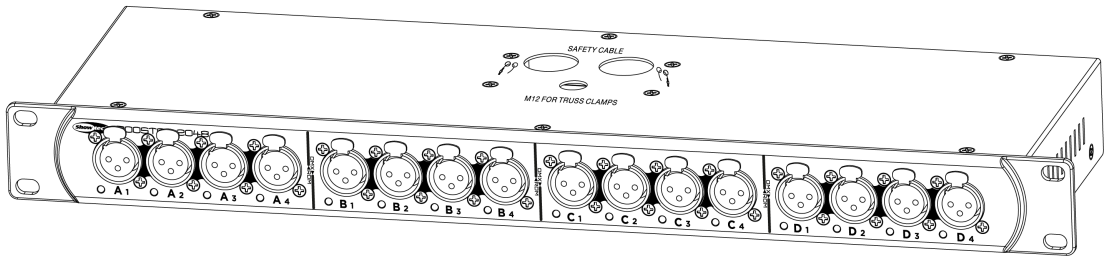
USER MANUAL

ENGLISH

V1.0



Booster 2048

Product code: 50798

4 universe DMX booster, 3-pin XLR

Preface

Thank you for purchasing this Showtec product.

The purpose of this user manual is to provide instructions for the correct and safe use of this product.

Keep the user manual for future reference as it is an integral part of the product. The user manual shall be stored at an easily accessible location.

This user manual contains information concerning:

- Safety instructions
- Intended and non-intended use of the device
- Installation and operation of the device
- Maintenance procedures
- Troubleshooting
- Transport, storage and disposal of the device

Non-observance of the instructions in this user manual may result in serious injuries and damage of property.

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Design and product specifications are subject to change without prior notice.

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Highlite International B.V. – Vestastraat 2 – 6468 EX Kerkrade – the Netherlands

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1. Introduction

1.1. Before Using the Product

Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

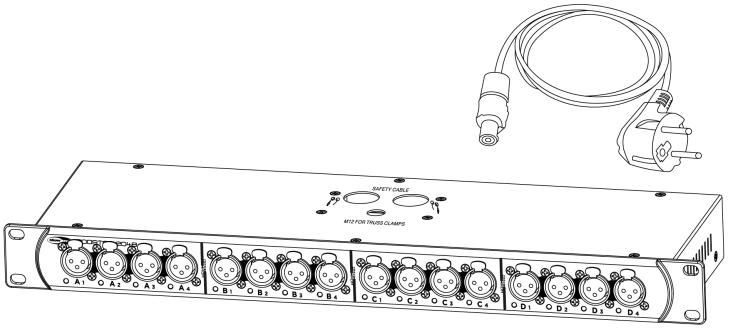
The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

After unpacking, check the contents of the box. If any parts are missing or damaged, contact your Highlite International dealer.

Your shipment includes:

- Showtec Booster 2048
- Schuko to Power Pro cable (1,5 m)
- User manual

Figure 1



1.2. Intended Use

This device is intended for professional use as a DMX splitter/booster. It can be installed only indoors. This device is not suitable for households.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.

1.3. Product Lifespan

This device is not designed for permanent operation.

Disconnect the device from the electrical power supply when the device is not in operation. This will reduce wear and improve the lifespan of the device.

1.4. Text Conventions

Throughout the user manual the following text conventions are used:

- References: References to parts of the device are in bold lettering, for example: "turn the **adjustment handle (05)**". References to chapters are hyperlinked
- 0–255: Defines a range of values
- Notes: **Note:** (in bold lettering) is followed by useful information or tips

1.5. Symbols and Signal Words

Safety notes and warnings are indicated throughout the user manual by safety signs.

Always follow the instructions provided in this user manual.



DANGER Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION Indicates a potentially hazardous situation, which, if not avoided, may result in minor or moderate injury.



Attention Indicates important information for the correct operation and use of the product.



Important Read and observe the instructions in this document.



Electrical hazard



Provides important information about the disposal of this product.

1.6. Symbols on the Information Label

This product is provided with an information label. The information label is located on the back side of the device.

The information label contains the following symbols:



This device is designed for indoor use.



This device shall not be treated as household waste.



This device falls under IEC protection class I.

2. Safety



Important
Read and follow the instructions in this user manual before installing, operating or servicing this product.

The manufacturer will not accept liability for any resulting damages caused by the non-observance of this manual.

2.1. Warnings and Safety Instructions



DANGER
Danger for children

For adult use only. The device must be installed beyond the reach of children.

- Do not leave any parts of the packaging (plastic bags, polystyrene foam, nails, etc.) within the reach of children. Packaging material is a potential source of danger for children.



DANGER
Electric shock caused by dangerous voltage inside

There are areas inside the device where dangerous touch voltage may be present.

- Do not open the device or remove any covers.
- Do not operate the device if the covers or the housing are open. Before operation, check if the housing is firmly closed and all screws are tightly fastened.
- Disconnect the device from the electrical power supply before service and maintenance, and when the device is not in use.



DANGER
Electric shock caused by short-circuit

This device falls under IEC protection Class I.

- Make sure that the device is electrically connected to ground (earth). Connect the device only to a socket-outlet with a ground (earth) connection.
- Do not cover the ground (earth) connection.
- Do not bypass the thermostatic switch or fuses.
- Replace fuses only with the same type and rating.
- Do not let the power cable come into contact with other cables. Handle the power cable and all connections with the mains with caution.
- Do not modify, bend, mechanically strain, put pressure on, pull or heat up the power cable.
- Make sure that the power cable is not crimped or damaged. Examine the power cable periodically for any defects.
- Do not immerse the device in water or other liquids. Do not install the device in a location where flooding may occur.
- Do not use the device during thunderstorms. Disconnect the device from the electrical power supply immediately.



Attention
Power supply

- Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.
- Make sure that the cross-sectional area of the extension cords and power cables is sufficient for the required power consumption of the device.



Attention
General safety

- Do not shake the device. Avoid brute force when installing or operating the device.
- If the device is dropped or struck, disconnect the device from the electrical power supply immediately.
- If the device is exposed to extreme temperature variations (e.g. after transportation), do not switch it on immediately. Let the device reach room temperature before switching it on, otherwise it may be damaged by the formed condensation.
- If the device fails to work properly, discontinue use immediately.



Attention
For professional use only
This device must be used only for the purposes it is designed for.

This device is designed to be used as a DMX splitter/booster. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not suitable for households.
- This device does not contain user-serviceable parts. Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.



Attention
Before each use, examine the device visually for any defects.

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- There are no deformations on housings, fixings and installation points.
- The power cables are not damaged and do not show any material fatigue.



Attention
Do not expose the device to conditions that exceed the rated IP class conditions.

This device is IP20 rated. IP (Ingress Protection) 20 class provides protection against solid objects greater than 12 mm, such as fingers, and no protection against harmful ingress of water.

2.2. Requirements for the User

This product may be used by ordinary persons. Maintenance may be carried out by ordinary persons. Installation and service shall be carried out only by instructed or skilled persons. Contact your Highlite International dealer for more information.

Instructed persons have been instructed and trained by a skilled person, or are supervised by a skilled person, for specific tasks and work activities associated with the installation, service and maintenance of this product, so that they can identify risks and take precautions to avoid them.

Skilled persons have training or experience, which enables them to recognize risks and avoid hazards associated with the installation, service and maintenance of this product.

Ordinary persons are all persons other than instructed persons and skilled persons. Ordinary persons include not only users of the product but also any other persons that may have access to the device or who may be in the vicinity of the device.

2.3. Personal Protective Equipment

During installation, deinstallation and rigging wear personal protective equipment in compliance with the national and site-specific regulations.

3. Description of the Device

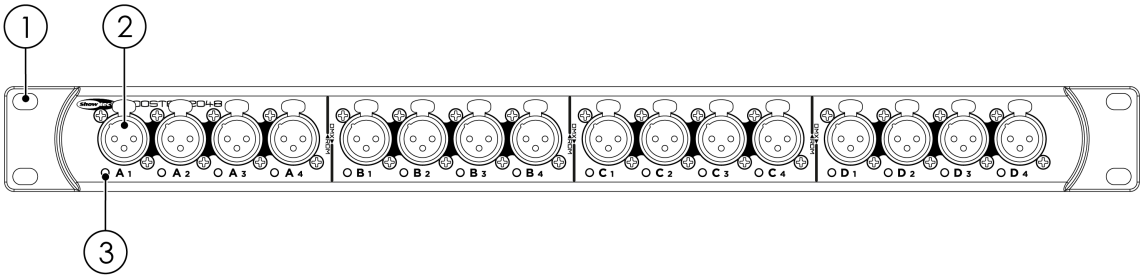
The Showtec Booster 2048 is a compact and powerful DMX splitter/booster designed to meet the growing demands of modern lighting setups. With 4 DMX inputs, each linked to 4 optically isolated outputs, it supports up to 2048 DMX channels (4 x 512), making it ideal for controlling complex fixtures across multiple universes.

Engineered with space efficiency in mind, the Booster 2048 is perfect for building compact node racks in tight backstage environments. Using 2 units, you can easily manage and boost 8 universes, streamlining your setup without compromising performance.

All inputs and outputs are optically isolated to prevent signal interference and eliminate ground loops. The unit also features a built-in DMX terminator function, allowing it to properly terminate the signal when positioned at the end of a DMX line. Additionally, an RDM filter switch lets you choose whether to pass or block RDM data, giving you full control over your signal flow.

3.1. Front View

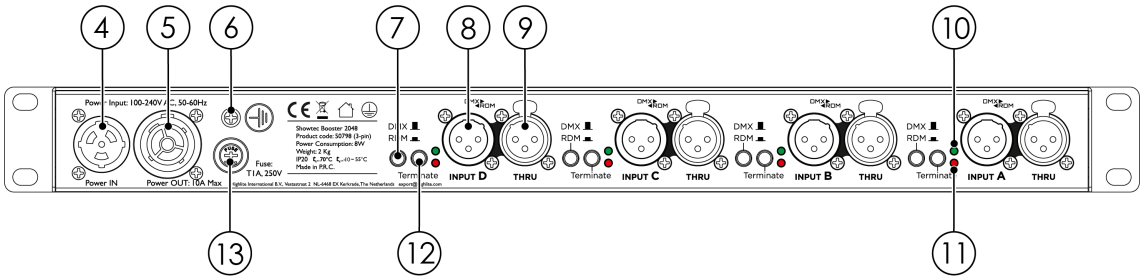
Figure 2



01) 4 x mounting opening
02) 16 x 3-pin DMX connector OUT (optically isolated) (A1–A4, B1–B4, C1–C4, D1–D4)
03) 16 x status LED for DMX output signal

3.2. Back View

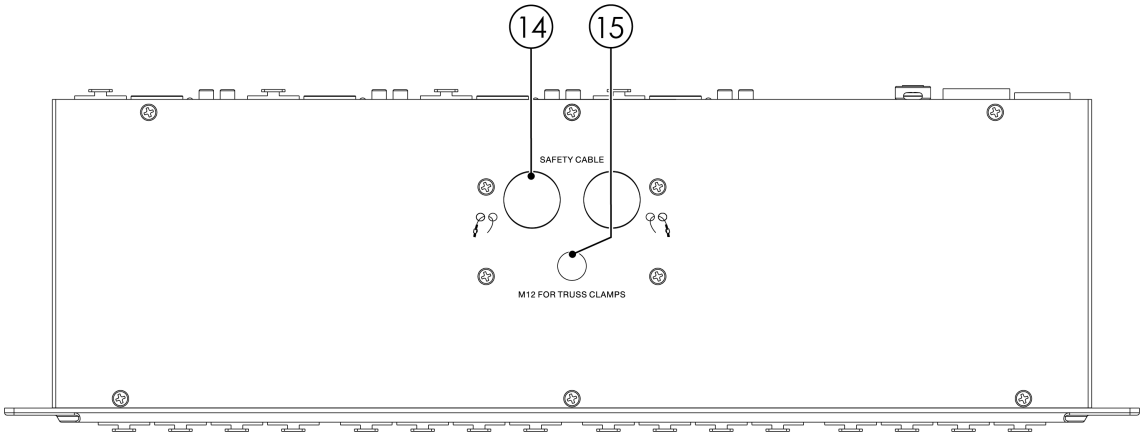
Figure 3



04) Power Pro True connector IN
05) Power Pro True connector OUT
06) Ground/earth connection
07) 4 x DMX/RDM filter button
08) 4 x 3-pin DMX connector IN (optically isolated) (A–D)
09) 4 x 3-pin DMX connector THRU (optically isolated) (A–D)
10) 4 x status LED for DMX input signal
11) 4 x power status LED
12) 4 x DMX terminate button
13) Fuse (T 1 A, 250 V)

3.3. Top View

Figure 4



14) 2 x opening for a safety cable
15) Top mounting opening (M12)

3.4. Product Specifications

Model:	Booster 2048

Control and Programming:	
Control mode	DMX / RDM

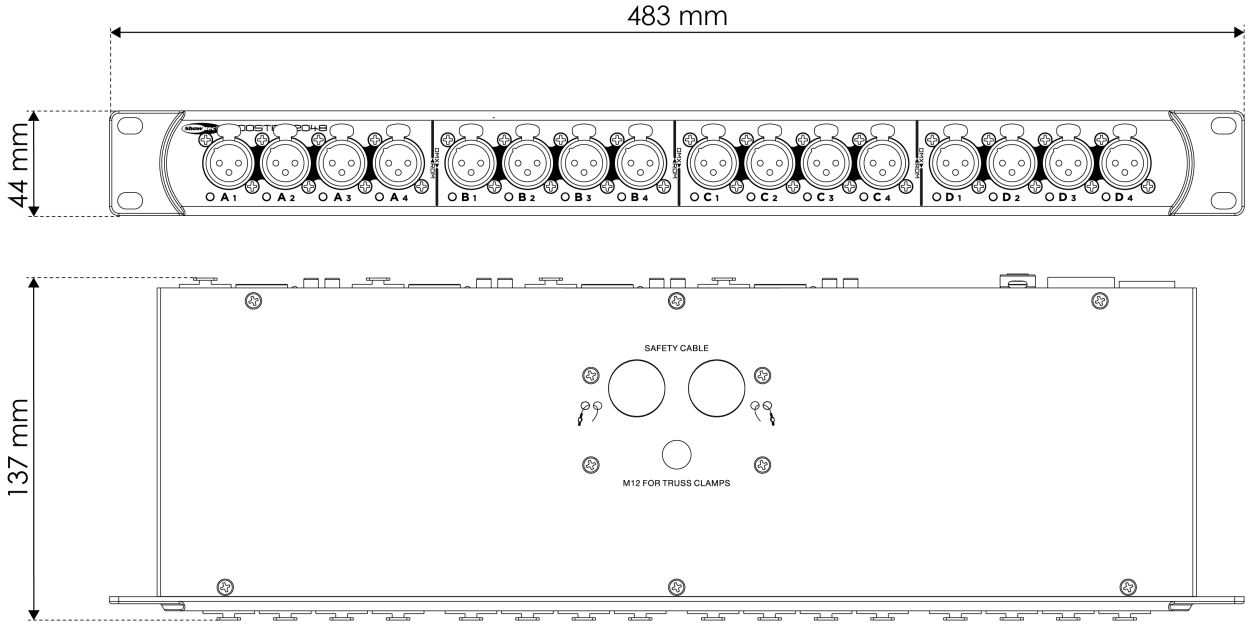
Electrical Specifications and Connections:	
Power supply	100–240 V AC 50/60 Hz
Power consumption	5 W
Power connector IN	powerCON TRUE1
DMX connector	XLR 3P IN/OUT

Mechanical Specifications:	
Length	483 mm
Width	137 mm
Height	44 mm
Weight	2 kg
IP rating	IP20 (indoor use only)
Housing	Aluminum / metal
Color	Black

Thermal Specifications:	
Maximum ambient temperature	55 °C
Minimum operating temperature	-10 °C

3.5. Dimensions

Figure 5



4. Installation

4.1. Safety Instructions for Installation



WARNING
Incorrect installation can cause serious injuries and damage of property.

If trussing systems are used, installation must be carried out only by instructed or skilled persons.

Follow all applicable European, national and local safety regulations concerning rigging and trussing.

4.2. Personal Protective Equipment

During installation, deinstallation and rigging wear personal protective equipment in compliance with the national and site-specific regulations.

4.3. Installation Site Requirements

- The device can be used only indoors.
- The maximum ambient temperature t_a = 55 °C must never be exceeded.
- The relative humidity must not exceed 50 % with an ambient temperature of 55 °C.

4.4. Mounting Options

The Booster 2048 can be placed on a flat surface, mounted to a truss with a clamp (see 4.4.1. Overhead Mounting with a Clamp) or mounted in a rack (see 4.4.2. Rack Mounting).

4.4.1. Overhead Mounting with a Clamp

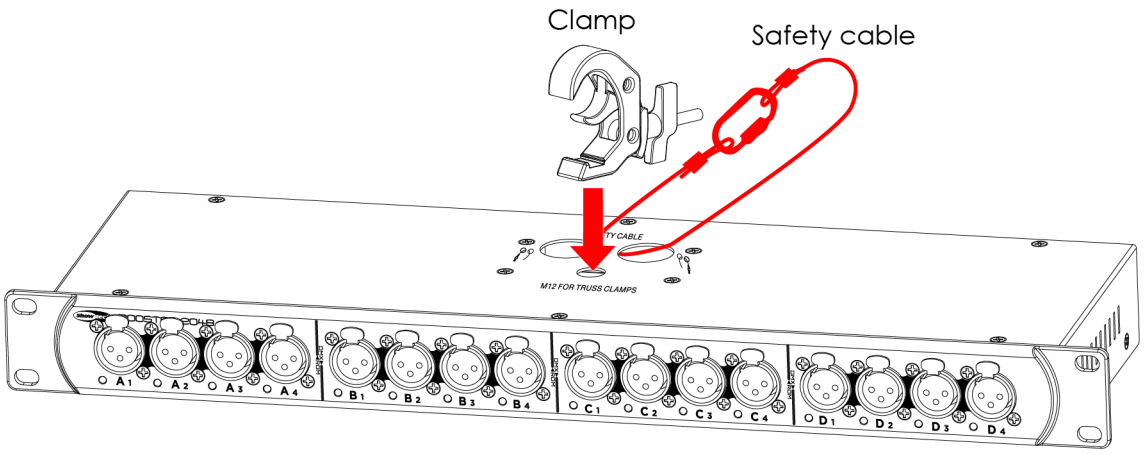
CAUTION
Restrict the access under the work area during rigging/derigging.

You can temporarily mount the device with a clamp to a truss, using the **top mounting opening (15)**.

To mount the device, follow the steps below:

01) Use a clamp to attach the device to the supporting structure.
02) Secure the device with a secondary suspension, for example a safety cable. Make sure that the secondary suspension can hold 10 times the weight of the device. If possible, the secondary suspension should be attached to a supporting structure independent of the primary suspension. Put the safety cable through the **openings for a safety cable (14)**.

Figure 6



4.4.2. Rack Mounting

The device can be mounted in a standard 19-inch rack. The device requires 1 rack unit (RU) of space.

Make sure that the rack is sufficiently secured to prevent it from becoming unstable or falling over.

To mount the device in a two-post rack, follow the steps below:

01) Insert 4 cage nuts in the openings on the rack posts where you want to mount the device.
02) Position the device in front of the rack posts so that the 4 **mounting openings (01)** on the flanges face the openings on the rack posts with cage nuts.
03) Use a screwdriver to mount the device to the rack posts with 4 screws.

4.5. Connecting to Power Supply



DANGER
Electric shock caused by short-circuit

The device accepts AC mains power at 100–240 V and 50/60 Hz. Do not supply power at any other voltage or frequency to the device.

This device falls under IEC protection class I. Make sure that the device is always electrically connected to the ground (earth).

Before connecting the device to the socket-outlet:
- Make sure that the power supply matches the input voltage specified on the information label on the device.
- Make sure that the socket-outlet has a ground (earth) connection.

Connect the device to the socket-outlet with the power plug. Do not connect the device to a dimmer circuit, as this may damage the device.

4.6. Power Linking of Multiple Devices

This device supports power linking. Power can be relayed to another device via the power OUT connector. Note that the input and the output connectors have different designs: one type cannot be connected to the other.

Power linking of multiple devices must be carried out only by instructed or skilled persons.



WARNING
Incorrect power linking may lead to overload of the electrical circuit and result in serious injuries and damage of property.

To prevent overload of the electrical circuit, when power linking multiple devices:

- Use cables with sufficient current-carrying capacity. The power cable supplied with the device is not suitable for power linking of multiple devices.
- Make sure that the total current draw of the device and all connected devices does not exceed the rated capacity of the power cables and the circuit breaker.
- Do not link more devices on one power link than the maximum recommended number.

The maximum recommended number of devices depends on the total load of all connected devices.

The total load shall not exceed 10 A or:

- at 120 V: 1200 W
- at 230 V: 2300 W

5. Setup and Operation

5.1. Warnings and Precautions



Attention
Connect all data cables before supplying power.
Disconnect power supply before connecting or disconnecting data cables.

5.2. Safety Instructions for Operation



Attention
This device must be used only for the purposes it is designed for.

This device is intended for professional use as a DMX splitter/booster. It can be used only indoors. This device is not suitable for households.

Any other use, not mentioned under intended use, is regarded as non-intended and incorrect use.



Attention
Power supply

Before connecting the device to the power supply, make sure that the current, voltage and frequency match the input voltage, current and frequency specified on the information label on the device.

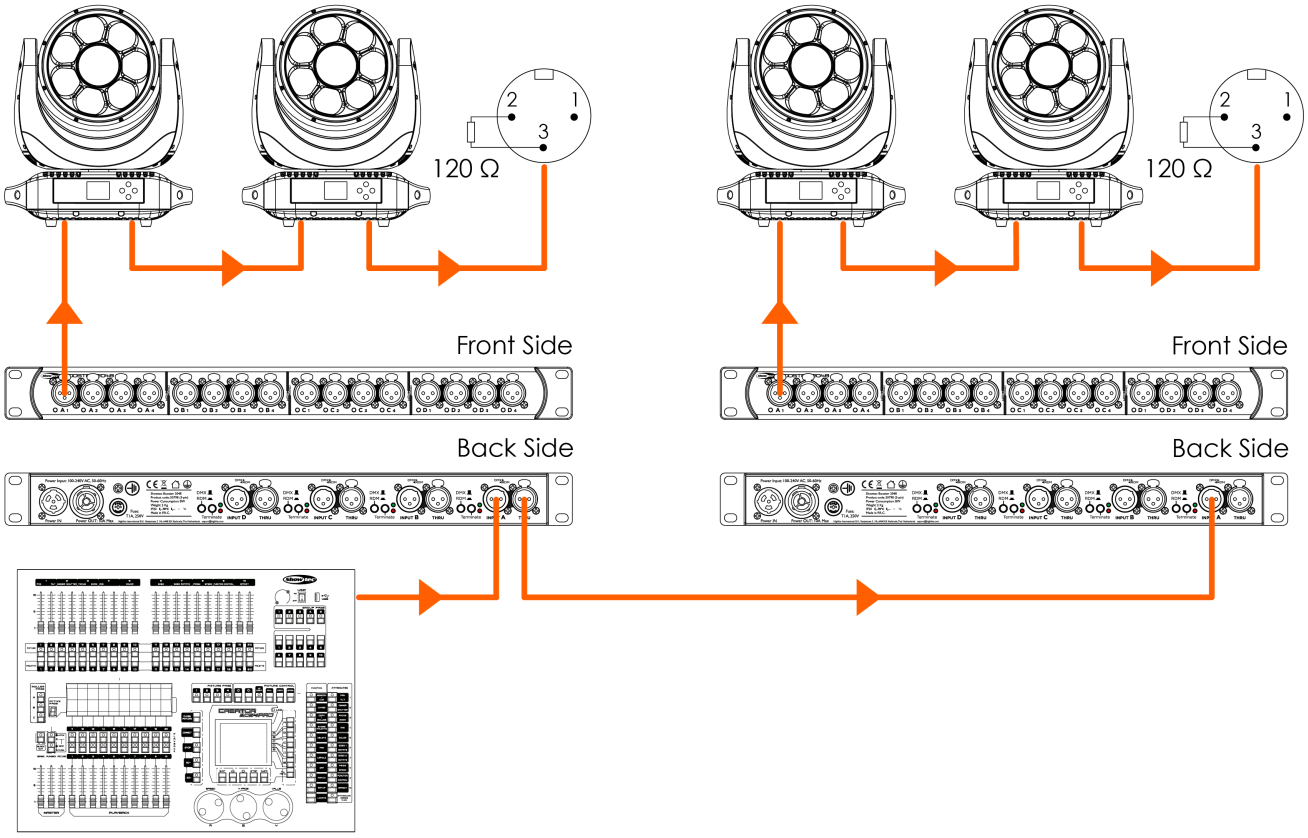
5.3. Setup Example

The Booster 2048 has 4 **3-pin DMX connectors IN (08)** that are each connected to 4 **3-pin DMX connectors OUT (02)**. Additionally, each **3-pin DMX connector IN (08)** is connected to a separate **3-pin DMX connector THRU (09)** to loop the signal through to other Booster 2048 devices.

The figure below shows a typical setup with 1 DMX controller, 2 Booster 2048 devices and 4 light fixtures.

01) Connect a DMX controller to one of the **3-pin DMX connectors IN (08)** of the device, for example INPUT A.
02) Connect the **3-pin DMX connector THRU (09)** for INPUT A to one of the **3-pin DMX connectors IN (08)** of a 2nd Booster 2048 device.
03) Connect one or more of the **3-pin DMX connectors OUT (02)** of the 1st Booster 2048 device to a daisy-chain of light fixtures.
04) Connect a DMX terminator (120 Ω resistor) to the DMX OUT connector of the last light fixture in the daisy-chain.
05) Repeat steps 3 and 4 for the 2nd Booster 2048 device.
06) Terminate the DMX link on the 2nd Booster 2048 device with the **DMX terminate button (12)**.

Figure 7



5.4. DMX Connection

5.4.1. DMX-512 Protocol

The Booster 2048 has 3-pin DMX signal IN and OUT connectors.

The pin assignment is as follows: pin 1 (ground), pin 2 (-), pin 3 (+).

Devices on a serial data link must be daisy-chained in a single line. The number of devices that you can control on one data link is limited by the combined number of the DMX channels of the connected devices and the 512 channels available in one DMX universe.

To comply with the TIA-485 standard, no more than 32 devices should be connected on one data link. In order to connect more than 32 devices on one data link, you must use a DMX optically isolated splitter/booster, otherwise this may result in deterioration of the DMX signal.

Note:

- Maximum recommended DMX data link distance: 300 m
- Maximum recommended number of devices on a DMX data link: 32 devices

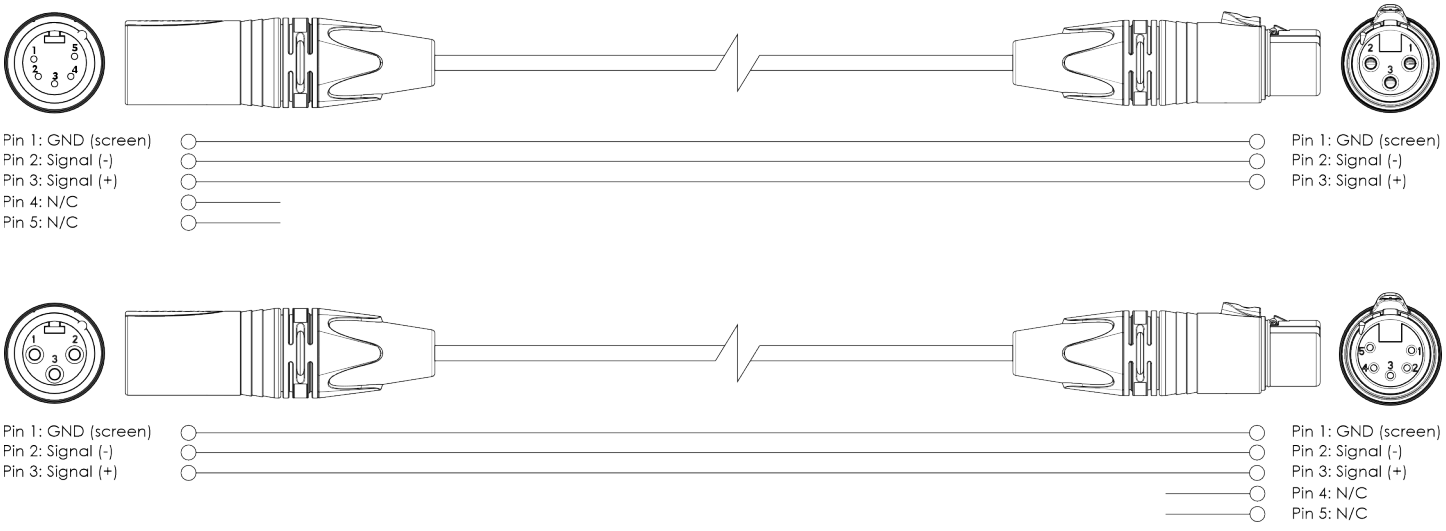
5.4.2. DMX Cables

Shielded twisted-pair cables with 3-pin XLR connectors must be used for reliable DMX connection. You can purchase DMX cables directly from your Highlite International dealer or make your own cables.

If you use XLR audio cables for DMX data transmission, this may lead to signal degradation and unreliable operation of the DMX network.

When you make your own DMX cables, make sure that you connect the pins and wires correctly as shown in the figure below.

Figure 8



5.5. Button Functions

Each input group of the Booster 2048 has 2 buttons to control the DMX and RDM signals for each **3-pin DMX connector IN (08)**.

Button	Function
DMX Terminate button (12)	Terminate the DMX signal on the corresponding input group if the Booster 2048 is the last device in the DMX link
DMX/RDM filter button (07)	Block RDM signals on the corresponding input group

Note:

The Booster 2048 device is the last device in the DMX link if a DMX signal comes in to the **3-pin DMX connector IN (08)** but is not linked to any further devices through the corresponding **3-pin DMX connector THRU (09)**. Light fixtures daisy-chained to a **3-pin DMX connector OUT (02)** form a separate DMX link and must be terminated separately (see 5.3. Setup Example on page 15).

5.6. LED Statuses

The device has 2 status LEDs for each **3-pin DMX connector IN (08)** and 1 status LED for each **3-pin DMX connector OUT (02)**.

Status LED	Function
Status LED for DMX output signal (03)	Lights up green to indicate that a DMX signal is present on the corresponding **3-pin DMX connector OUT (02)**
Status LED for DMX input signal (10)	Lights up green to indicate that a DMX signal is present on the corresponding **3-pin DMX connector IN (08)**
Power status LED (11)	Lights up red to indicate that the internal power supply for the corresponding input group is working correctly

5.7. RDM Information

This device supports RDM (see 5.7.2. Supported RDM PIDs (Parameter IDs)).

5.7.1. RDM Details

- Responder ID: 29B4:0C6xxxxx
- Manufacturer's ID: Showtec (Highlite International B.V.)
- Manufacturer Label: Showtec
- Model Description: Booster 2048
- Model ID: 198 (0C6 hexadecimal)
- Device Label: Booster 2048

Note:

An RDM responder ID consists of 3 parts:

- 1st part – 4 digits – Manufacturer's ID
- 2nd part – 3 digits – Model ID
- 3rd part – 5 digits – Unique ID

The RDM responder IDs of all products of Highlite International start with the same 4 digits. The first 7 digits of the RDM responder ID for each model are the same. The last 5 digits are different for each device.

5.7.2. Supported RDM PIDs (Parameter IDs)

RDM Parameter ID	Value	Required	GET	SET
DEVICE_LABEL	0x0082		*	*
DEVICE_MODEL_DESCRIPTION	0x0080		*	
DMX_PERSONALITY_DESCRIPTION	0x00E1		*	
FACTORY_DEFAULTS	0x0090		*	*
MANUFACTURER_LABEL	0x0081		*	
SUPPORTED_PARAMETERS	0x0050	*	*	

6. Troubleshooting

This troubleshooting guide contains solutions to problems which can be carried out by an ordinary person. The device does not contain user-serviceable parts.

Unauthorized modifications to the device will render the warranty void. Such modifications may result in injuries and material damage.

Refer servicing to instructed or skilled persons. Contact your Highlite International dealer in case the solution is not described in the table.

Problem	Probable cause(s)	Solution
The device does not function at all	No power to the device	• Make sure that the device is connected to power supply and the cables are plugged in
	The main fuse is blown	• Replace the fuse (see 7.2.1. Replacing the Fuse on page 20)
The connected fixtures do not function	The fixtures are incompatible	• Disconnect the fixtures and check their compatibility
	The fixtures are defective	• Try using different fixtures
The connected fixtures do not respond to DMX control	The controller is not connected	• Connect the controller (see 5.3. Setup Example on page 15)
	The signal is reversed. The 3-pin DMX OUT of the controller does not match the DMX IN of the device	• Install a phase-reversing cable between the controller and the device
	The controller is defective	• Try using another controller
The connected fixtures respond erratically to DMX control	Connections are defective	• Examine connections and cables. Correct defective connections. Repair or replace damaged cables
	The data link is not terminated with a 120 Ω termination plug	• Insert a termination plug in the DMX OUT connector of the last device on the link
	Incorrect addressing	• Make sure that the address settings are correct
	In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link	• To find out the defective device, bypass 1 device at a time until normal operation is restored

7. Maintenance

7.1. Preventive Maintenance

Attention
Before each use, examine the device visually for any defects.

Make sure that:

- All screws used for installing the device or parts of the device are tightly fastened and are not corroded.
- The safety devices are not damaged.
- There are no deformations on housings, fixings and installation points.
- The power cables are not damaged and do not show any material fatigue.

7.1.1. Basic Cleaning Instructions

To clean the device, follow the steps below:

01) Disconnect the device from the electrical power supply.
02) Allow the device to cool down for at least 5 minutes.
03) Clean the device with a soft, lint-free cloth.

Attention

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.

7.2. Corrective Maintenance

The device does not contain user-serviceable parts. Do not open the device and do not modify the device.

Refer repairs and servicing to instructed or skilled persons. Contact your Highlite International dealer for more information.

7.2.1. Replacing the Fuse

DANGER
Electric shock caused by short-circuit

- Do not bypass the thermostatic switch or fuses.
- Replace fuses only with the same type and rating.

Power surges, short-circuit or incorrect electrical power supply may cause a fuse to burn out. If the fuse burns out, the device will not function anymore. If this happens, follow the steps below:

01) Disconnect the device from the electrical power supply.
02) Allow the device to cool down for at least 15 minutes.
03) Loosen the fuse cover with a screwdriver and remove the fuse holder.
04) If the fuse is brown or unclear, it is burned out. Remove the old fuse.
05) Insert a new fuse in the fuse holder. Make sure that the type and the rating of the replacement fuse are the same as the ones specified on the information label of the product.
06) Replace the fuse holder in the opening and tighten the fuse cover.

8. Deinstallation, Transportation and Storage

8.1. Instructions for Deinstallation

WARNING
Incorrect deinstallation can cause serious injuries and damage of property.

- Let the device cool down before dismounting.
- Disconnect power supply before deinstallation.
- Always observe the national and site-specific regulations during deinstallation and derigging of the device.
- Wear personal protective equipment in compliance with the national and site-specific regulations.

8.2. Instructions for Transportation

- Use the original packaging to transport the device, if possible.
- Always observe the handling instructions printed on the outer carton box, for example: "Handle with care", "This side up", "Fragile".

8.3. Storage

- Clean the device before storing (see 7.1.1. Basic Cleaning Instructions on page 20).
- Store the device in the original packaging, if possible.

9. Disposal



Correct disposal of this product

Waste Electrical and Electronic Equipment

This symbol on the product, its packaging or documents indicates that the product shall not be treated as household waste. Dispose of this product by handing it to the respective collection point for recycling of electrical and electronic equipment. This is to avoid environmental damage or personal injury due to uncontrolled waste disposal. For more detailed information about recycling of this product contact the local authorities or the authorized dealer.

10. Approval

CE

Check the respective product page on the website of Highlite International (www.highlite.com) for an available declaration of conformity.