



Specification for

Model : DOL

Revised : Apr. 09. 2012
Original Release Date : July. 14. 2011

OPHIT

Revision History

Version Number	Revision Date	Author	Description of Changes
1.0	July 14, 2011	H.S YANG	Initial Version
1.1	Apr 09, 2012	J.H LEE	Ordering Information Removed

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1. General Description

DOL, 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. DOL can be used with DVI device as well as HDMI standard device such as Blu-ray player, PS-3.

- High speed and long distance transmission by a LC type Single Fiber
- TMDS video signals and EDID data are transmitted by optical fiber
- Extends up to 300m
- DVI Specification 1.0 Compliant
- Supports HDCP Compliant Device with HDCP Rev 1.1 Specification
- Maximum resolution WUXGA or 1080p (12bit Deep Color)

2. General Specification

Parameter	Symbol	
	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 Electrical Specification

4.1.1 Transmitter Module

	Parameter	Symbol	Min	Typ	Max	Units	Condition
P O W E R	Supply Voltage (Option External Power)	V_{CC}		5.0		V	
	Supply Current	I_{CC}	-	510		mA	
	Power Dissipation	P_O	-	2.55		W	
T M D S	Reference voltage for graphic signal	V_{REF}	3.1	3.3	3.5	V	
	Single-ended high level input voltage	V_H	$V_{REF} - 0.01$		$V_{REF} + 0.01$	V	
	Single-ended low level input voltage	V_L	$V_{REF} - 0.6$		$V_{REF} - 0.4$	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 DOL is Class 1M Laser Product.(TBD)

4.1.2 Receiver Module

	Parameter	Symbol	Min	Typ	Max	Units	Condition
P O W E R	Supply Voltage (External Power)	V_{CC}		5.0		V	
	Supply Current	I_{CC}	-	400		mA	
	Power Dissipation	P_O	-	2		W	
T M D S	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	F_{RXC}	25		225	MHz	

4.2 Connector Pin Assignment

4.2.1 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-

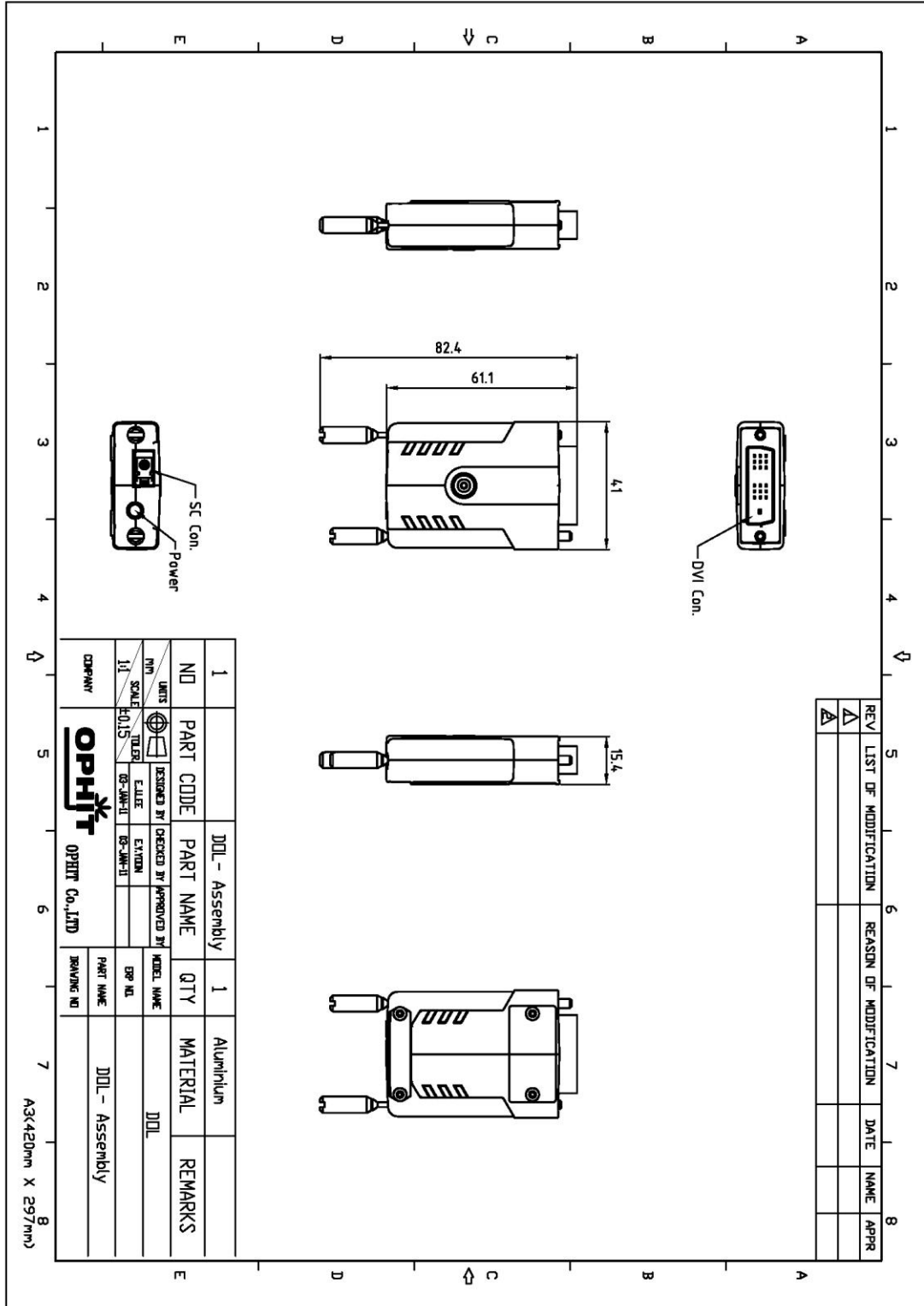
4.2.2 Receiver

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 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-

5. Mechanical Specification

5.1 Case Dimension

5.1.1 Transmitter / 5.1.2 Receiver



5.2 Cable Information

- Optical Fiber Cable(LC to LC)



6. 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 **OPHIT CO., LTD.** 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:

- DOL

If you have any further questions regarding the RoHS compliance of parts delivered by **OPHIT CO., LTD.**, please do not hesitate to contact us at support@ophit.com.

Best regards,

JONG-KOOK MOON/CEO

OPHIT CO., LTD.