Selfie Module Bill of Material

2 pages

Part	Description	
Arduino Pro Mini 3.3 volts	Arduino Pro mini	
Motor	M1, SPG30-150K	
Motor Controller	B1, ArduMoto v1.4 (see Notes)	
Voltage Regulator	U1, LT1528	
Voltage Regulator	U2, LM1117V33	
Yi Action Camera	See notes.	
WiFi Board	B2, ESP8266	Available from Sparkfun
Hall Effect Sensor	U3, TLE4913	Infineon, available from Mouser
Resistor	R1, 200 ohms	
Resistor	R2, 110 ohms (see Notes)	
Resistor	R3 and R4, 1k	
Resistor	R5, 5.6k	
Resistor	R6, 100k (see Notes)	
Capacitor	C1 and C2, 47uF tantalum	
Capacitor	C3, 100nF	
Capacitor	C4, 10uF	
Switch	S1 and S2, SPST	
Switch	S3, push button, momentary	
Battery	G1-G4, 3.7 volts, 850 mAh, Lithium (see Notes)	
Battery	G5, 11.1 volts, 1500 mAh, Lithium (see Notes)	

Selfie Module Notes

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Motor

The motor M1 is model SPG30-150K from Cytron Technologies (may be available from autobotic.com.my). It was selected for its high torque (588 mN-m). It is a 12 volt motor and was driven by battery G5 through the motor controller. The motor is used to drive the winch.

Motor Controller

The Motor Controller board was purchased from Sparkfun. The board has been updated since it was purchased for this project.

Camera

The Yi Action Camera was selected for its controllability over wifi. It was purchased through eBay.

WiFi Board

The ESP8266 board is versatile. Exercise some caution when learning to use it. During project development, an attempt to change the baud rate caused a board failure.

Resistors

The resistor R2 was two resistors in series: 100 ohm, and 10 ohm.

The resistor R6 and switch S3 are optional; they are not a part of the payload. They are used for testing the Selfie sequence.

Batteries

The batteries G1 to G4 are available at Sparkfun: https://www.sparkfun.com/products/13854. There are connectors not shown on the schematic and not listed in the BOM which were used to connect the batteries in series. These connectors are available at Sparkfun.

Battery G5 is a Turnigy 11.1 volt, 1500 mAh high discharge LiPo battery.