Group Name	VRSTeam
Group Member # 1	Runlong Hu
Group Member # 2	Ashley Ding

Row of totals

Component	Manufacturer	Manufacturer part number (MPN)	Distributor
MCU and Wi-Fi	Microchip Technology	ATSAMW25	DigiKey
6-DoF IMU Accelerometer + Gyroscope Sensor	STMicroelectronics	LSM6DSMTR	DigiKey
Temperature + Humidity Sensor	Sensirion AG	SHTC3-TR-10KS	DigiKey
Motor Driver	Toshiba	TB6612FNG	DigiKey
Servo	SparkFun Electronics	ROB-09065	DigiKey
Water Pump	Adafruit Industries LLC	4547	DigiKey
GPS Module	Adafruit Industries LLC	5186	Mouser
Buck-boost Converter	TEXAS INSTRUMENTS	TPS63021DSJT	DigiKey
Boost Switching Regulator IC	TEXAS INSTRUMENTS	TPS61232DRCT	DigiKey

			364.5	1.2613
Distributor Part Number	**Voltage (Min)**	**Voltage (Max)**	**Current Consumption, typical (mA)**	**Quiescent current (mA)**
ATSAMW25-MR210PA-ND	1.62V	3.63V	200	1
497-16696-1-ND	1.71V	3.6V	0.4	0.003
1649-SHTC3-TR-10KSTR-ND	1.62V	3.6V	43	0.0003
TB6612FNGC8ELCT-ND	2.7V	5.5V	1.1	0.015
1568-1320-ND	4.8V	6V	N/A	N/A
1528-4547-ND	3.0V	4.5V	120	0
485-5186	3.0V	4.3V	Acquisition); 29(Tracking)	0.018
296-37448-1-ND	1.8V	5.5V	4A(Output)	0.025
296-37990-1-ND	2.3V	5.5V	2.1A(Output)	0.2

				$ 61.69
Interface to MCU	**Cost QTY 1**	**Cost QTY 1K**	**Qty per board**	**Cost per board (Qty 1 pricing)**
N/A	$ 12.05	$ 10.92	1	$ 12.05
I²C x 1	$ 4.67	$ 2.47	1	$ 4.67
I²C x 1	$ 2.86	$ 1.32	1	$ 2.86
PWM	$ 1.97	$ 0.97	1	$ 1.97
N/A	$ 9.95	$ 9.95	1	$ 9.95
N/A	$ 2.95	$ 2.95	1	$ 2.95
I2C + UART	$ 19.95	$ 19.95	1	$ 19.95
	$ 4.34	$ 3.19	1	$ 4.34
	$ 2.95	$ 2.17	1	$ 2.95

Dev Board Link (Required)	Dev Board Price	Comments
https://www.digikey.com/en/p	$ 41.04	ESE5160 MCU and WiFi SoC
https://www.digikey.com/en/p	$ 4.79	
https://www.digikey.com/en/p	$ 2.99	The two sensors we use will share one I²C.
https://www.digikey.com/en/p	$ 5.29	This motor driver use PWM interface. Alternative motor driver: DRV2605LDGSR (I²C interface)
https://www.digikey.com/en/p	$ -	Actuator
https://www.digikey.com/en/p	$ -	
https://www.mouser.com/Pro	$ -	
https://www.digikey.com/en/p	$ -	
TPS61232DRCT Texas Instrume	$ -	

digital component location

project library

https://www.proto-advantage.com/store/product_info.php?products_id=3100207   UPenn ESE

https://www.proto-advantage.com/store/product_info.php?products_id=2700136   UPenn ESE

https://www.digikey.com/en/products/detail/chip-quik-inc/PA0036/5014710   UPenn ESE

Altium

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