

# WIRELESS-TR and WIRELESS-R Instruction Manual



# PERFORM FX

Wireless Transmitter/ Receiver



**CAUTION - ATTENTION - VORSICHT**

RISK OF ELECTRIC SHOCK- DO NOT OPEN  
RISQUE D'ELECTROCUTION- NE PAS OUVRIR  
STROMSCHLAGGEFAHR- NICHT OFFNEN



In Compliance with the following directives: RoHS Directive  
(2002/95/EU) and WEEE Directive (2002/96/EU)  
If this product is no longer functional or reaches the end of its  
usable life, please take it to an approved recycling plant.

CE

✓  
RoHS  
UK  
CA

Version 1.0

[www.terralec.co.uk](http://www.terralec.co.uk)

Dear Customer,

Thank you for purchasing the PerformFX WIRELESS-TR and WIRELESS-R Receiver. With decades of experience in design and production, PerformFX is one of the leading manufacturers of Professional Lighting and Effects equipment. This unit has been designed and manufactured to the highest standards so you can be assured you have made a good investment.

For your safety and to ensure you make full use of the Wireless Receiver features, please make sure you read this manual in full.

**Safety Advice:**

- Read this manual in full before operating this product.
- Keep this manual in a safe place for future reference.
- Heed all warnings and instructions, both in this manual and on the product.
- Carry and transport this product with care. Dropping this product may result in serious mechanical failure.
- The manufacturer accepts no responsibility for injury or damage caused as a result of not following the manual provided.
- This device is not waterproof and should not be used outside.
- In the event of any liquid entering the housing, unplug immediately and contact a qualified engineer.

**Protection from Electric Shock:**

- Only connect this unit to a mains socket with suitable trip and RCD protection.
- To disconnect from the mains socket, always remove by the mains plug. Do not attempt to remove by pulling the mains cable.
- Disconnect the unit from the mains supply before cleaning. Cleaning should be carried out with a soft, dry cloth.
- Do not expose this unit to any liquids.
- Do not operate near exposed water or in high humidity.
- Choose a suitable route for mains cables, ensuring trip hazards are avoided and the mains cable is not at risk of being crushed.
- Do not open this unit to service. There are no user serviceable parts inside. Any servicing or repairs should be carried out by a qualified engineer only. Any attempt to service or adapt this unit will leave your warranty void and could result in serious malfunction or injury.

**Protection from Fire:**

- Do not place near sources of heat or ignition.
- Do not cover or block any ventilation holes.
- Check your AC wall socket will take the power you are applying to avoid overloading the mains supply.

**Protection from Injury and Damage:**

- Do not attempt to modify this unit.
- Always install the unit in a suitable location where vibrations to the unit are avoided.
- Check this unit matches the mains voltage and frequency before plugging it in to your mains socket.
- In the event that any object or liquid enters the machine, switch off immediately, remove from the mains and consult a qualified engineer.
- Should you experience any malfunction or damage to the PSU/ cable, disconnect from the mains supply immediately and consult a qualified engineer.
- All parts should be replaced with genuine spare parts and carried out by a qualified engineer.

### Contents & Unpacking:

Before beginning your initial setup, check the unit has not been damaged in transit. In the event there is damage to the housing, cable or internal components, contact your dealer immediately.

### Specifications:

Power Supply: 5V DC, 350 mA

Carrier Frequency: 2.4 GHz ISM band, 78 channels

Modulation: GFSK

Coverage: 400m (line-of-sight)

Parallel Operation: Max. 7 transmitters

DMX Connector: 3-pin XLR

DMX Channels: 1 universe (512 channels)

Dimensions with antenna: 212 x 18 x 18mm

Weight: 80g

### Product Information:



	Name	Use
1	DMX 512 Connector	Transmitter: 3-pin XLR mounting plug (male). Receiver: 3-pin XLR mounting jack (female).
2	Power Input	Plug in the DC cable of the supplied power supply unit here.
3	Status Indicator	Lights permanently Red at the transmitter when a DMX signal is being transmitted. Flashes Green at the receiver when a DMX signal is being received. Shortly flashes Red, Green and Blue after connecting the power supply.
4	Recessed Button	To change the transmission channel and pair the devices.
5	Antenna	Sends and receives signals.

## **Product Information:**

The PerformFX wireless transmitters and receivers are a cost effective way to connect DMX controllers to DMX fixtures. Perfect for applications where wiring from a controller to DMX lights is hard to install. Lighting professionals know the most time-consuming job is running cables. Using our wireless DMX will dramatically reduce installation times and eliminate messy cabling. Mobile shows are quicker and easier to setup and pull down times are reduced to a minimum whilst making fixed installations simpler to manage and operate.

**The WIRELESS-TR set is easy to use and comes in the form of a male XLR 3-pin Transmitter and female 3-pin XLR Receiver and includes two power supplies.**

**The WIRELESS-R set consists of a female 3-pin XLR Receiver and power supply.**

### **Features:**

- User-friendly 3-pin XLR Connectors
- Interference-free operation in the 2.4 GHz band
- Up to 512 receivers can be controlled by each transmitter
- LED Indication for transmission channel
- Can transmit up to 512 DMX channels
- Operating range up to 400m, line of site
- Up to 7 transmitters can be used in one installation

### **Contents:**

#### **WIRELESS-TR**

Transmitter x1  
Receiver x1  
Power Supply x1  
Manual on Line

#### **WIRELESS-R**

Receiver x1  
Power Supply x1  
Manual on Line

### **Before Use:**

- Each receiver has 7 transmission channels. These can be set by powering the transmitter/ receiver and pushing the small recessed button.
- There are 7 transmission channels to choose from. An LED will light in different colours to represent a transmission channel: Red, Green, Yellow, Blue, Turquoise, Purple and White.
- The transmitter/ receiver should be powered by the supplied power supply's and the transmission channels should be set before connecting to any fixture or controller.
- The transmission channel should be set to the same channel on the transmitter and receiver i.e. both set to Red.

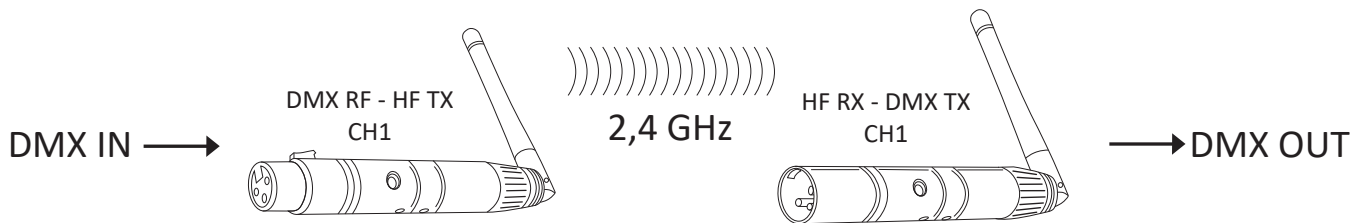
### **Product Use:**

- Once the transmission channel is set.
- Plug the male XLR into a DMX Controller and the female XLR into the first DMX light in the chain, (each connector requires power, so they are supplied with their own UK 5V DC Power Supply).
- As soon as the transmitter receives a DMX signal, the status indicator switches to red.
- Shortly afterward, the status indicators of the receivers starts flashing green to indicate that the DMX signal is being received.
- You can connect up to 512 receivers as long as they are set to the same channel as the transmitter.
- Up to 7 transmitters can be used in one installation.

## **Product Use:**

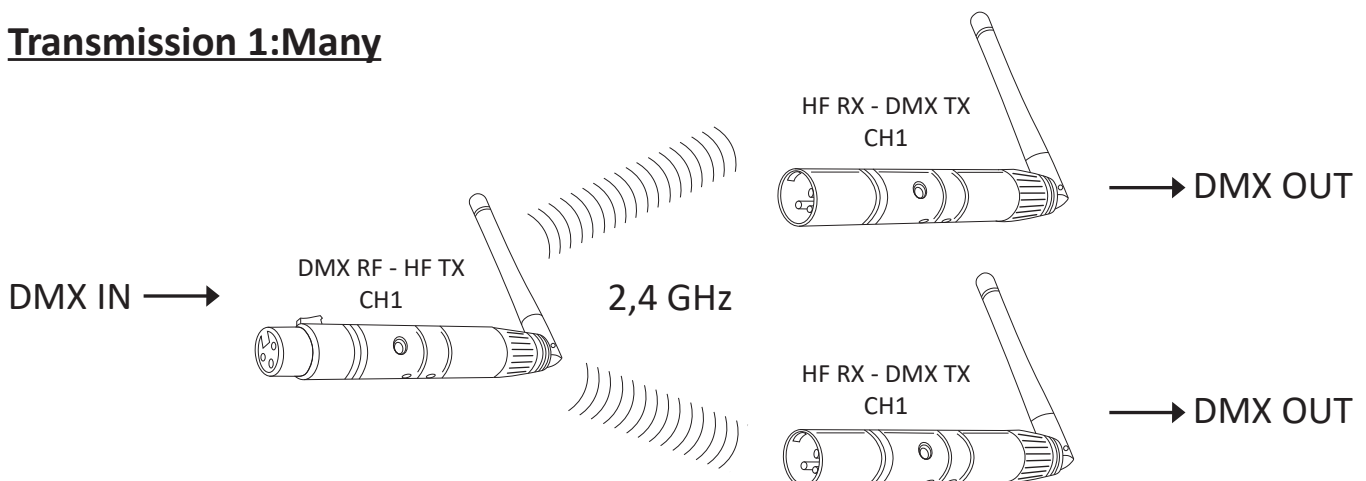
Several receivers may be assigned to a transmitter. It is possible to operate a maximum of 512 receivers.

### **Transmission 1:1**



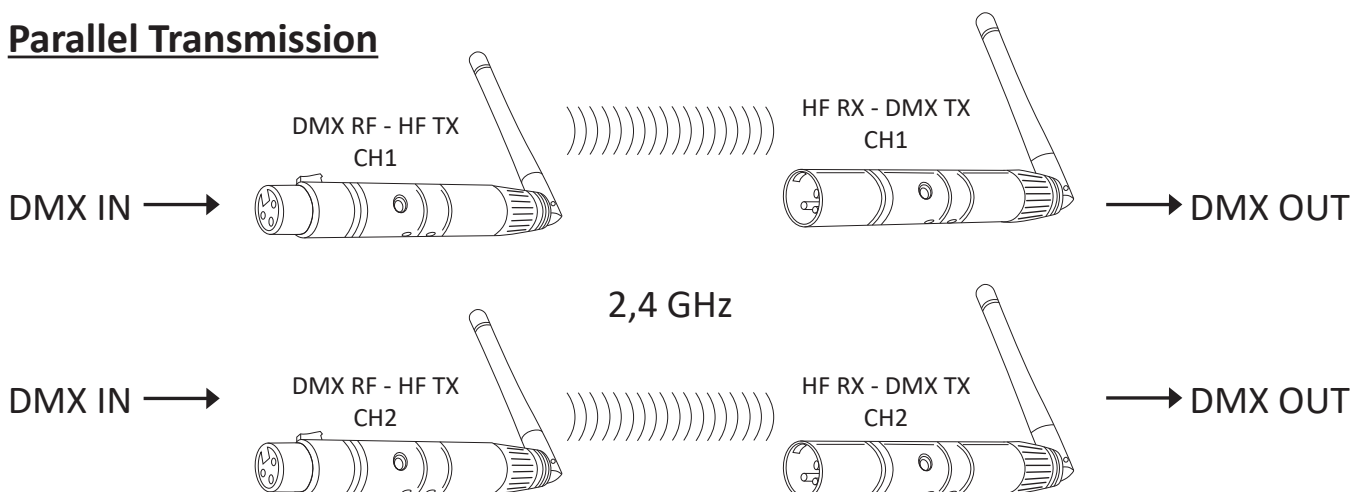
The DMX signal is fed to a transmitter which sends it via RF. A receiver with the same transmission channel receives the RF signal and distributes it as a DMX signal.

### **Transmission 1:Many**



The DMX signal is fed to a transmitter which sends it via RF. Several receivers with the same transmission channel receive the RF signal and distribute it as a DMX signal.

### **Parallel Transmission**



It is possible to operate 7 wireless DMX networks with 7 transmitters in parallel without mutual interference by adjusting them to different transmission channels. The wireless DMX networks operate independent of each other in 1:1 or 1:many transmission mode.

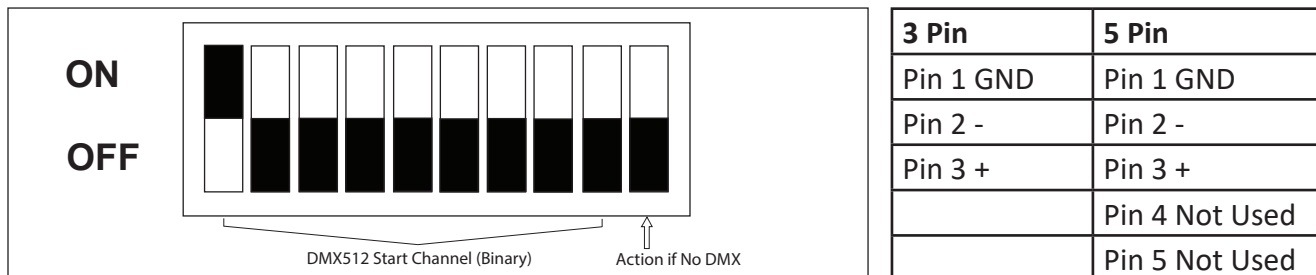
## DMX Basics:

DMX is short for “digital multiplexer”, which is a universal protocol designed for the entertainment industry. It allows control of intelligent fixtures like scanners, moving heads, LED par cans, dimmer packs and effects machines etc. DMX allows you to control many fixture channels, normally up to 512, with varying channels from 0-255 (0-100%). This will give control of channels such as gobo selection, movement, colours, dimming and timing to name just a few.

DMX is a very good system, as all this information can be sent down one cable. Used in conjunction with a DMX controller with memory, all your channel settings can be saved and recalled easily.

DMX was designed so that all manufacturers can use the same protocol/ language to control their fixtures, allowing the end user to use any make fixture from their DMX controller, as long as both are DMX compatible, and the controller has enough channels to control the fixture that is attached. Fixtures have an input and output DMX socket, allowing you to connect from the controller to the first fixture then from that fixture to the next (this is often referred to as ‘daisy chaining’). Sockets are normally 3 pin XLR but can be 5 pin XLR.

DMX fixtures need to have a DMX address set, this is so they can then decode the correct information from the controller. This is normally done by a digital display panel, where the address can be changed by simple up and down buttons; the system address ranges from 1-512. Alternatively, it may be controlled by a row of small switches, called dip switches; on this type of system, the required address is then converted to a binary number.

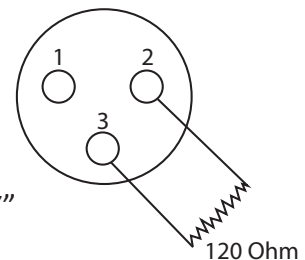


To work out your dip switch settings you can simply download a DMX calculator from the internet. The order in which fixtures are connected in a DMX line does not influence the DMX address, a fixture set to DMX address 1 can be put in a DMX line anywhere from beginning, middle to end. As long as it has its address set to 1, it knows to take information from that point onward.

## DMX Wiring and Connections:

3 pin DMX wiring is more common, although using a 5 pin connector is better to stop confusion with audio leads. With 5 pin connections, not all pins are used, though it is worth checking your manual for your fixture, as some lights use the unused pins for low voltage control.

To avoid erratic behaviour from your fixture, ensure when making cables, you always use suitable DMX cables and do not connect pin 1 GND to the outer casing of the connector (as you may do with your audio cables). Do not make “Y” leads to split cable fixtures; always use the in and out sockets or a DMX splitter.

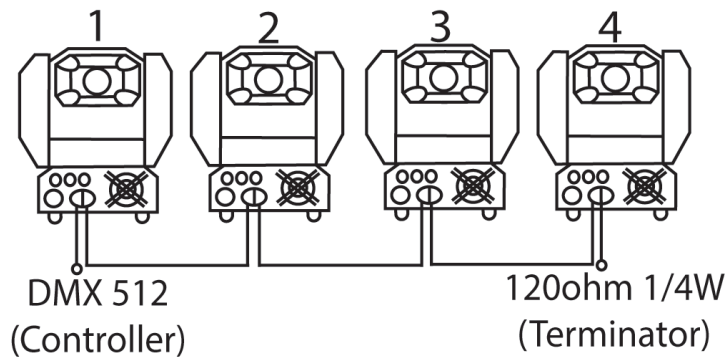


We also recommend you put a DMX terminator in any fixture which does not have a DMX lead connected from the output socket to another fixture; to reduce unexpected behaviour. A DMX terminator is simply a male XLR plug with 120 Ohms, ¼ watt resistor, soldered across pins 2 and 3. You can also buy these pre-made.



## Example of a DMX Fixture with 5 Channels

### Example of a DMX Line



Ch1 Pan	Ch2 Tilt	Ch3 Shutter/Shaking	Ch4 Gobo	Normal	Colour Split
540°	270°	246-255 Open	255 Fastest speed Gobo change	255 Fastest speed Rainbow Effect	255 Fastest speed Rainbow Effect
		247 Fastest speed shaking			
			128 Slowest speed Gobo change	128 Slowest speed Rainbow effect	128 Slowest speed Rainbow effect
			120-127	118-127 Pink	121-127 Pink
		132 Slowest speed shaking	111-119	107-117 Yellow	113-120 Yellow+Pink
			103-110	096-106 Orange	106-112 Yellow
		131 Fastest speed shutter	094-102	086-095 Light Green	098-105 Orange+Yellow
			086-083	075-085 UV Purple	091-097 Orange
			077-085	064-074 Blue	083-090 Light Green+Orange
		16 Slowest speed shutter	069-076	054-063 Red	076-082 Light Green
			060-068	043-053 Amber	068-075 UV Purple
			052-059	032-042 Light Blue	061-067 Blue
		008-015 Open	044-051	022-031 Magenta	053-060 Red+Blue
		000-007 Blackout	035-043	011-021 Green	046-052 Red
			0-26-034	000-010 White	038-045 Amber
			018-025		031-037 Light Blue
			009-017		023-030 Magenta
			000-008		016-022 Green+Magenta
					008-016 Green
					000-007 White

Each lighting fixture takes up 512 DMX Channels.

You have a cable from the controller to the first fixture cable, then from first to second and so on. The last light then has a DMX terminator plugged in.

Fixture 1 would be set to DMX address: 1 dipswitch number 1 on

Fixture 2 would be set to DMX address: 6 dipswitch number 2 & 3 on

Fixture 3 would be set to DMX address: 11 dipswitch numbers 1, 2 & 4 on

Figure 4 would be set to DMX address: 16 dipswitch number 5 on.

We recommend you read manuals for your DMX fixture and controller in full. Some controllers tell you what each fixture needs to be, and some lights need other settings changed before they will work.

When setting your DMX address, you must ensure fixtures do not overlap from one to the next.

You can set 2 fixtures to the same address, as long as they are the same fixture (i.e. same channel layout), then they will do the same as each other.

**Thank you for taking the time to read this information.  
For further information, please contact [sales@terralec.com](mailto:sales@terralec.com) or visit  
[www.terralec.co.uk](http://www.terralec.co.uk)**