



RGB Controls Proposal
St. James Tower – Manchester

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Introduction

The main purpose of this document is to demonstrate the capabilities and functionalities of the RGB controls proposed for the project.

The system is composed of RGB LED Neon Strip (as per datasheet), 1x RGB controller, multiple power supply units and 2 x gateways to allow the control and configuration of the elements above using a smart device. Namely a tablet.

1. System Structure

1.1 Components

1.1.1 LED RGB Tape

There are two types of LED neon tape specified. 1 - a standard 16mm wide to be used in the canopy and reception areas and 2- a large 35mm wide tape for the roof perimeter.

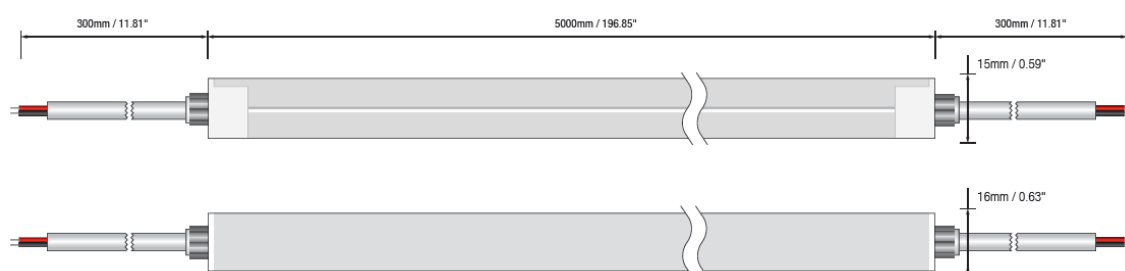


Fig. 1 – LED Aston RGB tape dimensions – Lower level

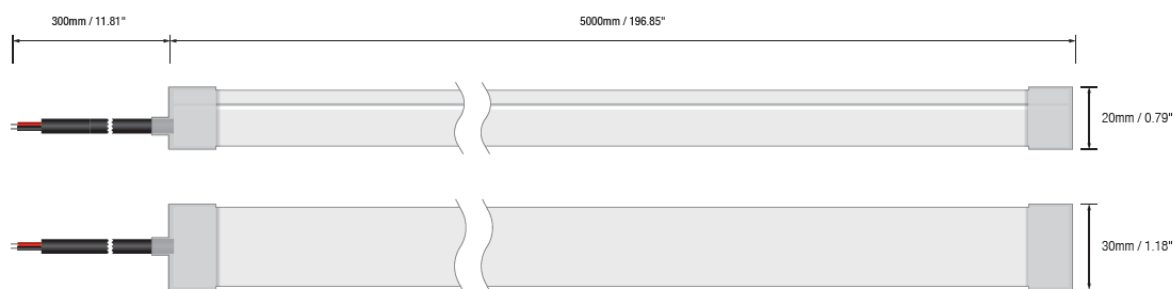


Fig. 2 – LED Captain RGB tape dimensions – Roof Perimeter

1.1.2 RGB Receiver

Unit responsible to process the commands to the LED Neon Tape. It allows to dim, change the colour and create switching cycles.



Fig. 3 RGW Control Unit

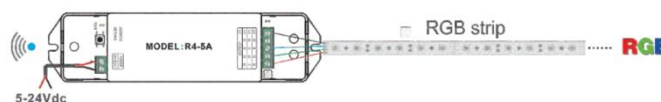


Fig. 4 RGW Control Unit Connection

1.1.3 Power Supply Unit

24Vdc Power Supply Unit (PSU). These units supply the required energy to the LED tape and RGB control units.



Fig 5. Power Supply Unit

1.1.4 Gateway

This allows a connection between a smart device (mobile or tablet) to the RGB control units.



Fig 6. Smart Gateway

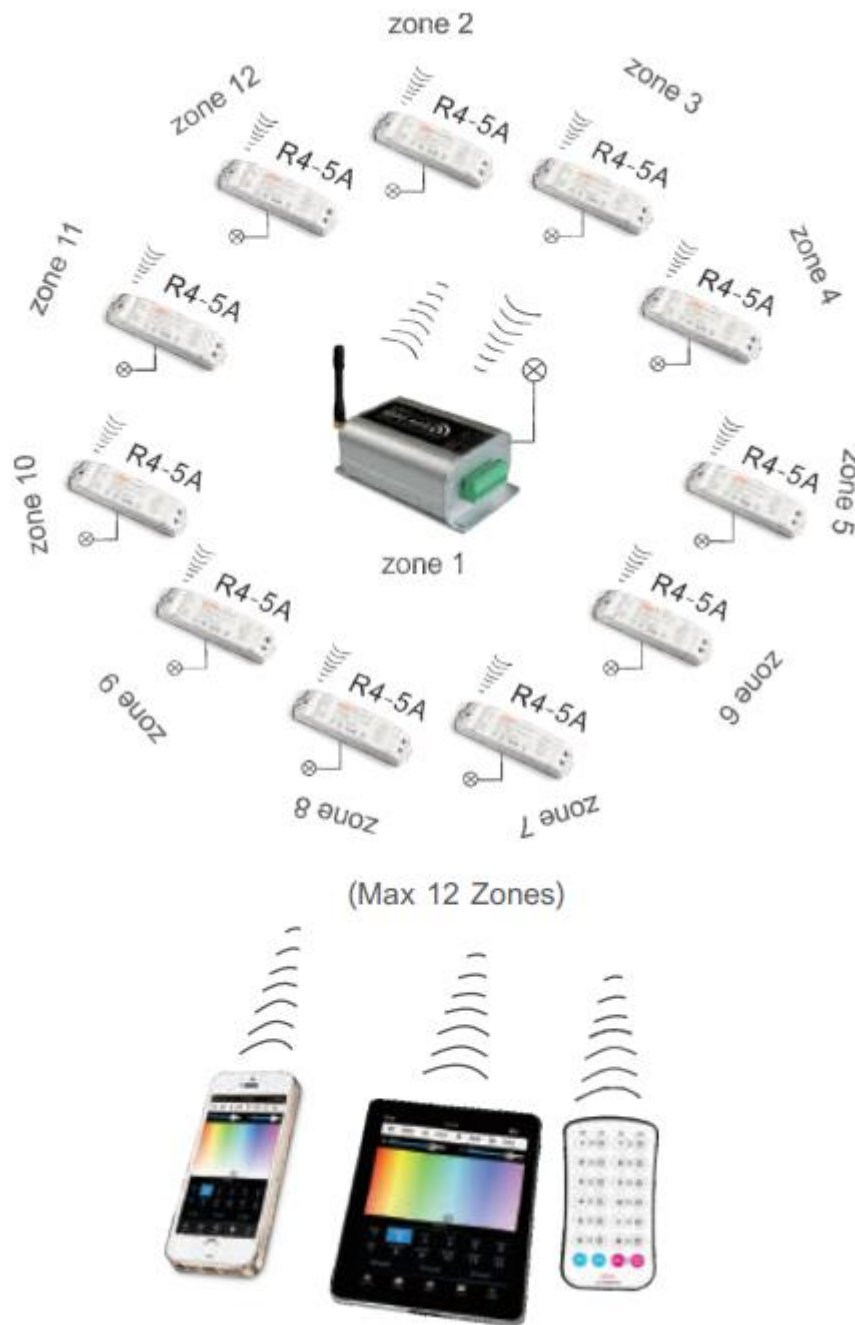
1.1.5 Smart device

By using the **LTech APP**, the user is able to control the RGB LED Tape, including dimming or changing the colour delivered.



Fig 7. Smart Device

1.2. System Configuration



2. System capabilities

2.1 Grouping LED sections

It is possible to group desired sections of LED tape. Each section can then be individually controlled still using the one controller. But this controller will allow to create separate settings for each group. For example, one group for the roof perimeter lighting and another for the lower-level lighting- or the whole building all in one group.

2.2 Changing systematically the colour output

Changing the colour output can be achieved by 4 different ways, being these:

- Gradual - smooth change from one colour to the other. The new colour starts dim getting brighter until it changes to next colour.
- Fading Dimming - new colour starts with a bright output, fades and then get brighter again before the change to new colour.
- Jump – The new colour in the sequence starts at the maximum brightness without changing until the next colour of the sequence starts.
- Strobe – Similar to the the jump feature, but going through the sequence faster.

Within these features is also possible to set a maximum output for brightness and how close the colour gets to the white spectrum.

2.3 Create your specific colour sequences

By default, the system has its own sequence when the colour changing option is activated, this can be changed in the settings, so the user can change it between 2 or more colours.

2.4 Schedule working periods

It is possible to create different scenes, and with each scene, the user can choose between which days of the week the scene will operate, switching ON and OFF times etc.