HS-13” | 6kg bomber | Auto-Missions

HS-13" - Robust 6kg Heavy-Lift Quadcopter with Auto-Mission Capabilities

The HS-13" is a robust 13-inch class X-Quadcopter drone for 6kg payloads and auto-missions, built on a lightweight carbon fibre Mark4 frame supporting up to 13" propellers.

Key electronics feature the P-H743 BMI270×2 flight controller (ArduPilot-compatible with dual gyros, SD logging, barometer, multiple UARTs, CAN); PTX 4-in-1 AM32 80A 8S ESC (telemetry, DShot, RPM feedback); PTX 4720 420KV motors for 13" props and 8S; HQProp 13×6.5×3 carbon-reinforced three-blade props; and 8S4P Li-ion battery.

Performance includes 10–10.5 kg all-up weight with 6kg payload, 55–65 A hover current, 65–80 **A cruise at 12–14 m/s, 18–20 min flight time with 20% reserve, 45–50 km/h cruise speed, and 8–10 km one-way range (16–20 km total). ArduPilot modes offer Altitude Hold, Loiter, RTL, waypoint auto-dropping, and manual control**.

G1 Dual-Band Link (915/868 MHz + 2.4 GHz) provides reliable control up to 15 km LOS with interference resilience. D-O4 Air Unit Pro delivers 1080p@100fps HD video with <50 ms latency, 15 km range (FCC), OSD/telemetry, and strong penetration. It's a stable heavy-lift platform for inspection/delivery, with components like R-TZ Mark4 frame, BETAFPV receiver, M10Q GPS, dual drop mechanism, and antennas.

Operation requires DJI Goggles 3, GX12 controller, and QGroundControl on a laptop, or mobile phone.

HS-13" - Robust 6kg Heavy-Lift Quadcopter

Build Frame

- **Model**: Mark4, 13-inch class
- **Type:** X-Quadcopter, carbon fibre construction
- **Propeller size capacity:** up to 13”

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Frame

Model	Mark4, 13-inch class
Type	X-Quadcopter, carbon fibre construction
Propeller Size Capacity	up to 13”

Speed

Maximum Horizontal Speed	70 km/h and -200+ km/h for Interceptor

Electronics Suite

Flight Controller	P-H743 BMI270×2 (ArduPilot compatible, SD logging, dual gyro redundancy, barometer, multiple UARTs, CAN support).
ESC	P-01 4-in-1 AM32 80A, 8S (telemetry capable, DShot, RPM feedback for dynamic filtering).
Motors	P-4720 420KV, optimized for 13” propellers and 8S voltage.
Propellers	HQProp 13×6.5×3 (carbon reinforced nylon, three-blade, high thrust and stability).
Battery Options:	8S4P Li-ion.

General Performance

All-Up Weight (AUW)	10–10.5 kg (including 6 kg payload).
Payload Capacity (nominal)	Maximum 6 kg.
Hover Current	(8S, 6 kg payload): 55–65A total.
Cruise Current	(12–14 m/s): 65–80A total.
Flight Time	(with 6 kg payload, 8S4P): ~18–20 minutes in normal weather with 20% reserve.
Cruise Speed	45–50 km/h optimal for efficiency.
Operational Range	(one-way, with reserve): ~8–10 km depending on wind conditions, 16-20 km in total.
Flight Modes	Altitude Hold, Loiter (GPS position hold), RTL (Return-to-Launch), Auto Mission dropping (waypoints) and full manual control included.

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Advanced Communi

The HS-13" drone employs the Dual-Band Link for communication and control, operating on 915/868 MHz for superior long-range penetration and resilience against interference in urban or obstructed environments. The HS-13 is complemented by 2.4 GHz for added bandwidth and redundancy to enhance robustness in noisy RF conditions; this dual-band setup provides frequency diversity, increased resistance to interference, and fail-safe redundancy over single-band systems, achieving a practical control range of up to 15 km line-of-sight with improved reliability in multipath scenarios.

For video transmission, it utilises the D-O4 Air Unit Pro, a digital HD system integrated with D Goggles 2 or Integra, supporting 1080p at 100 fps low-latency video over ranges up to 15 km (FCC) with strong anti-interference capabilities, integrated OSD and telemetry overlays from ArduPilot, ultra-low latency under 50 ms, crystal-clear feeds, high penetration compared to older systems, and stable connections even in challenging RF conditions.

Communication & Control

Radio Link	Dual-Band Link (915/868 MHz + 2.4 GHz):
Provides frequency diversity for enhanced link reliability.	
915/868 MHz ensures long-range penetration and resilience against interference, ideal for urban or obstructed environments.	
2.4 GHz adds bandwidth and redundancy, improving robustness in noisy RF conditions.	
Dual-band operation increases resistance to interference and fail-safe redundancy compared to single-band links.	
Practical control range: up to 15 km LOS, with improved reliability in multipath/interference scenarios.	

Video Transmission

System	DO4 Air Unit Pro
Digital HD video system, integrated with Goggles 2 / Integra.	
Supports 1080p @ 100 fps low-latency video.	
Range up to 15 km (FCC) with strong anti-interference performance.	
Integrated OSD and telemetry overlay from ArduPilot.	
Advantages: ultra-low latency (<50 ms), crystal-clear HD feed, high penetration compared to older systems, and stable connection even in challenging RF conditions.	

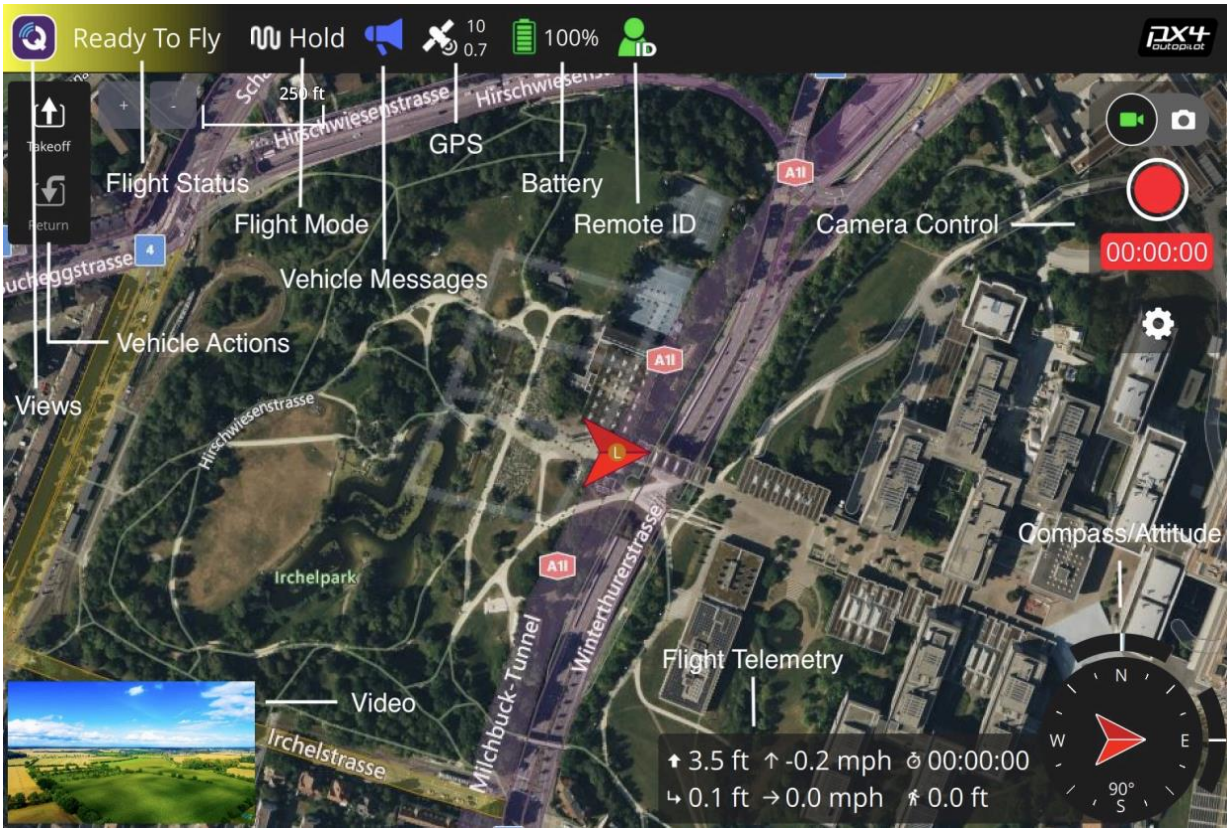
Key Options

HS-13” | 6kg bomber | Auto-Missions

Summary

This configuration provides a stable and reliable heavy-lift platform optimized for 6 kg payload operations on a 13” frame:

- ✓ **The PH743 + AM32 80A** stack enables professional-grade flight control with full ArduPilot functionality.
- ✓ **4720 420KV motors + 13×6.5×3 props** deliver efficient thrust and stable performance.
- ✓ High-density 8S4P Li-ion power pack delivers up to 20 minutes of sustained flight with a 6 kg payload — offering unmatched endurance in its class
- ✓ **Gemini dual-band control link (915/868 MHz + 2.4 GHz)** ensures uninterrupted connectivity, even in dense RF environments. The dual-frequency redundancy provides a critical safety layer that single-band systems cannot match.
- ✓ **D-O4 Air Unit Pro provides long-range, low-latency, HD video** — ideal for inspection, delivery, and professional operations.



Our ground Control software packages provide the ability to view via laptop, desktop or mobile phone, as well as full integration of D01/4 hardware.

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Component List

Component	Description
Frame	Readytosky Mark4 13” V3 Pro
Flight Controller	P-H743-SLIM
ESC	P 4in1 80A AM32 8S
Motors	P 4720 420KV (×4)
Propellers	HQProp 13×6.5×3 (2 pcs) ×2 sets
Receiver	BETAFPV SuperX ELRS G-Xross Nano
GPS + Compass	M10Q
Video System	D-O4 Air Unit Pro
Battery	8S4P Li-ion custom pack (est.)
Miscellaneous	Antennas for DJI, servo, etc.
Dropping Mechanism	Dual mechanism

Client Operating Set-Up

Use	3rd Party Equipment
Operating with UAV	DJI Googles 3
	GX12 Dual-Band Gemini-X Radio Controller (M2)
	Laptop Windows/Mac-OS or phone IOS/Android to run QGroundControl

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