Fiber Optical DisplayPort Extender

Part No: 9151 0016 (TX100), 9151 0017 (RX100)

Highlight Features

- DisplayPort 1.1a extension over Single Fiber
- Dual-mode DP: supports DVI and HDMI adaptors
- Up to UHD and 4096x2400@30Hz pixel resolution
- 10.8 Gbps datarate
- HDCP 1.1 compliant extension over one multimode fiber
- Full support of Link Training
- Compatible with Apple Cinema Display and 30" LCD displays

Lightware proudly presents the world's first Single fiber DisplayPort extender.

Lightware DP-OPT-TX100 and DP-OPT-RX100 devices extend Dual-mode DisplayPort 1.1a high resolution video and embedded audio, with optional HDCP encryption, over one multimode fiber up to 1100 m.

DisplayPort is one of the newest video interface standards introduced by VESA. 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, DPCP). 4Kx2K resolution can be achieved up to 30Hz frame rate.

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.
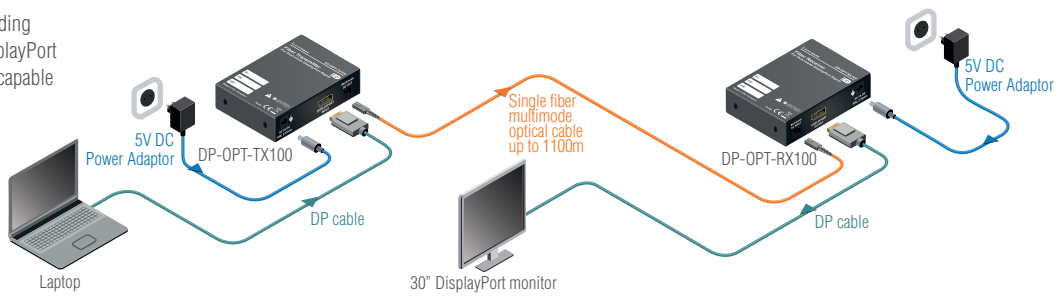
Single Fiber Technology makes these units fully DisplayPort 1.1a and HDCP 1.1 compliant without the need of a second fiber cable or copper connections. To simplify cabling, the bi-directional communication necessary for Link Training and HDCP handshaking, is performed on the same fiber core that transmits the video signal.

Galvanic isolation between source and display helps to avoid ground loops and hum effects. No delay occurs in the signal during optical conversion as the video image is transported without any frame latency.
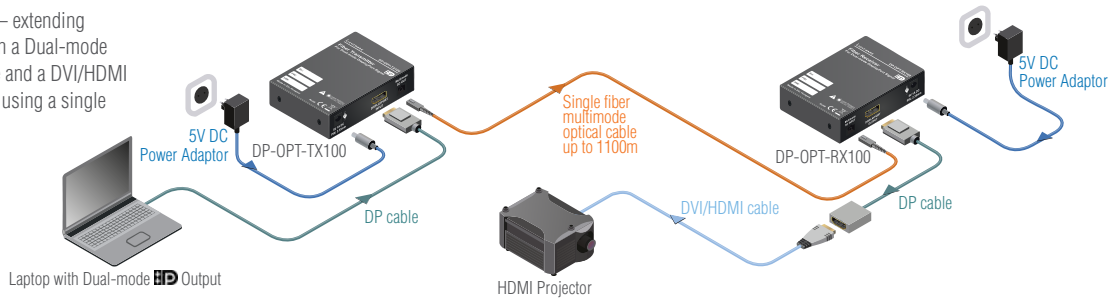
DP-OPT-TX100, DP-OPT-RX100
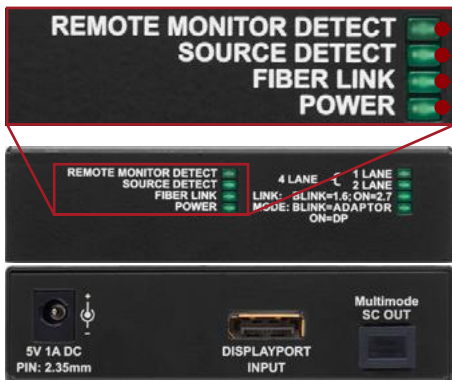
Standalone Operation

DisplayPort mode – extending connection between a DisplayPort source and a DisplayPort capable display.

5V DC Power Adaptor

DP-OPT-TX100

5V DC Power Adaptor

Laptop

DP cable

Single fiber multimode optical cable up to 1100m

30" DisplayPort monitor

DP cable

DP-OPT-RX100

5V DC Power Adaptor

DVI / HDMI mode – extending connection between a Dual-mode DisplayPort source and a DVI/HDMI capable display by using a single adaptor.

5V DC Power Adaptor

DP-OPT-TX100

Laptop with Dual-mode **HD** Output

DP cable

Single fiber multimode optical cable up to 1100m

HDMI Projector

DVI/HDMI cable

DP cable

DP-OPT-RX100

5V DC Power Adaptor

Detailed Description of LED Indicators (both TX100 and RX100)

REMOTE MONITOR DETECT
SOURCE DETECT
FIBER LINK
POWER

REMOTE MONITOR DETECT
SOURCE DETECT
FIBER LINK
POWER

4 LANE   1 LANE
          2 LANE
LINK: BLINK=1.6; ON=2.7
MODE: BLINK=ADAPTOR ON=DP

5V 1A DC
PIN: 2.35mm

DISPLAYPORT INPUT

Multimode SC OUT

DP-OPT-TX100

(REMOTE) MONITOR DETECT LED – is on when a powered monitor is connected to the RX100 device.

(REMOTE) SOURCE DETECT LED – in DisplayPort mode this LED indicates the source's power status. If a powered source is connected to TX100 this LED is on, otherwise it's off. In DVI/HDMI mode (when using the extender with DVI/HDMI monitor) this LED is blinking.

FIBER LINK LED – blinks when the link is active between the TX100 and RX100 devices, and they're ready to use.

POWER LED – is on when the device is powered by 5 V DC adapter.

1 LANE / 2 LANE / 4 LANE LEDs – in DisplayPort mode these LEDs indicate if 1, 2, or 4 lanes of DisplayPort Main Link's four high speed lanes are used (determined by the video resolution). In DVI/HDMI mode both LEDs are off.

LINK LED – in DisplayPort mode this LED blinks when link speed is the lower 1.62 Gbps, the LED is on when link speed is the higher 2.7 Gbps.

MODE LED – this LED is on when a DisplayPort monitor is connected to the RX100 device, the LED blinks when a DVI/HDMI monitor is connected to the RX100 device via a DP to DVI/HDMI adaptor.

1 LANE   4 LANE
2 LANE
LINK: BLINK=1.6   ON=2.7Gbps
MODE: BLINK=ADAPTOR ON=DP

MONITOR DETECT
REMOTE SOURCE DETECT
FIBER LINK
POWER

1 LANE   4 LANE
2 LANE
LINK: BLINK=1.6   ON=2.7Gbps
MODE: BLINK=ADAPTOR ON=DP

Multimode SC INPUT

DISPLAYPORT OUTPUT

5V 1A DC
PIN: 2.35mm

DP-OPT-RX100

DP-OPT-TX100, DP-OPT-RX100

Applications

- Long distance lossless DisplayPort signal transmission
- Apple Cinema Display port extension
- Ground loop isolation

Features

- Single Fiber Technology
- Extends DisplayPort 1.1a signals over one multimode fiber core
- DisplayPort to DVI/HDMI connection by using a single adaptor
- 2560x1600@60Hz maximum pixel resolution
- UHD and 4Kx2K resolution can be achieved up to 30Hz frame rate (4096x2400@30Hz)
- HDCP 1.1a compliant
- Zero frame latency, no delay
- No compression
- SC fiber optical connectors
- Several status LEDs: power, fiber-link, sorce detect, monitor detect, main link lane number, link speed, DisplayPort or DVI/HDMI mode
- Robust metal housing
- Rack mountable

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, 4096x2400 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
Video delay:	0 frames
HDCP pass through:	Yes
LED indicators (both TX and RX):	Power, fiber-link, sorce detect, monitor detect, main link lane number, link speed, DisplayPort or DVI/HDMI mode
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, 1 A)
Power consumption (TX100):	3 W (typ.), 5 W (max.)
Power consumption (RX100):	3 W (typ.), 5 W (max.)
Enclosure:	1 mm metal
Dimensions:	100,4 W x 67,6 D x 26 H mm
Net weight (TX):	200 g
Net weight (RX):	205 g
Compliance:	CE
Warranty:	3 years

Connectors

Power:	DC connector (2.5 / 5.5 mm barrel receptacle)
DisplayPort:	Standard DisplayPort goldplated connector
Fiber:	SC receptacle

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

DP-OPT-TX100, DP-OPT-RX100

Supplied Accessory

PSU-5VU Universal DC adaptor
(Part No: 1180 0049)
Wall power adaptor with interchangeable plug for international use.
Universal input: 100-240 V AC, 50-60 Hz,
Output: 5V DC, 2.5A

Optional Accessories

Under desk mounting kit
(Part No: 5240 0275)
The UD-kit makes easy to mount a single device on any flat surface (e.g. furniture).

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

Rack shelf (Part No: 5240 0269)
The 1U high rack shelf provides mounting holes for fastening two half-rack or four quarter-rack sized units.