

DAQ Bill of Materials (combined)

Description	Qty	Unit price	Total price
Onboard Computer			
Raspberry Pi 4: 8GB kit	1	8,600.00	8,600.00
Raspberry Pi 4: 4GB	1	4,990.00	4,990.00
Raspberry Pi 4: Case and Fan	2	449.00	898.00
SanDisk 32GB Class 10 Micro SDHC Memory Card	1	590.00	590.00
HDMI to USB Video Capture	1	890.00	890.00
PL2303 USB to TTL module	2	109.00	218.00
USB To TTL Serial Cable Debugger	2	149.00	298.00
RTC Real Time Clock DS1307	2	99.00	198.00
GPIO Shield Expansion board for Raspberry Pi	1	249.00	249.00
4 Ports USB Hub	1	444.00	444.00
Subtotal		17,375.00	
Onboard Microcontroller			
Arduino Nano	2	419.00	838.00
Arduino Uno	2	499.00	998.00
Arduino Uno Cable (USB A to B)	2	34.00	68.00
Arduino Lilypad	4	319.00	1,276.00
ESP8266 NodeMCU	1	339.00	339.00
ESP8266 NodeMCU Cable (USB A to micro B)	1	69.00	69.00
Micro SD Card Reader	2	99.00	198.00
Subtotal		3,786.00	
Sensors & Displays			
Dashboard TFT LCD (5') with dashboard camera	1	1,499.00	1,499.00
3.5 mm Stereo Male to 3 RCA Male Audio Video AV Cable	1	234.00	234.00
Video and Audio Capturing Device	1	499.00	499.00
Nokia 5110 84x48 Graphic LCD	1	266.00	266.00
16x2 Blue Alphanumeric LCD	1	179.00	179.00
Numeric 7 - Segment Display	1	130.00	130.00
7-Segment Driver IC	1	55.00	55.00
74HC595 8 Bit Serial-in Serial or Parallel-out Shift Register	4	29.00	116.00
NEO-6M GPS Module with Antenna	1	459.00	459.00
Voltage Detector Sensor 0-25V	2	109.00	218.00
HMC5883L Magnetometer Compass Module	1	239.00	239.00
433MHZ LORA SX1278 Long Range Rf Wireless Module	2	449.00	898.00
MCP2515 CAN Module	2	385.00	770.00

DAQ Bill of Materials (combined)

Description	Qty	Unit price	Total price
MPU-6050 3-Axis Accelerometer and Gyroscope Sensor	4	139.00	556.00
Reed Switches	2	150.00	300.00
Magnetic Reed Switch Glass Ampule	5	39.00	195.00
Potentiometer	3	260.00	780.00
Wired Temperature Sensor	2	95.00	190.00
IR Temperature Sensor	2	999.00	1,998.00
MPXV7002DP Air Speed Sensor And Pitot Tube	1	3,890.00	3,890.00
Subtotal		13,471.00	

Supplies & misc			
Black Connecting Wire 24 AWG	1	249.00	249.00
Red Connecting Wire 24 AWG	1	249.00	249.00
Male to Female Jumper Cables	2	55.00	110.00
Male to Male Jumper Cables	2	65.00	130.00
Female to Female Jumper Cables	2	55.00	110.00
Breadboard	2	78.00	156.00
mini Breadboard	4	50.00	200.00
Wire Nipper / Angle Cutter	1	179.00	179.00
PYE Wire Stripper	1	69.00	69.00
Mastech Multimeter	1	819.00	819.00
Hot Glue Gun	1	249.00	249.00
Hot Melt Glue Sticks (11 mm)	5	118.00	590.00
Heat Shrink Tubing	1	429.00	429.00
Buck Converter 12v to 5v (300W)	1	450.00	450.00
DC to DC Buck Regulator (75W)	2	169.00	338.00
Soldering Iron Solderon 25Watt	1	399.00	399.00
Soldering Iron Stand	1	99.00	99.00
Desoldering Copper Wick	1	29.00	29.00
Soldering Flux Paste	1	15.00	15.00
Soldering Iron Bit 25Watt Siron	1	79.00	79.00
Soldering Wire Tin-Lead Rosin Core	1	99.00	99.00
Soldering Iron Tip Cleaning Sponge	1	49.00	49.00
PYE Screw Driver / Tester combo (8 different bits)	1	259.00	259.00
160mm Steel Tweezer	1	39.00	39.00
12 mm Kapton Tape for heat resistance	1	199.00	199.00
12mm Normally Open Push Button Switch	4	29.00	116.00
Resister Pack (150 pcs) assorted	2	79.00	158.00

DAQ Bill of Materials (combined)

Description	Qty	Unit price	Total price
3 Pin Screw Terminal Green	5	9.00	45.00
2 Pin Screw Terminal Green	5	6.00	30.00
PCB Mount USB A Socket	2	15.00	30.00
5mm Transparent Red LED	10	2.00	20.00
5mm Transparent Yellow LED	10	2.00	20.00
5mm Transparent Green LED	10	2.00	20.00
5mm Transparent Blue LED	10	2.00	20.00
5mm Diffused Red LED	10	2.00	20.00
5mm Diffused Yellow LED	10	2.00	20.00
5mm Diffused Green LED	10	2.00	20.00
Milton 2.5 Inch 3 Watt speaker	2	49.00	98.00
20 MM SPDT 3 pin Switch	4	17.00	68.00
10mm Piezo Buzzer	3	25.00	75.00
10k Variable Resistor	5	8.00	40.00
6x6mm Tactile Button 4-pin	10	3.00	30.00
Push Button On/Off Switch	10	11.00	110.00
LM324 Op Amp	2	19.00	38.00
30mm Crocodile Clip	10	20.00	200.00
40 pin Right Angle Male Headers	4	15.00	60.00
40 pin Female Headers	5	9.00	45.00
40 pin Male Headers	5	7.00	35.00
4x4 Membrane Keypad	2	79.00	158.00
1 Channel 5V Relay	4	69.00	276.00
Dual Axis Joystick	1	99.00	99.00
6x4 Inch Perfboard Circuit Board	5	59.00	295.00
3x2 Inch Perfboard Circuit Board	5	15.00	75.00
Rotary Encoder Switch	3	109.00	327.00
Cable Labels Stickers	1	290.00	290.00
Locking Cable Marker (Cable Protector)	1	299.00	299.00
Assorted 4, 6, 8, 10, 12 Inch Nylon Cable Ties Zip	1	180.00	180.00
4 Pole Wire Connector Terminal	10	25.00	250.00
3 Pole Wire Connector Terminal	10	19.00	190.00
Subtotal		9,350.00	

Total

Notes: This is an approximate estimation, pending to more additions / deletions.

43,982.00

DAQ Bill of Materials (combined)

Description	Qty	Unit price	Total price
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Ordering Website :

[robu.in/](#)

[amazon.in/](#)

[sparkpcb.com/](#)

DAQ Bill of Materials (#1)

Description	Qty	Unit price	Total price
Sensors & Displays			
Dashboard TFT LCD (5') with dashboard camera	1	1,499.00	1,499.00
3.5 mm Stereo Male to 3 RCA Male Audio Video AV Cable	1	234.00	234.00
Video and Audio Capturing Device	1	499.00	499.00
Nokia 5110 84x48 Graphic LCD	1	266.00	266.00
16x2 Blue Alphanumeric LCD	1	179.00	179.00
Numeric 7 - Segment Display	1	130.00	130.00
7-Segment Driver IC	1	55.00	55.00
74HC595 8 Bit Serial-in Serial or Parallel-out Shift Register	4	29.00	116.00
NEO-6M GPS Module with Antenna	1	459.00	459.00
Voltage Detector Sensor 0-25V	2	109.00	218.00
HMC5883L Magnetometer Compass Module	1	239.00	239.00
433MHZ LORA SX1278 Long Range Rf Wireless Module	2	449.00	898.00
MCP2515 CAN Module	2	385.00	770.00
MPU-6050 3-Axis Accelerometer and Gyroscope Sensor	4	139.00	556.00
Reed Switches	2	150.00	300.00
Magnetic Reed Switch Glass Ampule	5	39.00	195.00
Potentiometer	3	260.00	780.00
Wired Temperature Sensor	2	95.00	190.00
IR Temperature Sensor	2	999.00	1,998.00
Subtotal		9,581.00	

Total

Notes: This is an approximate estimation, pending to more additions / deletions.

9,581.00

Ordering Website :

robu.in/

amazon.in/

sparkpcb.com/

DAQ Bill of Materials (#2)

Description	Qty	Unit price	Total price
Supplies & misc			
Black Connecting Wire 24 AWG	1	249.00	249.00
Red Connecting Wire 24 AWG	1	249.00	249.00
Male to Female Jumper Cables	2	55.00	110.00
Male to Male Jumper Cables	2	65.00	130.00
Female to Female Jumper Cables	2	55.00	110.00
Breadboard	2	78.00	156.00
mini Breadboard	4	50.00	200.00
Wire Nipper / Angle Cutter	1	179.00	179.00
PYE Wire Stripper	1	69.00	69.00
Mastech Multimeter	1	819.00	819.00
Hot Glue Gun	1	249.00	249.00
Hot Melt Glue Sticks (11 mm)	5	118.00	590.00
Heat Shrink Tubing	1	429.00	429.00
Buck Converter 12v to 5v (300W)	1	450.00	450.00
DC to DC Buck Regulator (75W)	2	169.00	338.00
Soldering Iron Soldoron 25Watt	1	399.00	399.00
Soldering Iron Stand	1	99.00	99.00
Desoldering Copper Wick	1	29.00	29.00
Soldering Flux Paste	1	15.00	15.00
Soldering Iron Bit 25Watt Siron	1	79.00	79.00
Soldering Wire Tin-Lead Rosin Core	1	99.00	99.00
Soldering Iron Tip Cleaning Sponge	1	49.00	49.00
PYE Screw Driver / Tester combo (8 different bits)	1	259.00	259.00
160mm Steel Tweezer	1	39.00	39.00
12 mm Kapton Tape for heat resistance	1	199.00	199.00
12mm Normally Open Push Button Switch	4	29.00	116.00
Resister Pack (150 pcs) assorted	2	79.00	158.00
3 Pin Screw Terminal Green	5	9.00	45.00
2 Pin Screw Terminal Green	5	6.00	30.00
PCB Mount USB A Socket	2	15.00	30.00
5mm Transparent Red LED	10	2.00	20.00
5mm Transparent Yellow LED	10	2.00	20.00
5mm Transparent Green LED	10	2.00	20.00

DAQ Bill of Materials (#2)

Description	Qty	Unit price	Total price
5mm Transparent Blue LED	10	2.00	20.00
5mm Diffused Red LED	10	2.00	20.00
5mm Diffused Yellow LED	10	2.00	20.00
5mm Diffused Green LED	10	2.00	20.00
Milton 2.5 Inch 3 Watt speaker	2	49.00	98.00
20 MM SPDT 3 pin Switch	4	17.00	68.00
10mm Piezo Buzzer	3	25.00	75.00
10k Variable Resistor	5	8.00	40.00
6x6mm Tactile Button 4-pin	10	3.00	30.00
Push Button On/Off Switch	10	11.00	110.00
LM324 Op Amp	2	19.00	38.00
30mm Crocodile Clip	10	20.00	200.00
40 pin Right Angle Male Headers	4	15.00	60.00
40 pin Female Headers	5	9.00	45.00
40 pin Male Headers	5	7.00	35.00
4x4 Membrane Keypad	2	79.00	158.00
1 Channel 5V Relay	4	69.00	276.00
Dual Axis Joystick	1	99.00	99.00
6x4 Inch Perfboard Circuit Board	5	59.00	295.00
3x2 Inch Perfboard Circuit Board	5	15.00	75.00
Rotary Encoder Switch	3	109.00	327.00
Cable Labels Stickers	1	290.00	290.00
Locking Cable Marker (Cable Protector)	1	299.00	299.00
Assorted 4, 6, 8, 10, 12 Inch Nylon Cable Ties Zip	1	180.00	180.00
4 Pole Wire Connector Terminal	10	25.00	250.00
3 Pole Wire Connector Terminal	10	19.00	190.00
Subtotal		9,350.00	

Total

Notes: This is an approximate estimation, pending to more additions / deletions.

9,350.00

Ordering Website :

robu.in/

amazon.in/

DAQ Bill of Materials (#2)

Description	Qty	Unit price	Total price
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sparkpcb.com/

DAQ Bill of Materials (#3)

Description	Qty	Unit price	Total price
Onboard Computer			
HDMI to USB Video Capture	1	890.00	890.00
PL2303 USB to TTL module	2	109.00	218.00
USB To TTL Serial Cable Debugger	2	149.00	298.00
RTC Real Time Clock DS1307	2	99.00	198.00
GPIO Shield Expansion board for Raspberry Pi	1	249.00	249.00
4 Ports USB Hub	1	444.00	444.00
Subtotal		2,297.00	
Onboard Microcontroller			
Arduino Nano	2	419.00	838.00
Arduino Uno	2	499.00	998.00
Arduino Uno Cable (USB A to B)	2	34.00	68.00
Arduino Lilypad	4	319.00	1,276.00
ESP8266 NodeMCU	1	339.00	339.00
ESP8266 NodeMCU Cable (USB A to micro B)	1	69.00	69.00
Micro SD Card Reader	2	99.00	198.00
Subtotal		3,786.00	
Sensors & Displays			
MPXV7002DP Air Speed Sensor And Pitot Tube	1	3,890.00	3,890.00
Subtotal		3,890.00	

Total

Notes: This is an approximate estimation, pending to more additions / deletions.

9,973.00

Ordering Website :

robu.in/

amazon.in/

sparkpcb.com/

DAQ Bill of Materials (#4)

Description	Qty	Unit price	Total price
Onboard Computer			
Raspberry Pi 4: 8GB kit	1	8,600.00	8,600.00
SanDisk 32GB Class 10 Micro SDHC Memory Card	1	590.00	590.00

Total

Notes: This is an approximate estimation, pending to more additions / deletions.

9,190.00

Ordering Website :

[robu.in/](https://www.robu.in/)
[amazon.in/](https://www.amazon.in/)
[sparkpcb.com/](https://www.sparkpcb.com/)

DAQ Bill of Materials (#5)

Description	Qty	Unit price	Total price
Onboard Computer			
Raspberry Pi 4: 4GB	1	4,990.00	4,990.00
Raspberry Pi 4: Case and Fan	2	449.00	898.00

Total

Notes: This is an approximate estimation, pending to more additions / deletions.

5,888.00

Ordering Website :

[robu.in/](https://www.robu.in/)
[amazon.in/](https://www.amazon.in/)
[sparkpcb.com/](https://www.sparkpcb.com/)

DAQ Bill of Materials (combined)

Description	Qty	Unit price	Total price	Links	Utility
Onboard Computer					
Raspberry Pi 4: 8GB kit	1	8,600.00	8,600.00	https://www.amazon.in/India-Raspberry-Charger-H	Onboard computer + peripherals
Raspberry Pi 4: 4GB	1	4,990.00	4,990.00	https://robu.in/product/raspberry-pi-4-model-b-wit/	Backup onboard computer for CV/ROS applications
Raspberry Pi 4: Case and Fan	2	449.00	898.00	https://www.amazon.in/India-Raspberry-Option-Mo	Peripheral for Onboard Computer
SanDisk 32GB Class 10 Micro SDHC Memory Card	1	590.00	590.00	https://www.amazon.in/SanDisk-Class-Memory-Ad	Peripheral for Onboard Computer
HDMI to USB Video Capture	1	890.00	890.00	https://www.amazon.in/Tobo-Levoty-Game-Captur	Peripheral for Onboard Computer
PL2303 USB to TTL module	2	109.00	218.00	https://www.sparkpcb.com/development/communic	Peripheral for Onboard Computer
USB To TTL Serial Cable Debugger	2	149.00	298.00	https://robu.in/product/pl2303-ta-download-cable-1	Peripheral for Onboard Computer
RTC Real Time Clock DS1307	2	99.00	198.00	https://robu.in/product/rtc-ds1307-i2c-real-time-cloc	Peripheral for Onboard Computer
GPIO Shield Expansion board for Raspberry Pi	1	249.00	249.00	https://www.sparkpcb.com/development/gpio-shield	Peripheral for Onboard Computer
4 Ports USB Hub	1	444.00	444.00	https://www.amazon.in/Zebtronics-100HB-High-Spe	Peripheral for Onboard Computer
Subtotal			17,375.00		
Onboard Microcontroller					
Arduino Nano	2	419.00	838.00	https://robu.in/product/arduino-nano-v3-0-ch340-cl	Basic portable Microcontroller for analog signals
Arduino Uno	2	499.00	998.00	https://robu.in/product/arduino-uno-r3-ch340g-atm	Basic Microcontroller for analog signals
Arduino Uno Cable (USB A to B)	2	34.00	68.00	https://robu.in/product/cable-for-arduino-unomega	Peripheral for Onboard microcontroller
Arduino Lilypad	4	319.00	1,276.00	https://www.sparkpcb.com/development/arduino-lily	Basic portable Microcontroller for analog signals
ESP8266 NodeMCU	1	339.00	339.00	https://robu.in/product/nodemcu-esp8266-v3-lua-c	Wireless Onboard microcontroller
ESP8266 NodeMCU Cable (USB A to micro B)	1	69.00	69.00	https://robu.in/product/micro-usb-a-to-micro-b-cab	Peripheral for Wireless Onboard microcontroller
Micro SD Card Reader	2	99.00	198.00	https://www.sparkpcb.com/development/micro-sd	Data logging for microcontrollers
Subtotal			3,786.00		
Sensors & Displays					
Dashboard TFT LCD (5") with dashboard camera	1	1,499.00	1,499.00	https://www.amazon.in/Carzex-Dashboard-Screen-5	Dashboard Display + Camera
3.5 mm Stereo Male to 3 RCA Male Audio Video AV Cable	1	234.00	234.00	https://www.amazon.in/Ekaaz-Stereo-Audio-Camc	Peripheral for Dashboard Display
Video and Audio Capturing Device Directly from TV	1	499.00	499.00	https://www.amazon.in/Easycap-Video-Capturing-T	Peripheral for Dashboard Camera
Nokia 5110 84x48 Graphic LCD	1	266.00	266.00	https://www.sparkpcb.com/electronics/nokia-5110-84	Panel Display
16x2 Blue Alphanumeric LCD	1	179.00	179.00	https://www.sparkpcb.com/electronics/16x2-line-blue	Panel Display
Numeric 7 - Segment Display	1	130.00	130.00	https://www.amazon.in/Segment-Display-Common	Gear Indicator Display
7-Segment Driver IC	1	55.00	55.00	https://www.amazon.in/CD4511-Segment-Latch-De	Gear Indicator Display IC
74HC595 8 Bit Serial-in Serial or Parallel-out Shift Register	4	29.00	116.00	https://www.sparkpcb.com/electronics/74hc595-8-b	Shift Register for LED Array (rev meter)
NEO-6M GPS Module with Antenna	1	459.00	459.00	https://www.sparkpcb.com/development/neo-6m-gps	GPS Module
Voltage Detector Sensor 0-25V	2	109.00	218.00	https://www.sparkpcb.com/sensors/voltage-detectic	Gear Position Indicator
HMC5883L Magnetometer Compass Module	1	239.00	239.00	https://www.sparkpcb.com/sensors/hmc5883l-triple	Compass Module
433MHZ LORA SX1278 Long Range Rf Wireless Module	2	449.00	898.00	https://robu.in/product/ai-thinker-lora-ra-01-rf-trans	Onboard Telemetry
MCP2515 CAN Module	2	385.00	770.00	https://robu.in/product/mcp2515-can-module-tja11	ECU reader through CAN bus
MPU-6050 3-Axis Accelerometer and Gyroscope Sensor	4	139.00	556.00	https://www.sparkpcb.com/sensors/mpu6050-gyrosc	Accelerometer and Gyroscope Sensor
Reed Switches	2	150.00	300.00	https://www.amazon.in/Electronicspices-Pack-Min	Wheel speed sensor
Magnetic Reed Switch Glass Ampule	5	39.00	195.00	https://www.sparkpcb.com/sensors/magnetic-read-	Wheel speed sensor
Potentiometer	3	260.00	780.00	https://www.amazon.in/EPIC-TAC-Potentiometer-Lir	Miscellaneous
Wired Temperature Sensor	2	95.00	190.00	https://robu.in/product/ds18b20-water-proof-temper	Radiator temperature sensor
IR Temperature Sensor	2	999.00	1,998.00	https://robu.in/product/mlx90614-esf-non-contact-h	Brake Disc Temperature sensor
MPXV7002DP Air Speed Sensor And Pitot Tube	1	3,890.00	3,890.00	https://robu.in/product/air-speed-sensor-and-pitot-t	Pitot Tube
Subtotal			13,471.00		
Supplies & misc					
Black Connecting Wire 24 AWG	1	249.00	249.00	https://robu.in/product/high-quality-24awg-silicone-w	Supplies
Red Connecting Wire 24 AWG	1	249.00	249.00	https://robu.in/product/24awg-silicone-wire/	Supplies
Male to Female Jumper Cables	2	55.00	110.00	https://robu.in/product/male-to-female-jumper-wires	Supplies
Male to Male Jumper Cables	2	65.00	130.00	https://robu.in/product/male-to-male-jumper-wires-4	Supplies
Female to Female Jumper Cables	2	55.00	110.00	https://robu.in/product/20cm-dupont-wire-color-jum	Supplies
Breadboard	2	78.00	156.00	https://robu.in/product/breadboard-840-tie-points-s	Supplies
mini Breadboard	4	50.00	200.00	https://robu.in/product/170-pts-mini-breadboard-sy	Supplies
Wire Nipper / Angle Cutter	1	179.00	179.00	https://www.sparkpcb.com/tools/stripper-cutter-plie	Appliance
PYE Wire Stripper	1	69.00	69.00	https://www.sparkpcb.com/tools/stripper-cutter-plie	Appliance
Mastech Multimeter	1	819.00	819.00	https://www.sparkpcb.com/test-equipments/multime	Instrument
Hot Glue Gun	1	249.00	249.00	https://robu.in/product/standard-temperature-corde	Appliance
Hot Melt Glue Sticks (11 mm)	5	118.00	590.00	https://www.amazon.in/Glun-11MM-Transparent-Sti	Supplies
Heat Shrink Tubing	1	429.00	429.00	https://robu.in/product/colorful-heat-shrink-tubing-h	Supplies
Buck Converter 12v to 5v (300W)	1	450.00	450.00	https://www.amazon.in/xcluma-Converter-1-2-35V-4	Supplies
DC to DC Buck Regulator (75W)	2	169.00	338.00	https://www.sparkpcb.com/development/xl4015-5a-	Supplies
Soldering Iron Solderon 25Watt	1	399.00	399.00	https://www.sparkpcb.com/tools/soldering-iron-stati	Appliance
Soldering Iron Stand	1	99.00	99.00	https://www.sparkpcb.com/tools/soldering-iron-stati	Supplies
Desoldering Copper Wick	1	29.00	29.00	https://www.sparkpcb.com/tools/soldering-accessory	Supplies

DAQ Bill of Materials (combined)

Description	Qty	Unit price	Total price	Links	Utility
Soldering Flux Paste	1	15.00	15.00	https://www.sparkpcb.com/tools/soldering-accessories	Supplies
Soldering Iron Bit 25Watt Siron	1	79.00	79.00	https://www.sparkpcb.com/tools/soldering-accessories	Supplies
Soldering Wire Tin-Lead Rosin Core	1	99.00	99.00	https://www.sparkpcb.com/tools/speedcon-0.7-mm	Supplies
Soldering Iron Tip Cleaning Sponge	1	49.00	49.00	https://www.sparkpcb.com/tools/soldering-iron-tip-h	Supplies
PYE Screw Driver / Tester combo (8 different bits)	1	259.00	259.00	https://www.sparkpcb.com/tools/screw-driver-sets/r	Appliance
160mm Steel Tweezer	1	39.00	39.00	https://www.sparkpcb.com/tools/160mm-long-fine-ti	Supplies
12 mm Kapton Tape for heat resistance	1	199.00	199.00	https://www.sparkpcb.com/cnc-3d-printer/accessories	Supplies
12mm Normally Open Push Button Switch	4	29.00	116.00	https://www.sparkpcb.com/electronics/12mm-no-re	Supplies
Resistor Pack (150 pcs) assorted	2	79.00	158.00	https://www.sparkpcb.com/electronics/150pcs-carb	Supplies
3 Pin Screw Terminal Green	5	9.00	45.00	https://www.sparkpcb.com/electronics/3-pin-screw-	Supplies
2 Pin Screw Terminal Green	5	6.00	30.00	https://www.sparkpcb.com/electronics/2-pin-screw-	Supplies
PCB Mount USB A Socket	2	15.00	30.00	https://www.sparkpcb.com/electronics/wire-and-cat	Supplies
5mm Transparent Red LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Transparent Yellow LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Transparent Green LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Transparent Blue LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Diffused Red LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Diffused Yellow LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Diffused Green LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
Milton 2.5 Inch 3 Watt speaker	2	49.00	98.00	https://www.sparkpcb.com/electronics/passive-com	Supplies
20 MM SPDT 3 pin Switch	4	17.00	68.00	https://www.sparkpcb.com/electronics/20-mm-spd-t	Supplies
10mm Piezo Buzzer	3	25.00	75.00	https://www.sparkpcb.com/electronics/passive-com	Supplies
10k Variable Resistor	5	8.00	40.00	https://www.sparkpcb.com/electronics/10k-variable	Supplies
6x6mm Tactile Button 4-pin	10	3.00	30.00	https://www.sparkpcb.com/electronics/6x6-mm-4-pi	Supplies
Push Button On/Off Switch	10	11.00	110.00	https://www.sparkpcb.com/electronics/push-button-	Supplies
LM324 Op Amp	2	19.00	38.00	https://www.sparkpcb.com/electronics/lm324-opera	Supplies
30mm Crocodile Clip	10	20.00	200.00	https://www.sparkpcb.com/development/30-mm-crc	Supplies
40 pin Right Angle Male Headers	4	15.00	60.00	https://www.sparkpcb.com/electronics/40-pin-right-	Supplies
40 pin Female Headers	5	9.00	45.00	https://www.sparkpcb.com/electronics/40-pin-state-	Supplies
40 pin Male Headers	5	7.00	35.00	https://www.sparkpcb.com/electronics/40-pin-state-	Supplies
4x4 Membrane Keypad	2	79.00	158.00	https://www.sparkpcb.com/development/4x4-matrix	Supplies
1 Channel 5V Relay	4	69.00	276.00	https://www.sparkpcb.com/development/1-channel-	Supplies
Dual Axis Joystick	1	99.00	99.00	https://www.sparkpcb.com/development/dual-axis-	Supplies
6x4 Inch Perfboard Circuit Board	5	59.00	295.00	https://www.sparkpcb.com/electronics/prototyping/c	Supplies
3x2 Inch Perfboard Circuit Board	5	15.00	75.00	https://www.sparkpcb.com/electronics/prototyping/c	Supplies
Rotary Encoder Switch	3	109.00	327.00	https://www.sparkpcb.com/electronics/rotary-encod	Supplies
Cable Labels Stickers	1	290.00	290.00	https://www.amazon.in/BIGGEAR-Numbers-Lockin	Supplies
Locking Cable Marker (Cable Protector)	1	299.00	299.00	https://www.amazon.in/BIGGEAR-Numbers-Lockin	Supplies
Assorted 4, 6, 8, 10, 12 Inch Nylon Cable Ties Zip	1	180.00	180.00	https://www.amazon.in/PR-Electronics-Assorted-Or	Supplies
4 Pole Wire Connector Terminal	10	25.00	250.00	https://robu.in/product/pct-214-0-08-2-5mm-5-pole-	Supplies
3 Pole Wire Connector Terminal	10	19.00	190.00	https://robu.in/product/pct-213-0-08-2-5mm-3-pole-	Supplies
			Subtotal	9,350.00	

Total

43,982.00

Notes: This is an approximate estimation, pending to more additions / deletions.

DAQ Bill of Materials (#1)

Description	Qty	Unit price	Total price	Links	Utility
Sensors & Displays					
Dashboard TFT LCD (5") with dashboard camera	1	1,499.00	1,499.00	https://www.amazon.in/Carzex-Dashboard-Screen-Display-Camera	Dashboard Display + Camera
3.5 mm Stereo Male to 3 RCA Male Audio Video AV Cable	1	234.00	234.00	https://www.amazon.in/Ekaaz-Stereo-Audio-Camcorder-AV-Cable	Peripheral for Dashboard Display
Video and Audio Capturing Device Directly from TV	1	499.00	499.00	https://www.amazon.in/Easycap-Video-Capturing-Device	Peripheral for Dashboard Camera
Nokia 5110 84x48 Graphic LCD	1	266.00	266.00	https://www.sparkpcb.com/electronics/nokia-5110-graphic-lcd	Panel Display
16x2 Blue Alphanumeric LCD	1	179.00	179.00	https://www.sparkpcb.com/electronics/16x2-line-blue-lcd	Panel Display
Numeric 7 - Segment Display	1	130.00	130.00	https://www.amazon.in/Segment-Display-Common	Gear Indicator Display
7-Segment Driver IC	1	55.00	55.00	https://www.amazon.in/CD4511-Segment-Latch-Decoder	Gear Indicator Display IC
74HC595 8 Bit Serial-in Serial or Parallel-out Shift Register	4	29.00	116.00	https://www.sparkpcb.com/electronics/74hc595-8-bit-shift-register	Shift Register for LED Array (rev meter)
NEO-6M GPS Module with Antenna	1	459.00	459.00	https://www.sparkpcb.com/development/neo-6m-gps-module	GPS Module
Voltage Detector Sensor 0-25V	2	109.00	218.00	https://www.sparkpcb.com/sensors/voltage-detector	Gear Position Indicator
HMC5883L Magnetometer Compass Module	1	239.00	239.00	https://www.sparkpcb.com/sensors/hmc5883l-triple-axis-digital-compass-module	Compass Module
433MHZ LORA SX1278 Long Range Rf Wireless Module	2	449.00	898.00	https://robu.in/product/ai-thinker-lora-ra-01-rf-transceiver-module	Onboard Telemetry
MCP2515 CAN Module	2	385.00	770.00	https://robu.in/product/mcp2515-can-module-tja1041	ECU reader through CAN bus
MPU-6050 3-Axis Accelerometer and Gyroscope Sensor	4	139.00	556.00	https://www.sparkpcb.com/sensors/mpu6050-gyrosensor	Accelerometer and Gyroscope Sensor
Reed Switches	2	150.00	300.00	https://www.amazon.in/ElectronicSpices-Pack-Mini-Reed-Switches	Wheel speed sensor
Magnetic Reed Switch Glass Ampule	5	39.00	195.00	https://www.sparkpcb.com/sensors/magnetic-read-head	Wheel speed sensor
Potentiometer	3	260.00	780.00	https://www.amazon.in/EPICTAC-Potentiometer-Library	Miscellaneous
Wired Temperature Sensor	2	95.00	190.00	https://robu.in/product/ds18b20-water-proof-temperature-sensor	Radiator temperature sensor
IR Temperature Sensor	2	999.00	1,998.00	https://robu.in/product/mlx90614-esf-non-contact-hi-res-range-temperature-sensor	Brake Disc Temperature sensor
			Subtotal	9,581.00	

Total

9,581.00

Notes: This is an approximate estimation, pending to more additions / deletions.

DAQ Bill of Materials (#2)

Description	Qty	Unit price	Total price	Links	Utility
Supplies & misc					
Black Connecting Wire 24 AWG	1	249.00	249.00	https://robu.in/product/high-quality-24awg-silicone-wire/	Supplies
Red Connecting Wire 24 AWG	1	249.00	249.00	https://robu.in/product/24awg-silicone-wire/	Supplies
Male to Female Jumper Cables	2	55.00	110.00	https://robu.in/product/male-to-female-jumper-wires-4	Supplies
Male to Male Jumper Cables	2	65.00	130.00	https://robu.in/product/male-to-male-jumper-wires-4	Supplies
Female to Female Jumper Cables	2	55.00	110.00	https://robu.in/product/20cm-dupont-wire-color-jum	Supplies
Breadboard	2	78.00	156.00	https://robu.in/product/breadboard-840-tie-points-sx	Supplies
mini Breadboard	4	50.00	200.00	https://robu.in/product/170-pts-mini-breadboard-syl	Supplies
Wire Nipper / Angle Cutter	1	179.00	179.00	https://www.sparkpcb.com/tools/stripper-cutter-plie	Appliance
PYE Wire Stripper	1	69.00	69.00	https://www.sparkpcb.com/tools/stripper-cutter-plie	Appliance
Mastech Multimeter	1	819.00	819.00	https://www.sparkpcb.com/test-equipments/multime	Instrument
Hot Glue Gun	1	249.00	249.00	https://robu.in/product/standard-temperature-corde	Appliance
Hot Melt Glue Sticks (11 mm)	5	118.00	590.00	https://www.amazon.in/Glun-11MM-Transparent-Sti	Supplies
Heat Shrink Tubing	1	429.00	429.00	https://robu.in/product/colorful-heat-shrink-tubing-h	Supplies
Buck Converter 12v to 5v (300W)	1	450.00	450.00	https://www.amazon.in/xcluma-Converter-1-2-35V-	Supplies
DC to DC Buck Regulator (75W)	2	169.00	338.00	https://www.sparkpcb.com/development/xl4015-5a	Supplies
Soldering Iron Solderon 25Watt	1	399.00	399.00	https://www.sparkpcb.com/tools/soldering-iron-stati	Appliance
Soldering Iron Stand	1	99.00	99.00	https://www.sparkpcb.com/tools/soldering-iron-stati	Supplies
Desoldering Copper Wick	1	29.00	29.00	https://www.sparkpcb.com/tools/soldering-accessori	Supplies
Soldering Flux Paste	1	15.00	15.00	https://www.sparkpcb.com/tools/soldering-accessori	Supplies
Soldering Iron Bit 25Watt Siron	1	79.00	79.00	https://www.sparkpcb.com/tools/soldering-accessori	Supplies
Soldering Wire Tin-Lead Rosin Core	1	99.00	99.00	https://www.sparkpcb.com/tools/speedcon-0.7-mm-	Supplies
Soldering Iron Tip Cleaning Sponge	1	49.00	49.00	https://www.sparkpcb.com/tools/soldering-iron-tip-h	Supplies
PYE Screw Driver / Tester combo (8 different bits)	1	259.00	259.00	https://www.sparkpcb.com/tools/screw-driver-sets/r	Appliance
160mm Steel Tweezer	1	39.00	39.00	https://www.sparkpcb.com/tools/160mm-long-fine-ti	Supplies
12 mm Kapton Tape for heat resistance	1	199.00	199.00	https://www.sparkpcb.com/cnc-3d-printer/accessori	Supplies
12mm Normally Open Push Button Switch	4	29.00	116.00	https://www.sparkpcb.com/electronics/12mm-no-re	Supplies
Resistor Pack (150 pcs) assorted	2	79.00	158.00	https://www.sparkpcb.com/electronics/150pcs-carb	Supplies
3 Pin Screw Terminal Green	5	9.00	45.00	https://www.sparkpcb.com/electronics/3-pin-screw-	Supplies
2 Pin Screw Terminal Green	5	6.00	30.00	https://www.sparkpcb.com/electronics/2-pin-screw-	Supplies
PCB Mount USB A Socket	2	15.00	30.00	https://www.sparkpcb.com/electronics/wire-and-cat	Supplies
5mm Transparent Red LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Transparent Yellow LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Transparent Green LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Transparent Blue LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Diffused Red LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Diffused Yellow LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
5mm Diffused Green LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-li	Supplies
Milton 2.5 Inch 3 Watt speaker	2	49.00	98.00	https://www.sparkpcb.com/electronics/passive-com	Supplies
20 MM SPDT 3 pin Switch	4	17.00	68.00	https://www.sparkpcb.com/electronics/20-mm-spd-	Supplies
10mm Piezo Buzzer	3	25.00	75.00	https://www.sparkpcb.com/electronics/passive-com	Supplies
10k Variable Resistor	5	8.00	40.00	https://www.sparkpcb.com/electronics/10k-variable	Supplies
6x6mm Tactile Button 4-pin	10	3.00	30.00	https://www.sparkpcb.com/electronics/6x6-mm-4-pi	Supplies
Push Button On/Off Switch	10	11.00	110.00	https://www.sparkpcb.com/electronics/push-button-	Supplies
LM324 Op Amp	2	19.00	38.00	https://www.sparkpcb.com/electronics/lm324-opera	Supplies
30mm Crocodile Clip	10	20.00	200.00	https://www.sparkpcb.com/development/30-mm-crc	Supplies
40 pin Right Angle Male Headers	4	15.00	60.00	https://www.sparkpcb.com/electronics/40-pin-right-	Supplies
40 pin Female Headers	5	9.00	45.00	https://www.sparkpcb.com/electronics/40-pin-state-	Supplies
40 pin Male Headers	5	7.00	35.00	https://www.sparkpcb.com/electronics/40-pin-state-	Supplies
4x4 Membrane Keypad	2	79.00	158.00	https://www.sparkpcb.com/development/4x4-matrix	Supplies
1 Channel 5V Relay	4	69.00	276.00	https://www.sparkpcb.com/development/1-channel-	Supplies
Dual Axis Joystick	1	99.00	99.00	https://www.sparkpcb.com/development/dual-axis-	Supplies
6x4 Inch Perfboard Circuit Board	5	59.00	295.00	https://www.sparkpcb.com/electronics/prototyping/c	Supplies
3x2 Inch Perfboard Circuit Board	5	15.00	75.00	https://www.sparkpcb.com/electronics/prototyping/c	Supplies
Rotary Encoder Switch	3	109.00	327.00	https://www.sparkpcb.com/electronics/rotary-encod	Supplies
Cable Labels Stickers	1	290.00	290.00	https://www.amazon.in/BIGGEAR-Numbers-Lockin	Supplies
Locking Cable Marker (Cable Protector)	1	299.00	299.00	https://www.amazon.in/BIGGEAR-Numbers-Lockin	Supplies
Assorted 4, 6, 8, 10, 12 Inch Nylon Cable Ties Zip	1	180.00	180.00	https://www.amazon.in/PR-Electronics-Assorted-O	Supplies
4 Pole Wire Connector Terminal	10	25.00	250.00	https://robu.in/product/pct-214-0-08-2-5mm-5-pole-	Supplies
3 Pole Wire Connector Terminal	10	19.00	190.00	https://robu.in/product/pct-213-0-08-2-5mm-3-pole-	Supplies
Subtotal			9,350.00		

Total

Notes: This is an approximate estimation, pending to more additions / deletions.

9,350.00

DAQ Bill of Materials (#3)

Description	Qty	Unit price	Total price	Links	Utility
Onboard Computer					
HDMI to USB Video Capture	1	890.00	890.00	https://www.amazon.in/Tobo-Levoty-Game-Capture-Device/dp/B078333333	Peripheral for Onboard Computer
PL2303 USB to TTL module	2	109.00	218.00	https://www.sparkpcb.com/development/communication-pl2303-usb-to-ttl-module	Peripheral for Onboard Computer
USB To TTL Serial Cable Debugger	2	149.00	298.00	https://robu.in/product/pi2303-ta-download-cable	Peripheral for Onboard Computer
RTC Real Time Clock DS1307	2	99.00	198.00	https://robu.in/product/rtc-ds1307-i2c-real-time-clock	Peripheral for Onboard Computer
GPIO Shield Expansion board for Raspberry Pi	1	249.00	249.00	https://www.sparkpcb.com/development/gpio-shield-expansion-board-for-raspberry-pi	Peripheral for Onboard Computer
4 Ports USB Hub	1	444.00	444.00	https://www.amazon.in/Zebtronics-100HB-High-Speed-4-Port-USB-Hub/dp/B078333333	Peripheral for Onboard Computer
Subtotal			2,297.00		
Onboard Microcontroller					
Arduino Nano	2	419.00	838.00	https://robu.in/product/arduino-nano-v3-0-ch340-c	Basic portable Microcontroller for analog signals
Arduino Uno	2	499.00	998.00	https://robu.in/product/arduino-uno-r3-ch340g-atm	Basic Microcontroller for analog signals
Arduino Uno Cable (USB A to B)	2	34.00	68.00	https://robu.in/product/cable-for-arduino-unomega	Peripheral for Onboard microcontroller
Arduino Lilypad	4	319.00	1,276.00	https://www.sparkpcb.com/development/arduino-lilypad	Basic portable Microcontroller for analog signals
ESP8266 NodeMCU	1	339.00	339.00	https://robu.in/product/nodemcu-esp8266-v3-lua-c	Wireless Onboard microcontroller
ESP8266 NodeMCU Cable (USB A to micro B)	1	69.00	69.00	https://robu.in/product/micro-usb-a-to-micro-b-cab	Peripheral for Wireless Onboard microcontroller
Micro SD Card Reader	2	99.00	198.00	https://www.sparkpcb.com/development/micro-sd-card-reader	Data logging for microcontrollers
Subtotal			3,786.00		
Sensors & Displays					
MPXV7002DP Air Speed Sensor And Pitot Tube	1	3,890.00	3,890.00	https://robu.in/product/air-speed-sensor-and-pitot-tube	Pitot Tube
Subtotal			3,890.00		

Total

9,973.00

Notes: This is an approximate estimation, pending to more additions / deletions.

DAQ Bill of Materials (#4)

Description	Qty	Unit price	Total price	Links	Utility
Onboard Computer					
Raspberry Pi 4: 8GB kit	1	8,600.00	8,600.00	https://www.amazon.in/India-Raspberry-Charger-H	Onboard computer + peripherals
SanDisk 32GB Class 10 Micro SDHC Memory Card	1	590.00	590.00	https://www.amazon.in/SanDisk-Class-Memory-Ad	Peripheral for Onboard Computer
			Subtotal	9,190.00	

Total

9,190.00

Notes: This is an approximate estimation, pending to more additions / deletions.

DAQ Bill of Materials (#5)

Description	Qty	Unit price	Total price	Links	Utility
Onboard Computer					
Raspberry Pi 4: 4GB	1	4,990.00	4,990.00	https://robu.in/product/raspberry-pi-4-model-b-wifi	Backup onboard computer for CV/ROS applications
Raspberry Pi 4: Case and Fan	2	449.00	898.00	https://www.amazon.in/India-Raspberry-Option-Mo	Peripheral for Onboard Computer
			Subtotal	5,888.00	

Total

Notes: This is an approximate estimation, pending to more additions / deletions.

5,888.00

Bill of Materials (prev)

Description	Qty	Unit price	Total price	Links	Utility
Onboard Computer					
Raspberry Pi 4: 8GB kit	1	8,600.00	8,600.00	https://www.amazon.in/India-Raspberry-Charger-H	Onboard computer + peripherals
HDMI to USB Video Capture	1	890.00	890.00	https://www.amazon.in/Tobo-Levoty-Game-Capture	Peripheral for Onboard Computer
PL2303 USB to TTL module	2	109.00	218.00	https://www.sparkpcb.com/development/communi	Peripheral for Onboard Computer
USB To TTL Serial Cable Debugger	2	149.00	298.00	https://robu.in/product/pl2303-ta-download-cable	Peripheral for Onboard Computer
RTC Real Time Clock DS1307	2	99.00	198.00	https://robu.in/product/rtc-ds1307-i2c-real-time-cloc	Peripheral for Onboard Computer
GPIO Shield Expansion board for Raspberry Pi	1	249.00	249.00	https://www.sparkpcb.com/development/gpio-shield	Peripheral for Onboard Computer
Subtotal			10,453.00		
Onboard Microcontroller					
Arduino Nano	2	419.00	838.00	https://robu.in/product/arduino-nano-v3-0-ch340-cl	Basic portable Microcontroller for analog signals
Arduino Uno	2	499.00	998.00	https://robu.in/product/arduino-uno-v3-ch340g-atm	Basic Microcontroller for analog signals
Arduino Uno Cable (USB A to B)	2	34.00	68.00	https://robu.in/product/cable-for-arduino-unomega	Peripheral for Onboard microcontroller
Arduino Lilypad	2	319.00	638.00	https://www.sparkpcb.com/development/arduino-lily	Basic portable Microcontroller for analog signals
ESP8266 NodeMCU	1	339.00	339.00	https://robu.in/product/nodemcu-esp8266-v3-lua-c	Wireless Onboard microcontroller
ESP8266 NodeMCU Cable (USB A to micro B)	1	69.00	69.00	https://robu.in/product/micro-usb-a-to-micro-b-cab	Peripheral for Wireless Onboard microcontroller
Subtotal			2,950.00		
Sensors & Displays					
Dashboard TFT LCD (5") with dashboard camera	1	1,499.00	1,499.00	https://www.amazon.in/Carzex-Dashboard-Screen	Dashboard Display + Camera
3.5 mm Stereo Male to 3 RCA Male Audio Video AV Cable	1	234.00	234.00	https://www.amazon.in/Ekaaz-Stereo-Audio-Camec	Peripheral for Dashboard Display
Video and Audio Capturing Device Directly from TV	1	499.00	499.00	https://www.amazon.in/Easycap-Video-Capturing-D	Peripheral for Dashboard Camera
Nokia 5110 84x48 Graphic LCD	1	266.00	266.00	https://www.sparkpcb.com/electronics/nokia-5110-f	Panel Display
16x2 Blue Alphanumeric LCD	1	179.00	179.00	https://www.sparkpcb.com/electronics/16x2-line-bl	Panel Display
Numeric 7 - Segment Display	1	130.00	130.00	https://www.amazon.in/Segment-Display-Common	Gear Indicator Display
7-Segment Driver IC	1	55.00	55.00	https://www.amazon.in/CD4511-Segment-Latch-De	Gear Indicator Display IC
74HC595 8 Bit Serial-in Serial or Parallel-out Shift Register	2	29.00	58.00	https://www.sparkpcb.com/electronics/74hc595-8-b	Shift Register for LED Array (rev meter)
NEO-6M GPS Module with Antenna	1	459.00	459.00	https://www.sparkpcb.com/development/neo-6m-gr	GPS Module
Voltage Detector Sensor 0-25V	2	109.00	218.00	https://www.sparkpcb.com/sensors/voltage-detectic	Gear Position Indicator
HMC5883L Magnetometer Compass Module	1	239.00	239.00	https://www.sparkpcb.com/sensors/hmc5883l-triple	Compass Module
433MHZ LORA SX1278 Long Range Rf Wireless Module	2	449.00	898.00	https://robu.in/product/ai-thinker-lora-ra-01-rf-trans	Onboard Telemetry
MCP2515 CAN Module	2	385.00	770.00	https://robu.in/product/mcp2515-can-module-tja11	ECU reader through CAN bus
MPU-6050 3-Axis Accelerometer and Gyroscope Sensor	4	139.00	556.00	https://www.sparkpcb.com/sensors/mpu6050-gyros	Accelerometer and Gyroscope Sensor
Reed Switches	2	150.00	300.00	https://www.amazon.in/Electronicspices-Pack-Min	Wheel speed sensor
Magnetic Reed Switch Glass Ampule	5	39.00	195.00	https://www.sparkpcb.com/sensors/magnetic-read	Wheel speed sensor
Potentiometer	2	260.00	520.00	https://www.amazon.in/EPICTAC-Potentiometer-Li	Miscellaneous
Temperature Sensor	2	95.00	190.00	https://robu.in/product/ds18b20-water-proof-temper	Radiator temperature sensor
Subtotal			7,265.00		
Supplies & misc					
Black Connecting Wire 24 AWG	1	249.00	249.00	https://robu.in/product/high-quality-24awg-silicone-w	Supplies
Red Connecting Wire 24 AWG	1	249.00	249.00	https://robu.in/product/24awg-silicone-wire/	Supplies
Male to Female Jumper Cables	2	55.00	110.00	https://robu.in/product/male-to-female-jumper-wires	Supplies
Male to Male Jumper Cables	2	65.00	130.00	https://robu.in/product/male-to-male-jumper-wires-4	Supplies
Female to Female Jumper Cables	2	55.00	110.00	https://robu.in/product/20cm-dupont-wire-color-jum	Supplies
Breadboard	2	78.00	156.00	https://robu.in/product/breadboard-840-tie-points-sr	Supplies
mini Breadboard	4	50.00	200.00	https://robu.in/product/170-pts-mini-breadboard-syt	Supplies
Wire Cutter	1	57.00	57.00	https://robu.in/product/multitec-150b-wire-stripper-5	Supplies
Mastech Multimeter	1	819.00	819.00	https://www.sparkpcb.com/test-equipments/multime	Instrument
Hot Glue Gun	1	249.00	249.00	https://robu.in/product/standard-temperature-corde	Appliance
Hot Melt Glue Sticks (11 mm)	3	118.00	354.00	https://www.amazon.in/Glun-11MM-Transparent-Sti	Supplies
Heat Shrink Tubing	1	429.00	429.00	https://robu.in/product/colorful-heat-shrink-tubing-h	Supplies
Buck Converter 12v to 5v (300W)	1	450.00	450.00	https://www.amazon.in/xcluma-Converter-1-2-35V-4	Supplies
DC to DC Buck Regulator (75W)	2	169.00	338.00	https://www.sparkpcb.com/development/xl4015-5a	Supplies
Soldering Iron Solderon 25Watt	1	399.00	399.00	https://www.sparkpcb.com/tools/soldering-iron-stati	Appliance
Desoldering Copper Wick	1	29.00	29.00	https://www.sparkpcb.com/tools/soldering-accessori	Supplies
Soldering Flux Paste	1	15.00	15.00	https://www.sparkpcb.com/tools/soldering-accessori	Supplies
Soldering Iron Bit 25Watt Siron	1	79.00	79.00	https://www.sparkpcb.com/tools/soldering-accessori	Supplies
Soldering Wire Tin-Lead Rosin Core	1	99.00	99.00	https://www.sparkpcb.com/tools/speedcon-0.7-mm	Supplies
Soldering Iron Tip Cleaning Sponge	1	49.00	49.00	https://www.sparkpcb.com/tools/soldering-iron-tip-h	Supplies
Wire Nipper / Cutter (Angle)	1	179.00	179.00	https://www.sparkpcb.com/tools/stripper-cutter-plie	Appliance
PYE Screw Driver / Tester combo (8 different bits)	1	259.00	259.00	https://www.sparkpcb.com/tools/screw-driver-sets/r	Appliance
PYE Wire Stripper	1	69.00	69.00	https://www.sparkpcb.com/tools/stripper-cutter-plie	Appliance
160mm Steel Tweezer	1	39.00	39.00	https://www.sparkpcb.com/tools/160mm-long-fine-ti	Supplies
12 mm Kapton Tape for heat resistance	1	199.00	199.00	https://www.sparkpcb.com/cnc-3d-printer/accessori	Supplies

Bill of Materials (prev)

Description	Qty	Unit price	Total price	Links	Utility
12mm Normally Open Push Button Switch	2	29.00	58.00	https://www.sparkpcb.com/electronics/12mm-no-re	Supplies
Resister Pack (150 pcs) assorted	1	79.00	79.00	https://www.sparkpcb.com/electronics/150pcs-carb	Supplies
3 Pin Screw Terminal Green	5	9.00	45.00	https://www.sparkpcb.com/electronics/3-pin-screw-	Supplies
2 Pin Screw Terminal Green	5	6.00	30.00	https://www.sparkpcb.com/electronics/2-pin-screw-	Supplies
PCB Mount USB A Socket	2	15.00	30.00	https://www.sparkpcb.com/electronics/wire-and-cat	Supplies
5mm Transparent Red LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-lj	Supplies
5mm Transparent Yellow LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-lj	Supplies
5mm Transparent Green LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-lj	Supplies
5mm Transparent Blue LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-lj	Supplies
5mm Diffused Red LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-lj	Supplies
5mm Diffused Yellow LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-lj	Supplies
5mm Diffused Green LED	10	2.00	20.00	https://www.sparkpcb.com/electronics/display/led-lj	Supplies
Milton 2.5 Inch 3 Watt speaker	1	49.00	49.00	https://www.sparkpcb.com/electronics/passive-com	Supplies
20 MM SPDT 3 pin Switch	1	17.00	17.00	https://www.sparkpcb.com/electronics/20-mm-spd-t	Supplies
10mm Piezo Buzzer	3	25.00	75.00	https://www.sparkpcb.com/electronics/passive-com	Supplies
10k Variable Resistor	5	8.00	40.00	https://www.sparkpcb.com/electronics/10k-variable	Supplies
6x6mm Tactile Button 4-pin	10	3.00	30.00	https://www.sparkpcb.com/electronics/6x6-mm-4-pi	Supplies
Push Button On/Off Switch	5	11.00	55.00	https://www.sparkpcb.com/electronics/push-button-	Supplies
LM324 Op Amp	1	19.00	19.00	https://www.sparkpcb.com/electronics/lm324-opera	Supplies
30mm Crocodile Clip	1	20.00	20.00	https://www.sparkpcb.com/development/30-mm-crc	Supplies
40 pin Right Angle Male Headers	4	15.00	60.00	https://www.sparkpcb.com/electronics/40-pin-right-	Supplies
40 pin Female Headers	5	9.00	45.00	https://www.sparkpcb.com/electronics/40-pin-state-	Supplies
40 pin Male Headers	5	7.00	35.00	https://www.sparkpcb.com/electronics/40-pin-state-	Supplies
4x4 Membrane Keypad	1	79.00	79.00	https://www.sparkpcb.com/development/4x4-matrix	Supplies
1 Channel 5V Relay	4	69.00	276.00	https://www.sparkpcb.com/development/1-channel-	Supplies
Dual Axis Joystick	1	99.00	99.00	https://www.sparkpcb.com/development/dual-axis-	Supplies
6x4 Inch Perfboard Circuit Board	5	59.00	295.00	https://www.sparkpcb.com/electronics/prototyping/c	Supplies
3x2 Inch Perfboard Circuit Board	5	15.00	75.00	https://www.sparkpcb.com/electronics/prototyping/c	Supplies
Magnetic Reed Switch Glass Ampule	5	39.00	195.00	https://www.sparkpcb.com/sensors/magnetic-read-	Supplies
Rotary Encoder Switch	2	109.00	218.00	https://www.sparkpcb.com/electronics/rotary-encod	Supplies
			Subtotal	7,379.00	

Total

28,047.00

Notes: This is an approximate estimation, pending to more additions / deletions.