RobiThrust UAV Propulsion Subsystem

Robichip Power SoC Product Specifications, Test Data, and Assembly Interfaces



Figure 1. RobiThrust propulsion subsystem application examples.

01 Subsystem Integration



Figure 2. Relative positions of the propeller, motor, Robichip Power SoC, and customer-provided cover.

Engineering Boundary

The white PCB retains its original board color and Robichip chip marking.

The white cover is marked Customer provided.

01 System and Partner Interfaces

Robichip Power SoC is the drive and control core. Partner-supplied motors and propellers are selected by application. Robichip provides the chip, RobiDev driver version, and required power and thermal interface data.

Table 1. Subsystem Roles

Chip Core	Robichip Power SoC
Driver Version	RobiDev D or HD (G1/G2)
Partner Items	Motor, Propeller, and Test Configuration
Customer Supplied	Airframe, Battery, Cover, and Final Mounting Interface

Assembly Evaluation

- Mounting holes, tolerances, materials, and disassembly direction.
- Power, phase, and signal cable routing with the required bend radius.
- Thermal contact surface, airflow direction, temperature points, and service clearance.

RobiThrust
www.robichip.com/robithrust

LET'S COLLABORATE

Motors · Propellers · System Integration · Beyond

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02 | PRODUCT FAMILY & PERFORMANCE

MiniE, P, and X Specifications and Bench Data

Product data, motor partner, test conditions, and measured results are shown together. Do not rank performance across platforms.

Specification	MiniE	P	X
Positioning	Light UAV Endurance efficiency and lower weight	Premium Type I Large-propeller efficiency and sustained output	Performance UAV High thrust and dynamic response
Motor Supplier and Model	Partner: Maxon ECX32 Flat UAV	Partner: Maxon ECX42 Flat	Racing Electric RUM-3848Y
Propeller	APC 10 × 4.5MR Up to 11 × 5.5MRP	FALCON 15 × 6 or 15 × 6E	13–15" or 10×5 tri-blade
Test Supply	16.8 V bench	24 V bench 240 W measured	44V bench
RobiDev Driver	RobiDev D or HD (G1/G2)	RobiDev D or HD (G1/G2)	RobiDev D or HD (G1/G2)
Measured Baseline	G2 3100–5600 rpm Average 11.17 gf/W Maximum approx. 673 gf	1615 gf at 5700 rpm 6.73 gf/W single-side measured	982 gf at 7300 rpm 5.41 gf/W performance window

Note: G1 is a non-red product. Changing the motor, propeller, supply, or cooling requires a new measurement baseline on the same platform.

2.1 MiniE | Partner: Maxon

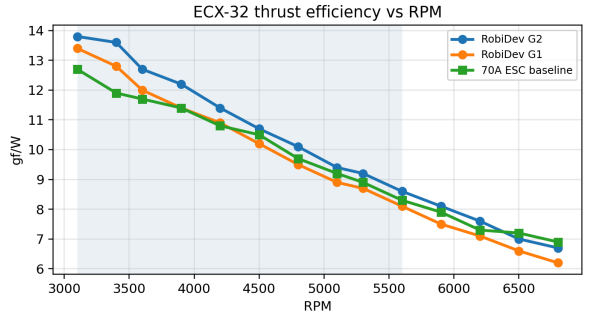


Figure 3. MiniE / ECX32 bench test.

Operating Range	3100–5600 rpm
G2 Average	11.17 gf/W
Baseline Average	10.51 gf/W
Maximum Thrust	Approx. 673 gf @ 6800 rpm

Test configuration: Maxon ECX32 Flat UAV / APC 10 × 4.5MR / 16.8 V

2.2 P | Partner: Maxon

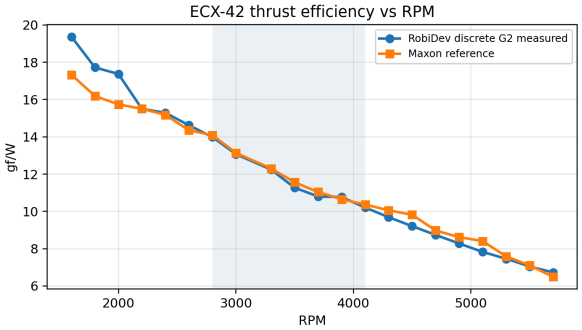


Figure 4. P / ECX42 bench test.

Maximum Thrust	1615 gf @ 5700 rpm
Input Power	240 W @ 24 V
Peak Efficiency	6.73 gf/W
Cooling Condition	single-side measured

Test configuration: Maxon ECX42 Flat / FALCON 15 × 6 / 24 V
X: Racing Electric / RUM-3848Y / 44V bench / 982 gf @ 7300 rpm
Propulsion Test Video | **5.41 gf/W**

03 | ASSEMBLY INTERFACE

Physical Components, Chip, and Assembly Inspection Fields

The subsystem is organized into estimable, buildable, and traceable engineering items for partner review of mounting, routing, and validation work.

3.1 Subsystem Hardware

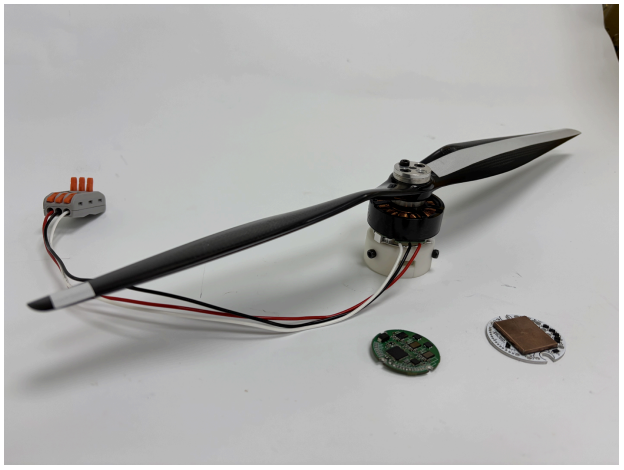


Figure 5. Relative arrangement of the motor, propeller, harness, cover, and board.

3.2 Motor Test Setup



Figure 6. Partner motor and propeller bench configuration.

3.3 Robichip Power SoC

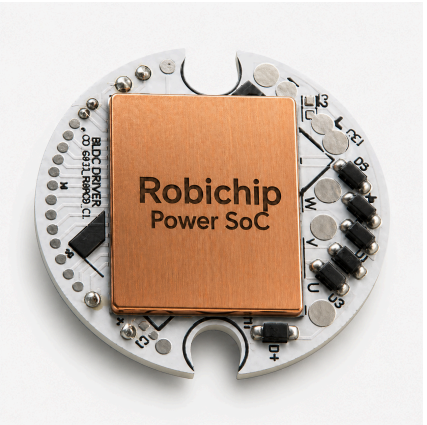


Figure 7. Power SoC with the Robichip marking and original white board finish.

3.4 Integration Focus

Table 5. Assembly Inspection Fields	
Mechanical	Mounting holes, tolerances, propeller clearance, screws, and torque
Electrical	Supply window, polarity, harness, connectors, phase order, and rotation direction
Thermal	Contact surface, mounting orientation, propeller airflow, environment, and temperature points
Traceability	Motor and propeller lot, board and driver revision, first article, and EOL records

3.5 Deliverables

- Version-controlled BOM and alternate-part notes.
- 2D and 3D assembly drawings, harness table, and connector definitions.
- First-article records, measurement fields, and change control.

If the airframe, battery, motor, propeller, or mission profile changes, repeat bench and flight validation on the target platform.

AWARDS & INDUSTRY RECOGNITION

GOVERNMENT AWARD | MOEA

Best AI Awards 2026

IC Design - Startup & SME Division

Honorable Mention | Robochips Power SoC

INDUSTRY STAGE | SEMI

SEMICON Taiwan 2026

Silicon Startups Stage | Selected Presenter

Sep 4, 11:20-11:30

INVESTOR SHOWCASE | SEMI

SEMI Venture Day 2026

Startup Pitch Showcase | Selected Startup

Sep 4 | Invitation-only program

Official sources: MOEA Best AI Awards 2026 winners list; SEMICON Taiwan 2026 official agendas. | Contact: bd@robichip.com