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 3S 2700mAh

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	-0.35	0.238	-1.52	1.115	10043	105.4	11.864	0.0046	0.369	0.0290	4.382	-0.079
30	1.38	0.310	-0.81	1.062	13428	62.8	11.856	0.0055	0.583	0.0291	6.914	0.199
40	3.41	0.272	29.25	170.185	15430	85.1	11.850	0.0047	0.729	0.0364	8.637	0.394
50	3.18	0.239	2.33	1.037	16833	60.1	11.844	0.0031	0.807	0.0292	9.552	0.333
60	2.76	0.239	2.48	1.036	17792	48.7	11.838	0.0037	0.892	0.0289	10.556	0.261
70	2.54	0.243	3.00	1.034	18550	48.8	11.835	0.0043	0.902	0.0288	10.673	0.238
80	2.21	0.246	3.52	1.037	19072	47.7	11.830	0.0049	0.937	0.0290	11.085	0.200
90	1.95	0.241	3.70	1.037	19608	50.0	11.828	0.0035	0.964	0.0341	11.405	0.171
100	2.73	0.241	4.22	1.047	20995	43.5	11.821	0.0054	1.010	0.0593	11.935	0.229

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	2.00	0.319	-1.62	0.930	10218	107.7	11.848	0.0044	0.365	0.0293	4.325	0.462
30	2.11	0.313	-1.29	0.858	13577	64.1	11.840	0.0047	0.578	0.0280	6.841	0.308
40	3.39	0.395	0.70	0.847	15530	89.5	11.837	0.0042	0.715	0.0291	8.468	0.400
50	3.26	0.320	1.48	0.845	16868	41.5	11.829	0.0047	0.796	0.0270	9.419	0.347
60	2.96	0.718	1.31	0.939	17856	56.2	11.823	0.0048	0.850	0.0293	10.049	0.294
70	3.07	0.324	3.33	0.843	18598	46.4	11.819	0.0045	0.893	0.0291	10.551	0.291
80	2.52	0.320	3.52	0.842	19088	50.0	11.816	0.0021	0.935	0.0288	11.049	0.228
90	2.67	0.337	3.63	0.844	19621	56.2	11.811	0.0057	0.961	0.0363	11.356	0.235
100	3.31	0.320	4.07	0.845	20965	49.2	11.806	0.0059	1.030	0.0531	12.164	0.272

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	2.60	0.340	-0.76	1.091	10266	124.9	11.833	0.0057	0.386	0.0441	4.564	0.569
30	3.01	0.313	-0.16	1.046	13641	62.4	11.826	0.0047	0.580	0.0294	6.857	0.439
40	3.94	0.322	1.39	1.024	15586	90.2	11.821	0.0057	0.718	0.0299	8.483	0.464
50	3.69	0.324	2.00	1.026	16903	47.0	11.813	0.0052	0.780	0.0361	9.213	0.401
60	3.15	0.317	2.27	1.029	17844	39.3	11.810	0.0036	0.849	0.0298	10.028	0.314
70	3.15	0.339	3.03	1.165	18592	43.7	11.805	0.0050	0.889	0.0294	10.497	0.300
80	1.72	0.315	5.25	1.023	19088	34.5	11.801	0.0049	0.920	0.0384	10.856	0.159
90	1.52	0.314	5.20	1.021	19595	42.5	11.796	0.0046	0.943	0.0295	11.129	0.136
100	2.08	0.312	5.65	1.024	20941	32.4	11.796	0.0045	1.012	0.0604	11.937	0.174

Plots for Measurement Results: