Tool info

Serial API:	1:1.0
Board:	Custom STM32F401RE thrustBoard v2
Firmware:	thrust++ : ChibiOS RT 7.1.0 : HAL 8.1.0
Commit:	[7ea798b] : Apr 25 2022 - 18:19:20

Measurement info

Motor:	T-Motor MT2212-16
KV:	750
Magnet poles:	14
Propeler:	carbon 10x3.3
Blade count:	2
Note:	

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	24.53	1.701	48.08	2.579	1657	0.0	12.546	0.0032	0.110	0.0056	1.386	17.697
25	35.53	1.708	74.59	2.560	2071	-nan(ind)	12.544	0.0043	0.182	0.0056	2.287	15.537
30	59.63	1.708	106.73	2.567	2471	0.0	12.539	0.0048	0.282	0.0055	3.533	16.878
35	77.73	1.707	145.35	2.607	2886	0.0	12.534	0.0043	0.410	0.0078	5.133	15.143
40	99.21	1.745	181.31	41.394	3278	7.1	12.527	0.0055	0.576	0.0101	7.211	13.758
45	127.96	1.717	231.54	2.544	3651	7.0	12.519	0.0035	0.770	0.0084	9.635	13.280
50	157.42	1.889	280.47	2.543	4032	6.2	12.509	0.0044	1.007	0.0112	12.592	12.502
55	191.83	1.725	332.33	2.617	4394	7.0	12.493	0.0056	1.280	0.0125	15.985	12.001
60	225.33	1.729	387.42	2.550	4762	14.8	12.477	0.0052	1.602	0.0124	19.989	11.273
65	264.74	1.746	446.27	2.576	5107	16.4	12.461	0.0056	1.962	0.0100	24.449	10.828
70	300.90	1.727	509.66	2.552	5457	20.0	12.441	0.0049	2.392	0.0131	29.755	10.113
75	349.32	1.784	576.54	2.592	5809	13.3	12.417	0.0039	2.856	0.0164	35.466	9.849
80	390.48	1.837	645.88	2.624	6142	18.7	12.392	0.0039	3.380	0.0147	41.885	9.323
90	465.57	1.727	788.48	2.665	6791	24.6	12.341	0.0046	4.572	0.0210	56.420	8.252
100	537.41	1.773	939.11	2.895	7443	32.2	12.280	0.0055	6.011	0.0252	73.811	7.281

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	23.19	2.065	47.55	2.765	-nan(ind)	-nan(ind)	12.483	0.0029	0.111	0.0057	1.390	16.687
25	31.94	2.067	74.07	2.768	2057	0.0	12.481	0.0047	0.182	0.0058	2.265	14.100
30	55.80	2.067	105.75	2.768	2471	0.0	12.478	0.0045	0.282	0.0056	3.515	15.874
35	72.96	2.557	143.69	2.774	2871	0.0	12.473	0.0041	0.404	0.0057	5.044	14.464
40	98.54	2.070	184.94	2.769	3257	0.0	12.465	0.0046	0.564	0.0075	7.028	14.022
45	120.86	2.067	230.18	2.766	3634	7.0	12.457	0.0021	0.764	0.0102	9.520	12.696
50	154.19	2.081	277.21	2.798	4007	7.1	12.445	0.0045	0.999	0.0131	12.436	12.399
55	185.38	2.073	327.18	2.901	4369	11.6	12.435	0.0042	1.257	0.0099	15.628	11.862
60	223.23	2.151	383.42	2.812	4736	7.1	12.418	0.0038	1.584	0.0098	19.670	11.349
65	259.56	2.106	441.77	2.878	5084	9.3	12.402	0.0029	1.947	0.0151	24.143	10.751
70	294.80	2.173	502.71	2.802	5441	19.9	12.381	0.0045	2.359	0.0197	29.205	10.094
75	338.88	2.262	570.19	2.807	5770	16.7	12.357	0.0048	2.813	0.0194	34.755	9.751
80	382.81	2.192	638.29	2.921	6106	21.4	12.331	0.0046	3.341	0.0180	41.200	9.292
90	464.70	2.216	780.13	3.081	6775	29.9	12.281	0.0060	4.523	0.0155	55.552	8.365
100	530.32	2.365	928.56	3.184	7393	19.5	12.221	0.0069	5.944	0.0299	72.645	7.300

Measurement Results 3:

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	23.58	2.215	46.79	4.149	1643	-nan(ind)	12.427	0.0043	0.111	0.0056	1.384	17.033
25	33.55	2.199	73.05	4.149	2057	0.0	12.423	0.0043	0.181	0.0057	2.251	14.907
30	56.24	2.221	104.06	4.161	2457	0.0	12.419	0.0039	0.280	0.0058	3.481	16.157
35	74.96	2.201	142.27	4.149	2857	0.0	12.413	0.0042	0.403	0.0075	5.004	14.981
40	94.57	2.199	182.52	4.155	3243	-nan(ind)	12.407	0.0054	0.560	0.0094	6.951	13.605
45	123.75	2.201	226.52	4.155	3622	7.1	12.399	0.0041	0.756	0.0099	9.370	13.208
50	152.86	2.201	273.27	4.153	3985	10.4	12.390	0.0048	0.980	0.0105	12.145	12.586
55	187.93	2.208	323.52	4.154	4348	6.9	12.375	0.0029	1.249	0.0098	15.452	12.162
60	220.39	2.221	380.36	4.174	4715	9.7	12.362	0.0041	1.575	0.0126	19.467	11.321
65	257.56	2.217	436.94	4.176	5073	10.7	12.342	0.0043	1.933	0.0133	23.861	10.794
70	298.41	2.236	500.87	4.185	5414	10.2	12.324	0.0047	2.348	0.0143	28.931	10.315
75	335.68	2.337	564.33	4.226	5752	15.5	12.299	0.0057	2.779	0.0157	34.180	9.821
80	379.33	2.244	630.91	4.176	6082	18.6	12.273	0.0041	3.307	0.0199	40.588	9.346
90	460.48	2.326	772.07	4.260	6735	32.6	12.224	0.0060	4.490	0.0191	54.884	8.390
100	527.80	2.303	920.57	4.271	7360	28.3	12.162	0.0060	5.890	0.0212	71.638	7.368

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	22.15	2.223	47.16	4.205	1629	0.0	12.368	0.0050	0.109	0.0058	1.350	16.399
25	31.15	2.089	72.81	4.207	2029	-nan(ind)	12.366	0.0049	0.174	0.0058	2.146	14.519
30	53.76	2.089	103.71	4.211	2443	-nan(ind)	12.363	0.0051	0.272	0.0058	3.361	15.997
35	72.63	2.091	142.29	4.209	2843	-nan(ind)	12.359	0.0038	0.396	0.0057	4.890	14.852
40	95.97	2.088	181.30	4.214	3229	-nan(ind)	12.350	0.0040	0.549	0.0089	6.782	14.151
45	123.22	2.095	224.74	4.221	3605	6.9	12.341	0.0041	0.741	0.0080	9.146	13.473
50	152.43	2.097	272.17	4.209	3979	7.1	12.330	0.0023	0.968	0.0102	11.942	12.765
55	183.84	2.100	321.52	4.225	4329	12.2	12.319	0.0043	1.239	0.0123	15.268	12.041
60	217.50	2.117	376.70	4.227	4693	14.6	12.303	0.0022	1.554	0.0119	19.119	11.376
65	253.96	2.099	433.43	4.229	5048	16.6	12.288	0.0041	1.918	0.0180	23.562	10.779
70	289.60	2.112	496.02	4.228	5389	21.4	12.265	0.0039	2.310	0.0128	28.331	10.222
75	331.72	2.241	558.41	4.229	5725	13.0	12.244	0.0050	2.747	0.0168	33.636	9.862
80	375.27	2.185	627.70	4.224	6067	22.6	12.219	0.0056	3.276	0.0163	40.031	9.374
90	455.74	2.220	765.17	4.232	6716	20.2	12.168	0.0063	4.453	0.0182	54.187	8.410
100	528.33	2.105	911.52	4.337	7317	24.7	12.110	0.0055	5.823	0.0221	70.520	7.492

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	20.77	0.911	47.78	3.120	1614	0.0	12.315	0.0046	0.107	0.0055	1.323	15.701
25	31.50	0.821	72.80	3.133	2029	-nan(ind)	12.312	0.0041	0.173	0.0059	2.126	14.818
30	54.00	0.721	103.72	3.128	2435	7.1	12.308	0.0042	0.270	0.0059	3.325	16.242
35	74.00	0.767	142.05	3.116	2837	7.1	12.303	0.0018	0.396	0.0059	4.873	15.187
40	93.75	0.783	180.57	3.121	3214	-nan(ind)	12.296	0.0039	0.552	0.0085	6.789	13.809
45	120.60	0.725	224.52	3.138	3593	7.1	12.285	0.0042	0.742	0.0125	9.112	13.235
50	151.45	0.735	269.87	3.149	3952	6.8	12.275	0.0039	0.965	0.0133	11.847	12.784
55	180.93	0.760	319.16	3.239	4314	12.4	12.265	0.0046	1.228	0.0101	15.065	12.010
60	213.42	0.864	375.25	3.131	4674	12.2	12.249	0.0038	1.546	0.0128	18.934	11.271
65	249.39	1.072	431.04	3.121	5019	15.0	12.235	0.0059	1.899	0.0116	23.236	10.733
70	290.83	0.751	494.70	3.146	5361	13.9	12.211	0.0043	2.310	0.0161	28.211	10.309
75	328.32	1.057	557.29	3.127	5699	20.3	12.190	0.0049	2.749	0.0176	33.513	9.797
80	374.56	0.862	625.04	3.176	6050	20.8	12.164	0.0042	3.266	0.0149	39.725	9.429
90	455.30	0.834	764.50	3.207	6683	28.6	12.115	0.0063	4.421	0.0220	53.563	8.500
100	526.65	0.938	909.62	3.261	7307	17.7	12.053	0.0068	5.789	0.0236	69.769	7.549

Plots for Measurement Results: