 (GH1.25 6pin)
Cable Length	GH 10P: 150mm GH 10P: 400mm GH 10P to 6P: 300mm
Antenna Connection Type	Board: SMA female Antenna: SMA male
Baud rate: (Adjustable)	230400 5Hz default
Working voltage	4.75V~5.25V
Current Consumption	~350mA
Dimensions	Board: 34.8*58.9*14.4mm Antenna Diameter: 27.5mm Antenna height: 59mm
Port Type	GHR-04V-S
Weight	37.9g(without antennas)

HIGH PRECISION GPS SYSTEMS (H-RTK SERIES)

H-RTK mosaic-H

Features

- Advanced anti-jamming, anti-spoofing solutions with AIM+ technology & OSNMA
- Dual antenna support for moving baseline yaw (GPS Heading) with just one GPS module
- All-in-view satellite tracking: multi-constellation, multi-frequency (Supports L1/L2/E5)
- Best-in-class RTK performance

Product URL

Specification:

Product	Holybro H-RTK Mosaic-H		
Application	Rover Moving Baseline Rover Base Station PPK		
GNSS	GPS: L1, L2 Galileo: E1, E5b GLONASS: L1, L2 Beidou: B1, B2,B3 QZSS: L1C/A,L1C/B,L2 SBAS: EgnOS, WAAS, GAGAN, MSAS, SDCM (L1)		
RTK performance	Horizontal accuracy 0.6 cm + 0.5 ppm Vertical accuracy 1 cm + 1 ppm		
Positioning accuracy	Mode	Horizontal	Vertical
	Standalone	1.2m	1.9m
	SBAS	0.6m	0.8m
	DGNSS	0.4m	0.7m
	RTK	0.6cm+0.5ppm	1.0cm+1ppm
GNSS attitude accuracy	Antenna separation	Heading	Pitch/Roll
	1m	0.15°	0.25°
	5m	0.03°	0.05°
Time-To-First Fix	Cold start: ≤ 45s Hot start: ≤ 20s Re-acquisition:1s		
Latency	< 10 mS		
Magnetometer (Compass)	IST8310		
Antennas Peak Gain (MAX)	2dBi		
LNA Gain	33±2dB		
Time precision	xPPS out: 5 ns Event accuracy:< 20 ns		
Data and Update Rate	Measurements only 100 Hz Standalone,SBAS, DGPS + attitude 50 Hz RTK + attitude 20 Hz		
Port	Port 1: USB Type-c Port 2: UART1 (GH1.25 10pin) Port 3: UART2 (GH1.25 6pin)		
Antenna Connection Type	Board: SMA female Antenna: SMA male		

HIGH PRECISION GPS SYSTEM (H-RTK SERIES)

Feature

- **Advanced GNSS Receiver:** High precision u-blox NEO-F9P GNSS receiver with reliable and stable centimeter-level positioning
- **Integrated RM3100 Compass:** Accurate and stable orientation data Rapid RTK Convergence: Advanced multi-frequency DGNSS algorithms enable quick RTK Fix
- **High-Gain Antenna:** Enhanced signal reception across GNSS frequencies
- **Advanced Filtering & Amplification:** Hybrid Coupler, SAW filter, and LNA architecture deliver exceptional signal strength and effective interference rejection
- **Versatile Installation:** Multiple antenna options offer flexibility for various situations
- **DroneCAN Option:** Offers MCU, IMU, barometer, and robust communication for advanced UAV systems

Product URL

H-RTK NEO-F9P Rover

Specification:

Product Model			
GNSS Receiver	u-blox NEO-F9P		
Recommended Application	Rover (UAV, Marine, Land Vehicle, etc)		
Connector Type	GH1.25 10pin cable	GH1.25 6pin cable	GH1.25 4pin cable
Applicable Ports	Holybro GPS1 Port	Holybro or Cubepilot GPS2 Port	Pixhawk CAN Port
Processor	NA	NA	STM32G473
IMU & Barometer	NA	NA	ICM42688 & ICP20100
Communication Protocol	UART	DroneCAN	
Antenna Type	Stacked Ceramic Patch Antenna		
Antennas Peak Gain	L1: 1.8dBi L5: 0.5dBi		
Antennas LNA Gain	28 ± 2dB		
Magnetometer	High Precision PNI RM3100		
GNSS	BeiDou, Galileo, GLONASS, GPS / QZSS		
GNSS Band	B1I , B2I , E1B/C , E5b , L1C/A , L1OF , L2C , L2OF		
Number of Concurrent GNSS	0.3 degrees		
Dynamic Heading accuracy	PVT: 1.5 m CEP , SBAS: 1.0m CEP , RTK: 0.01 m +1ppm CEP		
Horizontal Positioning accuracy	PVT: 2.0 m R50 , SBAS: 1.5m R50 , RTK: 0.01 m +1ppm R51		
Vertical Positioning accuracy	4		
Communication Protocol	UART or DroneCAN 1Mbit/s		
GNSS Protocol	NME , AUBX , binary , RTCM 3.3 , SPARTN 2.0.1		
Time-TO-First Fix	Hot Start: 3s , Aided starts: 4s , Cold starts: 27s		
Navigation Update Rate	GPS+GLO+GAL+BDS: , RTK: 7Hz Max , PVT: 7Hz Max , RAW: 10Hz		
Anti-spoofing	Advanced anti-spoofing algorithms		
Operational limits	Dynamics: ≤ 4g , Altitude: 80,000 m , Velocity: 500 m/s		
Working voltage	4.75V~5.25V		
Operating Temperature	-25℃ to 85℃		
Current Consumption	~250mA		
Cable Length(Contact us for customization)	40cm (default)		
Dimensions	Diameter: 61.99mm, Height: 21mm		
Weight	63.5g		
Waterproof IP Rating	IP66		

HIGH PRECISION GPS SYSTEM (H-RTK SERIES)

H-RTK NEO-F9P

Feature

- **Advanced GNSS Receiver:** High precision u-blox NEO-F9P GNSS receiver with reliable and stable centimeter-level positioning.
- **Integrated RM3100 Compass:** Accurate and stable orientation data Rapid RTK Convergence: Advanced multi-frequency DGNSS algorithms enable quick RTK Fix.
- **High-Gain Antenna:** Enhanced signal reception across GNSS frequencies.
- **Advanced Filtering & Amplification:** Hybrid Coupler, SAW filter, and LNA architecture deliver exceptional signal strength and effective interference rejection.
- **Versatile Installation:** Multiple antenna options offer flexibility for various situations.
- **DroneCAN Option:** Offers MCU, IMU, barometer, and robust communication for advanced UAV systems.

Product URL

Specification:

Product Model	H-RTK NEO-F9P w/ Helical Antenna	H-RTK NEO-F9P w/ Vertical Array Patch Antenna	H-RTK NEO-F9P w/ Base Station Antenna
			
GNSS Receiver	u-blox NEO-F9P	u-blox NEO-F9P	u-blox NEO-F9P
Recommended Application	Rover (UAV, Marine, Land Vehicle, etc), Base Station	Rover (UAV, Marine, Land Vehicle, etc), Base Station	Rover (UAV, Marine, Land Vehicle, etc), Base Station
Processor	STM32G473 (Available in DroneCAN Version Only)		N/A
IMU & Barometer	ICM42688 & ICP20100 (Available in DroneCAN Version Only)		N/A
Antenna	Helical Antenna	High Precision Vertical Array Patch Antenna	High-Gain Ceramic Antenna
Antennas Peak Gain	L1: 2dBi L5: 2dBi	L1: 3.5dBi L5: 3.5dBi	L1: 5.5dBi L5: 4dBi
Antennas LNA Gain	33 ± 2dB	33 ± 2dB	40 ± 2dB
Magnetometer	High Precision PNI RM3100		
GNSS	BeiDou, Galileo, GLONASS, GPS / QZSS		
GNSS Band	B1I, B2I, E1B/C, E5b, L1C/A, L1OF, L2C, L2OF		
Number of Concurrent GNSS	4		
Dynamic Heading accuracy	0.3 degrees		
Horizontal Positioning accuracy	PVT: 1.5 m CEP SBAS: 1.0m CEP RTK: 0.01 m +1ppm CEP		
Vertical Positioning accuracy	PVT: 2.0 m R50 SBAS: 1.5m R50 RTK: 0.01 m +1ppm R51		
Communication Protocol	UART or DroneCAN 1Mbit/s		
GNSS Protocol	NMEA UBX binary RTCM 3.3 SPARTN 2.0.1		
Time-TO-First Fix	Hot Start: 3s Aided starts: 4s Cold starts: 27s		
Navigation Update Rate	GPS+GLO+GAL+BDS: RTK: 7Hz Max PVT: 7Hz Max RAW: 10Hz		
Anti-spoofing	Advanced anti-spoofing algorithms		
Operational limits	Dynamics: ≤ 4 g Altitude: 80,000 m Velocity: 500 m/s		
Antenna Connection Type	Board: SMA female Antenna: SMA male		
Working voltage	4.75V~5.25V		
Operating Temperature	-25℃ to 85℃		
Current Consumption	~250mA		
Antenna Cable Length (Contact us for customization)	40cm (default)	40 or 80cm	500cm
Dimensions	Module: 43.1*44.1*22mm Antenna Diameter: 27.5mm Antenna Height: 59mm	Module: 43.1*44.1*22mm Antenna: 75*75*26mm	Module: 43.1*44.1*22mm Antenna Diameter: 152mm Antenna Height: 62.2mm
Weight	Module: 40g Antenna: 18g	Module: 40g Antenna: 168g	Module: 40g Antenna: 343g

H-RTK
NEO-F9P Module

- Advanced u-blox NEO-F9P GNSS Receiver
- Centimeter-Level Accuracy
- High-Precision RM3100 Compass
- Multi-Band (L1, L5) & Multi-Constellation
- 3 Antenna Options

Base Station Antenna

Vertical Array
Patch Antenna

Helical Antenna

HIGH PRECISION GPS SYSTEMS (H-RTK SERIES)

H-RTK F9P Ultralight

Feature

- **Advanced GNSS Receiver:** High precision u-blox NEO-F9P GNSS receiver with reliable and stable centimeter-level positioning.
- **Ultra-Lightweight Design:** Weighs only ~24 grams, ideal for weight-sensitive applications.
- **Integrated Helical Antenna:** Ensures reliable reception and compact form factor.
- **Multi-Band & Multi-Constellation Support:** Concurrently receives GPS, GLONASS, Galileo, and BeiDou signals across multiple bands.
- **High-Sensitivity Compass:** Integrated IST8310 compass for accurate orientation.
- **DroneCAN Option:** Offers MCU, IMU, barometer, and robust communication for advanced UAV systems.

Product URL

Specification:

Magnetometer	IST8310
Application	Moving Station (Aircraft, Ground Vehicle, Marine Vehicle, etc)
GNSS Receiver	U-blox ZED-F9P High Precision GNSS Receiver
GNSS Band	GPS: L1C/A and L2C GLONASS: L1OF and L2OF Galileo: E1-B/C and E5b BeiDou: B1I and B2I QZSS: L1C/A and L2C
Number of concurrent GNSS	4
Heading accuracy	0.4 degrees
Positioning Accuracy	Horizontal & Vertical: RTK 0.01m +1ppm CEP
Antenna	Integrated Helical Antenna 22±2dB
Antennas Peak Gain (MAX)	2.8 dBi
Acquisition	Hot Start: 2s Aided starts: 2s Cold starts: 25s
Data and Update Rate	RAW: 20Hz Max RTK: 8Hz Max Moving Base RTK: 5Hz Max
Maximum altitude	80,000 m
Maximum speed	500 m/s
Sensitivity	Tracking & Navigation: −167 d BmCold starts: −148 dBm Hot starts: −157 d BmReacquisition: −160 dBm
Timepulse	Configurable from 0.25hz to 10mhz
Protocols	NMEA, UBX binary, RTCM 3.3
Filtering & Amplication	Advanced Filtering & Signal Amplification
Anti-jamming	Active CW Detection and Removal Onboard Band Pass Filter
Anti-spoofing	Advanced Anti-spoofing Algorithms
Cable Length	40cm
Baud rate:	115200 5Hz (default) can be set
Working Temperature	-40 °C to +85 °C
Working voltage	4.75V~5.25V
Current Consumption	~250mA
Dimensions	Diameter: 78mm Height: 22mm
Weight	24.8 gram

HIGH PRECISION GPS SYSTEM (H-RTK SERIES)

H-RTK ZED-F9P - Rover

Feature

- **Advanced GNSS Receiver:** Equipped with the high precision u-blox ZED-F9P GNSS receiver.
- **Integrated RM3100 Compass:** Accurate orientation accuracy and stability.
- **High-Gain Antenna:** Integrated large multi-band stacked patch antenna for enhanced signal reception across multiple GNSS frequencies.
- **Durable Design:** IP66-rated for protection against dust and water, suitable for harsh environments.
- **Robust EMI Shielding:** Ensures consistent signal integrity by minimizing the impact of electromagnetic interference.
- **Advanced Filtering & Amplification:** Utilized Hybrid Coupler + SAW + LNA + Hybrid Coupler architecture, ensuring superior signal clarity and interference rejection.
- **DroneCAN Option:** Offers MCU, IMU, barometer, and robust communication for advanced UAV systems.

Product URL

Specification:

Product Model			
SKU	SKU12054	SKU12058	SKU12059
Connector Type	GH1.25 10pin cable	GH1.25 6pin cable	GH1.25 4pin cable
Applicable Ports	Holybro GPS1 Port	Holybro or Cubepilot GPS2 Port	Flight Controller CAN Port
Communication Protocol	UART	UART	DroneCAN
MCU , IMU , Barometer	N/A	N/A	STM32G4 , ICM42688 , ICP20100
Magnetometer	High precision, Low Noise RM3100 Compass		
Application	Rover (Aircraft, Ground Vehicle, Marine Vehicle, etc)		
GNSS Receiver	GPS: L1C/A and L2C , GLONASS: L1OF and L2OF , Galileo: E1-B/C and E5b , BeiDou: B1I and B2I , QZSS: L1C/A and L2C		
Number of concurrent GNSS	4		
Heading accuracy	0.4 degrees		
Positioning Accuracy	Horizontal & Vertical: RTK 0.01m +1ppm CEP		
Antenna	Multi-Band Stacked Ceramic Patch Antenna , 20.5±1dB LNA Gain (typical)		
Antennas Peak Gain (MAX)	L1: 4.0dBi , L2:1.0 dBi		
Acquisition	Hot Start: 2s , Aided starts: 2s , Cold starts: 25s		
Data and Update Rate	RAW: 20Hz Max , RTK: 8Hz Max , Moving Base RTK: 5Hz Max		
Maximum altitude	80,000 m		
Maximum speed	500 m/s		
Sensitivity	Tracking & Navigation: −167 dBm , Cold starts: −148 dBm , Hot starts: −157 dBm , Reacquisition: −160 dBm		
Timepulse	Configurable from 0.25hz to 10mhz		
Protocols	NMEA、UBX binary、RTCM 3.3		
Filtering & Amplication	Triple SAW + LNA Filtering for Precise Signal Filtering & Signal Amplification , Double Hybrid Coupler for Efficient Signal Coupling		
Anti-jamming	Active CW Detection and Removal , Onboard Band Pass Filter		
Anti-spoofing	Advanced Anti-spoofing Algorithms		
Cable Length	40cm		
Baud rate:	115200 5Hz (default) can be set		
Working Temperature	-40 °C to +85 °C		
Working voltage:	4.75V~5.25V		
Current Consumption	~250mA		
Dimensions	Diameter: 78mm Height: 22mm		
IP Rating	IP66		
Weight	117g		

HIGH PRECISION GPS SYSTEMS (H-RTK SERIES)

DroneCAN H-RTK F9P - Rover

Product URL

U-blox ZED-F9P high precision GNss module
STM32G473 processor
Ceramic Patch Antenna with 20dB LNA
BMM150 compass
DroneCAN Protocol
Ceramic Patch Antenna with 20dB LNA
Water Resistant
This model can be used on the rover (aircraft)

DroneCAN H-RTK F9P -Helical

Product URL

U-blox ZED-F9P high precision GNss module
STM32G473 processor
Helical Antenna with 36dB LNA
BMM150 compass
DroneCAN Protocol
Antenna can either be attached to the module directly or connected via a SMA cable
UART2 port exposed, allowing YAW/Heading
This model can be used either on the rover (aircraft) or as a base station.

DroneCAN Benefit

CAN has been specifically designed to deliver robust and reliable connectivity over relatively large distances.

Wiring is less complicated as you can have a single bus for connecting all your DroneCAN peripherals.

It does not occupy any serial port of the flight controller, and different CAN devices can be connected to the same CAN bus via a CAN splitter board.

It allows users to configure and update the firmware of all CAN-connected devices from one controler

HIGH PRECISION GPS SYSTEMS (H-RTK SERIES)

H-RTK F9P - Rover Lite

Product URL

Features

- U-blox F9P Module
- IST8310 compass
- Ceramic Patch Antenna with 20dB LNA
- Water Resistant
- Tri-colored LED indicator
- Integrated safety switch
- Used on the rover (aircraft)

H-RTK F9P - Helical

Features

- U-blox F9P Module
- IST8310 compass
- Helical Antenna with 36dB LNA
- UART2 port exposed, allowing YAW/Heading
- Tri-colored LED indicator
- Integrated safety switch
- Can be used either on the rover (aircraft) or as a base station

H-RTK F9P - Base

Features

- U-blox F9P Module
- IST8310 compass
- Helical Antenna with 36dB LNA
- Tri-colored LED indicator
- Integrated safety switch
- Used as a base station
- The board is the same as number 2 above, but it is equipped with a high-gain antenna.
- The search speed and positioning accuracy are the highest among the three models.

STANDARD PRECISION GPS SYSTEMS

M9N GPS Module

Product URL

Features

- Ublox M9N GNSS Receiver
- Accurate Positioning
- Fast Navigation Update Rate
- IST8310 Compass
- High-gain 25*25*4mm antenna
- Internal Buzzer, Safety switch
- Ultra Bright UI RGB LED

M10 GPS Module

Product URL

Features

- Newest Ublox 10th Gen GNSS
- Fast & Accurate Positioning
- High-gain 25*25*4mm antenna
- IST8310 Compass
- Internal Buzzer, Safety switch
- Ultra Bright UI RGB LED

Micro M9N GPS

Product URL

Features

- Ublox M9N GNSS Receiver
- Accurate Positioning
- Fast Navigation Update Rate
- IST8310 Compass
- Small Form Factor

Micro M10 GPS

Product URL

Features

- Newest Ublox 10th Gen GNSS
- Fast & Accurate Positioning
- IST8310 Compass
- Small Form Factor

STANDARD PRECISION GPS SYSTEMS

DroneCAN M9N

DroneCAN Benefit

CAN has been specifically designed to deliver robust and reliable connectivity over relatively large distances.

Wiring is less complicated as you can have a single bus for connecting all your DroneCAN peripherals.

It allows users to configure and update the firmware of all CAN-connected devices from one controler

It does not occupy any serial port of the flight controller, and different CAN devices can be connected to the same CAN bus via a CAN splitter board.

Product URL

Specification:

GNSS Receiver	Ublox NEO M9N
Number of Concurrent GNSS	Up to 4 GNSS (GPS, Galileo, GLONASS, BeiDou)
Processor	STM32G4 (170MHz, 512K FLASH)
Compass	BMM150 or IST8310
Frequency Band	GPS: L1C/A GLONASS: L10F Beidou: B1I Galileo: E1B/C
GNSS Augmentation System	SBAS: WAAS, EGNOS, MSAS, QZSS
Navigation Update	5Hz Default(10Hz MAX)
Accuracy	2.5m
Speed Accuracy	0.05 m/s
Max # of Satellites	22+
Communication Protoco	DroneCAN @ 1 Mbit/s
Supports Autopilot FW	PX4, Ardupilot
Port Type	GHR-04V-S
Antenna	25 x 25 x 4 mm ceramic patch antenna
Power consumption	Less than 200mA @ 5V
Voltage	4.7-5.2V
Operating Temperature	-40 ~ 80°c
Size	Diameter: 54mm Thickness: 14.5mm
Weight	36g
Cable Length	26cm
Other Notes	- LNA MAX2659ELT+ RF Amplifier - Rechargeable Farah capacitance - Low noise 3.3V regulator

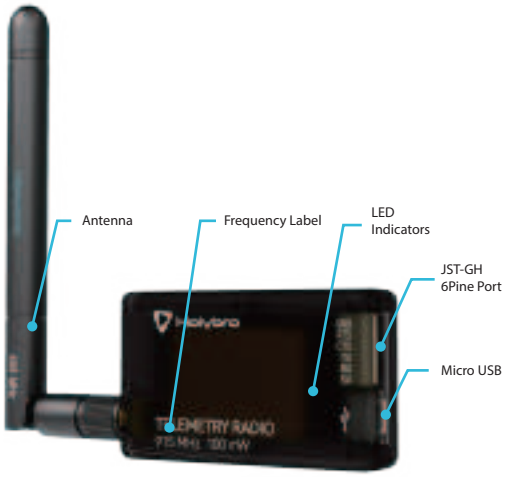
TELEMETRY RADIO

Sik Telemetry Radio v3

Product URL

Features

- Open-source SIK firmware
- Plug-n-play for Pixhawk Standard Flight Controller
- Easiest way to connect your Autopilot and Ground Station
- Interchangeable air and ground radio
- Micro-USB port (Type-C Adapter Cable Included)
- 6-position JST-GH connector
- Configurable through Mission Planner & APM Planner



Specification

- 100 mW maximum output power (adjustable) -117 dBm receive sensitivity
- RP-SMA connector
- 2-way full-duplex communication through adaptive TDM UART interface
- Transparent serial link
- MAVLink protocol
- Frequency Hopping Spread Spectrum (FHSS) Configurable duty cycle
- Error correction corrects up to 25% of bit errors open-source SIK firmware
- 28 x 53 x 10.7mm (without antenna)

Electrical Data

- Supply voltage: 5V DC (from USB or JST-GH)
- Transmit current: 100 mA at 20dBm
- Receive current: 25 mA
- Serial interface: 3.3 V UART

TELEMETRY RADIO

Microhard Radio

Features

Product URL

USB Type-C port, integrated USB to UART converter

6-position JST-GH connector, can be directly connected to the TELEM port on various flight controller

High voltage BEC onboard, Support DC7~35V voltage supply

UART transmission LED indicator

Three-stage RSSI LED indicator

Transmission within a public, license-exempt band of the radio spectrum

Transparent, low latency link rates up to 276 kbps (P900) and 345 kbps (P860 & P400)

Supports a robust true Mesh operation with auto-routing (P900 Only)

32 bits of CRC, selectable retransmission and forward error correction

Separate diagnostics port, transparent remote diagnostics and online network control

Specification:

	P900	P840	P400-C1S
Frequency Range	902 to 928 MHz	840 to 845 MHz	410 to 480 MHz
Transmit Power	100mW to 1W (20-30dBm)	100mW to 1W (20-30dBm)	100mW to 1W (20-30dBm)
Link Rate	Up to 276 kbps	Up to 345 kbps	Up to 345 kbps
Serial Baud Rate	Up to 230.4 kbps asynchronous	300 bps to 230 kbps	
Range	Up to 40 miles (60 km)	Up to 60 miles (100 km)	Up to 60 miles (100 km) @ 19.2 kbps
Spreading Method	Frequency Hopping Spread Spectrum (FHSS)	Frequency Hopping/Fixed Frequency, GMSK, 2GFSK, 4GFSK, QPSK	Frequency Hopping, GMSK, 2GFSK, 4GFSK, QPSK
Operating Modes	Mesh, Point-to-Point, Point-to-Multipoint, Store and Forward, Auto Routing, Self Healing, Packet Routing Modes.	Point-to-Point, Point-to-Multipoint, Store & Forward Repeater, Peer-to-Peer	
Input Voltage		DC7~35V (4-position JST-GH)	
Power Consumption	Sleep < 1mA Idle 3.5mA Rx: 45mA to 98mA Tx: 1000mA to 1400mA	Sleep < 1mA Idle 20mA Rx: 45mA to 98mA Tx Peak: 2A	Sleep < 1mA Idle 20mA Rx: 45mA to 98mA Tx Peak: 2A
Error Detection		32 bits of CRC, ARQ	
Weight	44g (without antenna) 71g (with antenna)	44g (without antenna) 71g (with antenna)	44g (without antenna) 67g (with antenna)

SENSORS

H-Flow

Features

- Integrated Optical Flow and Rangefinder Module
- PixArt Optical Flow Sensor for Accurate Motion Tracking
- Broadcom ToF Sensor for Precise Distance Measurement
- Infrared LED for Optical Low-Light Performance
- DroneCAN Protocol

Product URL

Specifications

- PixArt PAA3905E1 Optical Flow Sensor
  - Tracks under low light conditions of >5 lux
  - Effective Viewing angle up to 42°
  - Wide working ranges from 80mm up to 30m
  - Up to 7.4 rad/s
  - 40mW IR LED built onto the board for improved low-light operation
- Broadcom AFBR-S50LV85D Time-of-Flight Distance Sensor
  - Integrated 850 nm laser light source
  - Field-of-View (FoV) of 12.4° x 6.2° with 32 pixels
  - Typical distance sensing range up to 30m
  - Operation of up to 200k Lux ambient light
  - Works well on all surface conditions
  - Transmitter beam of 2° x 2° to illuminate between 1 and 3 pixels
- InvenSense ICM-42688-P 6-Axis IMU
- STM32F412CEU6 MCU
- Pixhawk Standard CAN Connector (4 Pin JST GH)
- Compact Form Factor
- Software-Controlled CAN Termination
- Protocol: DroneCAN
- Weight: 15.2g (3.5g without casing)

Precision Navigation and Stability in GPS-Denied Environments

The H-Flow's Time-of-Flight distance and Optical flow sensor enhance a drone's stability and navigation in GPS-denied environments by providing accurate motion and altitude data for precise control.

SENSORS

High Precision DroneCAN Airspeed Sensor - DLVR

Product URL

Features

Wide Pressure Range: Supports up to 2500 Pa and 226.8 km/h (141 mph) airspeed measurement.

High-Precision DLVR Sensor: Based on ALLSENSORS® DLVR with CoBeam technology, providing high precision and low temperature drift.

High Accuracy: Achieves better than 1% accuracy across a wide temperature range, ensuring reliable and accurate readings in demanding application.

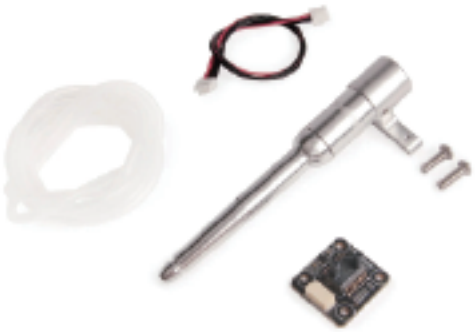
DroneCAN Protocol: Compatible with both PX4 and ArduPilot platforms.

Aluminum Shell: Durable and reliable construction

Digital Air Speed Sensor - MS4525DO

Product URL

MS4525DO has 1 psi measurement range (roughly up to 100 m/s or 360 km/h or 223 mp/h), the Airspeed Sensor Kit enables a resolution of 0.84 Pa, with data delivered at 14 bits from a 24 bit delta-sigma ADC. It also measures temperature to allow calculation of true airspeed from indicated airspeed using the static pressure sensor on the Flight Controller.



Digital Air Speed Sensor - MS5525DSO

Product URL

The MS5525DSO is a new generation of Digital Small Outline pressure sensors from MEAS with SPI and I2C bus interface designed for high volume OEM users. The sensor module includes a pressure sensor and an ultra-low power 24-bit ΔΣ ADC with internal factory calibrated coefficients.

SENSORS

DroneCAN RM3100 Professional Grade Compass

Product URL

This professional-grade RM3100 compass/magnetometer has impeccable signal-to-noise ratios, no drift, and precise magnetic field measurements. It can provide professional-grade heading accuracy and orientation calculations for your vehicle. With this compass, your vehicle can navigate through waypoints with little magnetic disturbance due to motor coils and metal parts. You can achieve the best result by placing this module far away from motor coils and other metal parts, getting rid of one of the largest points of failure on your unmanned vehicle.

Remote ID

Product URL

Holybro RemoteID Module is a low-cost, small-size, and light-weight module that broadcasts information about UAVs in flight through WiFi and Bluetooth. It supports both CAN and serial protocols. It is a FCC and CE-approved radio module.

The products run open-source firmware (ArduRemoteID) and provides a so-called standard Remote ID solution, primarily target drone manufacturers & system integrators.

ST VL53L1X Lidar

Product URL

The VL53L1X is a state-of-the-art, Time-of-Flight (ToF), laser-ranging sensor, enhancing the ST FlightSense™ product family. It is the fastest miniature ToF sensor on the market with accurate ranging up to 4 m and fast ranging frequency up to 50 Hz.

PMW3901 Optical Flow Sensor

Product URL

The Holybro PMW3901 Optical Flow Sensor is a UART version of PMW3901 module with built in BEC. It comes with a pre-soldered 6-pin JST-GH connector that is compatible with the . Compatible with PX4 & Ardupilot TELEM port on most Pixhawk style flight controllers..

DRONE DEVELOPMENT KIT

X650 Development Kit

Features

- New Pixhawk 6C/Pixhawk 6X flight controller with M10 GPS and plug-and-play SiK telemetry radio
- New frame design, the machine arms can be folded, the assembly time is the shortest (about 30 minutes), and no welding is required
- Carbon fiber frame combined with CNC aluminum parts and nylon parts structure, easy and direct installation
- Installation for companion computers such as Raspberry Pi and Nvidia Jetson Nano
- Optional depth camera mount for Intel RealSense depth camera

Includes

- Pixhawk 6C/Pixhawk 6X flight controller
- PM02 V3-12S /PM02D-12S power module
- Power distribution board (XT60 battery plug and XT30 ESC and peripheral equipment plug)
- M10 GPS module
- SiK Telemetry Radio V3 433/915MHz
- X650 Frame Kit
- Pre-installed items:
  - Motor - T-Motor MN4014 KV330 Motor (4 pieces) with XT30 plug
  - ESC - Tekko32 F4 ESC 45A (4 pieces) with XT30 plug
- Propeller 1555 (4 pieces)

PX4 Development Kit - X500v2

Features

- All new Pixhawk 6C or Pixhawk 6X Flight Controller with M10 GPS and Plug & play SiK Telemetry Radio
- New frame design with minimal assembly time (~30 minutes), No soldering required
- Carbon Fiber frame with fiber-reinforced nylon connectors providing easy & straightforward installation
- Power distribution board (PDB) with XT60 & XT30 plugs
- Mount for companion computer such as Raspberry Pi & Nvidia Jetson Nano
- Optional depth camera mount for Intel RealSense & Structure Core

Includes

- X500 V2 Frame Kit
- With Preinstalled Items:
- Motors - Holybro 2216 KV920 Motor (4 pcs)
- ESCs - BLHeli S ESC 20A (4 pcs)
- 1045 Propellers (6 pcs)
- Power Distribution Board – XT60 plug for battery & XT30 plug for ESCs & peripherals
- Note: Depth camera mount is sold separately

S500 v2 Development Kit

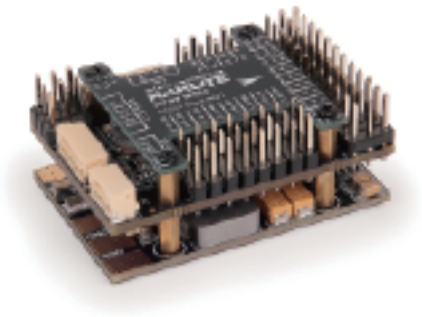
Features

- Easy to assemble, no soldering required
- Frame is made of mixture of carbon reinforced plastic and carbon rods
- Pre-solder ESC and power module
- Lower Cost

Includes

- Pixhawk 6C Flight Controller (Plastic Case)
- PM02 V3-12S Power Module
- M10 GPS Module
- SiK Telemetry Radio V3 433/915MHz
- Frame is made of mixture of carbon reinforced plastic and carbon rods
- Motors - Holybro 2216 KV920 Motor (4 pcs)
- ESCs - BLHeli S ESC 20A (4 pcs)
- 1045 Propellers (4 pcs)

FPV FLIGHT CONTROLLER



Kakute H743 -Wing

SKU: 11063

Product URL

Features

- MCU -STM32H743, 480 MHz, 1MB RAM, 2MB Flash
- IMU -IMU:ICM-42688P(SPI3)
- Baro-BMP280(12C4)
- OSD-AT7456E(SPI2)
- Blackbox: MicroSD card slot on SDMMC2
- 7x Uarts (1,2,3,5,6,7,8) with built-in inversion.
- 14x PWM outputs, 1x CAN, 5x ADC (Bat1/Curr1, Bat2/Curr2 and RSSI)
- 3x12C(12C1 and I2C2 for external devices, 12C4 for onboard sensors)
- 3x LEDs for FC STATUS (Blue, Red) and 3.3V indicator (Green)
- USB/DFU Key Extender with USB Type-C
- Dual Camera Inputs switch
- 3 On-board BEC output 5V, 6V/8V and 9V/12V
- 9V/12V ON/OFF Pit Switch
- High-precision Current Sense (90A continuous, 220A peak)
- Battery Voltage Sensor: 5K:25.5K (Scale 1800 in INAV,BATT VOLT_MULT 18.18 in ArduPilot)
- Mounting: 25 x 25mm, M2 hole
- Dimensions: 45x 30 x13.5 mm
- Weight: 28g with USB extender

Features

- MCU: STM32F405RGT6, 168 MHz , 192KB RAM,1MB Flash
- IMU: ICM-42688P (SPI1)
- Baro: SPL06 (I2C2)
- OSD: AT7456E (SPI2)
- 5x Uarts (1,2,3,5,6)and R3 is with built-in inversion.
- 6x PWM output, 2x ADC (Bat1/Curr1)
- 1x I2C(the I2C2 is for external devices, also for onboard sensors)
- 2x LEDs for FC STATUS (Blue) and 3.3V indicator (Green)
- USB/DFU Key Extender with USB Type-C
- High-precision Current Sense (110A continuous, 132A peak)
- 25x30x19mm
- 14.59g

Kakute F405 Wing Mini

SKU: 11071

Product URL

FPV FLIGHT CONTROLLER

Kakute H7 V1

SKU: 11065

Product URL

Features

- MCU-STM32H743 32-bit processor running at 480 MHZ
- IMU -MPU6000
- Barometer-BMP280
- OSD-AT7456E
- Onboard Bluetooth chip-ESP32-C3
- 6x UARTs (1,2,3,4,6,7; UART2 is used for Bluetooth telemetry)
- 9x PWM Outputs (8 Motor Output, 1 LED)
- 2x JST-SH1.0 8pin ESC port (4in1 ESCs, x8/0ctocopter compatible)
- 1x JST-SH1.0 6pin VTX port (For HD System like Caddx Vista & Air Unit)
- Battery input voltage: 2S - 8S
- BEC 5V 2A Cont.
- BEC 9V 3A Cont
- USB Type-C
- Mounting-30.5 x 30.5mm/Φ4mm hole with Φ3mm Grommets
- Dimension-35x35mm
- Weight - 8g

Features

- MCU - STM32H743 32-bit processor running at 480 MHz
- IMU - BMI270
- Barometer - BMP280
- OSD - AT7456E
- Onboard Flash: 128Mbits
- VTX ON/OFF Pit Switch – Switch can be enable using USER1 in Betaflight Mode tab. Warning: Do not enable this pit switch if you are using DJI FPV Remote Controller
- 6x UARTs (1,2,3,4,6,7)
- 9x PWM Outputs (8 Motor Output, 1 LED)
- Battery input voltage: 2S-6S BEC 5V 2A
- Mounting - 20 x 20mm, Φ3.6mm hole with M3 & M2 Grommets
- Dimension - 31x30x6mm
- Weight – 5.5g
- Support Betaflight, INAV, PX4, Ardupilot

Kakute H7 Mini

SKU: 11052

Product URL

FPV FLIGHT CONTROLLER

Kakute F722

SKU:11069

Product URL

Features

- MCU: STM32F722 32-bit processor, 216MHz, 256Kbytes RAM, 512Kbytes Flash
- IMU: ICM42688-P (SPI)
- Barometer: BMP280
- OSD: AT7456E
- 5x hardware UARTS (UART1,2,3,4,6)
- 7x PWM Outputs (6 Motor Output, 1 LED)
- Onboard 16 Mbytes for Blackbox logging
- Battery input voltage: 3S – 8S
- BEC: 9V/3A, 5V/2A, 3.3V/0.2A
- USB Type -C
- Dimensions: 35x35mm
- Mounting Holes: Standard 30.5 x 30.5
- Weight: 8g

Features

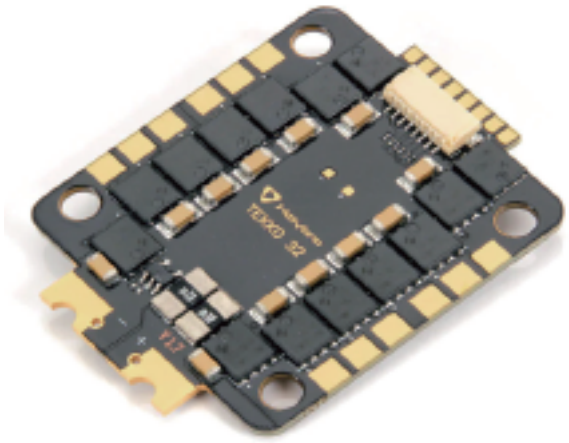
- MCU – STM32F405
- IMU – MPU6000
- Barometer – BMP280
- OSD – AT7456E
- 5x UARTs (1,3,4,5,6,7)
- 128 Mbit Dataflash chip
- Battery input voltage: 2S-8S
- BEC 9V/3A - Optimized for DJI O3 Air unit
- BEC 5V/2A
- 7x PWM Outputs (6 Motor Output, 1 LED)
- Supports serial receivers (SBUS, iBus, Spektrum, Crossfire, ESLR).
- Mounting – 30 x 30mm, Φ4mm hole with M3 Grommets
- Dimension – 37x37mm
- Weight – 7g
- JST-SH1.0_8pin port (For 4in1 ESCs)
- JST-SH1.0_6pin port (For DJI/Caddx HD System and other VTX)

Kakute F4 V2.4

SKU:11066

Product URL

ESC



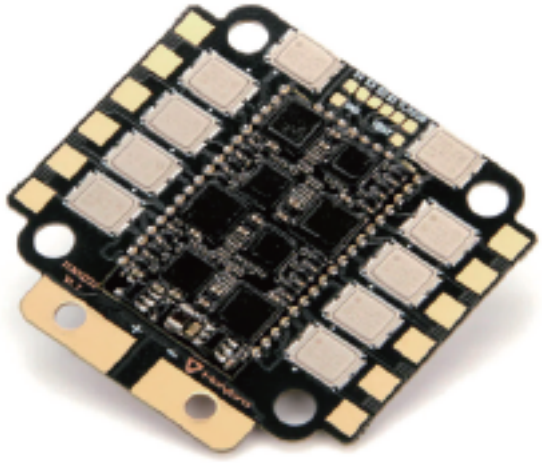
Tekko32 F4 4in1 50A ESC (AM32)

SKU: 31102

Product URL

Features

- F4 MCU @ 150Mhz (compared to F3 @108Mhz & F0 @48Mhz)
- PWM Frequency: 16k to 96k
- Continuous Current: 50A x4
- Burst Current: 60A x4
- Supports 4-6S battery
- Dimensions: 48x37x6mm / Weight: 13.8g
- Mounting holes: M4 30.5x30.5mm (M3 grommets included)



Tekko32 F4 Metal 65A ESC (AM32)

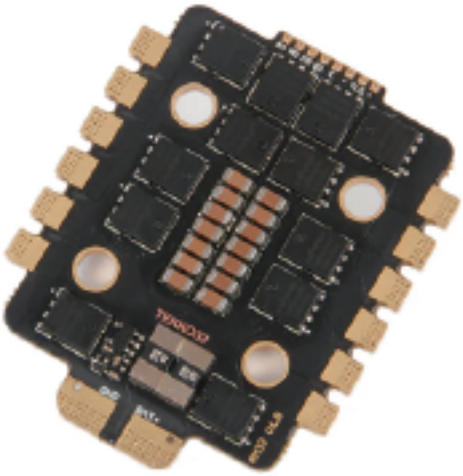
SKU: 31097

Product URL

Features

- New & faster F4 MCU @ 150Mhz, PWM Frequency: 16k to 96k
- Metal-cased MOSFET for excellent heat dissipation
- Massive on-board capacitance for noise filtering at 2068uf
- 3 oz copper PCB design to allow bigger current and better heat dissipation
- Continuous Current: 65A x4, Burst Current: 75A x4
- Supports 4-6S battery
- Dimensions: 43 x 44mm / Weight: 15.8g
- Mounting holes: M4 30.5x30.5mm (M3 grommets included)

ESC



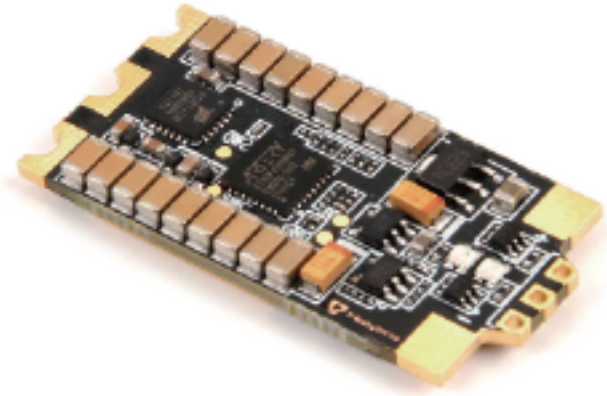
Tekko32 F4 4in1 Mini 50A ESC(AM32)

SKU:31246

Product URL

Features

- All new High-quality MOSFETs with low internal resistance & heat generation, and individual metal heatsink
- New and faster F4 MCU @ 150Mhz (compared to F3 @108Mhz & F0 @48Mhz)
- Separate drive & control circuit, reducing the electrical interference to the control circuit



Tekko32 F4 45A ESC (AM32)

SKU: 31104

Product URL

Features

- F4 MCU with firmware Dshot1200 up to 32kHz
- PWM up to 48k
- Small size & low weight
- On-Board RGB LED
- Build in Current sensor
- 2-6s LIPO input
- Size: 17.3*34.3*4.5mm
- Weight: 5.8g

FPV DRONE

Kopis X8 Cinelifter 5"
Kit - Cage

Kopis X8 Cinelifter 5”
Kit - Ducted

Feature

- 5" compact design with injection molded ducts
- Perfect for indoor fiying near people and outdoor cursing
- Easily Swappable duct to cage design (purchase separately)
- Ducted design provides smooth flight & excellent flight efficiency
- Caged design provided greater maneuverability, especially in winy situation

Kopis Cinematic X8 7" Kit

Feature

- Made for 7" propeller
- Camera platform shock absorption structure with 10 silicone damping balls
- Spacing between top and bottom plates: 22mm
- Camera platform elevation: 0 ~ 25 ° Adjustable
- Wheelbase: 396mm
- Weight: 1124g
- Frame weight: 640g

2025—V009

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