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 XM3040EG-12
KV:	1000
Magnet poles:	14
Propeler:	Aeronaut CAM 11x7 fold
Blade count:	2
Note:	Battery 3S.

Measurement Results 1:

Output [%]	Thrust [G] mean	std dev	Torque [G cm] mean	std dev	RPM [1/min] mean	std dev	Voltage [V] mean	std dev	Current [A] mean	std dev	Pin [W]	ThrustEff [G/W]
20	77.78	5.862	288.95	9.089	2033	7.9	12.314	0.0037	0.888	0.0306	10.939	7.110
30	172.21	5.852	509.28	9.090	2762	7.6	12.287	0.0041	1.864	0.0307	22.905	7.518
40	337.87	5.867	857.81	9.100	3688	18.6	12.221	0.0061	3.910	0.0389	47.778	7.072
50	525.59	5.860	1242.20	9.101	4465	22.9	12.126	0.0055	6.784	0.0518	82.260	6.389
60	737.57	5.926	1674.85	9.190	5206	45.9	11.997	0.0108	10.813	0.0496	129.724	5.686
70	1044.60	5.892	2289.56	10.223	6117	52.0	11.799	0.0103	16.612	0.0622	196.003	5.330
80	1342.25	7.124	2921.84	10.815	6918	56.4	11.554	0.0111	23.920	0.1259	276.362	4.857
90	1567.17	6.873	3435.03	10.129	7518	39.5	11.299	0.0095	31.225	0.0614	352.809	4.442
100	1766.71	8.775	3857.62	15.277	7955	42.8	11.028	0.0160	38.688	0.1983	426.631	4.141

Measurement Results 2:

Output [%]	Thrust [G] mean	std dev	Torque [G cm] mean	std dev	RPM [1/min] mean	std dev	Voltage [V] mean	std dev	Current [A] mean	std dev	Pin [W]	ThrustEff [G/W]
20	73.14	11.313	256.60	17.291	2007	7.1	12.096	0.0054	0.877	0.0279	10.611	6.893
30	154.22	11.311	470.28	17.290	2723	11.2	12.065	0.0039	1.821	0.0309	21.973	7.018
40	307.04	11.321	814.77	17.305	3632	13.1	12.011	0.0048	3.819	0.0498	45.865	6.695
50	495.94	11.334	1188.76	17.309	4392	20.6	11.921	0.0063	6.609	0.0651	78.783	6.295
60	709.12	11.351	1618.60	17.349	5126	42.7	11.795	0.0095	10.582	0.0553	124.816	5.681
70	1015.51	11.355	2209.75	17.518	6051	50.1	11.616	0.0085	16.293	0.0553	189.257	5.366
80	1293.76	12.144	2820.73	17.856	6841	49.7	11.397	0.0113	23.165	0.0776	264.012	4.900
90	1533.06	11.659	3340.81	18.862	7416	55.6	11.145	0.0117	30.598	0.1063	341.030	4.495
100	1720.25	12.095	3735.49	24.870	7881	38.7	10.886	0.0097	37.860	0.3988	412.161	4.174

Measurement Results 3:

Output [%]	Thrust [G] mean	std dev	Torque [G cm] mean	std dev	RPM [1/min] mean	std dev	Voltage [V] mean	std dev	Current [A] mean	std dev	Pin [W]	ThrustEff [G/W]
20	75.08	8.620	264.79	4.440	1986	7.4	11.919	0.0043	0.888	0.0310	10.580	7.096
30	158.03	8.618	470.72	4.422	2686	9.9	11.891	0.0059	1.809	0.0293	21.511	7.347
40	303.78	8.622	803.50	4.490	3587	12.6	11.833	0.0075	3.711	0.0421	43.915	6.917
50	478.84	8.642	1156.21	4.465	4334	20.6	11.741	0.0079	6.381	0.0533	74.925	6.391
60	694.43	8.660	1584.90	4.628	5093	38.4	11.611	0.0091	10.367	0.0483	120.376	5.769
70	978.95	8.728	2161.79	7.076	5964	54.1	11.417	0.0112	15.939	0.0847	181.975	5.380
80	1266.71	8.747	2758.92	8.826	6748	52.9	11.189	0.0112	22.670	0.1028	253.660	4.994
90	1493.24	9.044	3274.00	8.008	7323	52.4	10.948	0.0115	29.926	0.1107	327.614	4.558
100	1675.54	8.852	3677.97	12.849	7803	40.0	10.701	0.0121	37.072	0.1861	396.712	4.224

Measurement Results 4:

Output	Thrust [G]		Torque [G cm]		RPM [1/min]		Voltage [V]		Current [A]		Pin [W]	ThrustEff
[%]	mean	std dev	mean	std dev	mean	std dev	mean	std dev	mean	std dev		[G/W]
20	60.12	6.371	260.73	7.124	1949	7.0	11.678	0.0058	0.844	0.0310	9.855	6.100
30	144.05	6.372	456.12	7.119	2637	9.6	11.648	0.0048	1.734	0.0308	20.197	7.132
40	281.70	6.374	777.52	7.152	3508	18.9	11.599	0.0048	3.567	0.0429	41.367	6.810
50	454.26	6.393	1119.72	7.259	4249	23.9	11.517	0.0069	6.201	0.0503	71.414	6.361
60	662.75	6.582	1540.74	7.280	5017	34.3	11.400	0.0106	10.042	0.0422	114.482	5.789
70	948.51	6.410	2111.17	7.671	5892	43.8	11.236	0.0077	15.579	0.0950	175.047	5.419
80	1220.64	6.902	2697.52	10.127	6681	53.5	11.022	0.0089	22.119	0.0880	243.806	5.007
90	1446.84	6.880	3202.12	7.737	7250	64.5	10.788	0.0091	29.311	0.0709	316.221	4.575
100	1641.87	9.307	3607.88	36.916	7740	29.1	10.554	0.0072	36.423	0.3336	384.407	4.271

Measurement Results 5:

Output	Thrust [G]		Torque [G cm]		RPM [1/min]		Voltage [V]		Current [A]		Pin [W]	ThrustEff
[%]	mean	std dev	mean	std dev	mean	std dev	mean	std dev	mean	std dev		[G/W]
20	78.67	5.143	261.06	2.305	1927	8.8	11.495	0.0042	0.839	0.0290	9.639	8.161
30	148.84	5.119	453.04	2.310	2607	9.1	11.469	0.0049	1.727	0.0299	19.812	7.513
40	277.12	5.125	757.89	2.376	3453	16.8	11.420	0.0044	3.482	0.0413	39.767	6.969
50	448.61	5.136	1098.41	2.347	4191	17.8	11.340	0.0060	6.031	0.0303	68.396	6.559
60	646.13	5.234	1520.06	2.668	4952	45.7	11.233	0.0078	9.855	0.0443	110.702	5.837
70	932.68	5.324	2077.77	3.961	5839	46.4	11.067	0.0087	15.276	0.0791	169.059	5.517
80	1206.75	5.238	2651.51	5.554	6616	49.8	10.866	0.0077	21.714	0.0988	235.951	5.114
90	1435.06	5.923	3148.49	6.250	7194	46.9	10.648	0.0082	28.685	0.0732	305.441	4.698
100	1619.22	7.448	3546.96	7.742	7681	42.5	10.428	0.0108	35.645	0.1721	371.721	4.356

Plots for Measurement Results: