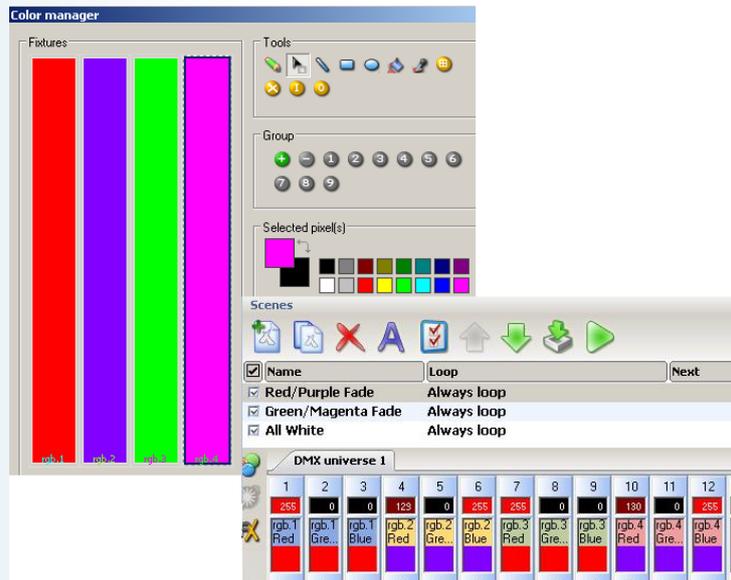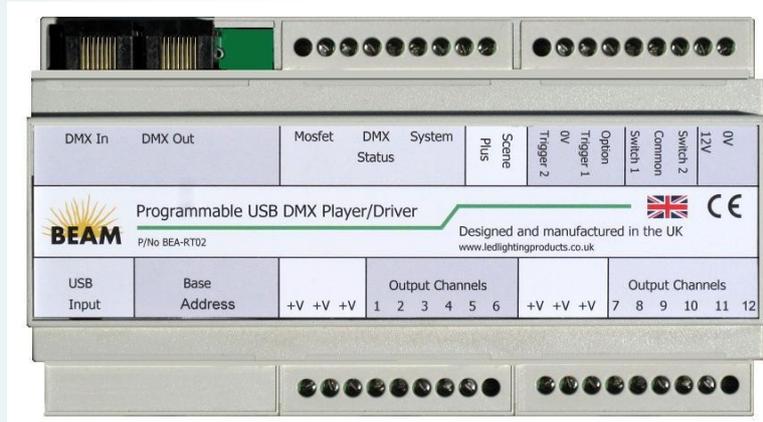# Product Manual

Programmable DMX Player

Integrated low cost USB programmable DMX Decoder and 12 Channel Driver, ideal for small multi-zone LED installations

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Introduction

DMX has been the preferred method of controlling and dimming LEDs since its inception in the 1980s. It has many benefits, the key ones being low cost, robustness and the support by the majority of lighting manufacturers.

The Beam Programmable DMX Player conveniently and economically couples USB programmability and 12 output channels to drive LEDs directly. This simplifies wiring as there are no external DMX decoders required and massively simplifies system fault-finding. Intelligent built-in diagnostics further simplify the task of installation. The Beam DMX Player can be used in both standalone and live running modes (when connected to a computer). Sophisticated protection modes ensure safe shutdown in the event of voltage or thermal overload. The unit is programmed via a simple, easy-to-learn Windows application and features variable fade and dwell times for programming elegant colour chases and sweeps.
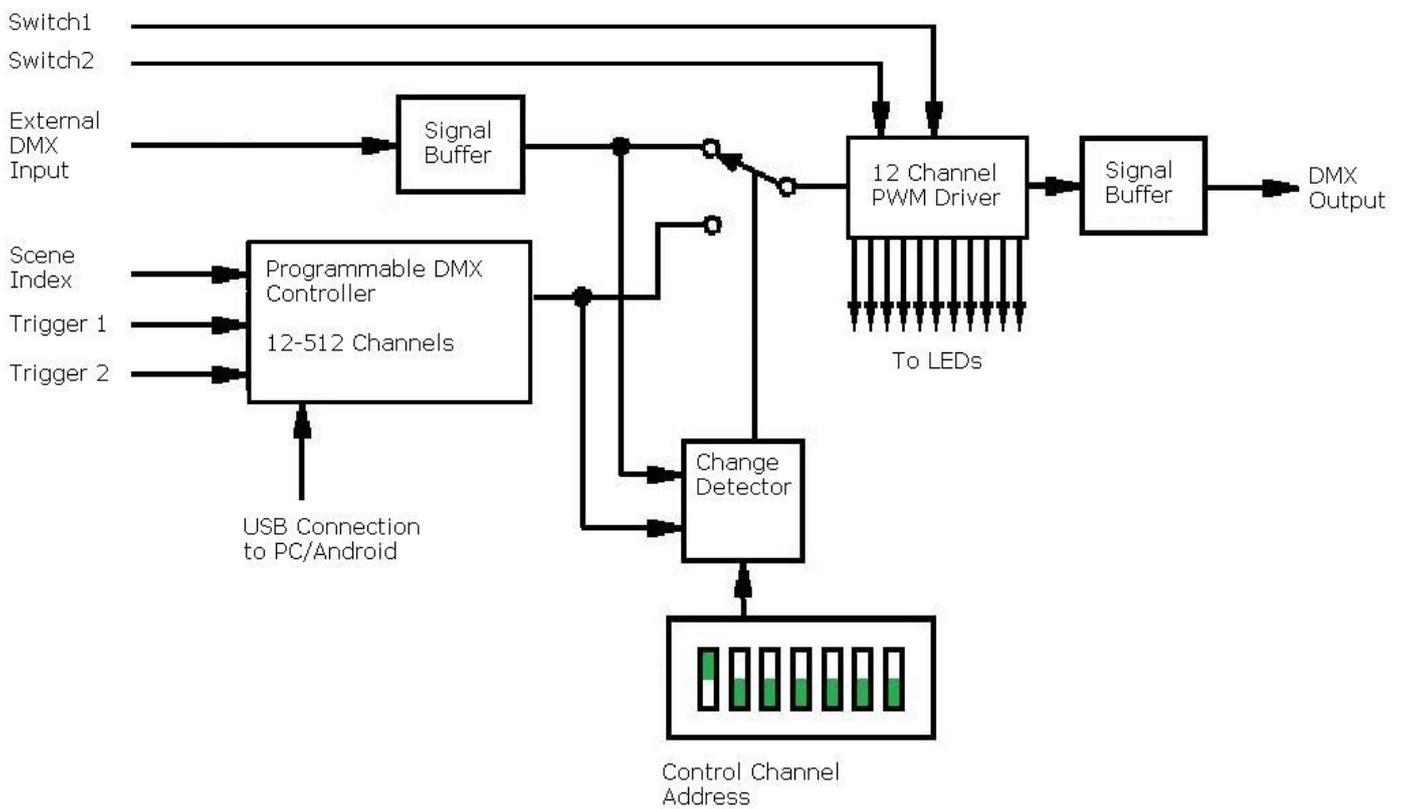
Switch inputs allow connection to simple external switches or sensors for switching on/off, indexing through the pre-programmed scenes and calling up scenes via the trigger inputs

The Beam Programmable DMX Player is perfect for small, multi-zone LED installations where user-programmable scenes, simple operation and reliability are of importance.

Key Features

- Integrates a sophisticated programmable DMX controller, decoder and power driver all-in-one

- Scenes are programmed via USB

- 12 PWM output channels for direct connection to 12/24V LEDs

- Scenes are indexed via a retractive switch or relay contact.

- Built-in supervisory chip monitors voltage, current and temperature and performs soft shutdown in the event of overload

- Two further dry contact ports can trigger pre-defined scenes (for a small additional cost)

- RJ45 DMX Communication Ports

- 12-24V DC Operation

- Convenient DIN rail mounting

- Status LEDs that indicate: USB Active, Over-temperature, Over-voltage

- DMX Chips are socketed for ease of replacement

- Complies with the essential requirements of EN 61347-1 General and safety requirements for lamp control gear and EN 61347-2-13 Particular requirements for electronic control gear for LED modules.

Block Diagram

Switch1

Switch2

External DMX Input

Signal Buffer

Scene Index

Trigger 1

Trigger 2

Programmable DMX Controller

12-512 Channels

USB Connection to PC/Android

12 Channel PWM Driver

To LEDs

Signal Buffer

DMX Output

Change Detector

Control Channel Address

Wiring Up (Basic Configuration)

The basic requirements to get the system running are a PC or android device for programming the scenes, a 12/24V power supply and the LEDs themselves. Suitable LEDs are monochrome, RGB or RGBW strips, downlights, wall lights and garden lights or a mixture of them all.

For standalone use (not connected to a computer) the unit is switched on and off via SW1 and SW2. The unit reverts to its last setting when switched on in this manner. If the unit is powered-down it reverts to scene 1.

The scenes are advanced by a retractive switch connected to the SCENE input. After the last scene the unit reverts to scene 1. If the connected load exceeds 3A/channel, an RGB buffer should be employed.

To LEDs (monochrome/RGB/RGBW)

To computer or Android for programming scenes
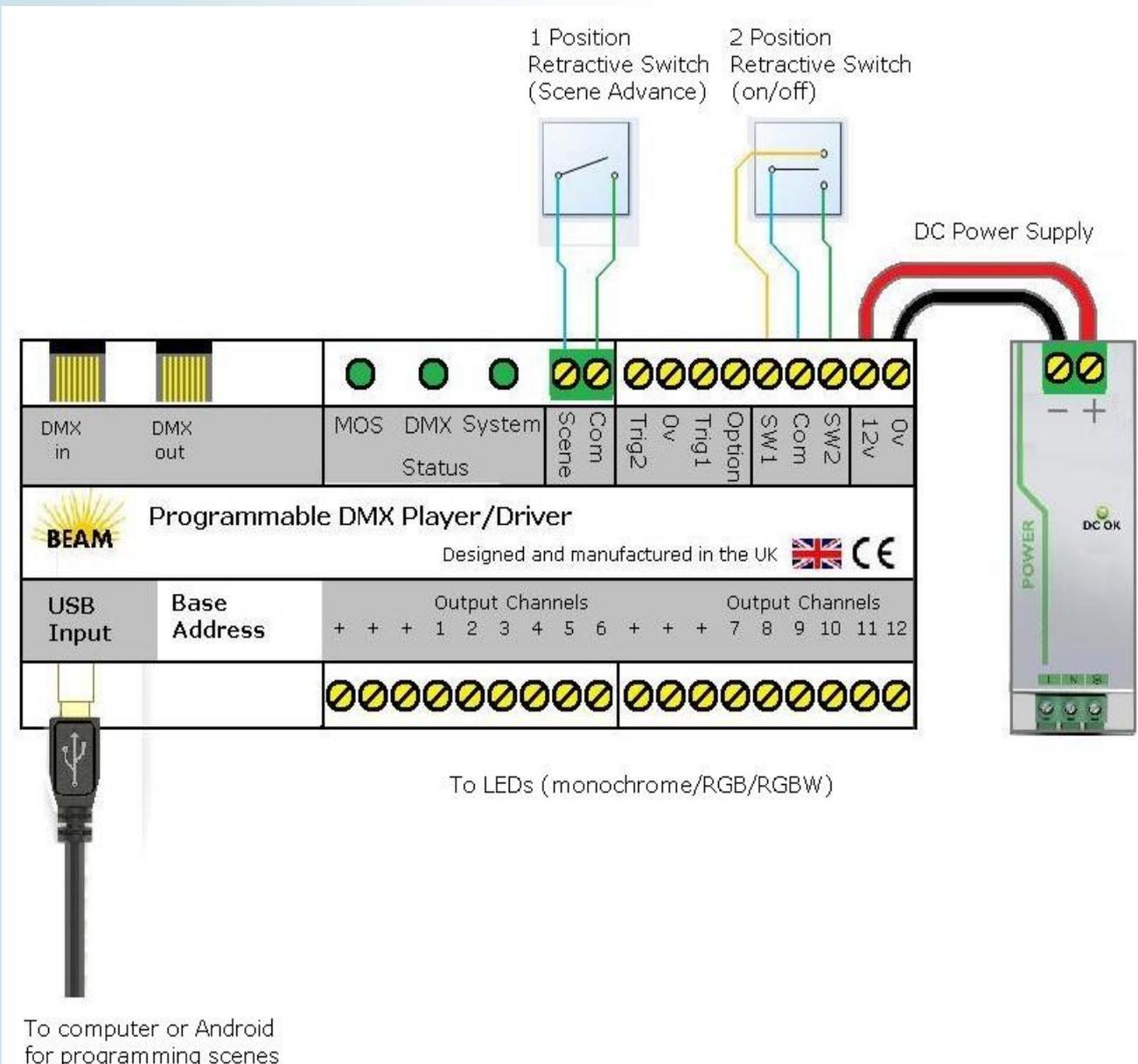
Getting Started

With the device powered up it is now time to program it. This involves assigning the channels to the connected lights and creating scenes. These can either be run live (connected to computer) or in standalone mode.

Getting Started—Installing the Software and USB Driver

The device can be programmed via android phone or PC. It can be left connected (live running) or the scenes can be downloaded into the device's memory for standalone use.

To Install by PC

PLEASE INSTALL THE DRIVERS BEFORE PLUGGING THE DEVICE INTO THE COMPUTER'S USB PORT

1)   Visit http://www.ledlightingproducts.co.uk/ESA.htm and download the software. Select save and then run, and follow the instructions. The USB drivers will be installed automatically.

2)   Plug in the device to the PC and run Easy Stand Alone. The software should recognize the device.

3)   For the manual, visit ledlightingproducts.co.uk/esamanual.pdf

To Install by Android Phone

1)   You will need an OSB USB lead (order code USB/OSB/01)

2)   Visit the android play store and download the free arcolis app

Upgrading Channels and Trigger Ports

The standard configuration is 256 live DMX channels, 12 standalone DMX channels and no trigger ports. To unlock the features (additional charges apply) you will need to create an account. Please visit:

https://store.dmxsoft.com/

Wiring Up (Advanced Configuration)

External DMX Input

It is an increasing requirement to have more than one source of DMX lighting control. For instance, in addition to a wall switch many people like to have an app on their mobile device. There are many free ones available but the industry-standard is Luminair 3.0 by synthe-fx (see picture on right).

To interface to a mobile device requires an Ethernet-to-DMX gateway and a spare port on a wireless router. The DMX signal is then connected to the external DMX input. Then, when a change is detected on DMX channel 1 the DMX control is given to the external device.

There are many devices that can be connected to the external DMX input including Raspberry Pi type computers and standalone controllers.

Trigger Inputs

The two trigger inputs invoke scenes that can NOT be accessed by the SCENE+ button. This is typically useful where a standard lighting program needs to be over-ridden for a specific event. For instance, an occupancy sensor near a bar could invoke bright blue lighting in the bar area when someone approaches. When they leave, the lighting will revert to the last scene selected.

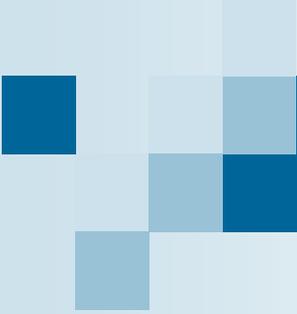To invoke a trigger scene simply connect the trigger terminal to its common (0V) connection.

Diagnostic LEDs

The system status LEDs give a useful indication of what is going on. The ideal indication is 3 green LEDs. The indications are as follows:

MOSFET

No indication	-	Faulty unit or missing/reversed polarity DC input.
Solid Green	-	All OK, MOSFETs within limits
Flashing Orange	-	MOSFETS Over 60C
Flashing Red	-	MOSFETS Over 80C, output limited to 10%

DMX

Solid Green	-	External DMX Present
Flashing Green	-	No External DMX

SYSTEM

Solid Green	-	All good
Flashing Orange	-	Undervoltage, Vin<=8V
Flashing Red	-	Overvoltage, Vin>=27V, output limited to 10%

Contacting Technical Support

Technical support is available by emailing info@ledlightingproducts.co.uk or by calling 01543 481532. For customers outside the UK please dial +44 1543 481532.

The technical helpline is open Monday-Thursday 9:30am—4:30pm and Friday 9:30am—12:00 pm.
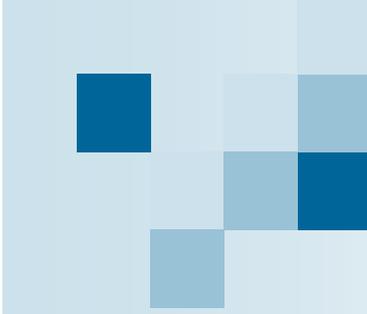
Spare Parts

As DMX signals are exposed to the real world they often see surges, incorrect polarity, even mains voltage. For this reason the DMX Chips are socketed for ease of replacement.

Replacement DMX chips are available, part number SN75176BN.

Warranty

LED Lighting Products Ltd warrants that the product it manufactures and sells will be free from defects in materials and workmanship for a period of 1 year from the date of despatch. If the device proves defective within the respective period, LED Lighting will repair or replace the defective hardware at its sole discretion. If the failure is due to an operator error, the user accepts to pay for any charge relating to the diagnosis of the hardware, faulty parts or shipping from our factory.

LED Lighting Products Ltd makes no warranty of any kind, express or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose. In no event shall LED Lighting Products Ltd be liable for indirect, special or consequential damages.

Opening the unit voids the warranty as described above.