The driver unit that can attach on the Ramps 1.4 main board, to drive steppers is called riprap-mainly used on 3D printer system or CNC
Machines. Suitable for Mendel, Huxley etc. riprap systems.

A4988 IC can drive 2A per phase of the stepper; the new version V2 of this module has 2oz copper thickness (70um instead of normal
35um), and the higher copper thickness provides better heat dissipation- about 2A with heat sink. The three axis X Y Z of the machine will
Need three pieces of this unit, and the extra 3D printer head will need this unit too, one head will need one unit.

The A4988 stepper motor driver carrier is a breakout board for Allegro's A4988 micro stepping bipolar stepper motor driver. The driver features adjustable current limiting, overcurrent and over temperature protection, and five different micro step resolutions (down to 1/16-step). It operates from 8 – 35 V and can deliver up to approximately 1 A per phase without a heat sink or forced air flow (it is rated for 2 A per coil with sufficient additional cooling).

This product is a carrier board or breakout board for Allegro's A4988 DMOS Microstamping Driver with Translator and Overcurrent Protection; we therefore recommend Careful reading of the A4988 datasheet (380k pdf) before using this product. This stepper motor driver lets you control one bipolar stepper motor at up to 2 A output current per coil (see the *Power Dissipation Considerations* section below for more information). Here are some of the driver's key features:

- Simple step and direction control interface
- Five different step resolutions: full-step, half-step, quarter-step, eighth step, and sixteenth step

- Adjustable current control lets you set the maximum current output with a potentiometer,
  which lets you use voltages above your stepper motor's rated voltage to achieve higher
  step rates
- Intelligent chopping control that automatically selects the correct current decay mode (fast
  Decay or slow decay)
- Over-temperature thermal shutdown, under-voltage lockout, and crossover-current
  Protection

- Short-to-ground and shorted-load protection