PIXMOB SCHOOL

PixMob Video Training Series: Introduction to PixMob

Part 2
The PixMob Protocol

The PixMob protocol defines how a pulse of light is shown on the LED wristbands. The PixMob control protocol is **Command Based**, meaning that each DMX cue sent needs to contain all the information needed for the wristband to execute the command.

This is opposed to a **State Based Model,** where you only need to send a change to the current state of the fixture to see its effects.This is the model under which most of the lighting world operates. If you come from a lighting background, it can take a bit of time to start thinking in the PixMob way. For this reason it is very useful to understand the building blocks of the PixMob protocol.

PIXMOB   **Lighting World**

Command Based   **State Based**

Cue 1: Effect+Color+Speed   Cue 1: Pos+Effect+Color+Speed

Cue 2: Effect+Color+Speed   Cue 2: Color

Cue 3: Effect+Color+Speed   Cue 3: Pos

The Envelope

As mentioned, the protocol can only tell the wristband to show a pulse of light in a set color. A pulse can be defined by its:
- **Fade in**
- **Sustain (how long the wristband holds the top intensity level for that pulse)**
- **Fade out**

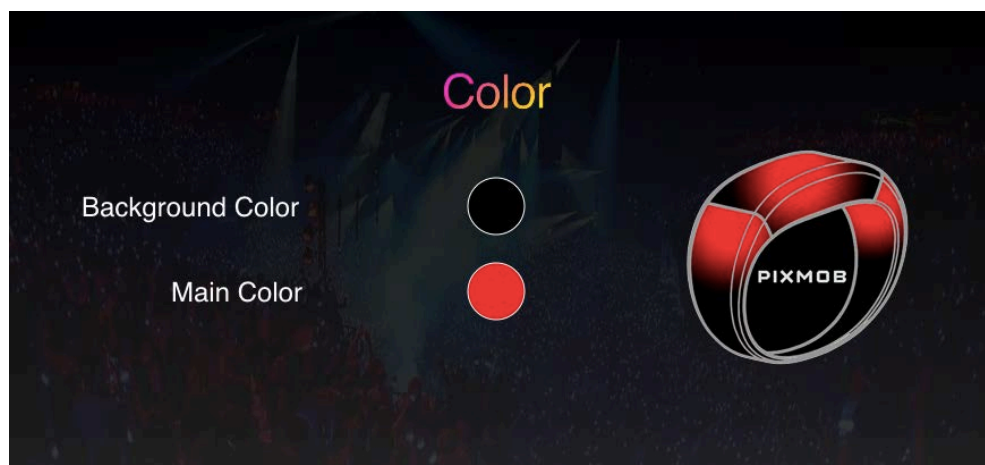We call these 3 phases an **Envelope**.
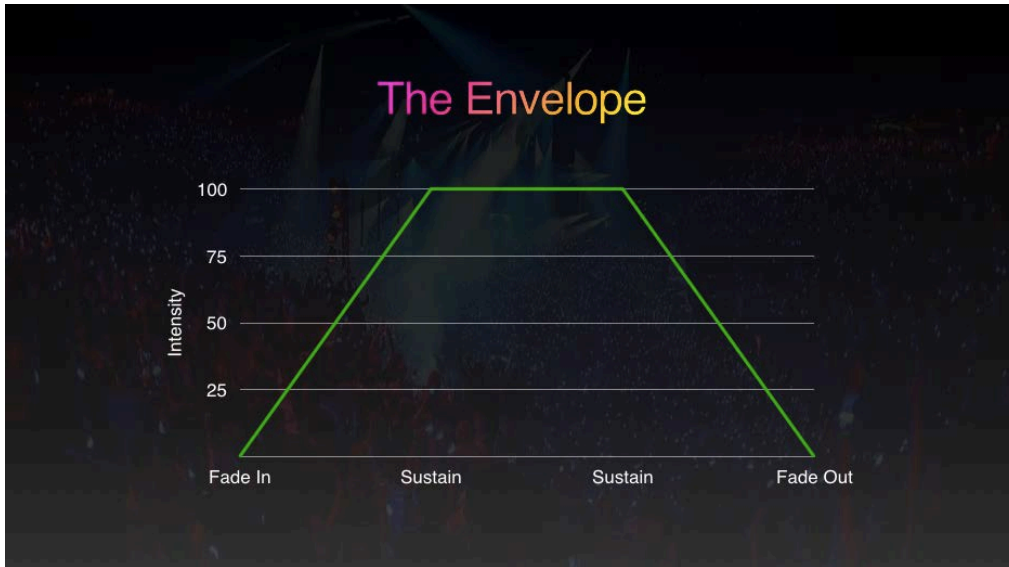
Color

The wristband operates between 2 colors at all times:
- **Background Color**
- **Main Color**

 Usually, the background color is black. When we send a command with a red envelope, what we will see is that the wristbands light up in red.

You do have the ability to set a background color other than black.
Example: Full Green

With a full green background, when the red envelope is sent, what we will see is that the wristband turns from green to red following the envelope characteristics and then comes back to green. The wristbands will stay in green until the next envelope command is received.
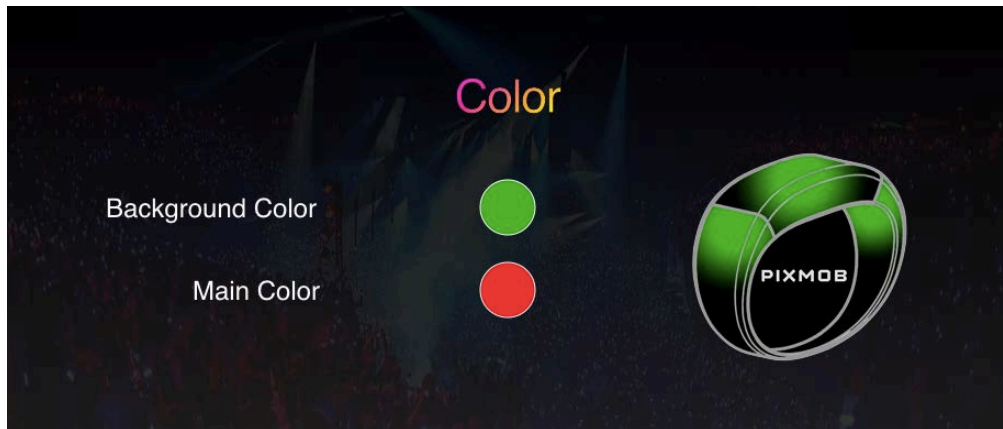
Command Steps

The PixMob protocol can only send 1 command at a time. These commands are limited in the amount of information they contain. To achieve certain looks, you will need to send several commands in a sequence.
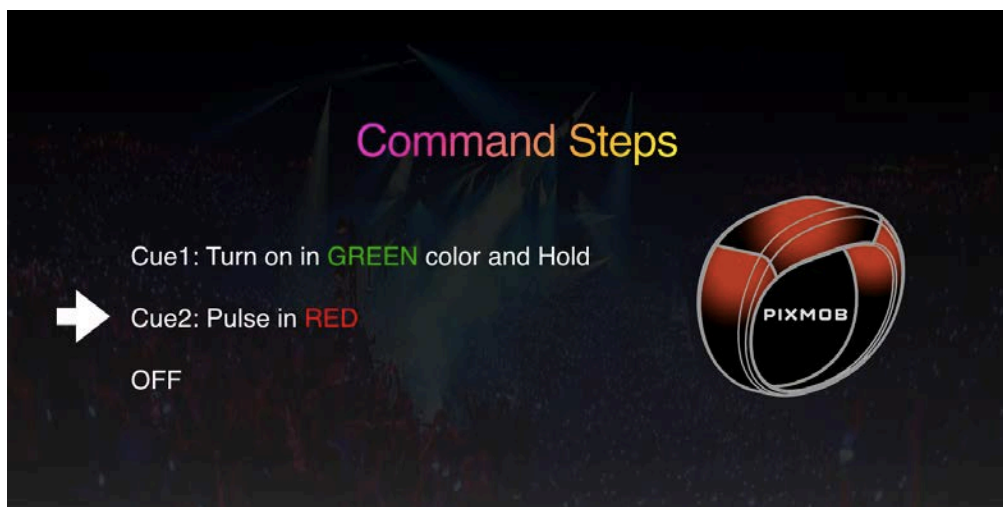
In the color example above (Background Color: Green, Red Envelope) This will take two separate commands, in our control desk this will mean 2 cues:

Cue 1:
Turn on in Green color and hold it.
Cue 2:
Pulse in Red.

- At Cue 2, the wristbands will be flashing from green to red and will continue to do so while Cue 2 is active.
- When Cue 2 is turned off, the wristbands will go back to Green and stay turned on in Green.

This is the standard behavior for the background color. To get rid of the background color, a new cue with the command "set the background color to black" is needed.
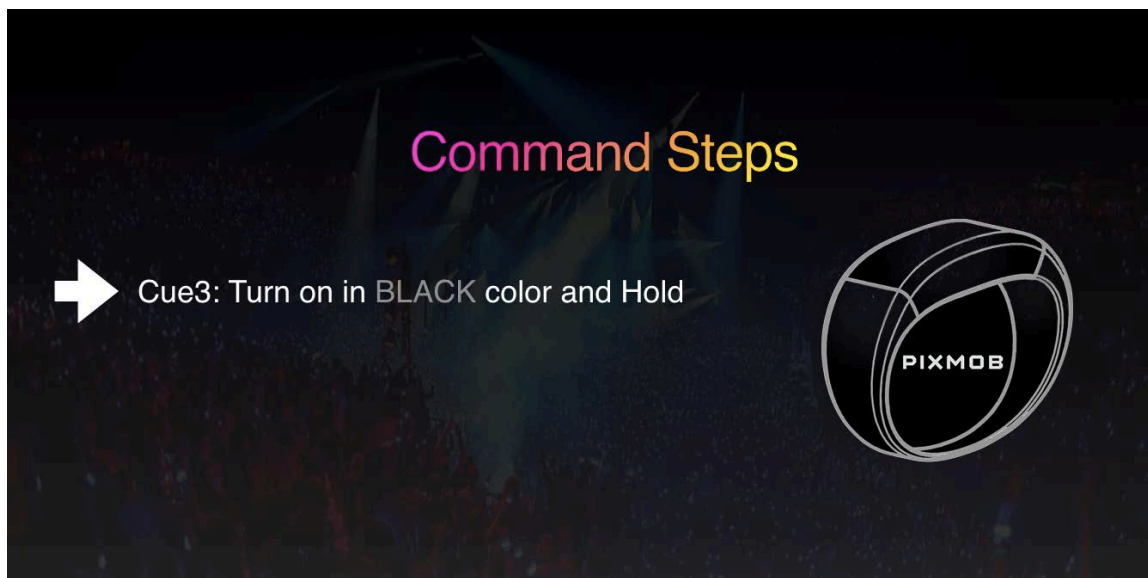
Cue 1:
Turn on in Green color and hold it.
Cue 2:
Pulse in Red.
Cue 3:
Turn on in Black and hold.

Closing

These are the basic steps to creating a look with PixMob. There are plenty of advanced commands that modify the behavior of the wristbands. Depending on their nature, they can be added to regular commands as modifiers or require a complete separate command sent or cue to be transmitted. One particular look could take any number of cues, played back in precise sequence to be rendered on the wristbands.