

Scout Drone: Your AI Carrier Pigeon: Step-by-step build

Concept assembly guide derived from the staged build plan. Not a certified engineering drawing. Prices are estimates (Oct 2026); nothing here is a purchase.

Stage 1

1	Assemble the 7-inch frame. Part S1: Light 7-inch LR carbon frame (Chimera7 class) x1 (~\$40) Buy: Amazon search
2	Bolt one 1300KV motor on each arm. Part S2: 2806.5/2807 1300KV 6S motors x4 (~\$70) Buy: Amazon search
3	Mount the SpeedyBee F405 V4 stack on the 30x30 standoffs. Part S4: SpeedyBee F405 V4 BLS 60A stack x1 (\$76) Buy: SpeedyBee
4	Solder motor leads and XT60 to the ESC. Part S4: SpeedyBee F405 V4 BLS 60A stack x1 (\$76) Buy: SpeedyBee
5	Flash ArduPilot to the F405. Part S4: SpeedyBee F405 V4 BLS 60A stack x1 (\$76) Buy: SpeedyBee
6	Mount the M10Q GPS on the printed mast; wire to a UART. Part S5: Matek M10Q-5883 GPS/compass x1 (\$43) Buy: Boulder MultiRotor (Matek)
7	Bind the ELRS Lite receiver (override only); wire to a UART. Part S8: RadioMaster Pocket ELRS + BetaFPV ELRS Lite RX (override) x1 (~\$80) Buy: Amazon search
8	Flash the Pi Zero 2 W card; mount it with the 5V 3A BEC. Part S6: Raspberry Pi Zero 2 W + 64 GB microSD + 5V 3A BEC x1 (~\$33) Buy: Raspberry Pi
9	Connect Pi Zero UART to the FC for MAVLink. Part S6: Raspberry Pi Zero 2 W + 64 GB microSD + 5V 3A BEC x1 (~\$33) Buy: Raspberry Pi
10	Mount Camera Module 3 in the TPU pod; connect ribbon to the Pi Zero. Part S7: Pi Camera Module 3 in TPU pod x1 (\$25) Buy: Raspberry Pi
11	Fit the Remote ID module and register with FAA. Part S10: Remote ID broadcast module x1 (~\$35) Buy: Amazon search
12	Strap on strobe; tidy wiring with standoffs and straps. Part S11: Misc: silicone wire, XT60, straps, standoffs, strobe x1 (~\$15) Buy: Amazon search
13	Fit the 6S 21700 pack under the frame. Part S9: 6S1P 21700 Li-ion pack (Molicel P45B), XT60 x1 (~\$65) Buy: Amazon search
14	Fit props last; run a tethered hover test. Part S3: 7-inch bi-blade LR props, 3 sets x1 (~\$12) Buy: Amazon search

Stage 2

15	Swap or add the Radxa Zero 3W for on-board detection. Part S12: Radxa Zero 3W (detection upgrade) x1 (\$28-43) Buy: Amazon search
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Stage 3

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Add the spare 6S pack to the kit.

Part S13: Spare 6S pack x1 (~\$30) Buy: [Amazon search](#)

Stage 4

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(Optional) Stack the SIM7080G HAT for cellular alerts.

Part S14: Waveshare SIM7080G Cat-M HAT (cellular add-on) x1 (\$31.99) Buy: [Waveshare](#)

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(Optional) Add the ideal-diode brain battery for hot swaps.

Part S15: Pololu ideal diode (brain hot-swap battery) x1 (~\$45) Buy: [Pololu](#)

Optional

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(Optional) Plug the InfiRay P2 Pro into the companion USB.

Part S16: InfiRay P2 Pro thermal camera (optional) x1 (\$249) Buy: [InfiRay](#)