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:	RaceStar BR2507S
KV:	1800
Magnet poles:	14
Propeler:	HQProp 6x4x3
Blade count:	3
Note:	Battery 4S 2250mAh

Measurement Results 1:

Output [%]	Thrust [G] mean	Thrust [G] std dev	Torque [G cm] mean	Torque [G cm] std dev	RPM [1/min] mean	RPM [1/min] std dev	Voltage [V] mean	Voltage [V] std dev	Current [A] mean	Current [A] std dev	Pin [W]	ThrustEff [G/W]
20	95.44	4.224	122.76	1.050	5924	55.3	16.390	0.0037	0.842	0.0302	13.807	6.912
30	168.35	4.211	209.63	1.059	7776	83.9	16.356	0.0051	1.650	0.0300	26.993	6.237
40	248.31	4.216	312.03	1.269	9432	40.7	16.304	0.0051	2.781	0.0434	45.333	5.477
50	370.36	4.241	451.37	1.229	11337	68.0	16.224	0.0086	4.568	0.0762	74.117	4.997
60	507.11	4.326	609.44	1.524	13294	96.6	16.097	0.0131	7.103	0.0646	114.341	4.435
70	670.00	4.325	788.08	1.712	15208	139.4	15.944	0.0090	10.530	0.0578	167.892	3.991
80	858.94	4.355	995.71	1.592	17247	74.0	15.744	0.0141	14.989	0.1073	235.984	3.640
90	1039.67	4.693	1198.03	1.630	18911	78.2	15.515	0.0172	19.717	0.0838	305.908	3.399
100	1191.51	4.675	1373.91	3.076	20330	64.7	15.264	0.0160	24.847	0.1162	379.261	3.142

Measurement Results 2:

Output [%]	Thrust [G] mean	Thrust [G] std dev	Torque [G cm] mean	Torque [G cm] std dev	RPM [1/min] mean	RPM [1/min] std dev	Voltage [V] mean	Voltage [V] std dev	Current [A] mean	Current [A] std dev	Pin [W]	ThrustEff [G/W]
20	89.47	4.854	119.01	0.952	5893	47.0	16.177	0.0057	0.821	0.0388	13.287	6.734
30	161.61	4.852	204.73	0.948	7701	95.1	16.141	0.0047	1.602	0.0306	25.856	6.250
40	240.70	4.852	304.93	0.978	9350	31.2	16.094	0.0056	2.681	0.0376	43.142	5.579
50	358.01	4.890	438.87	1.222	11244	65.3	16.015	0.0071	4.477	0.0773	71.707	4.993
60	491.42	5.033	592.04	2.640	13112	79.5	15.899	0.0106	6.939	0.0686	110.327	4.454
70	651.06	5.009	766.99	1.888	15059	129.4	15.753	0.0089	10.261	0.0521	161.633	4.028
80	838.09	5.042	970.42	2.183	17112	76.8	15.558	0.0128	14.699	0.1007	228.689	3.665
90	1003.89	5.378	1156.30	2.372	18672	77.2	15.336	0.0128	19.503	0.0685	299.084	3.357
100	1167.84	5.076	1344.24	1.683	20198	74.3	15.120	0.0089	24.393	0.1108	368.811	3.167

Measurement Results 3:

Output [%]	Thrust [G] mean	Thrust [G] std dev	Torque [G cm] mean	Torque [G cm] std dev	RPM [1/min] mean	RPM [1/min] std dev	Voltage [V] mean	Voltage [V] std dev	Current [A] mean	Current [A] std dev	Pin [W]	ThrustEff [G/W]
20	82.47	7.146	118.21	1.155	5817	54.2	15.986	0.0057	0.808	0.0278	12.920	6.383
30	152.24	7.144	201.23	1.156	7637	80.8	15.956	0.0044	1.589	0.0331	25.361	6.003
40	229.84	7.150	301.45	1.172	9255	21.8	15.913	0.0062	2.637	0.0543	41.969	5.476
50	345.18	7.152	431.85	1.170	11116	61.5	15.838	0.0048	4.406	0.0778	69.780	4.947
60	476.09	7.284	583.78	1.734	12991	72.7	15.732	0.0131	6.830	0.0775	107.452	4.431
70	635.89	7.156	756.60	1.329	14977	115.4	15.589	0.0086	10.173	0.0654	158.577	4.010
80	820.69	7.293	955.86	2.218	16964	72.5	15.416	0.0089	14.516	0.0794	223.769	3.668
90	987.23	7.376	1138.60	1.692	18531	80.7	15.206	0.0121	19.368	0.0547	294.500	3.352
100	1149.35	7.610	1318.23	4.861	20037	68.2	14.983	0.0149	24.131	0.1405	361.561	3.179

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	80.25	7.130	116.95	2.786	5789	56.8	15.809	0.0054	0.806	0.0319	12.748	6.295
30	148.43	7.127	197.32	2.778	7576	79.7	15.782	0.0040	1.571	0.0345	24.797	5.986
40	225.48	7.127	295.88	2.783	9158	37.8	15.740	0.0053	2.621	0.0424	41.255	5.466
50	340.54	7.129	425.15	2.795	11004	55.0	15.666	0.0064	4.367	0.0552	68.417	4.977
60	468.73	7.184	572.55	3.175	12849	102.7	15.560	0.0132	6.758	0.0685	105.163	4.457
70	632.01	7.325	746.47	3.406	14796	120.2	15.418	0.0095	10.087	0.0865	155.521	4.064
80	816.79	7.249	942.29	3.624	16833	70.1	15.227	0.0127	14.370	0.1233	218.798	3.733
90	969.30	7.302	1112.17	3.170	18378	73.9	15.018	0.0118	19.024	0.0747	285.701	3.393
100	1135.81	7.598	1293.64	4.430	19852	71.7	14.809	0.0141	23.808	0.1453	352.574	3.221

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	83.21	6.626	113.31	3.107	5733	50.4	15.623	0.0053	0.797	0.0426	12.456	6.680
30	148.80	6.622	192.69	3.095	7496	80.3	15.596	0.0050	1.548	0.0316	24.143	6.163
40	224.33	6.624	289.13	3.115	9069	42.4	15.555	0.0048	2.573	0.0437	40.016	5.606
50	334.13	6.642	414.81	3.164	10907	69.4	15.486	0.0055	4.300	0.0711	66.593	5.017
60	461.78	6.625	559.12	3.126	12751	74.4	15.393	0.0113	6.634	0.0700	102.118	4.522
70	623.29	6.735	732.50	3.275	14663	69.8	15.252	0.0086	9.940	0.1099	151.596	4.112
80	801.88	6.697	922.67	3.455	16739	93.8	15.081	0.0131	14.121	0.0954	212.958	3.765
90	961.27	6.745	1095.66	3.461	18236	76.1	14.894	0.0074	18.810	0.0809	280.151	3.431
100	1122.54	6.777	1277.29	4.027	19736	68.3	14.692	0.0125	23.562	0.1329	346.178	3.243

Plots for Measurement Results: