

## 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: 10x4.5  
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	78.86	1.964	160.54	3.725	2107	7.1	16.702	0.0041	0.263	0.0077	4.387	17.974
25	122.80	1.955	243.75	3.717	2585	7.1	16.691	0.0070	0.452	0.0084	7.547	16.271
30	169.32	1.956	334.85	3.727	3036	12.7	16.673	0.0053	0.708	0.0086	11.805	14.343
35	222.32	1.979	438.93	3.718	3455	17.6	16.648	0.0043	1.042	0.0100	17.341	12.820
40	282.01	2.057	546.53	3.799	3845	19.5	16.617	0.0052	1.455	0.0122	24.186	11.660
45	341.49	2.046	659.18	3.805	4225	21.7	16.581	0.0048	1.940	0.0126	32.171	10.615
50	408.74	1.979	781.78	3.750	4572	26.9	16.535	0.0061	2.382	0.0154	39.384	10.378
55	470.20	2.029	905.23	4.025	4910	29.1	16.489	0.0068	2.710	0.0177	44.686	10.522
60	532.96	2.005	1035.86	3.929	5256	39.3	16.428	0.0070	3.103	0.0202	50.981	10.454
65	588.32	2.080	1157.87	3.768	5569	42.6	16.365	0.0072	3.586	0.0347	58.682	10.026
70	627.61	1.992	1293.57	3.889	5890	67.8	16.288	0.0079	4.346	0.0286	70.790	8.866
75	658.68	2.024	1431.15	4.142	6199	66.5	16.201	0.0070	5.383	0.0351	87.214	7.552
80	694.02	2.049	1563.38	5.485	6472	77.0	16.104	0.0111	6.736	0.0323	108.474	6.398
90	775.40	4.481	1840.35	7.025	6992	65.5	15.939	0.0099	9.826	0.0519	156.616	4.951
100	944.59	11.238	2094.98	14.185	7435	69.9	15.747	0.0136	12.863	0.0790	202.551	4.663

## 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	72.84	1.619	155.33	8.453	2059	4.4	16.432	0.0038	0.249	0.0062	4.098	17.775
25	116.12	1.354	232.44	8.314	2526	9.6	16.420	0.0050	0.430	0.0063	7.054	16.461
30	161.75	1.360	323.12	8.308	2974	10.4	16.404	0.0039	0.683	0.0082	11.200	14.442
35	212.97	1.407	422.23	8.350	3392	13.2	16.381	0.0051	1.012	0.0121	16.571	12.853
40	273.48	1.375	528.86	8.334	3787	16.6	16.348	0.0064	1.402	0.0135	22.924	11.930
45	333.18	1.402	637.16	8.350	4145	18.2	16.317	0.0066	1.877	0.0169	30.624	10.880
50	396.15	1.413	756.56	8.329	4497	22.2	16.275	0.0070	2.351	0.0147	38.255	10.355
55	454.14	1.515	874.61	8.356	4831	34.6	16.223	0.0065	2.686	0.0156	43.577	10.421
60	517.34	1.818	996.95	8.656	5170	41.3	16.166	0.0068	3.096	0.0225	50.043	10.338
65	582.50	2.011	1125.23	8.899	5482	44.6	16.100	0.0062	3.568	0.0237	57.453	10.139
70	637.12	1.582	1255.49	9.171	5803	53.6	16.032	0.0073	4.271	0.0291	68.471	9.305
75	680.19	1.620	1394.51	8.394	6092	62.8	15.950	0.0076	5.310	0.0411	84.702	8.030
80	719.29	1.385	1532.28	8.486	6376	67.3	15.865	0.0079	6.612	0.0371	104.906	6.856
90	793.51	1.808	1804.42	9.049	6924	63.7	15.715	0.0105	9.674	0.0320	152.018	5.220
100	877.59	7.502	2039.05	9.896	7368	69.1	15.543	0.0109	12.553	0.0608	195.114	4.498

### Measurement Results 3:

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	72.82	1.355	152.38	8.223	2034	7.4	16.237	0.0056	0.244	0.0076	3.969	18.348
25	115.08	1.504	229.42	8.215	2507	10.9	16.225	0.0042	0.424	0.0082	6.876	16.736
30	157.99	1.326	319.70	8.244	2949	11.4	16.205	0.0051	0.675	0.0091	10.936	14.447
35	209.72	1.327	414.78	8.231	3364	11.8	16.183	0.0065	0.984	0.0104	15.919	13.175
40	264.76	1.325	517.42	8.203	3749	18.5	16.151	0.0052	1.369	0.0152	22.104	11.978
45	321.25	1.330	623.15	8.281	4118	17.8	16.115	0.0070	1.831	0.0156	29.515	10.885
50	383.03	1.399	739.65	8.228	4467	22.8	16.067	0.0065	2.308	0.0149	37.076	10.331
55	443.07	1.428	859.84	8.228	4799	26.0	16.012	0.0070	2.676	0.0144	42.844	10.342
60	507.56	1.551	982.14	8.336	5134	29.2	15.950	0.0070	3.092	0.0176	49.325	10.290
65	572.22	2.263	1109.53	8.982	5436	34.8	15.874	0.0082	3.573	0.0237	56.711	10.090
70	632.54	1.436	1242.67	8.604	5728	59.9	15.783	0.0096	4.256	0.0258	67.170	9.417
75	682.78	1.484	1368.34	9.030	6042	62.2	15.691	0.0080	5.269	0.0358	82.670	8.259
80	723.60	1.429	1501.10	8.419	6299	63.1	15.589	0.0093	6.528	0.0320	101.774	7.110
90	795.43	1.411	1766.10	10.744	6867	50.3	15.422	0.0113	9.530	0.0401	146.972	5.412
100	866.94	2.711	2008.50	10.042	7283	70.1	15.244	0.0119	12.397	0.0588	188.981	4.587

### Measurement Results 4:

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	69.13	1.533	144.66	4.175	1993	7.1	15.920	0.0040	0.241	0.0066	3.831	18.046
25	108.55	1.471	220.37	4.172	2466	7.5	15.907	0.0051	0.414	0.0085	6.592	16.466
30	151.86	1.480	306.01	4.166	2901	12.3	15.890	0.0048	0.657	0.0088	10.436	14.552
35	201.71	1.472	400.30	4.193	3309	12.3	15.866	0.0048	0.961	0.0127	15.241	13.235
40	255.51	1.484	500.10	4.168	3698	18.6	15.838	0.0043	1.339	0.0121	21.214	12.044
45	310.25	1.624	602.75	4.261	4056	19.3	15.801	0.0058	1.786	0.0176	28.220	10.994
50	372.03	1.542	717.32	4.234	4397	20.5	15.757	0.0058	2.272	0.0158	35.801	10.392
55	435.31	2.098	835.13	4.228	4718	21.1	15.707	0.0061	2.648	0.0168	41.597	10.465
60	494.20	1.736	954.05	4.572	5056	33.1	15.646	0.0066	3.061	0.0194	47.894	10.319
65	554.83	2.109	1073.03	4.391	5368	37.5	15.584	0.0071	3.546	0.0228	55.267	10.039
70	612.66	1.637	1207.42	4.347	5664	50.4	15.516	0.0066	4.230	0.0198	65.635	9.334
75	662.82	1.724	1337.54	5.096	5972	60.8	15.445	0.0072	5.196	0.0272	80.251	8.259
80	707.29	1.520	1474.53	5.640	6241	55.7	15.366	0.0066	6.453	0.0305	99.161	7.133
90	781.30	1.776	1744.01	6.110	6803	57.8	15.228	0.0112	9.425	0.0361	143.528	5.444
100	854.60	3.645	1982.14	6.977	7236	64.4	15.063	0.0082	12.206	0.0486	183.859	4.648

### Measurement Results 5:

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	66.79	1.217	142.80	3.816	1975	7.4	15.782	0.0053	0.231	0.0075	3.645	18.325
25	105.26	1.213	217.23	3.772	2435	7.1	15.765	0.0050	0.403	0.0073	6.360	16.551
30	148.17	1.212	302.58	3.794	2877	11.1	15.749	0.0040	0.640	0.0082	10.078	14.703
35	197.63	1.216	394.89	3.771	3282	10.8	15.724	0.0048	0.941	0.0113	14.804	13.350
40	253.67	1.263	494.87	3.791	3664	16.7	15.693	0.0055	1.319	0.0134	20.702	12.253
45	306.04	1.257	596.96	3.832	4014	15.4	15.655	0.0076	1.767	0.0176	27.661	11.064
50	367.00	1.249	709.32	3.898	4361	19.3	15.610	0.0067	2.257	0.0189	35.228	10.418
55	427.96	1.435	823.78	3.909	4684	26.1	15.556	0.0065	2.627	0.0201	40.866	10.472
60	488.21	1.483	944.45	4.294	5017	27.2	15.493	0.0064	3.047	0.0189	47.205	10.342
65	550.78	1.441	1064.95	4.206	5329	42.4	15.435	0.0056	3.555	0.0274	54.866	10.039
70	606.52	1.483	1190.81	4.830	5629	51.5	15.367	0.0064	4.215	0.0257	64.766	9.365
75	664.06	1.740	1323.59	4.429	5936	49.3	15.294	0.0067	5.172	0.0272	79.099	8.395
80	704.40	1.814	1453.15	4.105	6220	65.6	15.215	0.0082	6.410	0.0371	97.530	7.222
90	776.61	2.312	1722.97	9.114	6766	54.1	15.072	0.0094	9.329	0.0379	140.601	5.524
100	840.04	1.788	1954.39	8.466	7220	57.4	14.915	0.0086	12.035	0.0458	179.501	4.680

## Plots for Measurement Results:

