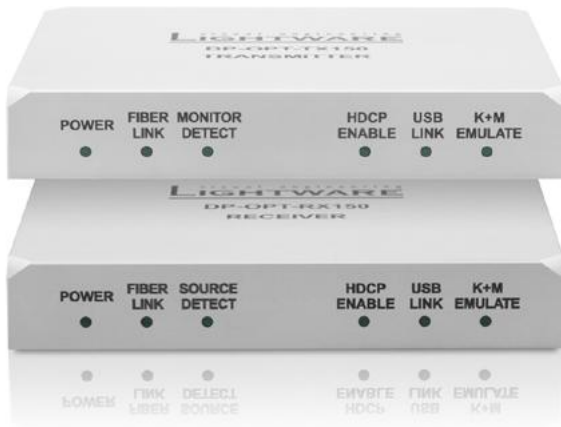# DP-OPT-TX150, DP-OPT-RX150

KVM DisplayPort Fiber Optical Extenders

Part No: 9151 0018 (TX100), 9151 0019 (RX100)

Highlight Features

- DisplayPort 1.1a + Keyboard + Mouse fiber extender
- Dual-mode DP: supports DVI and HDMI adaptors
- Up to UHD and 4096x2400@30Hz pixel resolution
- HDCP 1.1 compliant extension over one multimode fiber
- Compatible with Apple LED Cinema Display
- Support of the latest Mac laptop and desktop computers with Thunderbolt port
- USB HID* extension of maximum two devices over the same multimode fiber

Lightware DP-OPT-TX150 and DP-OPT-RX150 devices extend Dual-mode DisplayPort 1.1a high resolution video and embedded audio with optional HDCP encryption plus USB HID* over one multimode fiber up to 1100 m.

DisplayPort is one of the newest video interface standards. Using DisplayPort, high resolution video and excellent quality audio can be transmitted. The interface's 10.8 Gbps bandwidth is capable of transmitting 2560x1600@60Hz pixel resolution video with full support of content protection (HDCP). UHD and 4Kx2K resolution can be achieved up to 30Hz frame rate.

Intelligent HID Emulation is provided for two devices with full transparency. The special HID devices - including keyboard and mouse - are emulated by the extender and transparently transferred to the computer with the result that no drivers are required for the proper functionality, it's as easy as Plug & Play. DP-OPT-TX150 has 2 extra local USB ports with a built-in HUB and can be connected to the PC/Mac with a single USB cable.

Dual-mode DisplayPort: when connecting a DVI or HDMI display through an adaptor cable, Dual-mode DisplayPort graphic cards reconfigure their outputs to DVI or HDMI accordingly. Lightware DisplayPort extenders support Dual-mode port extension and adaptor cables.
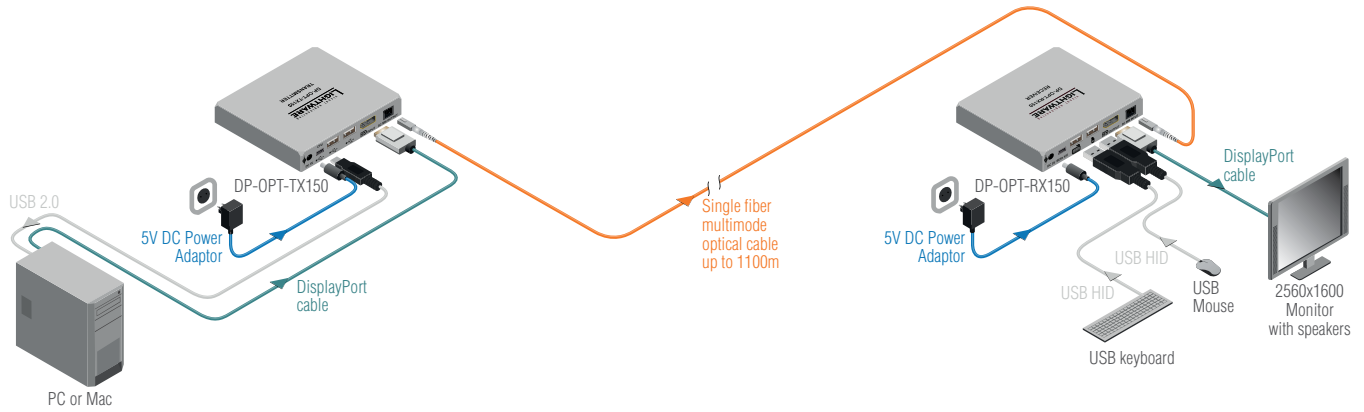
Thunderbolt: Lightware's DisplayPort extenders can be used with Thunderbolt sources and devices. The extender pair and the DisplayPort monitor have to be placed at the end of the Thunderbolt chain. Apple Thunderbolt Display is not supported.

Single Fiber Technology makes these units fully DisplayPort 1.1a and HDCP 1.1 compliant without the need of a second fiber cable or copper connections. To simplify cabling, the bi-directional communication - necessary for DisplayPort Link Training, HDCP handshaking and USB transfer - is performed on the same fiber core that transmits the video signal. Both receiver and transmitter are remote configurable from either side through the mini USB connector.
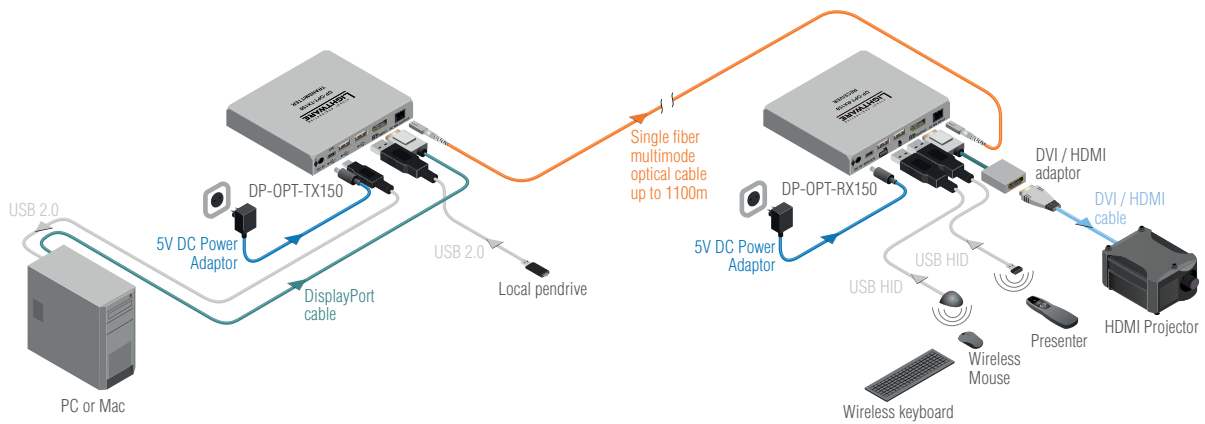
*USB HID: Human Interface Device such as keyboard, mouse or presenter.

DP-OPT-TX150, DP-OPT-RX150

Standalone Diagram with High Eesolution DP Monitor

USB 2.0

DP-OPT-TX150

5V DC Power Adaptor

DisplayPort cable

PC or Mac

Single fiber multimode optical cable up to 1100m

DP-OPT-RX150

5V DC Power Adaptor

USB HID

USB HID

USB keyboard

USB Mouse

DisplayPort cable

2560x1600 Monitor with speakers

Standalone Diagram with HDMI Projector

USB 2.0

DP-OPT-TX150

5V DC Power Adaptor

DisplayPort cable

PC or Mac

USB 2.0

Local pendrive

Single fiber multimode optical cable up to 1100m

DP-OPT-RX150

5V DC Power Adaptor

USB HID

USB HID

Wireless keyboard

Wireless Mouse

Presenter

DVI / HDMI adaptor

DVI / HDMI cable

HDMI Projector

Transmitter and Receiver Front and Rear View

POWER   FIBER LINK   MONITOR DETECT   HDCP ENABLE   USB LINK   K+M EMULATE

POWER   FIBER LINK   SOURCE DETECT   HDCP ENABLE   USB LINK   K+M EMULATE

CPU

DC 5V   INPUT   SC MM OUTPUT

DP-OPT-TX150 rear view

DC 5V   SERVICE   OUTPUT   SC MM INPUT

DP-OPT-RX150 rear view

DC connector

USB-A connectors for local devices

DisplayPort connector

USB connection towards the computers

USB control

USB-A connectors for extended devices

SC fiber connector
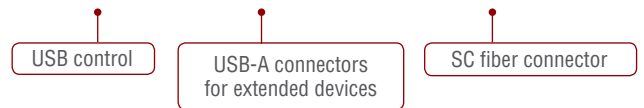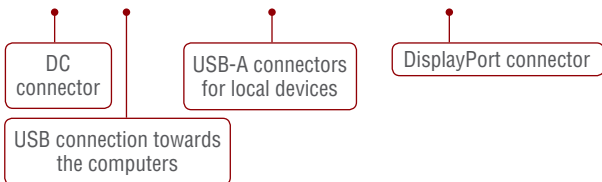
DP-OPT-TX150, DP-OPT-RX150

Applications

- Long distance lossless DisplayPort signal and USB HID transmission
- Apple Cinema Display compatible AV extension
- Ground loop isolation

Features

- DisplayPort 1.1a + Keyboard + Mouse fiber extender
- Dual-mode DP: supports DVI and HDMI adaptors
- 2560x1600@60Hz maximum pixel resolution
- UHD and 4Kx2K resolution can be achieved up to 30Hz frame rate (4096x2400@30Hz)
- HDCP 1.1 compliant extension over one multimode fiber
- Compatible with Apple LED Cinema Display
- Support of the latest Mac laptop and desktop computers with Thunderbolt port
- USB HID (Human Interface Device) only
- External USB HUBs are supported
- Single Fiber Technology
- Zero frame latency, no delay
- No compression
- SC optical fiber connector
- Solid Aluminum body
- Several status LEDs: power, fiber link, source detect, monitor detect, HDCP enable, USB link, K+M emulate
- USB control
- Kensington lock support

Connectors

DisplayPort:	Standard DisplayPort gold plated connector
Fiber:	SC receptacle
USB HID (RX)	2 x USB-A female connector
USB (TX)	2 x USB-A female connector
USB control:	Mini USB-B female connector
Power:	DC connector (1.35 / 3.5 mm barrel receptacle)

Specifications

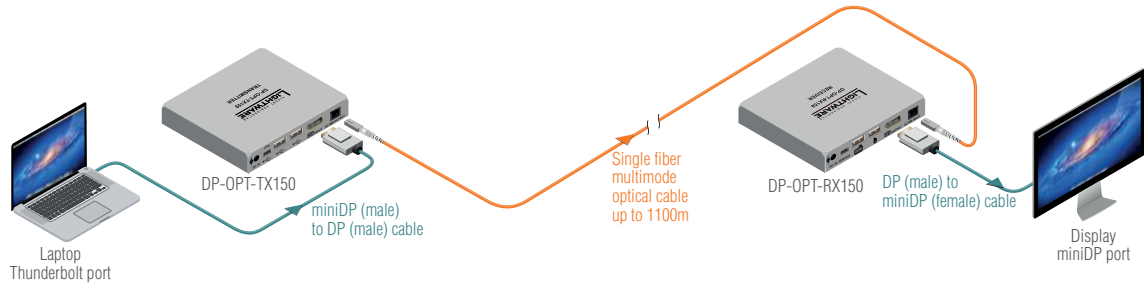|	
Data rate:	1.62 / 2.7 Gbps/lane,maximum: 10.8 Gbps total
Max resolution at 60Hz:	2560x1600 pixels
Max resolution at 30Hz:	4Kx2K, 4096×2400 pixels
Other supported resolutions:	4096x2160 up to 30 Hz 3840x2160 up to 30Hz 1920x1080@120 Hz
Color depth:	24, 30, 36, 48 bits deep color
HDCP pass through:	Yes
Fiber:	50/125 SC Multimode (preferred) 62.5/125 SC Multimode
Laser wavelengths:	High speed lanes: 778; 800; 825; 850 nm Low speed lanes: 911; 980 nm
Laser class specifications:	Class 3R
Transmitter output OMA*:	-6.25 dBm (worst case)
Receiver OMA* sensitivity:	-14.25 dBm (worst case)
Transmission distance:	1100 m (using OM4 type fiber)
Power supply:	External power adaptor (100 to 240 V AC, 50-60 Hz)(5 V DC, 2 A)
Power consumption (RX):	3,25 W (typ.) 3,5 W (max) without USB 3,75W (typ.) with USB 8,25 W (max 500mA/USB A conn) with USB
Power consumption (TX):	2,75 W (typ.) 3 W (max) without USB 3,1W (typ.) with USB 8,2 W (max 500mA/USB A conn) with USB
Enclosure:	Solid Aluminum
Dimensions:	110 W x 95 D x 18 H mm
Weight:	300 g
Compliance:	CE
Warranty:	3 years

OMA*: Optical Modulation Amplitude
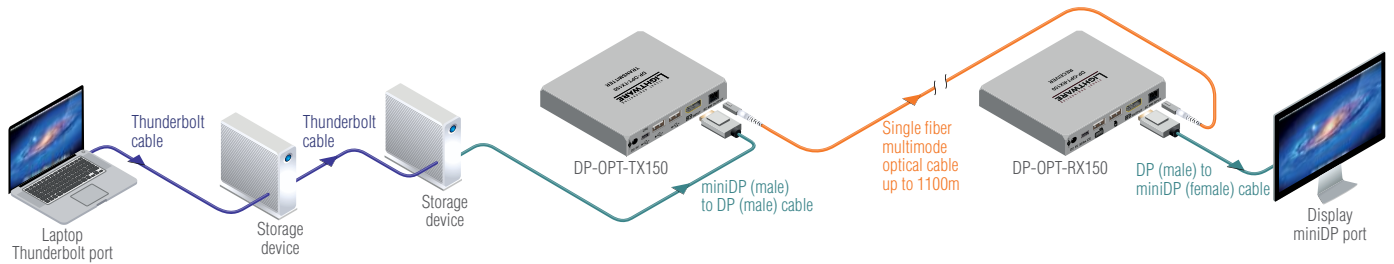
Maximum extension distances

	OM1 (62.5/125)	OM2 (50/125)	OM3 (50/125)	OM4 (50/125)
DisplayPort 2560x1600@60Hz 24bpp	150 m	350 m	800 m	1100 m

Standalone Diagram with Apple Macbook Pro and LED Cinema Display

Laptop
Thunderbolt port

DP-OPT-TX150

miniDP (male)
to DP (male) cable

Single fiber
multimode
optical cable
up to 1100m

DP-OPT-RX150

DP (male) to
miniDP (female) cable

Display
miniDP port

Standalone Diagram with Daisy Chained Thunderbolt Devices and LED Cinema Display

Laptop
Thunderbolt port

Thunderbolt
cable

Storage
device

Thunderbolt
cable

Storage
device

DP-OPT-TX150

miniDP (male)
to DP (male) cable

Single fiber
multimode
optical cable
up to 1100m

DP-OPT-RX150

DP (male) to
miniDP (female) cable

Display
miniDP port

Supplied Accessories
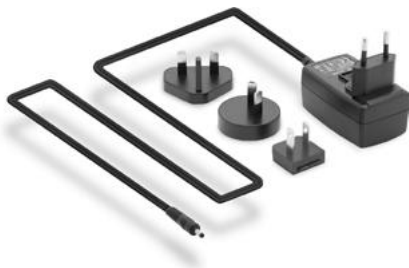
PSU-5VS Universal DC adaptor (Part No: 1180 0050)
Wall power adaptor with interchangeable plug for international use.
Universal input: 100-240 V AC, 50-60 Hz
Output: 5 V DC, 2,5 A

USB to USB cable (Part No: 1374 0004)
USB cable with male 5-pin mini USB-B to USB-A connector.

Optional Accessories

Rack shelf (Part No: 5240 0269)
1U high rack shelf provides mounting holes for fastening two half-rack or four quarter-rack sized units. Pocket sized devices can also be fastened on the shelf.

Under desk mounting kit double (Part No: 5240 0276)
The UD-kit double makes it easy to mount a single device or multiple devices on any flat surface (e.g. furniture).