DMML-003FH6

Rev. 1.1

Optical DVI Module

General Description

Optical DVI extension module, is designed to let digital flat panel display signal extend over 300 meters away from host based on DVI Standard by optical transmission.

It can transmit EDID data and HDCP over fiber in real time. It can be used with DVI device as well as HDMI standard device such as Blu-ray player, PS-4.

Image

Feature

- High speed and long distance transmission by a **LC type Single Fiber**
- Single Link TMDS video signals and EDID data are transmitted by optical fiber
- Extends up to **300m by OM3** multi mode fiber
- DVI Specification 1.0 Compliant
- Supports HDCP Compliant Device with **HDCP Rev 1.1** Specification
- Maximum resolution **WUXGA (1920x1200)**

Absolute Maximum Ratings

Parameter	Rating
Power Supply	-0.3 to 5.5 V
Operating Temperature	0 to 50 ℃
Storage Temperature	-20 to 70 ℃
Relative Humidity	10 to 80 RH

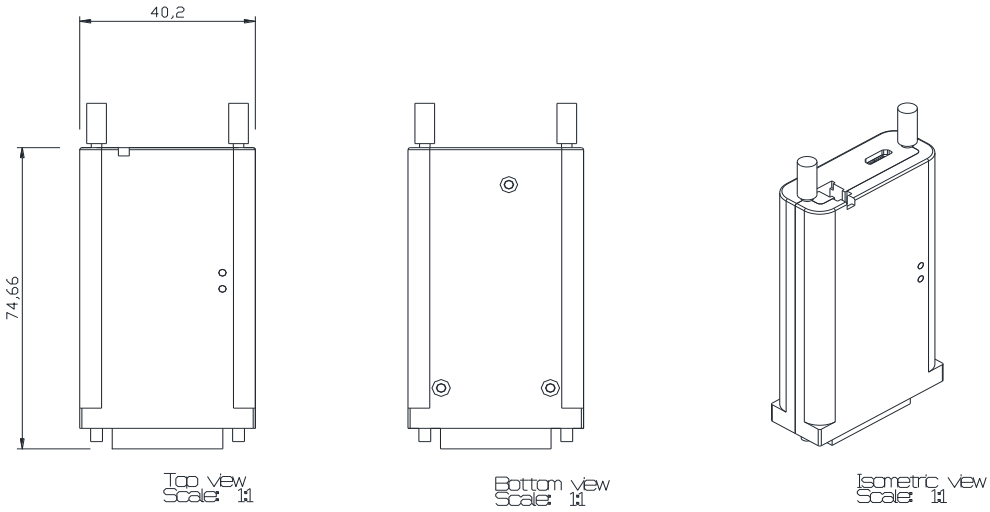
General Secifications

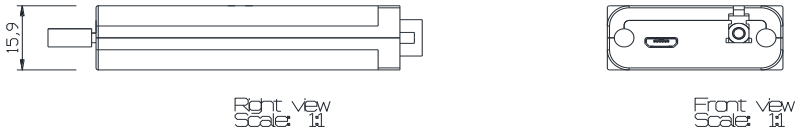
Parameter	Symbol	
	Transmitter	Receiver
Optical Converter	850nm 10G VCSEL/ InGaAs PIN PD	980nm 1G VCSEL/ GaAs PIN PD
Input and Output Signal	TMDS Signal(DVI 1.0 standard)	TMDS Signal(DVI 1.0 standard)
Video Bandwidth	2.25Gbps / Channel	
Module Dimension	74.66 x 40.2 x15.9 mm (L x W x H)	
Module Weight	68 g	
Used electrical Connector	24 PIN DVI-D Plug	24 PIN DVI-D Plug
Optical Connector	1 LC Connector	1 LC Connector
Recommended Fiber	Multi-mode glass-fiber	
Maximum Supported Resolution	WUXGA(1920x1200) / 60Hz	

Dimensions

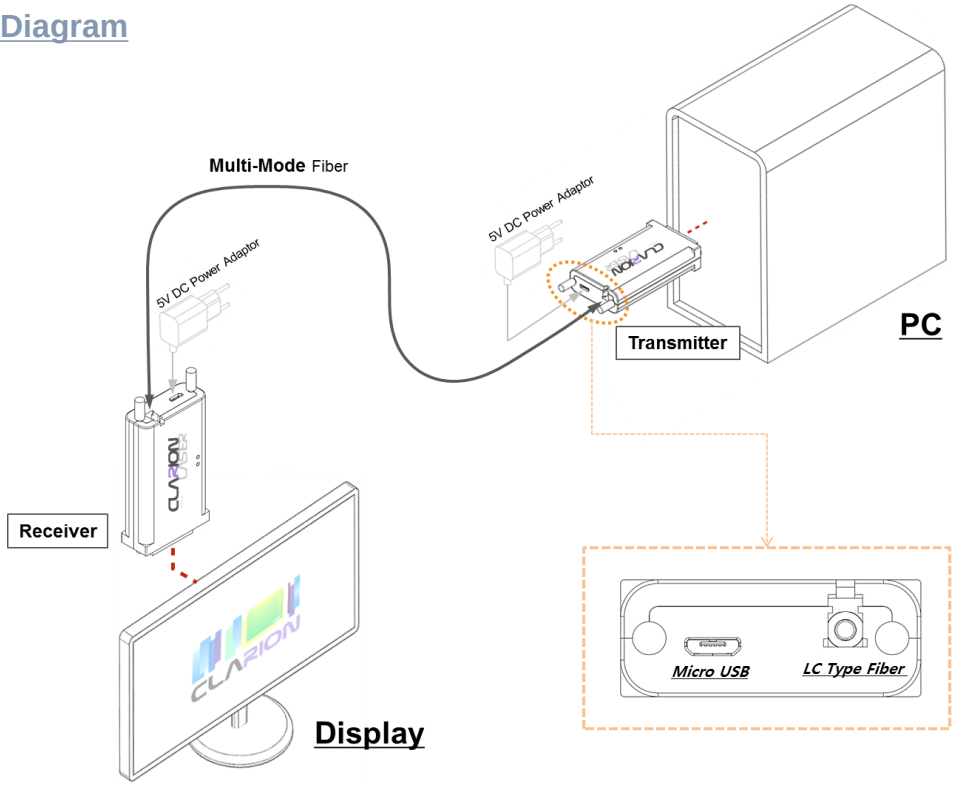
Dimensions

Unit :mm





Install Diagram



Electrical Specifications

- Transmitter Module

Parameter		Symbol	Min.	Typ.	Max.	Units	Conditions
POWER	Supply Voltage	Vcc		5.0		V	External Power
	Supply Current	Icc		500		mA	
	Power Dissipation	Po		2.0		W	
TMDS	Reference Voltage for Graphic Signal	V_{REF}	3.0	3.3	3.6	V	
	Single-ended high level input voltage	V_H	V_{REF} -0.2		V_{REF} +0.01	V	
	Single-ended low level input voltage	V_L	V_{REF} -0.7		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	R_{LD}		50.0		Ω	

- Receiver Module

Parameter		Symbol	Min.	Typ.	Max.	Units	Conditions
POWER	Supply Voltage	Vcc		5.0		V	External Power
	Supply Current	Icc		500		mA	
	Power Dissipation	Po		2.0		W	
TMDS	Reference Voltage for Graphic Signal	V_{REF}	3.1	3.3	3.5	V	
	Single-ended Output swing voltage	V_{ISWING}	0.4		0.6	V	AC coupled
	Differential Input Clock Frequency	F_{RXC}	25		225	MHz	

PIN Description

No	Pin Assignment	Functional Description
1	TMDS2-	TMDS Data Signal Channel 2 Negative
2	TMDS2+	TMDS Data Signal Channel 2 Positive
3	TMDS2 Shield	TMDS Data Signal Channel 2 Shield
4	No Connect	
5	No Connect	
6	SCL	HDCP/DDC communication clock
7	SDA	HDCP/DDC communication data
8	No Connect	
9	TMDS1-	TMDS Data Signal Channel 1 Negative
10	TMDS1+	TMDS Data Signal Channel 1 Positive
11	TMDS1 Shield	TMDS Data Signal Channel 1 Shield
12	No Connect	
13	No Connect	
14	+5V Power	5 V Input for Transmitter for Host, 5 V Output for Monitor from Receiver
15	Ground	Ground for +5V
16	Hot Plug Detect	Signal is driven by monitor to enable the system to identify the presence of a monitor
17	TMDS0-	TMDS Data Signal Channel 0 Negative
18	TMDS0+	TMDS Data Signal Channel 0 Positive
19	TMDS0 Shield	TMDS Data Signal Channel 0 Shield
20	No Connect	
21	No Connect	
22	TMDS Clock+	TMDS Clock Channel Positive
23	TMDS Clock Shield	TMDS Clock Channel Shield
24	TMDS1Clock-	TMDS Clock Channel Negative

Reach

No	Fiber	Reach	Index
1	OM1	33 m	
2	OM2	82 m	
3	OM3	300 m	

Notes

* The inherent design of this component causes it to be sensitive to electrostatic discharge(ESD). To prevent ESD-induced damage and/or degradation to equipment, take normal ESD precautions when handling this product

* The VCSEL is a class I laser and should be treated as a potential eye hazard. Due to the size of the component, the applicable warning logotype, aperture label, and certification / identification label cannot be placed on the component itself.