



**ENGLISH**

**VT301 - HDMI Matrix Extender Set (TX/RX)**

**V1**

**Product code: 101261**

### Preface

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Thank you for purchasing this DMT 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
- Installation and operation of the device
- Intended and non-intended use 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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## 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:

- VT301 - HDMI Matrix Extender Set (TX/RX)
- 1x Jack Cable with IR eye (IR IN) (1,5 m)
- 1x Jack Cable with IR eye (IR OUT) (1,5 m)
- 2x brackets
- 2x DC Power Adapter (input 100-240VAC, Output 12V 2A) (1,1 m)
- 2x RS232 (GPIO=General Purpose Input-Output Phoenix connector)
- 1x IR remote control
- User manual

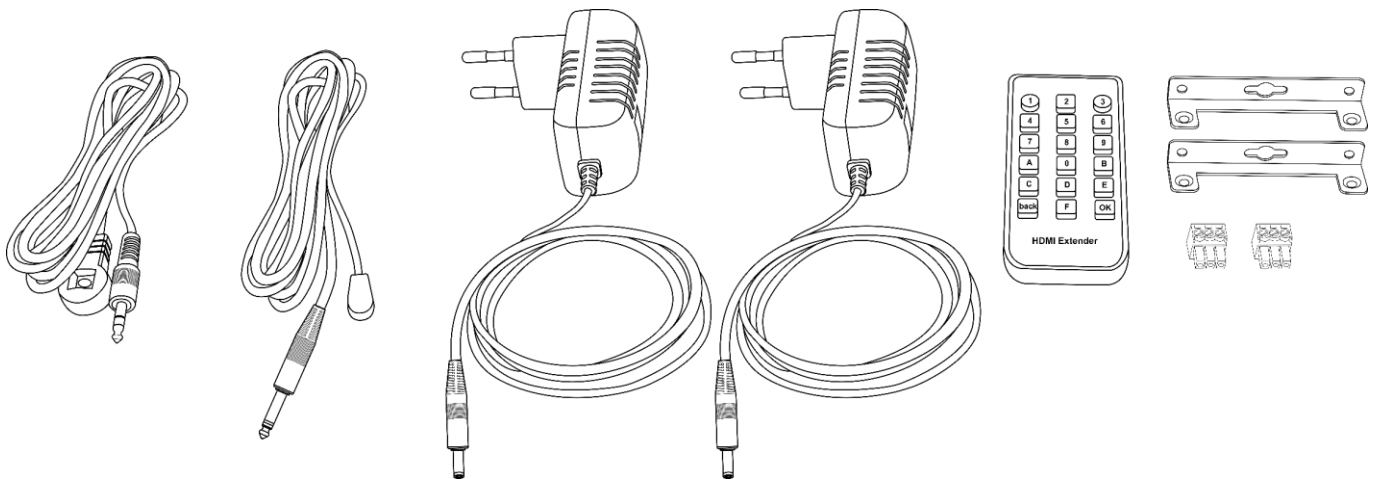
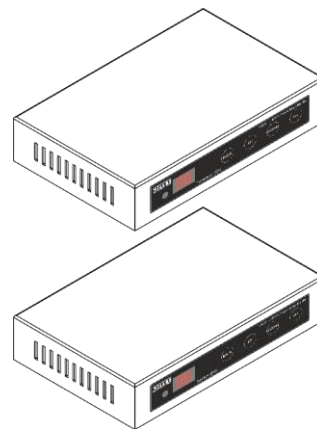


Fig. 01

### 1.2. Intended Use

This device is intended for professional use as an HDMI matrix switch. It is suitable only for indoor installation. 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 the wear and will improve the device's lifespan.

### 1.4. Text Conventions

Throughout the user manual the following text conventions are used:

- Buttons: All buttons are in bold lettering, for example "Press the **UP/DOWN** buttons"
- References: References to chapters and parts of the device are in bold lettering, for example: "Refer to **2. Safety**", "turn the **adjustment screw (02)**"
- 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.



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 bottom plate of the device.

The information label contains the following symbols:



This device is designed for indoor use.



This device is IEC protection class III.



This device shall not be treated as household waste.



Read and observe the instructions in this document.

## 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 various parts of the packaging (plastic bags, polystyrene foam, nails, etc.) within children's reach. Packaging material is a potential source of danger for children.



#### DANGER

Incorrect handling of the AC power adapter may result in hazardous situations

This device is delivered with an AC power adapter. Incorrect handling of the AC power adapter may result in hazardous situations.

- Use only the AC power adapter delivered with the device.
- Do not wrap the power cable around the power adapter or any other object. This can damage the internal wires.
- Do not cover the power adapter with anything when it is plugged into the socket-outlet. This may cause overheating.
- Do not expose the power adapter to water or other liquids.

Do not use the power adapter:

- If it shows signs of overheating, for example the plastic is damaged.
- If the AC input pins show signs of corrosion or overheating.
- If the power cable is damaged or shows signs of material fatigue.



### **Attention** **General safety**

- Do not insert objects into the air vents.
- Do not switch the device on and off in short intervals. This decreases the device's life.
- 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.



### **Attention** **This device shall be used only for the purposes it is designed for.**

This device is designed to be used as a professional laser projector. Any incorrect use may lead to hazardous situations and result in injuries and material damage.

- This device is not designed for permanent operation.
- 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** **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 and installation may be carried by ordinary persons. Service shall be carried out only by instructed or skilled persons. Contact your Highlife 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 operation, 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 to avoid hazards associated with the operation, 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.

### 3. Description of the Device

The DMT VT301 HDMI Matrix Extender Set is a flexible long-distance video signal solution (network), consisting of a single sender and receiver unit. The network can be extended, allowing the connection of multiple HDMI video sources to multiple displays / televisions et cetera within one network. The sender and receiver units can be controlled manually or by using an included infrared remote. It offers IR signal transmission and supports a resolution up to 1920 x 1080P @60 Hz. Private network to up to 255 devices. You'll have the option to order additional receivers (VT301-R) if your setup requires extra receiver units on different positions. Any HDMI switch can be used to attach multiple devices to one single receiver.

Please note that a network switch is required when bridging a distance of more than 100 metres.

#### 3.1. Front View Transmitter

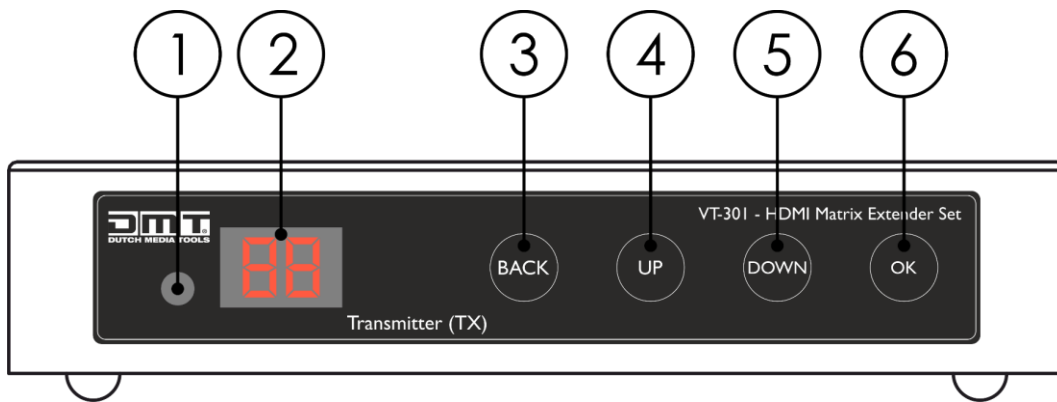


Fig. 02

- 01) Eye for remote control
- 02) LED Display
- 03) Back button
- 04) Up button
- 05) Down button
- 06) OK button

#### 3.2. Back View Transmitter

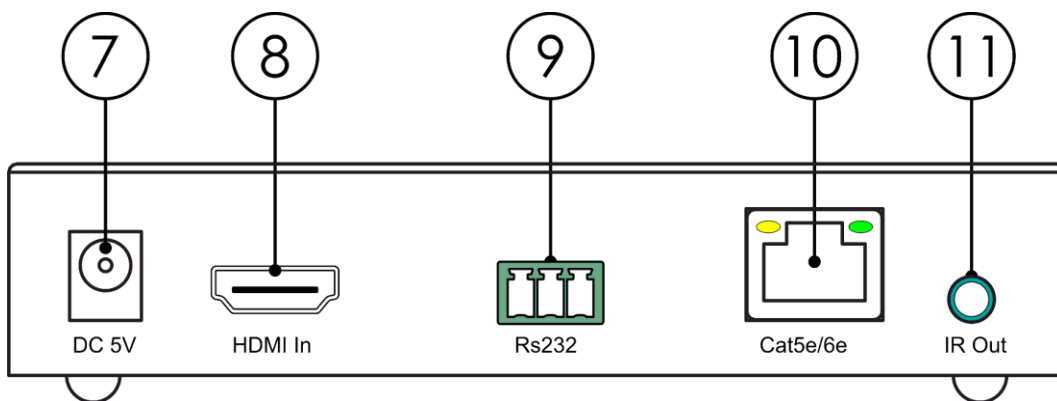


Fig. 03

- 07) DC5V
- 08) HDMI IN
- 09) RS232 (GPIO=General Purpose Input-Output Phoenix connector)
- 10) CAT 5e/6e
- 11) IR Out: Jack connector for Infrared sensor for remote control



### 3.3. Front View Receiver

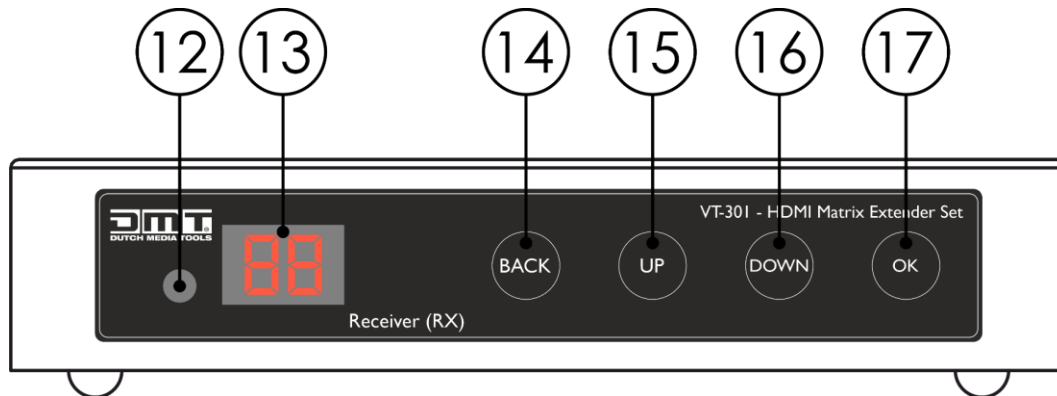


Fig. 04

- 12) Eye for remote control
- 13) LED Display
- 14) Back button
- 15) Up button
- 16) Down button
- 17) OK button

### 3.4. Back View Receiver

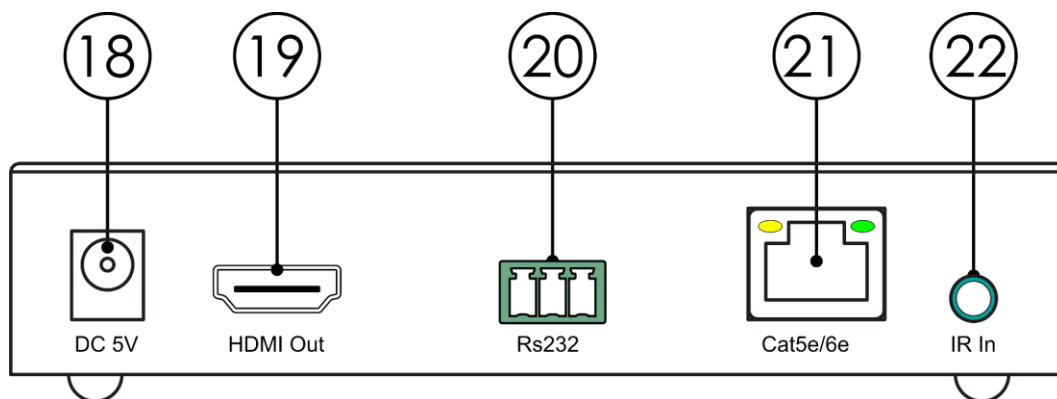


Fig. 05

- 18) DC5V
- 19) HDMI OUT
- 20) RS232 (GPIO=General Purpose Input-Output Phoenix connector)
- 21) CAT 5e/6e
- 22) IR In: Jack connector for Infrared sensor for remote control

### 3.5. Product Specifications

Model:	VT301 - HDMI Matrix Extender Set (TX/RX)
<b>Electrical Transmitter:</b>	
Input voltage:	100–240 V AC, 50/60 Hz
Power consumption:	4 W
Power supply	5V DC / 2A
<b>Physical Transmitter::</b>	
Dimensions:	125 x 80 x 25 mm (LxWxH)
Weight:	0,3 kg
<b>Connections Transmitter:</b>	
Inputs:	CAT 5e/6e HDMI IN 2.0 RS232 (GPIO=General Purpose Input-Output Phoenix connector)
Outputs:	IR Out: Jack connector for Infrared sensor for remote control
HDMI resolution:	Up to 1920 x 1080P @60 Hz
<b>Electrical Receiver:</b>	
Input voltage:	100–240 V AC, 50/60 Hz
Power consumption:	2,7 W
Power supply	5V DC / 2A
<b>Physical Receiver:</b>	
Dimensions:	125 x 80 x 25 mm (LxWxH)
Weight:	0,26 kg
<b>Connections Receiver:</b>	
Inputs:	IR In: Jack connector for Infrared sensor for remote control CAT 5e/6e RS232 (GPIO=General Purpose Input-Output Phoenix connector)
Output:	HDMI OUT 2.0
HDMI resolution:	Up to 1920 x 1080P @60 Hz
<b>Thermal:</b>	
Maximum ambient temperature $t_a$ :	40 °C
Minimum ambient temperature:	-10 °C
Maximum housing temperature $t_c$ :	50 °C
Humidity:	5–90 %

### 3.6. Dimensions

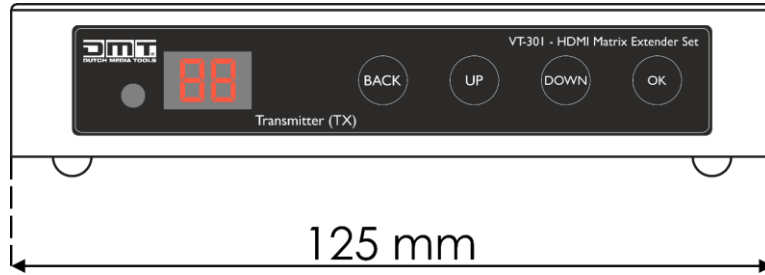


Fig. 06

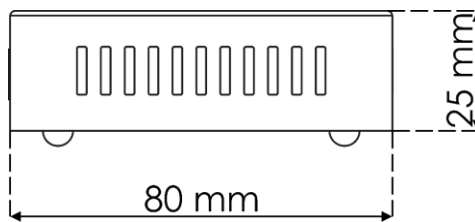


Fig. 07

## 4. Installation

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### 4.1. Installation Site Requirements

- The device must be installed only indoors.
- The device can be positioned on a flat surface.
- The maximum ambient temperature  $t_a = 40\text{ °C}$  must never be exceeded.
- The relative humidity must not exceed 50 % with an ambient temperature of 40 °C.

### 4.2. Connecting to Power Supply



**Attention**  
Incorrect handling of the AC power adapter may result in hazardous situations

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.

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.

## 5. Setup

### 5.1. Warnings and Precautions



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

### 5.2. Setup Examples

#### 5.2.1. One to One

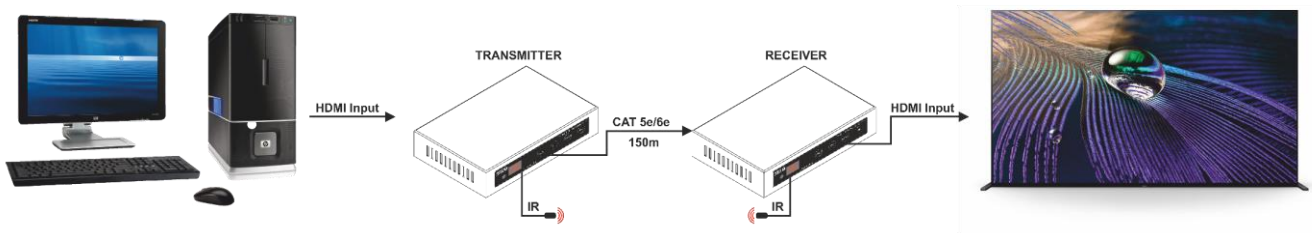


Fig. 08

#### 5.2.2. One to Many

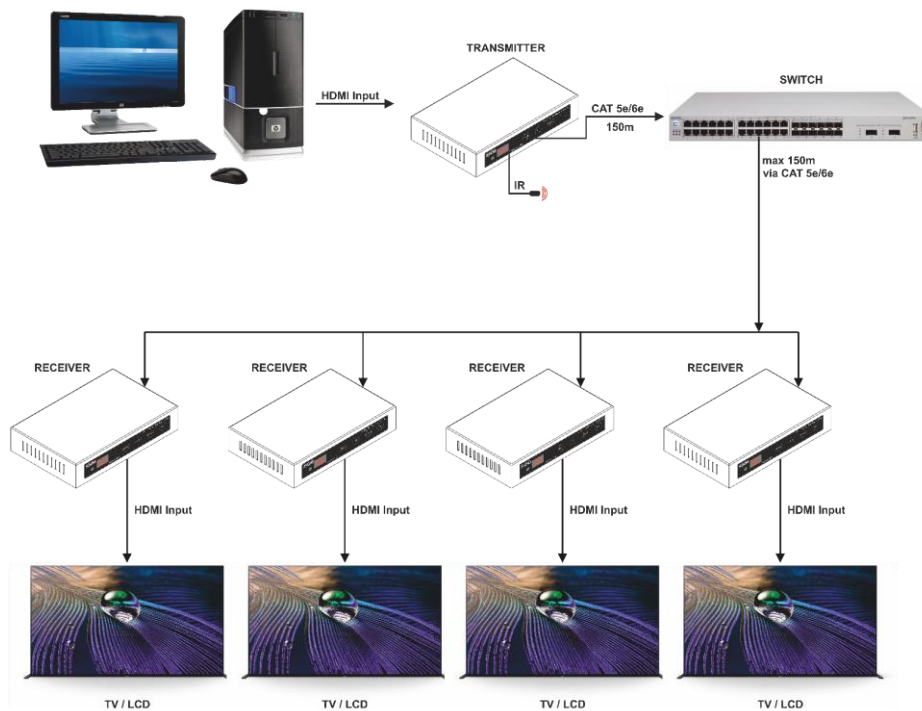


Fig. 09

5.2.3. Many to Many

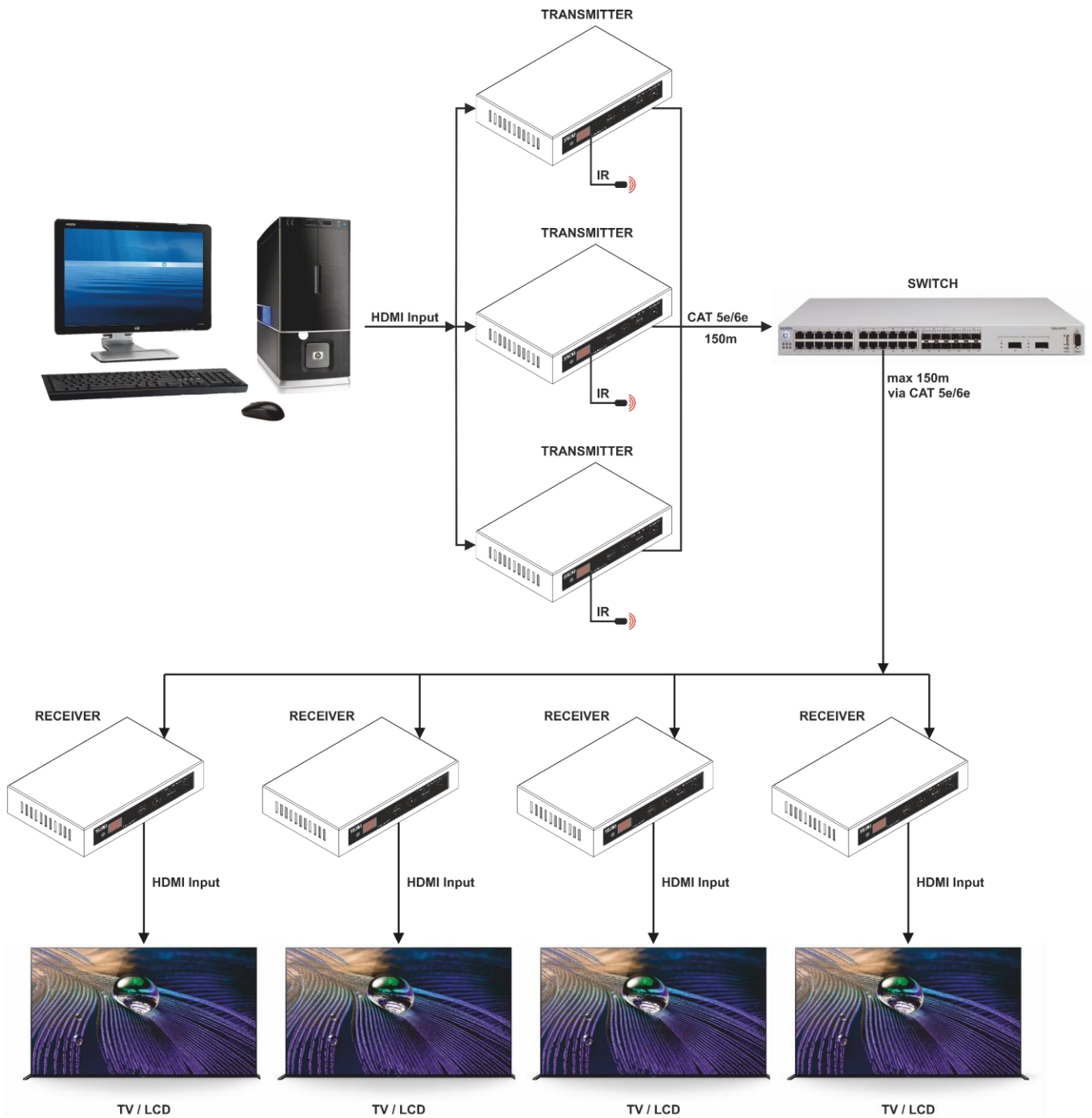


Fig. 10

## 6. Operation

### 6.1. 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 an HDMI matrix switch. It is suitable only for indoor installation. It is suitable only for indoor installation.

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

### 6.2. Remote Control Operation

The device can be operated with an IR remote control. The remote control is included in the delivery.



**DANGER**

**Do not ingest battery, chemical burn hazard.**

The remote control is delivered without batteries. It accepts a CR-2025 coin cell battery. If the coin cell battery is swallowed, it can cause severe internal burns in just 2 hours and can lead to death.

When replacing the battery, make sure that the polarity is correct. Incorrect polarity may damage the remote control.

To operate the device with the IR remote control:

01) Point the remote control at the front of the Matrix Receiver or Transmitter.

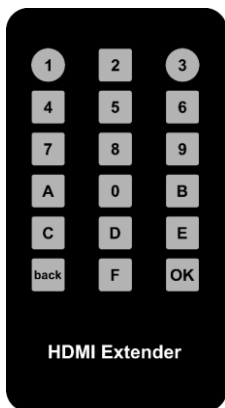


Fig. 11 1

To install the batteries:

- 01) Press on one side of the remote and open the **battery housing** (Fig. 12).
- 02) Remove the entire battery holder bracket (Fig. 13).
- 03) Make sure that you've got the polarity of the battery correctly (Fig. 14).
- 04) Insert a CR-2025 battery into the **battery housing** (Fig. 15).
- 05) Close the **battery housing** (Fig. 16).

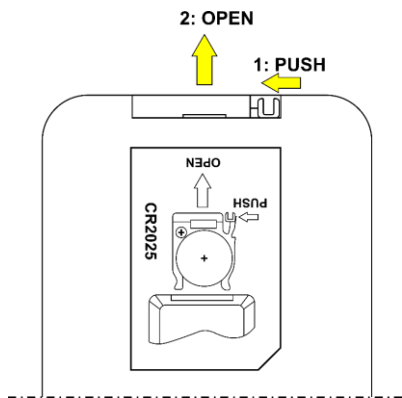


Fig. 12

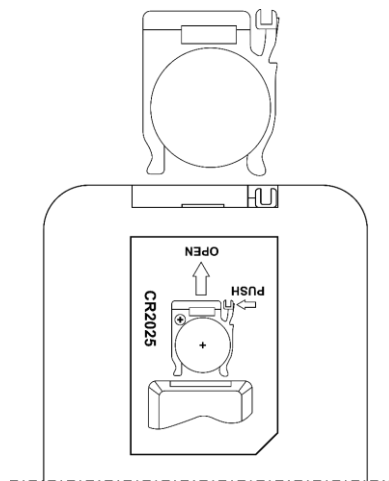
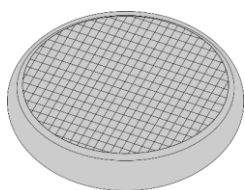


Fig. 13

Negative Side (-)



Positive Side (+)



Fig. 14

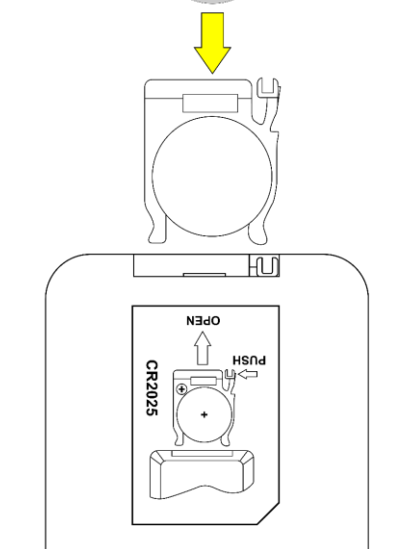


Fig. 15

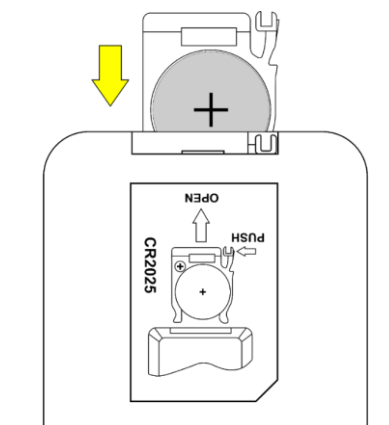


Fig. 16



6.3. Network Setup

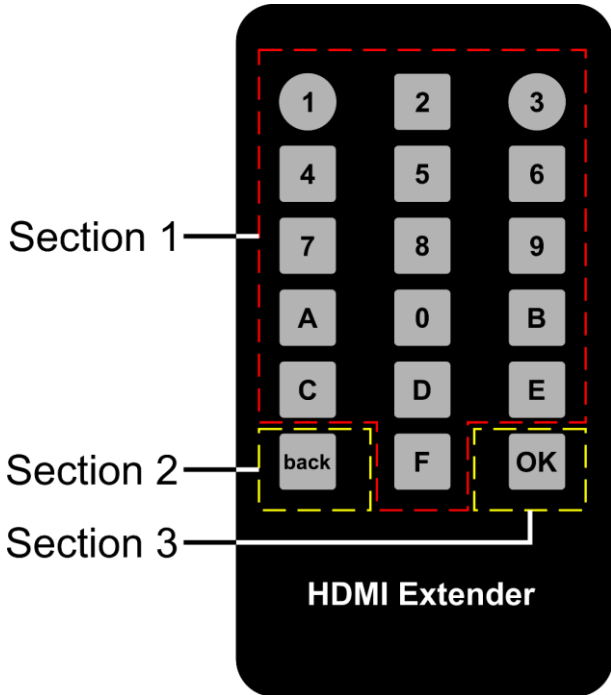


Fig. 17

Section	Function	Description
1	1-9 and A-F	Use these buttons to set the desired network channel.
2	Back	Return to the previously set network channel
3	OK	Press this button to store the desired network channel



	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
01	11	21	31	41	51	61	71	81	91	A1	B1	C1	D1	E1	F1
02	12	22	32	42	52	62	72	82	92	A2	B2	C2	D2	E2	F2
03	13	23	33	43	53	63	73	83	93	A3	B3	C3	D3	E3	F3
04	14	24	34	44	54	64	74	84	94	A4	B4	C4	D4	E4	F4
05	15	25	35	45	55	65	75	85	95	A5	B5	C5	D5	E5	F5
06	16	26	36	46	56	66	76	86	96	A6	B6	C6	D6	E6	F6
07	17	27	37	47	57	67	77	87	97	A7	B7	C7	D7	E7	F7
08	18	28	38	48	58	68	78	88	98	A8	B8	C8	D8	E8	F8
09	19	29	39	49	59	69	79	89	99	A9	B9	C9	D9	E9	F9
0A	1A	2A	3A	4A	5A	6A	7A	8A	9A	AA	BA	CA	DA	EA	FA
0B	1B	2B	3B	4B	5B	6B	7B	8B	9B	AB	BB	CB	DB	EB	FB
0C	1C	2C	3C	4C	5C	6C	7C	8C	9C	AC	BC	CC	DC	EC	FC
0D	1D	2D	3D	4D	5D	6D	7D	8D	9D	AD	BD	CD	DD	ED	FD
0E	1E	2E	3E	4E	5E	6E	7E	8E	9E	AE	BE	CE	DE	EE	FE
0F	1F	2F	3F	4F	5F	6F	7F	8F	9F	AF	BF	CF	DF	EF	FF

## 7. Troubleshooting

This troubleshooting guide contains actions which can be carried out by the user. 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 power up	No power to the device	<ul style="list-style-type: none"> <li>Check if power is switched on and cables are plugged in</li> </ul>
The device does not respond to DMX control	The controller is not connected	<ul style="list-style-type: none"> <li>Connect the controller</li> </ul>
	The device is not in DMX mode	<ul style="list-style-type: none"> <li>Activate DMX mode from the main menu</li> </ul>
	The signal is reversed. The 3-pin/5-pin DMX OUT of the controller does not match the DMX IN of the device	<ul style="list-style-type: none"> <li>Install a phase-reversing cable between the controller and the device</li> </ul>
	The controller is defective	<ul style="list-style-type: none"> <li>Try using another controller</li> </ul>
The device responds erratically to DMX control	Bad data link connection	<ul style="list-style-type: none"> <li>Examine connections and cables. Correct poor connections. Repair or replace damaged cables</li> </ul>
	The data link is not terminated with a 120 Ω termination plug	<ul style="list-style-type: none"> <li>Insert a termination plug in the DMX OUT connector of the last device on the link</li> </ul>
	Incorrect addressing	<ul style="list-style-type: none"> <li>Check address settings and correct, if necessary</li> </ul>
	In case of a setup with multiple devices, one of the devices is defective and disturbs data transmission on the link	<ul style="list-style-type: none"> <li>To find out which is the defective device, bypass one device at a time until normal operation is restored</li> </ul>
The device does not respond to IR remote control	The IR sensor is out of range	<ul style="list-style-type: none"> <li>Try using the remote control from a different angle.</li> </ul>
	The battery of the remote control is depleted	<ul style="list-style-type: none"> <li>Change the battery</li> </ul>

## 8. Maintenance

### 8.1. Safety Instructions for Maintenance

Maintenance and cleaning shall be carried out only by instructed persons. Follow the maintenance schedule established for the site where the electrical enclosure is installed.

Disconnect power supply before servicing or cleaning.

### 8.2. 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.
- There are no deformations on housings, fixations and installation points.
- The power cables are not damaged and do not show any material fatigue.

#### 8.2.1. Basic Cleaning Instructions

To clean the device, follow the steps below:

- 01) Disconnect the electrical enclosure from the power supply.
- 02) Clean the device with a soft, lint-free cloth.
- 03) Remove residual dust with an air-duster or air-blower. Keep the air-duster or air-blower at a minimum distance of 30 cm.



#### Attention

- Do not immerse the device in liquid.
- Do not use alcohol or solvents.
- Do not clean the device with a brush.
- Make sure that the connections are fully dry before connecting the device to the power supply and to other devices.

### 8.3. 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 skilled persons. Contact your Highlite International dealer for more information.

## 9. Deinstallation, Transportation and Storage

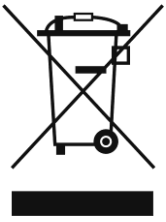
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- Disconnect power supply before deinstallation.
- Use the original packaging to transport the device, if possible.
- Always observe the handling instructions printed on the outer carton box, for example: "Handle with care", "This side up", "Fragile".
- Clean the device before storing. Follow the cleaning instructions in chapter **8.2.1. Basic Cleaning Instructions** on page 18.
- Store the device in the original packaging, if possible.

## 10. Disposal

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### Correct disposal of this product



Disposal of Old Electrical and Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems)

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 applicable collection point for the 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.

## 11. Approval

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





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