Powering a drone's companion computer (DS-001, VN-001)

Should a companion board draw from the drone's flight battery or carry its own? Simulated, and implemented three times independently to check the simulation.

0.6% of the flight pack used by the companion board per flight; a separate 65 g battery costs about 8.5 times more hover power than the board draws

Results

Measure	Result
Pack drain rate against the board's	about 163 times faster
Board's share of the pack per flight	**0.6%**
Board alone on the same energy	about 41 hours
Three implementations	byte-identical output

How it was measured

Model	2 kg quadcopter, 250 W hover, 4S 5,000 mAh pack, board assumed to draw 1.3 W
Check	Simplex, Python and C implementations, written independently

Conditions

Status	Simulated, pending measurement on hardware

Limits of this result

Every power figure here is modelled, not metered. The board's draw is an assumption drawn from published measurements of the same board class.

Where it is recorded

simplex/docs/POWER_COMPANION_OPTIONS.md; simplex/validate/power/out. The data behind this sheet is published beside it at senuaai.com/evidence/datasheets/.