Electronic Brick Technical Notes

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1 Power Distribution

1.1 LEGO Conducting Strip Technology

Figure 1: The LEGO Conducting Strip

![Figure 1: The LEGO Conducting Strip](image1)

Figure 2: Two LEGO Conducting Strips Mated in Parallel

![Figure 2: Two LEGO Conducting Strips Mated in Parallel](image2)

1.2 Power Polarizing Circuit

1.3 Battery Brick

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Figure 3: Two LEGO Conducting Strips Mated at Right Angles

Figure 4: Standard Power Circuit
Figure 5: Battery Brick
2 Logic Bricks

2.1 Inverter Brick

![Inverter Circuit](image)

Figure 6: Inverter Circuit

2.2 And Brick

![And Circuit](image)

Figure 7: And Circuit

2.3 Or Brick

2.4 Flip Flop Brick
Figure 8: Or Circuit

Figure 9: Flip Flop Circuit
Figure 10: Timer Circuit

2.5 Timer Brick

2.6 Oscillator Brick

3 Actuator Bricks

3.1 Motor Brick

3.2 Power Brick

4 Sensor Bricks

4.1 Touch Sensor Brick

4.2 Threshold Light Sensor Brick

4.3 Differential Light Sensor Brick
4.4 Sound Sensor Sensor Brick

A Printed Circuit Board Layouts
Figure 12: Motor Circuit
NOTES

1. Use 4-dode power supply with IN4007 diodes and 33uF capacitor.
2. Use ½ of "power-jumper cables" for black 2x2 conducting brick.
   Carefully remove T-shaped plastic holster, and feed clipped wire
   brick through edge slot:

Figure 13: Power Brick Circuit

Figure 14: Touch Sensor Circuit
Figure 15: Threshold Light Sensor Circuit

Figure 16: Differential Light Sensor Circuit
Figure 17: Sound Sensor Sensor Circuit
Figure 18: Electronic Brick Printed Circuit Layouts, Component Side
Figure 19: Electronic Brick Printed Circuit Layouts, Solder Side