

Tool info

Serial API: 1:1.0
Board: Custom STM32F401RE thrustBoard v2
Firmware: thrust++ : ChibiOS RT 7.1.0 : HAL 8.1.0
Commit: [0ea573c] : Sep 15 2022 - 20:11:16

Measurement info

Motor: Dualsky 2814 V2
KV: 970
Magnet poles: 14
Propeler: Aeronaut 9x7 fold
Blade count: 2
Note:

Measurement Results 1:

Output [%]	Thrust [G]		Torque [G cm]		RPM [1/min]		Voltage [V]		Current [A]		Pin [W]	ThrustEff [G/W]
	mean	std dev	mean	std dev	mean	std dev	mean	std dev	mean	std dev		
20	54.39	7.352	253.98	0.838	2486	60.2	16.425	0.0063	0.779	0.0436	12.787	4.253
30	139.04	7.357	507.62	0.998	3528	61.0	16.369	0.0062	1.839	0.0431	30.097	4.620
40	269.43	7.437	901.82	0.999	4721	65.3	16.252	0.0064	3.999	0.0541	64.994	4.145
50	429.88	7.475	1401.85	1.866	5927	67.0	16.057	0.0110	7.570	0.0867	121.559	3.536
60	688.49	7.496	1943.52	2.656	7263	89.7	15.793	0.0137	12.385	0.1217	195.602	3.520
70	985.28	9.014	2495.82	6.115	8425	69.9	15.491	0.0125	17.948	0.1291	278.031	3.544
80	1234.47	7.538	3011.51	8.757	9345	76.2	15.152	0.0138	24.455	0.1190	370.556	3.331
90	1447.14	8.458	3501.17	13.940	10101	75.7	14.791	0.0161	31.783	0.1510	470.100	3.078
100	1540.37	7.433	3748.15	9.510	10460	71.0	14.547	0.0135	36.432	0.1608	529.965	2.907

Measurement Results 2:

Output [%]	Thrust [G]		Torque [G cm]		RPM [1/min]		Voltage [V]		Current [A]		Pin [W]	ThrustEff [G/W]
	mean	std dev	mean	std dev	mean	std dev	mean	std dev	mean	std dev		
20	33.45	3.800	242.97	0.907	2405	9.6	16.099	0.0049	0.744	0.0400	11.981	2.792
30	128.00	3.795	487.49	0.920	3433	19.7	16.055	0.0042	1.782	0.0353	28.604	4.475
40	251.79	3.886	879.17	0.979	4624	26.4	15.949	0.0051	3.923	0.0452	62.574	4.024
50	415.66	3.890	1374.71	1.364	5853	27.5	15.779	0.0123	7.485	0.0936	118.107	3.519
60	653.25	4.262	1919.08	3.939	7148	62.6	15.550	0.0134	12.260	0.0945	190.642	3.427
70	939.78	5.180	2432.53	7.145	8263	54.6	15.291	0.0112	17.503	0.0754	267.638	3.511
80	1193.26	4.098	2949.18	14.042	9208	62.7	14.994	0.0150	23.972	0.1198	359.443	3.320
90	1410.73	4.580	3437.05	8.934	9969	52.1	14.677	0.0148	31.292	0.0875	459.267	3.072
100	1508.60	4.104	3676.86	6.775	10360	44.4	14.452	0.0128	35.865	0.1244	518.326	2.911

Measurement Results 3:

Output [%]	Thrust [G]		Torque [G cm]		RPM [1/min]		Voltage [V]		Current [A]		Pin [W]	ThrustEff [G/W]
	mean	std dev	mean	std dev	mean	std dev	mean	std dev	mean	std dev		
20	40.41	5.979	237.92	1.010	2366	10.5	15.830	0.0050	0.712	0.0330	11.274	3.585
30	125.83	5.981	475.28	1.149	3381	13.7	15.791	0.0054	1.697	0.0341	26.797	4.696
40	253.70	6.009	864.00	1.235	4554	24.6	15.704	0.0081	3.851	0.0565	60.478	4.195
50	409.72	6.171	1349.59	1.692	5771	33.6	15.548	0.0109	7.314	0.0740	113.721	3.603
60	636.54	6.118	1891.69	2.645	7055	66.7	15.325	0.0174	12.079	0.1014	185.114	3.439
70	915.85	6.776	2400.49	6.437	8175	85.3	15.073	0.0152	17.379	0.1049	261.956	3.496
80	1189.41	6.220	2907.40	7.750	9095	48.5	14.791	0.0163	23.675	0.0639	350.183	3.397
90	1395.40	6.174	3384.20	14.094	9871	51.4	14.478	0.0121	30.842	0.1448	446.545	3.125
100	1494.75	6.285	3614.85	9.405	10232	47.8	14.256	0.0135	35.263	0.1459	502.688	2.974

Plots for Measurement Results:

