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 XM3040EG-12
KV:	1000
Magnet poles:	14
Propeler:	Graupner 12x6 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	97.46	6.441	255.30	6.452	2128	10.2	12.296	0.0052	0.886	0.0302	10.896	8.945
30	204.23	6.387	452.75	6.466	2859	10.7	12.265	0.0046	1.782	0.0303	21.858	9.343
40	393.33	6.386	756.33	6.463	3731	9.0	12.206	0.0050	3.559	0.0417	43.446	9.053
50	625.52	6.428	1119.83	6.517	4557	23.0	12.110	0.0063	6.232	0.0444	75.467	8.289
60	874.00	6.526	1550.59	6.587	5302	38.5	11.972	0.0099	10.083	0.0587	120.720	7.240
70	1220.92	7.252	2152.84	6.800	6215	75.2	11.769	0.0106	15.770	0.0854	185.597	6.578
80	1560.05	7.003	2768.34	7.307	7030	74.7	11.521	0.0144	22.567	0.1093	260.004	6.000
90	1882.78	7.610	3305.67	14.880	7614	52.3	11.249	0.0133	29.889	0.1882	336.226	5.600
100	2122.51	7.069	3734.49	8.570	8081	58.4	10.965	0.0131	37.168	0.1280	407.543	5.208

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	83.09	21.280	256.48	8.465	2110	9.8	12.093	0.0049	0.892	0.0301	10.781	7.707
30	189.51	21.270	445.08	8.450	2829	11.5	12.065	0.0033	1.779	0.0302	21.467	8.828
40	369.45	21.273	741.01	8.443	3680	19.7	12.013	0.0065	3.487	0.0350	41.886	8.820
50	588.25	21.276	1095.29	8.460	4489	30.2	11.922	0.0060	6.098	0.0410	72.699	8.092
60	835.34	21.297	1522.36	8.564	5238	40.8	11.791	0.0085	9.928	0.0406	117.058	7.136
70	1165.13	21.394	2098.12	8.859	6145	60.2	11.609	0.0081	15.449	0.0896	179.348	6.496
80	1514.89	21.313	2709.44	9.171	6940	50.4	11.389	0.0122	22.200	0.1295	252.843	5.991
90	1815.61	22.837	3214.58	23.418	7542	42.7	11.124	0.0119	29.199	0.1422	324.822	5.590
100	2047.72	21.818	3648.61	15.908	7973	51.9	10.850	0.0132	36.650	0.2682	397.655	5.149

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	89.94	24.430	249.12	6.247	2079	10.8	11.919	0.0046	0.842	0.0301	10.034	8.964
30	193.22	24.423	431.00	6.244	2787	13.4	11.892	0.0046	1.715	0.0397	20.401	9.471
40	367.76	24.424	724.17	6.259	3638	16.3	11.839	0.0046	3.446	0.0413	40.802	9.013
50	585.35	24.431	1068.60	6.405	4418	17.7	11.753	0.0072	5.990	0.0534	70.397	8.315
60	823.91	24.432	1485.12	6.352	5184	37.7	11.622	0.0095	9.740	0.0567	113.193	7.279
70	1151.32	24.449	2043.86	6.846	6088	49.2	11.440	0.0083	15.119	0.0724	172.969	6.656
80	1472.11	24.529	2634.00	8.185	6860	47.7	11.211	0.0125	21.634	0.0642	242.541	6.070
90	1774.88	26.679	3126.04	18.284	7462	41.0	10.976	0.0104	28.554	0.1861	313.394	5.663
100	2007.19	24.508	3569.52	9.529	7903	53.7	10.719	0.0143	35.911	0.1564	384.933	5.214

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	79.96	26.492	237.57	3.871	2046	7.7	11.683	0.0055	0.840	0.0308	9.818	8.144
30	175.29	26.477	416.84	3.845	2741	9.7	11.662	0.0056	1.685	0.0311	19.650	8.921
40	345.58	26.477	699.04	3.881	3575	10.2	11.612	0.0050	3.298	0.0385	38.302	9.023
50	554.72	26.518	1027.59	3.902	4353	17.0	11.538	0.0061	5.779	0.0418	66.677	8.320
60	797.63	26.496	1447.51	3.939	5115	37.6	11.423	0.0092	9.522	0.0541	108.769	7.333
70	1129.13	27.166	1998.58	8.118	6004	49.8	11.269	0.0052	14.763	0.0976	166.357	6.787
80	1425.57	26.567	2559.70	4.956	6803	61.6	11.060	0.0082	21.119	0.0751	233.582	6.103
90	1740.82	26.693	3085.74	10.595	7394	44.2	10.833	0.0105	28.148	0.0896	304.917	5.709
100	1973.02	26.545	3493.74	5.764	7865	47.4	10.596	0.0088	35.195	0.1514	372.947	5.290

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	74.65	23.062	235.45	3.121	2029	8.8	11.531	0.0046	0.830	0.0355	9.568	7.802
30	162.50	23.059	408.09	3.092	2712	10.1	11.507	0.0048	1.636	0.0299	18.829	8.630
40	322.90	23.060	680.10	3.093	3523	18.3	11.460	0.0048	3.226	0.0385	36.974	8.733
50	532.38	23.062	1003.34	3.278	4301	22.5	11.387	0.0059	5.653	0.0459	64.377	8.270
60	766.18	23.065	1417.52	3.266	5088	32.6	11.268	0.0088	9.256	0.0487	104.302	7.346
70	1105.78	23.076	1962.27	3.459	5929	53.5	11.103	0.0071	14.504	0.0698	161.040	6.867
80	1381.03	23.068	2506.37	4.240	6756	49.0	10.913	0.0103	20.680	0.0814	225.684	6.119
90	1684.62	23.215	3025.69	6.121	7317	40.9	10.685	0.0092	27.629	0.0778	295.229	5.706
100	1930.02	23.686	3417.42	5.571	7842	50.1	10.468	0.0111	34.377	0.1335	359.862	5.363

Plots for Measurement Results: