



## 1. General Description

The FX-D120 optical DVI extension module is designed to let digital flat panel display signal extend over 300 meters (1,000ft) away from host based on DVI standard by optical transmission. It can transmit EDID data and HDCP over fiber in real time. FX-D120 can be used with DVI devices as well as HDMI standard devices such as BluRay player or PS4.

- High speed and long distance over a LC type single fiber cable transmits TMDS video signals and EDID data by optical fiber
- Extends up to 300m
- DVI specification 1.0 compliant
- Supports HDCP compliant devices with HDCP 1.1 specification
- Maximum resolution WUXGA or 1080p (12bit Deep Color)

## 2. General Specification

	Transmitter	Receiver
Input and Output Signal	TMDS Signal (DVI 1.0 standard)	TMDS Signal (DVI 1.0 standard)
Video Bandwidth	2.25Gbps / Channel	
Module Dimension	82.4 x 41 x 15.4 mm (W x H x D)	
Module Weight	-	
Copper Connector	24 PIN DVI-D Plug(input)	24 PIN DVI-D Plug(output)
Optical Connector	1 LC Connector	1 LC Connector
Recommended Fiber	50 / 125um Multi-mode glass-fiber	
Maximum Supported Resolution	PC : WUXGA(1920x1200)60Hz HD : 1080P(12bit Deep Color)	

## 3. Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Power Supply	$V_{CC}$	-0,3	+5,5	V
Operating temperature	$V_{OT}$	0	+50	°C
Storage temperature	$V_{ST}$	-20	+70	°C
Relative Humidity	$H_{RH}$	10	80	RH

**Notice:** Stresses greater than those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operations section for extended periods of time may affect reliability.



## 4. Electrical Specification

### 4.1 Transmitter Module

	Parameter	Symbol	Min.	Typ	Max.	Units	Condition
POWER	Supply Voltage (Option External Power)	$V_{CC}$		5.0		V	
	Supply Current	$I_{CC}$	-	510		mA	
	Power Dissipation	$P_o$	-	2.55		W	
TMDS	Reference voltage for graphic signal	$V_{REF}$	3.1	3.3	3.5	V	
	Single-ended high level input voltage	VH	$V_{REF}-0.01$		$V_{REF}+0.01$	V	
	Single-ended low level input voltage	VL	$V_{REF}-0.6$		$V_{REF}-0.4$	V	
	Single-ended input swing voltage	$V_{ISWING}$	0.4		0.6	V	
	Single-ended standby input voltage		$V_{REF}-0.01$		$V_{REF}-0.01$	V	
	Data Output Load	RLD		50		$\Omega$	

Transmitter module of FX-D120 is Class 1M Laser Product.(TBD)

### 4.2 Receiver Module

	Parameter	Symbol	Min.	Typ	Max.	Units	Condition
POWER	Supply Voltage (External Power)	$V_{CC}$		5.0		V	
	Supply Current	$I_{CC}$	-	400		mA	
	Power Dissipation	$P_o$	-	2		W	
TMDS	Reference voltage for graphic signal	$V_{REF}$	3.1	3.3	3.5	V	
	Single-ended output swing voltage	$V_{OSWING}$	0.4		0.6	V	AC couple
	Differential Input Clock Frequency	$V_{RXC}$	25		225	MHz	

### 4.3 Connector Pin Assignment

#### 4.3.1 Transmitter

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1.	T.M.D.S. Data2-	9.	T.M.D.S. Data1-	17.	T.M.D.S. Data0-
2.	T.M.D.S. Data2+	10.	T.M.D.S. Data1+	18.	T.M.D.S. Data0+
3.	T.M.D.S. Data2 Shield	11.	T.M.D.S. Data1 Shield	19.	T.M.D.S. Data0 Shield
4.	No Connect	12.	No Connect	20.	No Connect
5.	No Connect	13.	No Connect	21.	No Connect
6.	DDC Clock (SCL)	14.	+5V Power(Input)	22.	T.M.D.S Clock Shield
7.	DDC Data (SDA)	15.	Ground (for +5V)	23.	T.M.D.S Clock+
8.	No Connect	16.	Hot Plug Detect	24.	T.M.D.S Clock-

#### 4.3.2 Receiver

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1.	T.M.D.S. Data2-	9.	T.M.D.S. Data1-	17.	T.M.D.S. Data0-
2.	T.M.D.S. Data2+	10.	T.M.D.S. Data1+	18.	T.M.D.S. Data0+
3.	T.M.D.S. Data2 Shield	11.	T.M.D.S. Data1 Shield	19.	T.M.D.S. Data0 Shield
4.	No Connect	12.	No Connect	20.	No Connect
5.	No Connect	13.	No Connect	21.	No Connect
6.	DDC Clock (SCL)	14.	+5V Power(Output)	22.	T.M.D.S Clock Shield
7.	DDC Clock (SCL)	15.	Ground (for +5V)	23.	T.M.D.S Clock+
8.	No Connect	16.	Hot Plug Detect	24.	T.M.D.S Clock-

### 4.4 Cable Information

#### Optical Fiber Cable(LC to LC)



## 5. RoHS

### Certificate of Conformance RoHS

Dear Customer,

On January 27, 2003, the European Parliament and the Administrative Council adopted Directive 2002/95/EC (RoHS) that concerns the "Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment". The parts currently delivered by PureLink GmbH, are already free of lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (Cr6+), polybrominated biphenyl (PBB) and polybrominated diphenyl (PBDE). This Certification of Conformance is to certify that the products listed below comply with RoHS Directive mentioned above:

- FX-D120

If you have any further questions regarding the RoHS compliance of parts delivered, please do not hesitate to contact your supplier.