



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	CHECKED BY

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, and vendor.

Table 1: A bill of materials for the current Nimbus Pro system. Information listed includes the item number, name, quantity, mass, vendor, and a list of other items each interfaces with. Masses are not included if they were already included in another item's mass or if it is irrelevant (if the item is not in the plane). Not included is each component of the aircraft that came with the kit (e.g., control horns, glue, connector pieces, coverings, etc.).

Item #	Item Name	Interfaces With	Quantity [#]	Mass [g]	Vendor
1	Nimbus Pro Airframe	Everything	1	2000	BangGood
2	Pitot Tube	Item 3	1	19	Amazon
3	PX4 Airspeed Sensor	Item 4	1	N/A	N/A
4	Flip32 Breakout I2C	Items 5, 6, 7, 19	1	60	Custom
5	OpenPilot Revo Flight Controller	Item 4	1	35	Hyperion World
6	Servos	Item 4	4	44	Hobby King
7	ESC	Items 4, 8, 19	2	160	Hobby King
8	Motors	Item 7	2	280	Tower Hobbies
9	RC Receiver	Items 10, 19	1	19	Team Blacksheep
10	RC Antennas	Item 9	2	0	N/A
11	POE Adapter	Items 12, 15, 19	1	30	N/A
12	Ubiquiti Bullet	Items 11, 13	1	165	Amazon
13	5GHz antenna	Item 12	1	32	N/A
14	5GHz Litebeam Antenna	Items 1, 30	1	N/A	Newegg
15	Odroid	Items 4, 11, 16, 17, 19	1	99	Hard Kernel
16	Camera	Items 15, 28	1	241	Basler
17	InertialSense	Item 15, 18	1	N/A	N/A
18	GPS Antenna	Item 17	1	94	Drotek
19	Power Harness	Items 4, 7, 9, 11, 15, 20-22, 31	1	130	N/A

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

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