SuperDroid Robots

Batteries in serie

Voltage Regulators
TE-111-ADJ

12V   5V

Regulator v2.1a
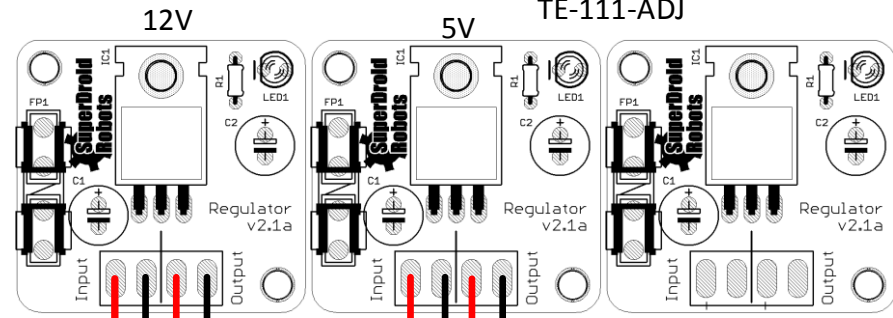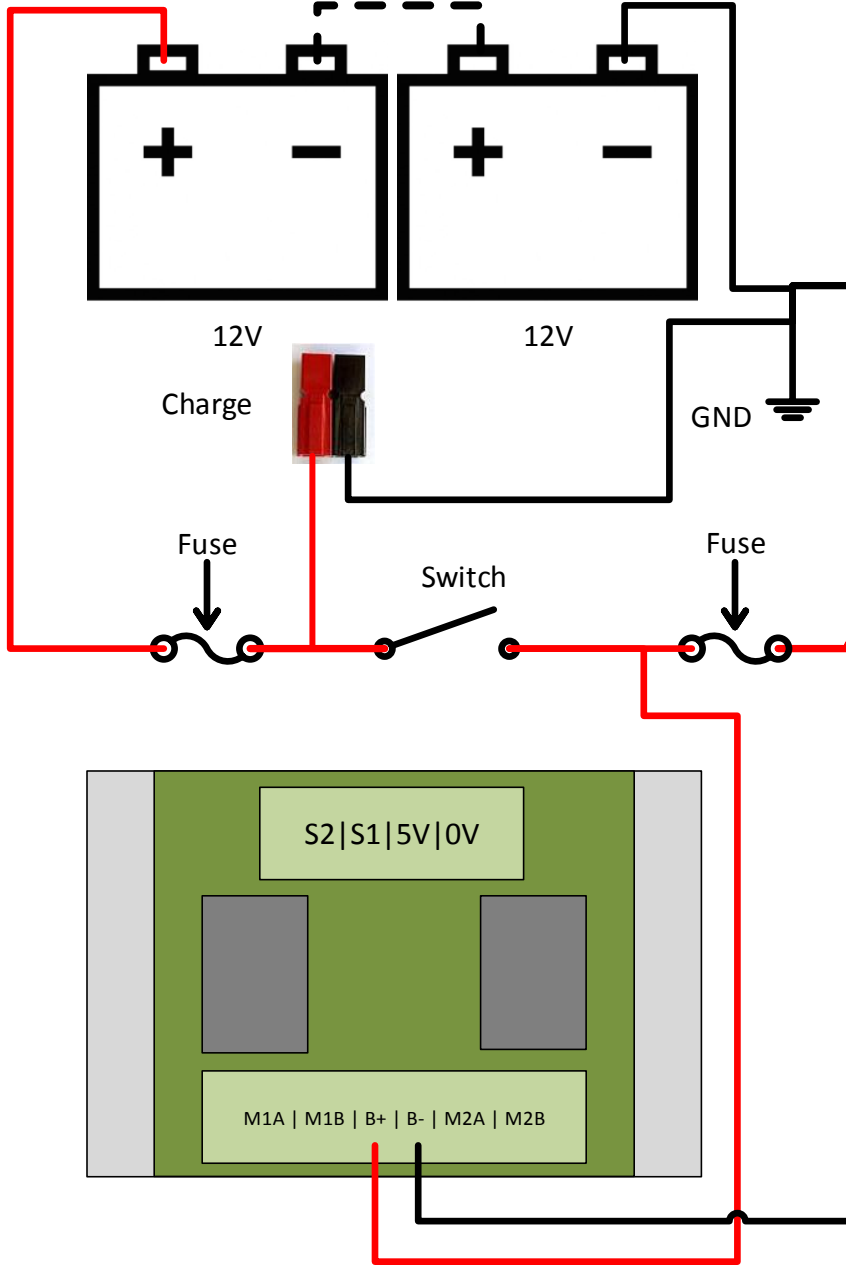
12V   12V

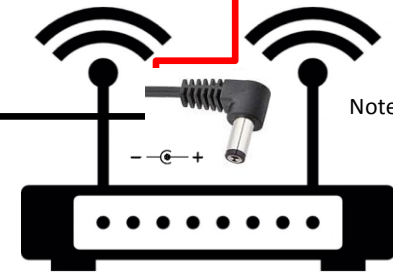Charge

GND

Fuse   Fuse

Switch

Terminal Block

12V Bus   5V Bus

Note Blue square 12V bus
Orange Square 5V bus

S2|S1|5V|0V

Note: Router Center Positive

M1A | M1B | B+ | B- | M2A | M2B

Router

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Wifi ATR

8/3/2016

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4 Relay Board(TE-249-040).
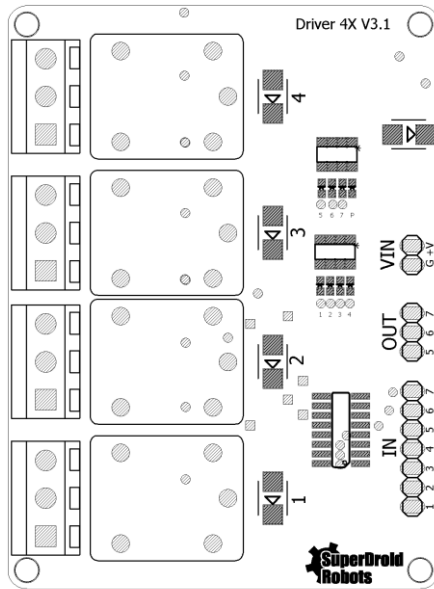
Robotics Development Shield

Sabertooth

S2|S1|5V|0V

M1A | M1B | B+ | B- | M2A | M2B
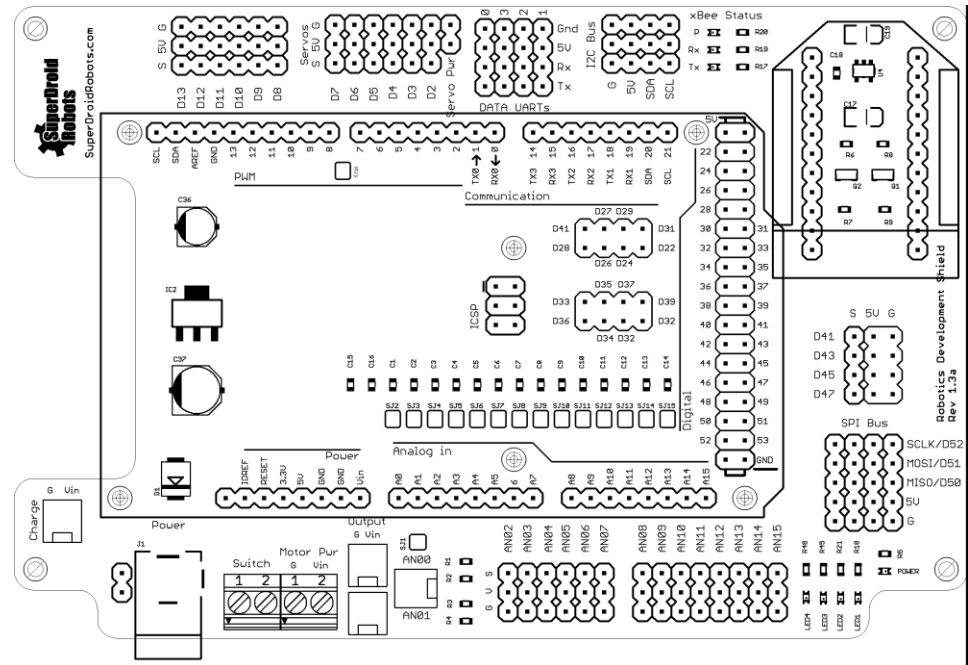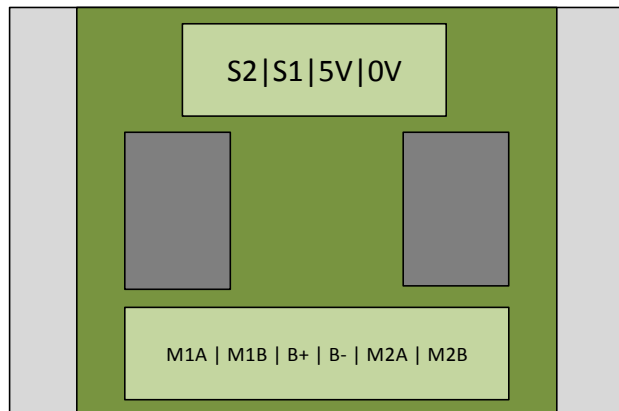
Connections

	5V Arduino Power Rail		
3	Mode Pin RC Receiver	Board 5V	Board Ground
4	Drive Pin RC Receiver	N/C	N/C
5	Turn Pin RC Receiver	N/C	N/C
6	Sabertooth S1	N/C	N/C
7	Sabertooth S2	N/C	N/C

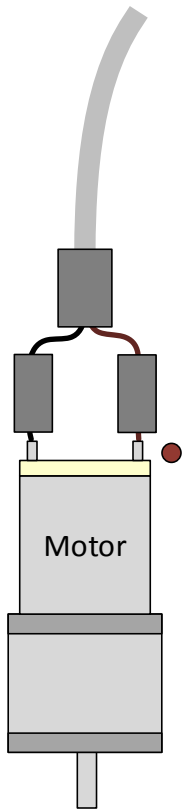|	5V Arduino Power Rail		
41	4 Relay pin 1	N/C	N/C
43	4 Relay pin 2	N/C	N/C
45	4 Relay pin 3	N/C	N/C
47	4 Relay pin 4	N/C	N/C

Input to Arduino	
Barrel Jack From Bus	12V
Input to 4 Relay Board	
VIN	12V

Notes:

Arduino connections using our Robotics Development Shield(MCU-055-000). Follow Connections Table.

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Arduino Mega

Wiring of Individual Motors

Shielded Wire to Motor Controllers
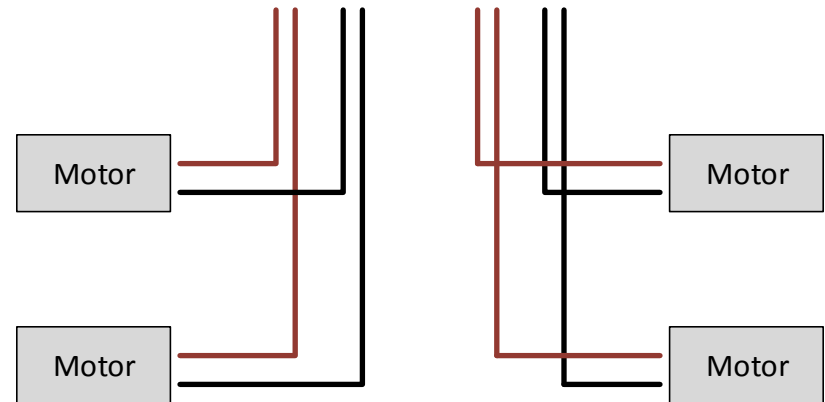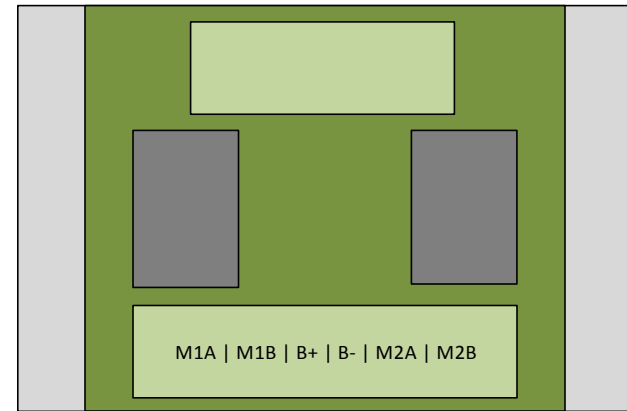
Large Ferrite Bead

Small Ferrite Bead

Motor

Note1: Positive Terminal is marked with a red dot.

Note2: Ferrite Beads should be covered in heat shrink to prevent movement.

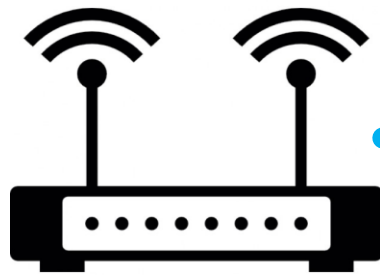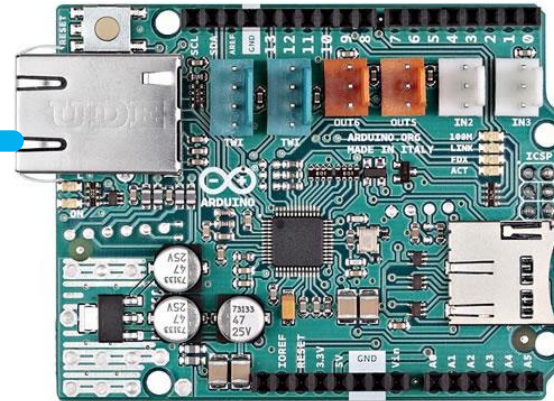Note3: A capacitor across the motor terminals can reduce motor noise.

Motor Circuit

M1A | M1B | B+ | B- | M2A | M2B

Motor

Motor

Motor

Motor

Note: If running multiple motors, parallel motor wires at the motor controller as shown.

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Wiring Motors

Notes:

1. Assembly should be performed by knowledgeable and skilled individual. SuperDroid Robots offers assembly services if you are not comfortable reading schematics and performing work.
2. Wire gauges depend on load and size of motors.
3. Fuse size depends on load and size of motors.
4. Switch should be rated for at least the same amount of current as the fuse.
5. To charge batteries unplug them and use charger or run parallel wire with plug for charger.
6. Servo pigtail (TE-040-001) typically used.

Router
TE-238-000

Ethernet Shield
MCU-083-000

References:

http://www.superdroidrobots.com/shop/category.aspx/32mm-gear-motors/76/
http://www.sdrobots.com/tech-thursday-033-power-big-electric-motor/

Recommendations for WIFI-ATR:

1. Maximum IG32 motor stall current is 6 Amps per motor, therefore 18 AWG for power wire is sufficient.
2. Recommended fuse size is 10 Amps.
3. Shielded wire recommended.
4. Use ferrite beads close to the motor to attenuate electric noise.
5. Install capacitors across motor solder tabs as needed for electric noise suppression.