



1. General Description

FX-P320, the optical HDMI extension module is designed to let digital flat panel displays signal extend over 300 meters away from host based on HDMI standard by optical transmission technology. Its small package transmits up to four video and one low-speed lane, while simultaneously receiving one low-speed signal, all over one multimode fiber cable.

- Long distance transmission of digital AV signals corresponding to T.M.D.S - over 300 meter (1,000ft) over on single multi-mode fiber cable.
- TMDS video signals and EDID data are transmitted by 1 channel multimode optical fiber cable
- Supports HDCP 1.1 by DDC channel
- Maximum resolution – WUXGA (1920x1200)
- Small size for insertion into internal system
- External power supply for Transmitter is optional. Automatic power switch is included.

2. General Specification

	Transmitter	Receiver
Optical Converter	850nm, 4Ch Transmit OSA 911nm, 1Ch VCSEL 980nm, 1Ch PIN P/D Diode	850nm, 4Ch Receive OSA 980nm, 1Ch VCSEL 911nm, 1Ch PIN P/D Diode
Input and Output Signal	TMDS Signal HDMI 1.3a standard)	TMDS Signal (HDMI 1.3a standard)
Video Bandwidth	3.5 Gbps/Channel	
Module Dimension	33x12x282mm (WxHxD)	
Module Weight	-	
Used electrical Connector	HDMI A Type Plug (Input)	HDMI A Type Plug (Output)
Optical Connector	1 SC Connector	1 SC Connector
Recommended Fiber	50/125um Multi-mode glass-fiber	
Maximum Supported Resolution	WUXGA (1920x1200)/60Hz	

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}	4.5	5.0	5.5	V	
	Supply Current	I_{CC}	-	260	300	mA	
	Power Dissipation	P_O	-	1.3	1.5	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		Ω	

Transmitter module of Model FX-P320 includes 4 channel VCSEL (Vertical Surface Emitting Laser Diode) with 850, 911, 980nm invisible laser radiation. **Do not view directly laser module of transmitter or the end of the other side of optical cable connected to transmitter with optical instrument.** Transmitter module of FX-P320 is Class 1M Laser Product.

4.2 Receiver Module

	Parameter	Symbol	Min.	Typ	Max.	Units	Condition
POWER	Supply Voltage (External Power)	V_{CC}	4.5	5.0	5.5	V	
	Supply Current	I_{CC}	-	230	250	mA	
	Power Dissipation	P_O	-	1.15	1.25	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
	Data Input Load	RLD		50		Ω	





4.3 Connector Pin Assignment

4.3.1 Transmitter

Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data2 +	11	T.M.D.S Clock Shield
2	T.M.D.S. Data2 Shield	12	T.M.D.S Clock -
3	T.M.D.S. Data2 -	13	CEC
4	T.M.D.S. Data1 +	14	No Connect
5	T.M.D.S. Data1 Shield	15	SCL
6	T.M.D.S. Data1 -	16	SDA
7	T.M.D.S. Data0 +	17	DDC/CEC Ground
8	T.M.D.S. Data0 Shield	18	+5V POWER
9	T.M.D.S. Data0 -	19	Hot Plug Detect
10	T.M.D.S Clock +		

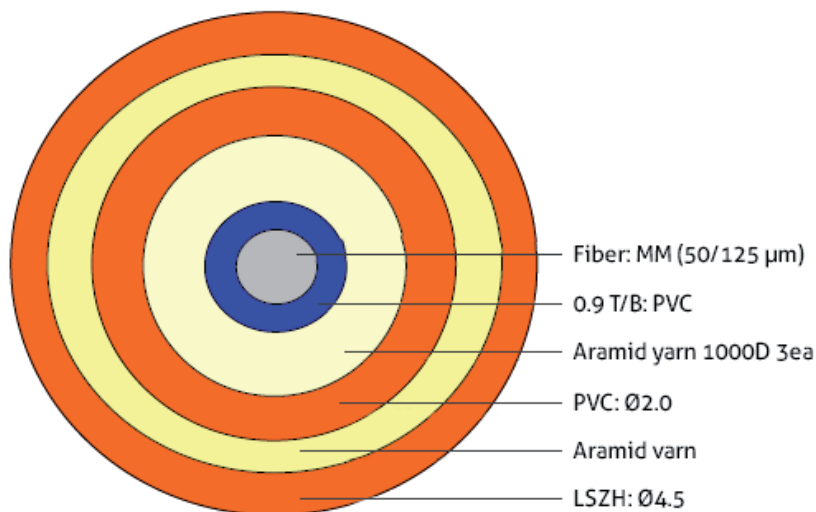
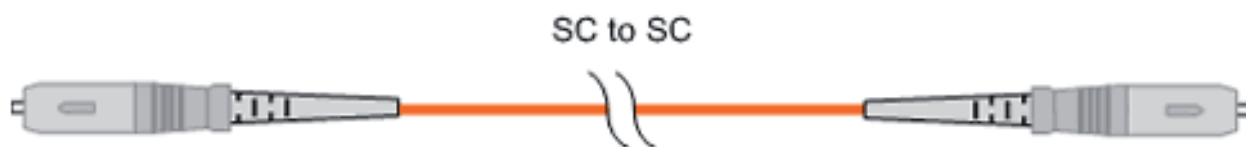
4.3.2 Receiver

Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data2 +	11	T.M.D.S Clock Shield
2	T.M.D.S. Data2 Shield	12	T.M.D.S Clock -
3	T.M.D.S. Data2 -	13	CEC
4	T.M.D.S. Data1 +	14	No Connect
5	T.M.D.S. Data1 Shield	15	SCL
6	T.M.D.S. Data1 -	16	SDA
7	T.M.D.S. Data0 +	17	DDC/CEC Ground
8	T.M.D.S. Data0 Shield	18	Out +5V POWER
9	T.M.D.S. Data0 -	19	Hot Plug Detect
10	T.M.D.S Clock +		



4.4 Cable Information

Optical Fiber Cable (MMF 50/125)



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-P320

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