DVI Extender via 4 fiber channel
LC Duplex Connector
Extends DVI connection up to 5 kilometers

Description

DVI (Digital Visual Interface) recently becomes an popular interface between monitor and PC. Electrical signal limits the transmission length and quality. APAC DVI extender helps DVI to transmit far away via optical fiber.

Features

- Long distance image transmission
- High resolution and image quality
- No RF Interference by optical fiber
- Class 1 laser product complies with EN 60825-1
- DVI-D single link
- CE and FCC approved

Application

- Remote monitor for traffic, industrial, military control
- LCD, Projector, Plasma display connection
- Large video wall system
- Multi-monitor for Advertising

Ordering information

Part Number	Maximum Broadcasting nodes	Note
DVI05K-4LC-XX-R	---	(RX)
DVI05K-4LC-XX-T	8	Power budget > 15 dB (TX)
DVI05K-4LC-XX-ET	32	Power budget > 23 dB (TX)

XX : 00 : US Plug for AC adaptor
01 : EU Plug for AC adaptor
02 : BS Plug for AC adaptor

* This product does not include optical fiber

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Specification

PARAMETER	SPECIFICATION	NOTE
Max length	5000M @ UXGA	SMF 4-LC
Max resoultion	1920 × 1200	Single link
Max DVI bandwidth	1.65 Gbps per channel	
EDID support	Pseudo DDC	Customers optional
HDCP compliant	No	
Oprical Power Output	-5 dBm ± 3dBm	DVI05K-4LC-XX-T
	> 0dBm	DVI05K-4LC-XX-ET
Optical Power for RX	MAX : < 0dBm MIN : > -23dBm (Sensitivity)	
Operating voltage	DC 5V	
Supply current	Max. 400mA	TX module
	Max. 280mA	RX module
Optical property	4 channels 1310nm @ -4dBm ± 2dB	FP Laser
Operating Temperature	-10℃ to 50℃	
Storage Temperatute	-20℃ to 75℃	
Dimension	TX unit : 90 × 40 × 19.6 RX unit : 90 × 40 × 19.6	L × W × H (mm)
Weight	TX unit : 90g ; RX unit : 65g	

Adaptor Specification

PARAMETER	SPECIFICATION	NOTE
Input	100~240VAC	0.2A 50~60Hz
Output	DC 5V	1.0 A
DC Jack	Inside 5V / Outside ground	

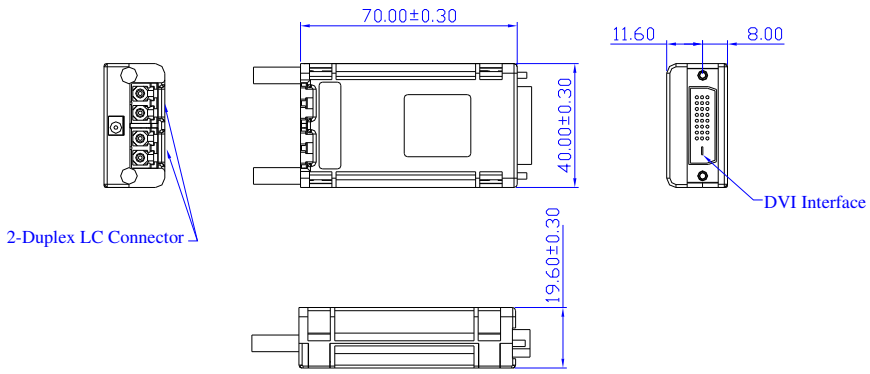
Requirements

- DVI PC or DVI signal source (Transmitter)
- DVI Monitor or Projector (Receiver)
- 100~240VAC 50~60Hz 0.2A

Pseudo EDID support

There is virtual EDID data structure in TX module. This provides pseudo monitor information to the host. Then host can work at different modes by reading this data. It supports all standard modes such as VGA, SVGA, XGA, SXGA and UXGA…etc.

Dimensions



DIMENSIONS ARE IN MILLIMETERS

ALL DIMENSIONS ARE ±0.2mm UNLESS OTHERWISE SPECIFIED

Unit：mm

Safety Regulation

CE and FCC approved.

Installation

Important: Please follow the installation procedure below. Improper, or no operation may result if the start-up sequence is not correctly followed.

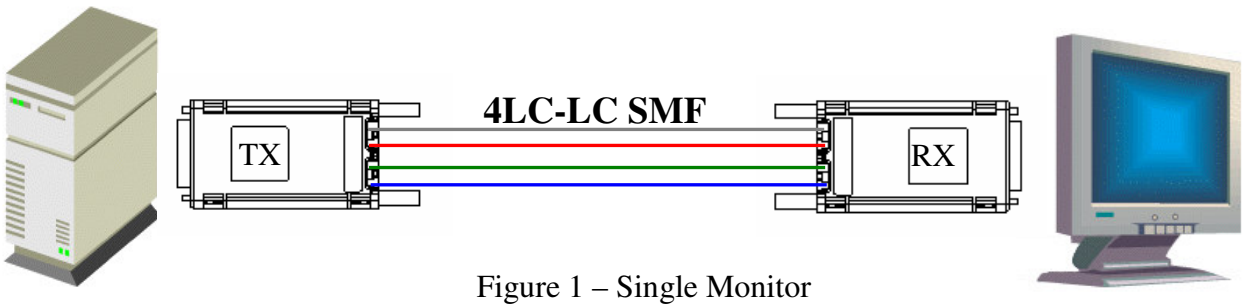


Figure 1 – Single Monitor

Step 1

Carefully unpack the contents of the shipping group. Check the following items:

- TX module or RX module
- AC/DC Adaptor
- Plug converter (Optional)

Step 2

Connect each duplex LC fiber cable one by one as indicated number. The channel "1" of TX corresponds to channel 1 of RX. The other channels are the same connection.

Step 3

Connect the AC/DC adapter to the RX module.

Neglect AC/DC adapter to the TX module. The PC may supply voltage source via DVI receptacle.

Step 4

Plug directly the TX module in the DVI receptacle of PC. Do **NOT** use any intermediate cable or adapter between them.

Step 5

Plug the RX directly module in the DVI receptacle of display. Do **NOT** use any intermediate cable or adapter between them.

Step 6

Power on the PC and display.

Note1：The set-up of screen might be fitted to the display resolution. It is certain to happen such unfitness if it is first time to boot up in using this extender module. Then, go to Display Properties in Windows systems and click the tap of Settings. Then you can set the right display resolution to meet your display. Once you set the right resolution, you could see displaying the initial screen at the same resolution as just before you powered on.

Note2：You might not use the AC/DC adapter at TX module, but use the power supplied through a DVI pin from the graphic cards. After completing the installation instruction, if the system doesn't work properly, you could re-connect the AC/DC adapter while all powers for the system are ON.

Application Reference

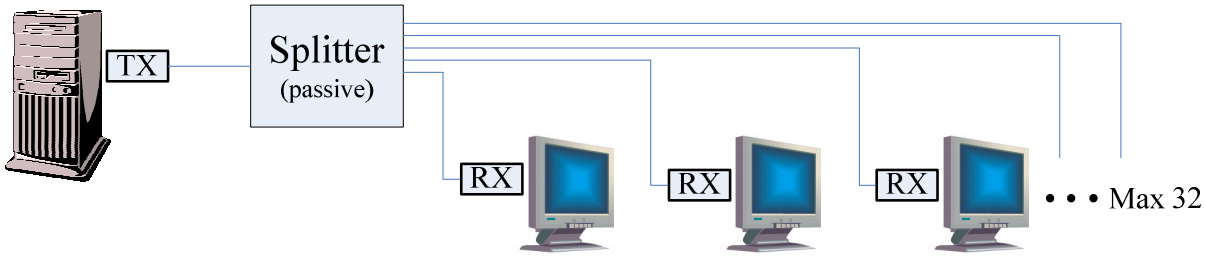


Figure 2 – DVI Broadcast (Multi-Monitor)

Calculation of optical power loss

Component Loss

COMPONENT	LOSS	SYMBOL
LC connector	0.3 dB	
Single mode fiber	0.5 dB/km	
Coupler loss (1x2)	3.5 dB	
Coupler loss (1x4)	7.0 dB	
Coupler loss (1x8)	10.5 dB	
Coupler loss (1x16)	14.0 dB	
Coupler loss (1x32)	17.5 dB	

Example for multiple monitor installation

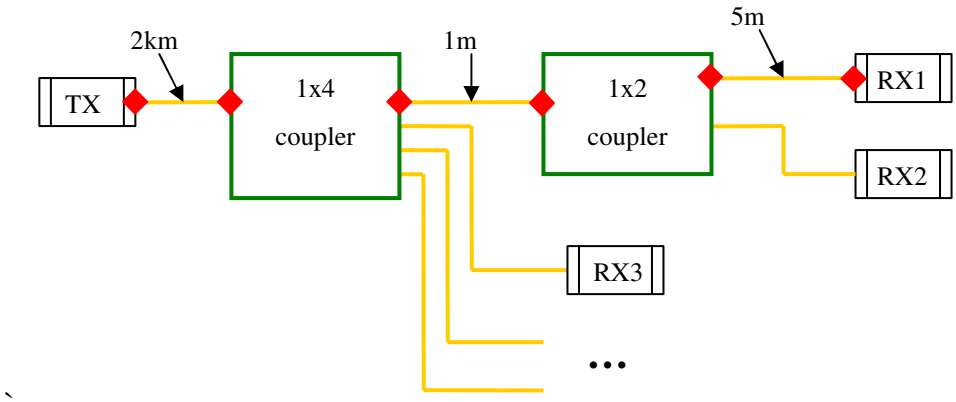


Figure 3 – Installation Setup

For example, we calculate the power loss from TX to RX1. In this optical path, we have 6 connectors, 2.006 km fiber, one 1x4 coupler and one 1x2 coupler. If we add all losses in this, we can get 14.5 dB in total loss. From the ordering information on page 1, we can choose the model whose power budget is greater than 14.5 dB for this installation. For example, APAC's DVI05K-4LC-XX DVI extender has 15 dB power budget which is greater than 14.5 dB, so it can be chosen to use in this setup.

connector	0.5 dB x 6 pcs	=	3 dB
fiber loss	0.5 dB x 2 km	=	1 dB
1x4 coupler	7.0 dB	=	7 dB
1x2 coupler	3.5 dB	=	3.5 dB
	Total loss		14.5 dB