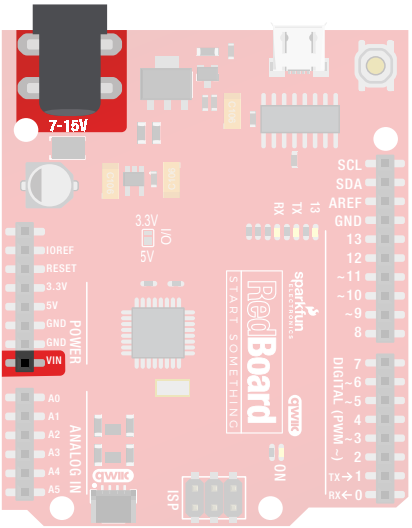
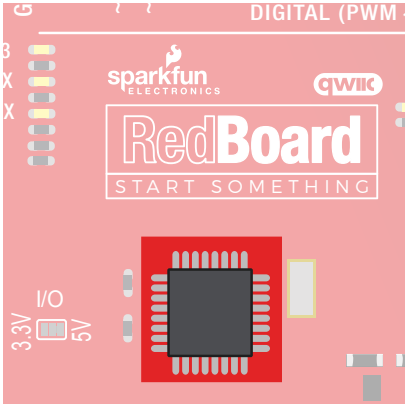
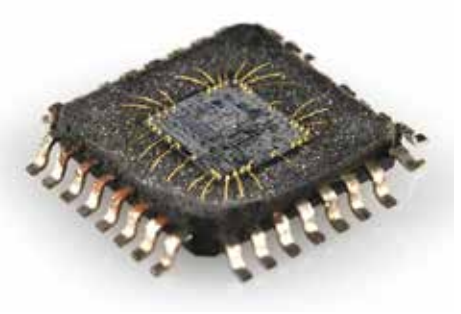
voltage on VIN will be about 4.6–5V. However, if you power the RedBoard through the barrel jack (highlighted in the picture), the VIN pin will reflect that voltage. For example, if you were to power the barrel jack with 9V, the voltage out on VIN would also be 9V. Notice that the voltage range listed on the RedBoard near the barrel jack is 7–15V. This means that the recommended input voltage should always be at or above 7V or should be at or below 15V. Never exceed this range.





INTEGRATED CIRCUITS (ICS) AND BREAKOUT BOARDS: An Integrated Circuit (IC) is a collection of electronic components — resistors, transistors, capacitors, etc. — all stuffed into a tiny chip and connected together to achieve a common goal. They come in all sorts of flavors, shapes and sizes. The chip that powers the RedBoard, the ATmega328, is an IC. The chip on the motor driver, the TB6612FNG, is another IC.

Integrated circuits are often too small to work with by hand. To make working with ICs easier and to make them breadboard-compatible, they are often added to a breakout board, which is a printed circuit board that connects all the IC's tiny legs to larger ones that fit in a breadboard. The motor driver board in your kit is an example of a breakout board.



The guts of an integrated circuit, visible after removing the top.