

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: Aeronaut CamZ 12x6 fold
Blade count: 2
Note: Battery 3S.

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	88.99	2.243	213.81	1.999	1720	60.3	12.311	0.0041	0.660	0.0441	8.128	10.948
30	177.22	2.230	425.87	1.863	2507	60.4	12.285	0.0048	1.524	0.0380	18.728	9.462
40	361.10	2.249	756.64	1.919	3442	61.7	12.223	0.0043	3.348	0.0586	40.929	8.823
50	602.67	2.210	1207.94	2.476	4378	64.0	12.125	0.0065	6.429	0.0650	77.954	7.731
60	873.73	2.279	1745.68	2.109	5244	70.0	11.976	0.0111	10.742	0.0739	128.651	6.791
70	1138.68	2.418	2274.42	6.415	5954	71.0	11.793	0.0114	15.719	0.0746	185.369	6.143
80	1368.70	4.433	2778.03	8.455	6584	73.2	11.577	0.0123	21.616	0.0831	250.248	5.469
90	1593.75	4.502	3262.26	12.418	7085	70.7	11.336	0.0114	28.229	0.1227	319.997	4.981
100	1816.87	5.356	3671.65	16.864	7515	76.8	11.070	0.0121	35.296	0.1922	390.715	4.650

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	87.92	3.412	211.90	3.816	1662	10.0	12.086	0.0044	0.661	0.0367	7.984	11.011
30	171.33	3.208	421.55	3.778	2453	8.8	12.065	0.0050	1.541	0.0370	18.596	9.213
40	352.71	3.175	749.65	3.801	3385	16.3	12.007	0.0060	3.352	0.0538	40.245	8.764
50	600.47	3.142	1191.60	3.925	4308	23.2	11.919	0.0068	6.406	0.0646	76.351	7.865
60	847.84	3.450	1690.50	4.301	5135	24.5	11.778	0.0101	10.438	0.0539	122.937	6.897
70	1098.59	3.955	2201.00	5.904	5852	41.1	11.614	0.0073	15.309	0.0934	177.798	6.179
80	1324.47	3.463	2682.28	8.804	6454	38.7	11.423	0.0119	21.010	0.0768	239.990	5.519
90	1557.88	5.493	3146.38	8.711	6954	38.8	11.195	0.0126	27.477	0.1075	307.614	5.064
100	1753.64	5.939	3525.73	21.408	7360	49.7	10.940	0.0118	34.064	0.2297	372.653	4.706

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	78.42	4.449	206.05	5.007	1642	13.3	11.906	0.0060	0.687	0.0417	8.177	9.590
30	154.85	4.060	411.51	4.726	2417	11.4	11.885	0.0045	1.506	0.0313	17.902	8.650
40	339.29	4.012	732.85	4.730	3347	14.9	11.829	0.0059	3.296	0.0505	38.983	8.703
50	572.72	4.002	1157.16	4.795	4252	22.9	11.739	0.0073	6.156	0.0514	72.265	7.925
60	820.20	4.461	1654.26	5.459	5056	42.6	11.602	0.0111	10.207	0.0618	118.421	6.926
70	1061.99	4.980	2141.33	6.230	5757	48.1	11.430	0.0120	14.940	0.0610	170.764	6.219
80	1298.50	5.109	2615.02	7.356	6366	48.9	11.247	0.0095	20.592	0.0518	231.602	5.607
90	1509.07	4.633	3075.54	12.963	6885	43.5	11.040	0.0124	26.937	0.1189	297.377	5.075
100	1712.52	6.884	3496.72	19.577	7305	37.6	10.802	0.0138	33.851	0.2458	365.640	4.684

Plots for Measurement Results:

