Ray Gun

User manual

What is it?

Ray Gun is a simple LED strip controller for the AE Modular synth format. It is designed to give instantaneous lighting effects that synchronise with your music. Ray Gun is most fun when paired with modules that produce triggers, matching triggers to percussion sounds with the trigger inputs on the module to create a light show that matches your beats. Of course this is only a suggestion and the great thing about modular is that rules are there to be broken!

Getting started

Ray Gun is super simple to set up. After connecting the AE Modular ribbon cable to the header pins on the back of the module and installing it in your AE Modular case, connect your LED strip to power by connecting the power supply to the power jack on the node of the LED strip. Next connect the module to the LED strip via the included mono 3.5mm cable (you can opt to replace this with a longer/shorter cable if you want, just make sure it's mono!). Power up your AE Modular case and make sure that the power switch on the top right of the Ray Gun module is on (switched to the "I" position) and the LEDs should begin to display a scrolling rainbow pattern. And that's all there is to it!

Warning! Do not connect any other devices to the 3.5mm output jack as doing so could damage the chip.

Power

If you have opted to use your own power supply, please ensure that it is **5v 2A CENTER POSITIVE.** We cannot take responsibility for any damaged modules/LEDs as a result of the incorrect power connections being used. (However, if you do mistakenly fry your LEDs then do contact us either via Tindie or the AE modular forum as you will be able to buy a replacement strip).

Controls

The module has 4 trigger inputs, each with its own dedicated button for triggering manually. The first 3 triggers operate the various light effects and the fourth cycles through the 8 available modes. The trigger inputs will respond to signals above around 3v. The power switch at the top right of the module controls power to the module *not* the LED strip and its main purpose is to disconnect the digital chip from the system as the chip produces a small amount of noise. An added bonus to the power switch is that it will effectively “freeze” the LED strip at whatever state it is in when you turn the switch off. If no triggers are sent to any of the 3 trigger inputs for a period of about 6 seconds, the module will enter idle mode and show a slowly scrolling rainbow pattern (except for Sidechain Mode as, in this mode, the default state is “on”).

Modes

The table below gives a brief description of each of the 8 modes. As a general rule of thumb, triggers 1 and 2 tend to produce a “bigger” light effect (better for pairing with kick/snare sounds) and trigger 3 generally produces a “shorter”/”smaller” effect (better

for pairing with hats and faster percussions sounds). But this is just a guide and obviously experimentation is encouraged!

Mode	**Effect**
RGB mode	Each trigger creates a Red/Green/Blue flash across all LEDs
Rave mode	Trig 1: purple flash Trig 2: blue flash Trig 3: alternating left/right white flashes
Gated mode	Trig 1: slow decay rainbow flash Trig 2: very short white flash which gates trig 1 Trig 3: slow decay randomly positioned LEDs
Fast waves mode	Trigs 1 and 2 produce fast orange and red waves. Trig 3 produces randomly positioned LED flashes
Random mode	Trig 1: flash of random colour and decay time Trig 2: waves of random colour, decay time and direction Trig 3: white flashes of random position, size and decay time
Sidechain mode	In this mode, the LEDs will be “on” by default. Trig 1 causes them to go “off” before fading back in again. Trig 2 changes the hue randomly. Trig 3 increases the fade in time cycling faster before resetting to the initial fade in time (*note that in this case trig 3 is expected to be used via the button to set the preferred fade in time*).
Slow waves mode	Trigs 1 and 2 create slow green and blue waves across the LED strip. Trig 3 causes randomly positioned white flashes
Keyboard mode	T*his mode differs from the rest in that the three inputs can receive a gate signal instead of a trigger. When the gate is “high” the respective input’s light effect will be “on”. Note that each effect can be on simultaneously for added variation!* Trig1: rainbow Trig 2: multicoloured glitter effect Trig 3: fast, white pendulum effect