

DMX512 Instructions

Set Up & Addressing

BEFORE YOU START

- Read these instructions carefully. For the latest instructions for all our products please see www.rclighting.com/instructions
- For DMX Installation instructions, please refer to DOC-083 "DMX Installation Instructions".
- RCL spotlights need to be converted for DMX use. This cannot be done on site and must be specified when ordering.
- RCL spotlights converted for DMX still require a third party DMX source for control. RCL's handheld remote controller is used for addressing the spotlights only.
- DMX systems should always be installed by a contractor who understands the requirements of the DMX standard. Before RCL spotlights are installed, it is important to test the cable and source, as indicated in DOC-083.

If you have any difficulty with these instructions please contact:

Remote Controlled Lighting Ltd (UK)
42 Riverside Road, London SW17 0BA
+44 (0) 20 8404 2400
tech@rclighting.com

Remote Controlled Lighting Ltd (Asia)
T1,5/F Hi Yip Factory Building
2 Hi Yip Street, Hong Kong
+852 2310 9733

Introduction to DMX512

As an alternative to using RCL's handheld remote controller, it is also possible to control RCL's spotlights using the DMX512 protocol. DMX was originally developed for use in the theatre but is now widely used in entertainment, hospitality and retail.



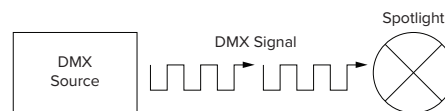
The DMX signal is made up of 512 'Channels'. Each channel can have a value between 0 - 255. For standard DMX setup, RCL requires the first five channels as Control Channels. The remaining channels (6 - 512) can be used for data.

NOTES

- The number of adjustment channels that the fixture uses is dependent on the functions available on the fixture and the control mode that is selected. By default RCL fixtures require four consecutive channels.

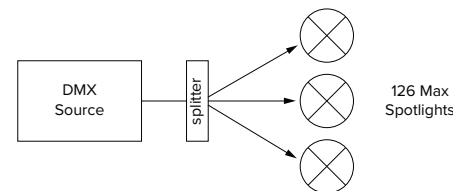
SA	SA+1	SA+2	SA+3
Pan (Coarse)	Pan (Fine)	Tilt	Dimmer

Each RCL spotlight requires four consecutive Adjustment Channels to control it – 2 for Pan, 1 for Tilt and 1 for Dimmer Level. The first channel that a light reads is called the Start Address (SA).

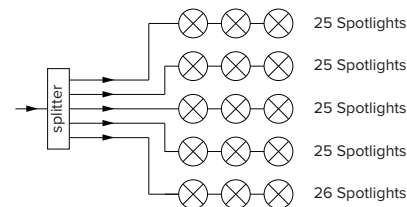


The DMX signal is sent out as a continuous stream of data from the DMX source via a cable or track. The spotlight uses the Start Address to identify which data it needs to read.

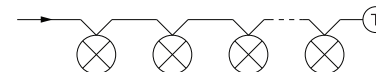
In principle, RCL spotlights should work with any DMX system, however not all DMX sources output the full 512 channels. The source must output at least 256 channels. To check system compatibility, please contact RCL.



The maximum number of spotlights that can be individually controlled by a single DMX source (sometimes called a Universe) is 126. However, due to loading issues RCL recommends that no more than 30 lights be connected to one DMX feed. To control more than 30 lights, it is possible to fit isolating amplifiers known as Splitters (readily available from third party manufacturers).



A typical Splitter with five outputs can control all 126 spotlights by connecting 25 to four chains and 26 to the fifth.



The DMX system must be connected in a 'Daisy Chain' configuration and the chain must be terminated with a 120Ω DMX terminator. All cable used must be approved DMX cable.

Addressing via RCL Controller

RCL spotlights need to be allocated a Start Address before they can be controlled by the DMX source. This can be done using RCL's handheld remote controller.

NOTES

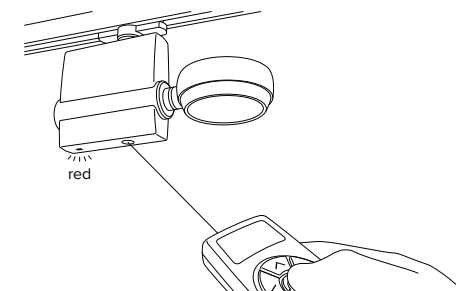
- This process requires the "Set DMX Address" option to be enabled in the RCL handheld controller's Function Menu. If it is not visible, please see DOC-005 "Controller Advanced Instructions" for enabling instructions.

1 Using the buttons on the controller, cycle through the Function Menu and use the button to select Set DMX Address.

2 Use the buttons to choose which Address to assign.

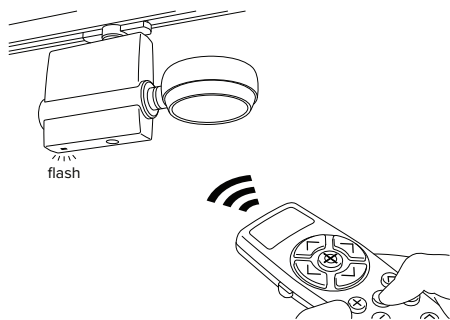
NOTES

- The first Start Address that can be set is 6. Please refer to the section "Introduction to DMX512" for more information.



3 Holding the button, aim the controller's laser beam at the sensor of the spotlight you wish to Address. An LED on the spotlight will illuminate red to show that the light has been selected.

4 The spotlight is now ready to receive the allocated Start Address.



- 5 To complete the process, aim the controller at the selected spotlight and press the **OK** button to transmit the Address to the spotlight. The LED on the spotlight will flash to indicate that the command has been received.
- 6 Repeat steps 1 – 4 to set the appropriate Start Address for each spotlight.
- 7 To exit the Function Menu at any time, press the **ESC** button.
- 8 Before the spotlights can be controlled by the DMX system, it needs to be set to **Operating Mode**. See section C “Operating Mode” for further instructions.

IMPORTANT

- Because each spotlight uses four Adjustment Channels, assuming that the first Start Address is 6, the Start Address for the next spotlight would be 10 and so on.

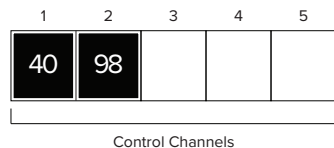
NOTES

- In situations where you want multiple lights to respond to the same DMX instructions, it is possible to allocate the same Start Address to more than one light.

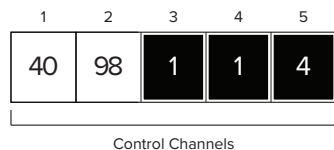
B Addressing via DMX Source

It's possible to assign Start Addresses using the DMX source directly.

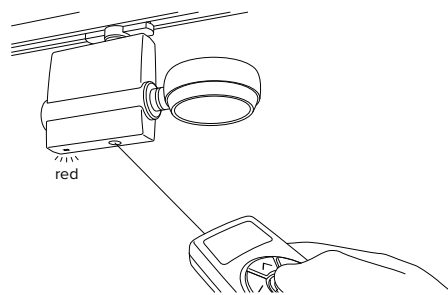
- 1 To set a spotlight's Start Address using the DMX source, it must be set to **Addressing Mode**. To do this, set Channel 1 = 40 and Channel 2 = 98.



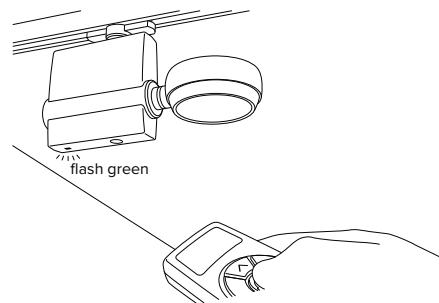
- 2 Use the remaining three channels to set the desired Start Address. Each channel (3 – 5) represents one digit of the Address. For example, channel 114 would be:



- 3 Holding the **+** button, aim the controller's laser beam at the sensor of the spotlight you wish to Address. An LED on the spotlight will illuminate red to show that the light has been selected.



- 4 To complete the process, hold the **+** button and aim the laser away from the sensor. The LED on the spotlight will flash green to indicate that the Start Address has been received.



- 5 Repeat steps 2 – 4 to set the appropriate Start Address for each spotlight.

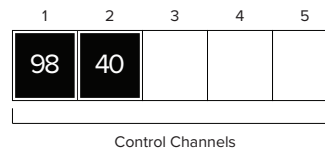
IMPORTANT

- Because each spotlight uses four Adjustment Channels, assuming that the first Start Address is 006, the Start Address for the next spotlight would be 010 and so on.

- 6 Before the spotlights can be controlled by the DMX system, it needs to be set to **Operating Mode**. See section C “Operating Mode” for further instructions.

C Operating Mode

- 1 Once all the spotlights have been allocated Start Addresses, the DMX system needs to be set to **Operating Mode**.
- 2 To set the DMX system to **Operating Mode**, set Channel 1 = 98 and Channel 2 = 40 on the DMX source.



D DMX Control Modes

After spotlights have been Addressed, it is possible to set the level of control they receive from the DMX source.

NOTES

- This process requires the “DMX Control” option to be enabled in the RCL handheld controller's **Function Menu**. If it is not visible, please see **DOC-005 “Controller Advanced Instructions”** for enabling instructions.

- 1 Using the **▲▼** buttons on the controller, cycle through the **Function Menu** and use the **OK** button to select **DMX Control**.
- 2 Use the **▲▼** buttons to choose an option from the menu.

Full – The DMX source controls the spotlight's movement and dim level.

Dimming – The DMX source controls the spotlight's dim level. Movement is controlled by RCL's handheld remote controller.

None – RCL's handheld remote controls the spotlight's movement and dim level.

- 3 Holding the **+** button, aim the controller's laser beam at the sensor of the spotlight you wish to adjust. An LED on the spotlight will illuminate red to show that the light has been selected.

- 4 To complete the process, aim the controller at the selected spotlight and press the **OK** button. The LED on the spotlight will flash to indicate that the command has been received.

- 5 Repeat steps 3 – 4 to set the DMX control level for each spotlight.