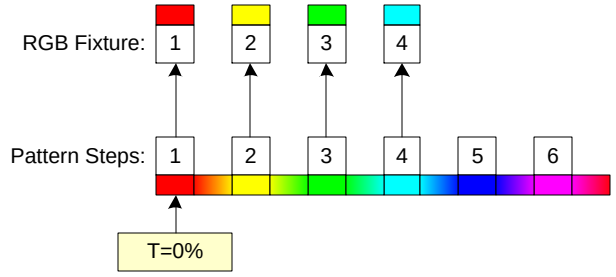
DMX Pattern Generator

Pattern Parameters Explained

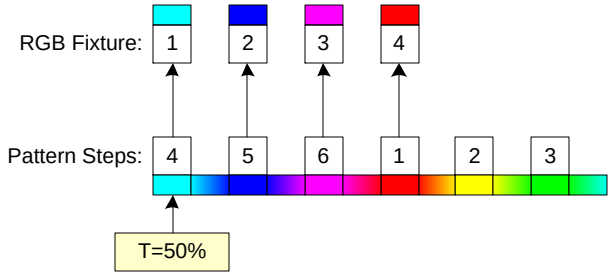
The following example demonstrates how the pattern parameters influence the behaviour of the pattern generator. The example has 4 “fixtures” (RGB lights) and pattern with 6 steps (out of a possible maximum of 16). The pattern steps are configured for a rainbow pattern.

The fixtures travel along the pattern at a given rate, where positive is left to right, and negative is right to left. For any fixture that travels over the “end” of the pattern, it loops back to the start again.

Example 1 – Pattern at 0% position

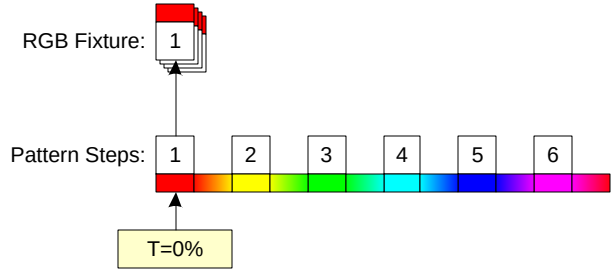


Example 2 – Pattern at 50% position

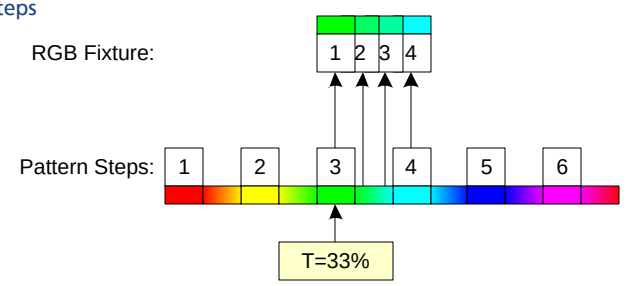


Fixtures can also be set to “span” the pattern to vary the visible range. The Span parameter defines how many steps the fixtures will cover.

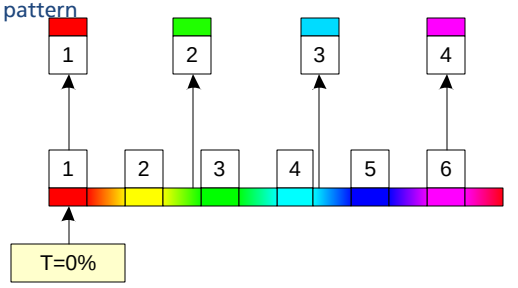
Example 3 – Span=1: All fixtures take on the same colour



Example 4 – Span=2: Fixture colours range between two pattern steps



Example 5 – Span=6: Fixture colours cover the whole pattern



The Span can be greater than the number of steps in the pattern, which will result in the pattern repeating across the fixtures.

Normally, the fixtures will blend between colour steps as the pattern rotates. Colour “Snap” can be enabled and the fixture will then jump to the colour of the nearest step.

Pattern Parameters Explained

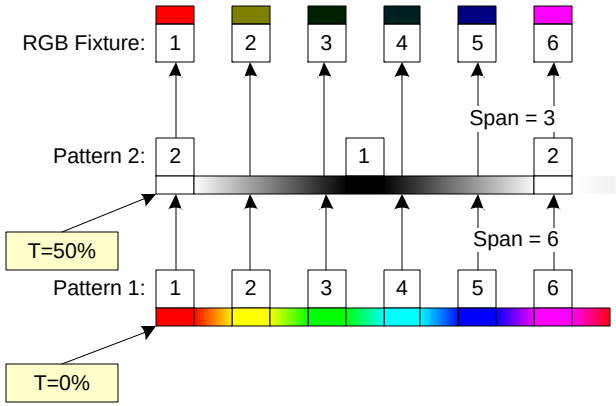
The DMX controller has 8 pattern generators which can be used to drive 4 groups of fixtures independently. To create more interesting effects, the pattern generators can be stacked such that one pattern modifies the one beneath.

To use the overlay feature, each pattern should reference the same fixtures (though there is no restriction here). Each pattern remains independent in terms of rate, snap, bounce, etc. The patterns combine the channel data using standard logical or mathematical operators as described below.

Pattern 1 is always applied first, followed by the other patterns. For example, a compound pattern might use patterns 1, 2 and 4.

The example below shows a compound pattern built up from patterns 1 and 2. Pattern 2 applies a “SCALE” operation to add a undulating fade to pattern 1.

Example 6 – Two pattern overlay



The pattern operations available are:

NONE	The pattern channel data (usually RGB values) is applied directly to the fixtures. This is the normal mode for the bottom pattern in a stack.
OR	The pattern channel data is binary ORed with the current fixture channel data.
AND	The pattern channel data is binary ANDed with the current fixture channel data.
XOR	The pattern channel data is binary Exclusive-ORed with the current fixture channel data.
ADD	The pattern channel data is added to the current fixture channel data This is clipped at the maximum channel value (255) if the result would exceed 255.
SUB	The pattern channel data is subtracted from the current fixture channel data This is clipped at 0 if the result would be negative.
MIN	The result is the minimum of the pattern and fixture channel data.
MAX	The result is the maximum of the pattern and fixture channel data.
SCALE	The result is the current fixture channel data, scaled by the corresponding pattern channel data – i.e. each of the RGB values can be scaled independently. The pattern scale is between 0-255 representing 0% and 100%. Therefore, the scaling is ALWAYS down.