



BRIGHAM YOUNG UNIVERSITY
AUVSI CAPSTONE TEAM (TEAM 45)

Bill of Materials

ID	Rev.	Date	Description	Author	Checked By
BM-001	0.1	02-19-2019	SS Engineering Draft	Tyler Critchfield	Brandon McBride
BM-001	1.0	04-02-2019	Complete System Bill of Materials	Jacob Willis	Jake Johnson
BM-001	1.1	04-15-2019	Added cost	Tyler Critchfield	Ryan Anderson

1 Introduction

The following tables show our Bill of Materials for the entire system. We've included the following information with each component: item number, item name, items interfaced with, quantity, mass, vendor, and cost.

Table 1: A finalized bill of materials for the aircraft. Information listed includes the item number, item name, items interfaced with, quantity, mass, vendor, and cost. Masses are not included if they were already included in another item's mass or if they are irrelevant (e.g., if the item is not on the airframe). Items that were part of the airframe kit (control horns, glue, connector pieces, coverings, etc.) are also excluded.

Item #	Item Name	Interfaces With	Quantity [#]	Mass [g]	Vendor	Cost
1	My Fly Dream Nimbus Pro Airframe	Everything	1	2000	BangGood	\$250
2	Pitot Tube	Item 3	1	19	Amazon	\$52.80
3	PX4 Airspeed Sensor	Item 4	1	N/A	N/A	N/A
4	Flip32 Breakout I2C	Items 5, 6, 7, 19	1	60	Custom	N/A
5	OpenPilot Revo Flight Controller	Item 4	1	35	Hyperion World	\$40.74
6	Servos	Item 4	4	44	Hobby King	\$5.02
7	ESC	Items 4, 8, 19	2	160	Hobby King	\$106.60
8	Motors	Item 7	2	280	Tower Hobbies	\$114.58
9	RC Receiver	Items 10, 19	1	19	Team Blacksheep	\$123.95
10	RC Antennas	Item 9	2	0	N/A	N/A
11	POE Adapter	Items 12, 15, 19	1	30	Amazon	\$6.79
12	Ubiquiti Bullet	Items 11, 13	1	165	Amazon	\$73.78
13	5GHz antenna	Item 12	1	32	getfpv.com	\$14.99
14	5GHz Litebeam Antenna	Items 1, 30	1	N/A	Newegg	\$105.95
15	Odroid XU4	Items 4, 11, 16, 17, 19	1	99	Hard Kernel	\$57.95
16	Sony A6000 Camera	Items 15, 28	1	241	Sony	\$448
17	InertialSense	Item 15, 18	1	N/A	(borrowed)	N/A
18	GPS Antenna	Item 17	1	94	Drotek	\$35
19	Power Harness	Items 4, 7, 9, 11, 15, 20-22, 31	1	130	N/A	\$10

Table 2: A continuation of the system bill of materials from the previous page.

Item #	Item Name	Interfaces With	Quantity [#]	Mass [g]	Vendor	Cost
20	Castle BEC 20 A	Items 15, 19, 22, 39	1	N/A	Castle Creations	\$39.95
21	Castle BEC 10 A	Items 9, 19	1	N/A	Castle Creations	\$21.95
22	Bottle Drop Arduino	Items 15, 19, 23	1	N/A	Hobby King	\$9.89
23	Payload Release	Item 22	1	18	Hobby King	N/A
24	Tail Foam Wedge	Item 1	1	10	Custom	N/A
25	Battery Straps	Item 31	2	5	N/A	\$3.94
26	Velcro Strips	Items 5, 12, 31	6	N/A	EE Shop	\$1
27	Controller Board Housing		1	N/A	N/A	\$2
28	Camera Housing	Item 16	1	N/A	Custom	N/A
29	Propellers	Item 8	2	14	Hobby King	\$1.04
30	WiFi Router	Item 14	1	N/A	Amazon	\$161
31	4S Lipo Battery	Item 19, 25	1	944	Hobby King	\$85
32	UGV Chassis	Item 33, 37	1	88	Amazon	\$27
33	UGV Battery	Item 32	1	31	Amazon	\$5
34	UGV GPS	Item 32, 37	1	24	Amazon	\$23
35	Parachute housing	Item 36	1	10	Custom	N/A
36	36" Parachute	Items 32, 35	1	92	FruityChutes	\$99
37	UGV Controller	Items 32, 33, 34	1	35	Hyperion	\$50
38	Fiber Tape	Item 1	N/A	N/A	Amazon	\$10
39	Camera Power Supply	Items 16, 20	1	40	Amazon/ Custom	\$10
40	UGV Payload Bay	Items 1, 23, 32, 36	1	N/A	Custom	N/A