

Tool info

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

Measurement info

Motor: Dualsky 2814 V2
KV: 970
Magnet poles: 14
Propeler: Graupner 10x6 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	70.45	3.741	28.45	5.274	2349	8.3	16.428	0.0050	0.515	0.0385	8.459	8.329
30	221.31	3.733	298.72	5.296	3758	18.6	16.369	0.0046	1.602	0.0476	26.232	8.437
40	452.42	3.957	673.26	5.358	5106	30.3	16.261	0.0066	3.633	0.0553	59.082	7.658
50	713.72	3.952	1140.19	5.431	6364	27.7	16.087	0.0080	6.787	0.0661	109.183	6.537
60	1023.58	5.006	1675.20	5.494	7469	51.8	15.839	0.0110	11.159	0.0828	176.747	5.791
70	1337.91	4.514	2198.52	6.335	8405	37.7	15.551	0.0115	16.272	0.1067	253.050	5.287
80	1648.68	4.831	2718.54	8.603	9201	43.0	15.207	0.0171	22.501	0.2022	342.169	4.818
90	1901.71	3.933	3216.73	7.736	9911	48.3	14.837	0.0165	29.491	0.1540	437.569	4.346
100	2129.36	5.315	3646.94	12.566	10434	47.4	14.473	0.0123	36.283	0.1359	525.142	4.055

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	63.01	5.082	29.53	5.980	2326	11.1	16.115	0.0050	0.512	0.0354	8.243	7.644
30	213.87	5.078	288.30	5.984	3707	21.0	16.067	0.0059	1.575	0.0466	25.312	8.450
40	434.62	5.102	649.45	6.004	5052	31.9	15.972	0.0064	3.510	0.0685	56.052	7.754
50	687.19	5.097	1105.61	6.033	6274	35.9	15.813	0.0079	6.566	0.0635	103.831	6.618
60	981.89	5.341	1617.39	6.574	7361	68.3	15.592	0.0124	10.854	0.0900	169.228	5.802
70	1286.26	5.127	2117.48	6.527	8296	83.5	15.324	0.0136	15.795	0.1028	242.038	5.314
80	1590.02	5.999	2621.99	9.288	9096	36.9	15.014	0.0150	21.780	0.1643	327.001	4.862
90	1856.37	5.532	3122.32	9.763	9790	42.0	14.671	0.0136	28.672	0.1923	420.640	4.413
100	2081.66	6.948	3546.96	13.883	10341	46.5	14.332	0.0124	35.490	0.1675	508.661	4.092

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	53.08	3.300	21.34	5.633	2295	9.9	15.862	0.0046	0.513	0.0378	8.135	6.525
30	205.59	3.290	271.86	5.639	3653	19.3	15.817	0.0057	1.551	0.0304	24.527	8.382
40	422.78	3.736	626.36	5.654	4970	25.8	15.727	0.0087	3.438	0.0407	54.076	7.818
50	662.05	5.288	1065.51	5.812	6200	37.8	15.582	0.0095	6.469	0.0566	100.795	6.568
60	951.13	3.460	1561.80	5.827	7262	59.4	15.363	0.0120	10.559	0.0686	162.216	5.863
70	1254.92	3.399	2055.46	8.234	8187	92.1	15.102	0.0152	15.406	0.0888	232.659	5.394
80	1538.28	4.027	2547.23	8.939	9005	43.0	14.804	0.0174	21.250	0.1469	314.584	4.890
90	1801.02	6.658	3036.11	14.046	9666	33.9	14.468	0.0148	28.061	0.2104	405.987	4.436
100	2000.31	3.893	3452.24	12.125	10219	46.2	14.131	0.0156	34.813	0.1324	491.926	4.066

Plots for Measurement Results:

