

HS-10" | 4kg Payload | Interceptor | Single Dropper

HS-10" Drone: Versatile Long-Range Quadcopter Platform

The HS-10" is a versatile, high-performance 10-inch class X-Quadcopter drone engineered with a lightweight carbon fibre Mark4 frame, offering a robust 4kg payload capacity and adaptability across specialised configurations such as Fiber Optics, Interceptor, or Single Dropper Frame setups.

Optimised for long-range missions and demanding applications like payload delivery or precision navigation, it integrates advanced electronics including the PF405 V3 flight controller with ICM42688 gyro and Betaflight compatibility, a 75A 4-in-1 ESC with AM32 firmware for efficient telemetry and reduced noise, powered by P3214 820KV motors tuned for 10" propellers, HQProp 10x5x3 efficiency-oriented blades, and a MM10Q GPS + Compass module for reliable positioning in challenging environments.



Supporting flexible power options like 6S4P 20,000 mAh Li-ion for extended endurance or 6S3P 15,000 mAh high-discharge Li-ion for the Interceptor, this platform prioritises reliability, precision, and customisation for professional-grade operations.



The HS-10" Long-Range Quadcopter Platform

Build Frame

- **Model:** Mark4, 10-inch class
- **Type:** X-Quadcopter, carbon fibre construction
- **Propeller size capacity:** up to 10"



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Frame

Model	Mark4, 10-inch class
Type	X-Quadcopter, carbon fibre construction
Propeller Size Capacity	up to 10"

Speed & Ceiling

Cruise Speed	40–45 km/h optimal for efficiency
Maximum Horizontal Speed	-70 km/h and -200+ km/h for Interceptor

Electronics Suite

Flight Controller	PF405 V3 (stack) (ICM42688 gyro, barometer, Betaflight compatible, multiple UARTs)
Motors	P 3214 820KV, optimised for 10" long-range propellers
Propellers	HQProp 10x5x3 (three-blade, efficiency-oriented)
GPS + Compass (except fibre optics)	MM10Q — high-precision GNSS module with integrated compass for reliable navigation, accurate positioning, and stable heading reference even in challenging environments
Battery Options:	<ul style="list-style-type: none"> o 6S4P 20,000 mAh Li-ion o 6S3P 15,000 mAh High Discharge Li-ion (for Interceptor)

General Performance

All-Up Weight (AUW)	6–6.5 kg (including 4 kg payload)
Payload Capacity (nominal)	Maximum 4 kg with 6S3P high discharge (15,000 mAh)

6S3P high-discharge (15,000 mAh) Interceptor

Hover Time	15–17 minutes (with 20% reserve)
Flight Time	17– 25 minutes
Practical Range	15 km (with reserve)
Hover Current	65–70 A

6S4P (20,000 mAh) + 4 kg payload

Hover Time	11–13 minutes (with 20% reserve)
Flight Time	15–17 minutes
Practical Range	7–8 km one-way (with reserve), total 15 km
Hover Current	70–75 A

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Advanced Communication and Video Transmission Systems for HS-10" Interceptor and Single Bomber Variants

The HS-10" drone's Interceptor and Single Bomber variants feature advanced communication and control via the Dual-Band ELRS radio link, operating on both 2.4 GHz and 868/915 MHz frequencies to provide maximum reliability through frequency diversity. The 868/915 MHz band ensures long-range penetration in obstructed environments, whilst the 2.4 GHz band offers additional bandwidth and redundancy in noisy RF conditions, making the dual-band system far superior to single-link setups with a practical control range of approximately 12–15 km line-of-sight. For video transmission, these variants utilise the DO4 Air Unit Pro system, equipped with a rotating mount for flexible payload camera positioning, supporting 1080p at 100 fps low-latency digital HD video over distances up to 15 km under FCC regulations.

Communication & Control

Radio Link	Dual-Band ELRS (2.4 GHz + 868/915 MHz)
Frequency diversity for maximum reliability	
868/915 MHz ensures long-range penetration in obstructed areas	
2.4 GHz adds bandwidth and redundancy in noisy RF conditions	
Dual-band system offers superior resilience compared to single-link setups	
Practical control range: ~12–15 km LOS	

Video Transmission

System	DO4 Air Unit Pro (with rotating mount for payload camera flexibility)
Supports 1080p @ 100 fps low-latency digital HD video	
Range up to 15 km (FCC)	
Integrated OSD telemetry overlay	
Ultra-low latency (<50 ms), stable HD feed, excellent penetration	

Interceptor / Single Bomber



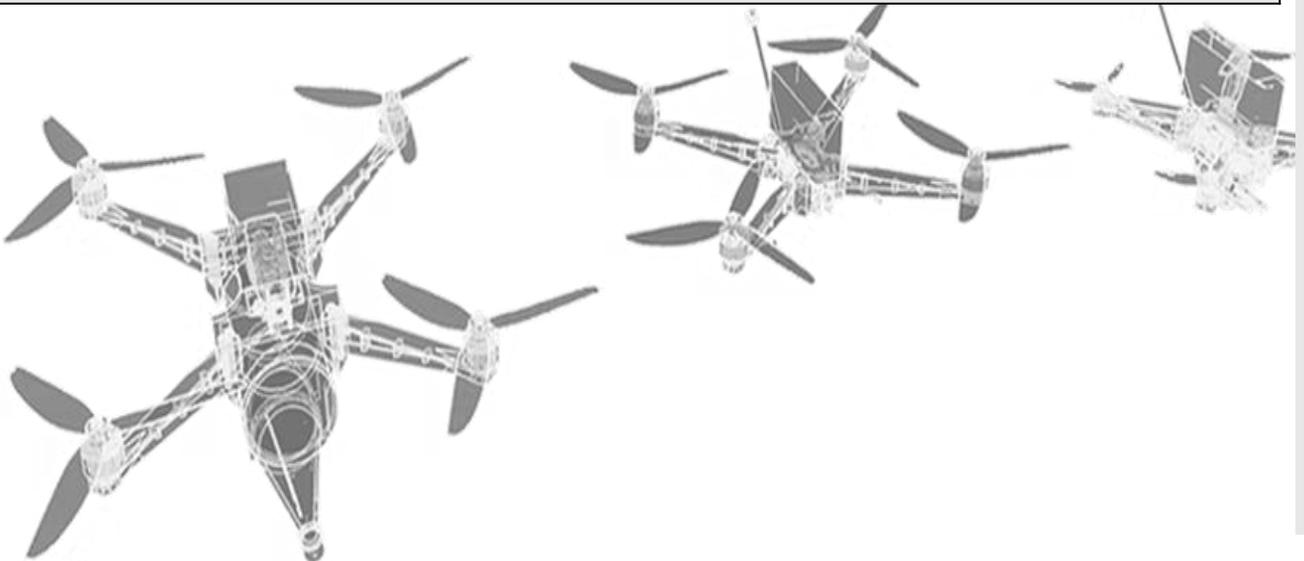
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Fiber-Optical Tethered Communication System

In addition to standard long-range RF control, our platform supports a fibre-optic tethered communication system — designed for critical missions where interference-free operation and guaranteed link integrity are required.

Communication & Control

Ground Station Integration	<ul style="list-style-type: none"> ○ Command inputs via standard radio controller. ○ A/V output to FPV goggles, external monitor, or command screen.
Onboard Fibre Transmitter	<ul style="list-style-type: none"> ○ Mounted securely at the rear of the drone. ○ Provides direct high-bandwidth uplink/downlink through optical cable ○ Immune to RF interference, jamming, and signal degradation.
Operational Range (via fibre spools)	<ul style="list-style-type: none"> ○ Available spool options: 10 km / 15 km / 20 km / 25 km. ○ Provides both radio command link and real-time HQ video transmission with zero interference.
Operator Advantages	<ul style="list-style-type: none"> ○ Absolute link security: Fiber is not affected by radio jamming or multipath Interference. ○ Stable real-time video: No latency fluctuations typical of wireless links ○ Mission flexibility: Ideal for operations in restricted RF environment.
<p>Note: A longer fibre spool increases operational range, but also adds additional onboard weight. As spool length increases, the maximum payload capacity of the drone decreases proportionally.</p>	



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Video Transmission for Fiber Optics

The HS-10" drone boasts specialised camera options for varied missions, including the Mini Night Cat 3 for superior low-light and night operations with its IR-sensitive 0.00001 Lux sensor; the RCP2 SE V2 for reliable daytime FPV with balanced colour and wide dynamic range; the AI-assisted CaddxFPV-G for seamless day-to-night transitions; and custom integrations like thermal or analogue cameras for professional tasks such as search and rescue or surveillance. Complementing these are Betaflight flight modes like Altitude Hold for stable hovering, manual Angle/Horizon/Acro controls, Return-to-Launch failsafe via ELRS/GPS, and configurable waypoint loitering.

Communication & Control

F-Mini Night Cat 3 (1200TVL, IR-sensitive, 0.00001 Lux) ground Station Integration	<p>Best for: Night operations, security, and low-light reconnaissance. Advantages: Extremely sensitive sensor optimized for starlight and IR illumination. Provides clear images in environments where human vision is nearly blind.</p>
RCP-2 SE V2 (1000TVL)	<p>Best for: Daytime inspection, general-purpose FPV use. Advantages: Balanced colour reproduction, wide dynamic range, and proven reliability in harsh environments. Ideal for operators who need consistent performance without complexity.</p>
CadGaz (AI-assisted, auto night/day switching)	<p>Best for: Mixed-condition missions (day-to-night transitions). Advantages: Intelligent AI-based scene detection automatically optimizes image quality whether in full daylight or total darkness, eliminating the need for manual adjustments.</p>
Custom Cameras (Analog, Thermal, etc.)	<p>Best for: Specialised professional applications (search & rescue, industrial inspections, thermal mapping, surveillance). Advantages: Open integration platform — thermal imaging, high-resolution analogue, or customer-supplied cameras can be mounted and powered as needed.</p>

Flight Modes (Betaflight)

Altitude Hold	Baro-based hover for stable stationary flight above the target.
Angle / Horizon / Acro	Manual flight modes.
Return-to-Launch (basic failsafe)	Via ELRS/GPS
Configuration	Configurable for mission hovering and waypoint loiter (with additional setup)

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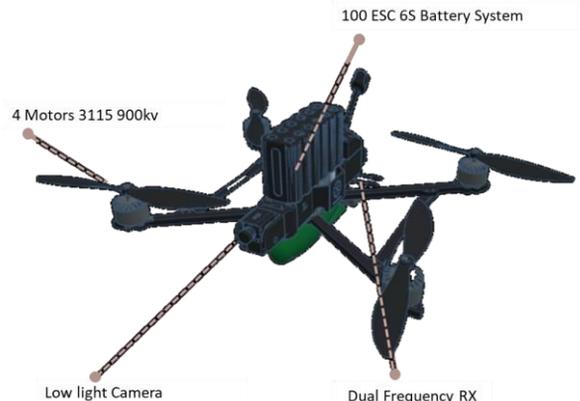
Summary

The HS-10" platform is optimised for reliable 4 kg payload operations on a compact long-range frame, featuring the Pilotix F405 combined with an AM32 75A stack for efficient power management through dynamic PWM frequency control, which minimises heat and enhances overall flight efficiency. The P-3214 820KV motors provide high thrust-to-weight performance alongside balanced endurance, whilst battery flexibility—such as 6S3P for lighter missions or 6S4P for extended endurance—enables customisation of flight times to suit specific requirements.

The G-ELRS dual-band link ensures robust control in interference-heavy environments, complemented by the D-O4 HD video system for dependable long-range FPV with a crystal-clear feed. An optional Fibre-Optic Communication Module delivers unparalleled anti-jamming security and stable transmission over 10–25 km tether lengths, making it ideal for RF-restricted or interference-prone areas, though longer fibre spools may reduce payload capacity.

This 10" platform is optimized for reliable 4 kg payload operations on a compact long-range Frame:

- ✓ **The P-F405 + AM32 75A stack** ensures efficient power management with dynamic PWM frequency control, reducing heat and improving overall flight efficiency.
- ✓ **P-3214 820KV motors + HQ 10×5×3 props** deliver high thrust-to-weight performance with balanced endurance.
- ✓ **Battery flexibility** (6S3P for lighter missions, 6S4P for endurance) allows tailoring flight time to the mission.
- ✓ **G-ELRS dual-band link** provides rock-solid control even in interference-heavy environments.
- ✓ **D-O4 HD video system** ensures reliable long-range FPV with crystal-clear feed.
- ✓ **Optional Fiber-Optic Communication Module** offers unmatched anti-jamming security and stable transmission over 10–25 km tether lengths — ideal for operations in RF-restricted or interference-prone areas (note: longer fibre spools reduce available payload capacity).



Note: HS can setup fibre-optics drones with initiating systems for ammunition "Mustache" with 3-point fuse, but for special requests only.

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Component List

Component	Description
Frame	Mark4 10"
Flight Controller	P-F405 V3
ESC	P 4-in-1 75A, AM32
Motors	P-3214 820KV (x4)
Propellers	HQProp 10x5x3
Receiver	G-ELRS Dual Band (2.4 + 868/900 MHz)
GPS + Compass	M-M10Q
Video System Digital	D-O4 Air Unit Pro + Rotating Mount
Video System Analog	Client to specify analogue camera
Battery Options	6S3P High Discharge 15,000
Miscellaneous	Antennas, wiring, mounts, servo
Fiber setup	Fiber spool / ground control station / transmitter

Client Operating Set-Up

Use	3 rd Party Equipment
Operating with UAV for interceptor/single bomb dropper	DJI Googles 3
	GX12 Dual-Band Gemini-X Radio Controller (M2)
Operating with UAV for fibre optics:	Monitor Hawkeye 10.2-inch Captain with DVR, HDMI
	RadioMaster Boxer


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