

Specification for

Model : DQSL

Revised : Apr. 09. 2012
Original Release Date : July. 10. 2009

OPHIT

Revision History

Version Number	Revision Date	Author	Description of Changes
1.0	July 10, 2009	J.H Lee	Initial Version
1.1	Apr 09, 2012	J.H Lee	Ordering Information Removed

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1. General Description

DQSL , dual link extension system, lets your Dual digital flat panel display signal extend up to 100 meters (330 feet) away from host by TMDS digital signal transmission.

- High speed and long distance transmission by LC type multimode fibers
(Uses 2 strand multi mode LC fiber optic cable)
- Extends up to 100m
- It can support two mode for DDC
 - Real mode : Uses one CAT-5 cable for DDC
 - Emulation : Pseudo-DDC detection function for EDID information
- Self detecting function for EDID information
- It can support single link and dual link by selectable function switcher

2. General Specification

Parameter	Symbol	
	Transmitter	Receiver
Optical Converter	850nm, 7ch Transmit OSA	850nm, 7ch Receive OSA
Input and Output Signal	TMDS Signal(DVI 1.0 standard)	TMDS Signal(DVI 1.0 standard)
Video Bandwidth	1.65Gbps / Channel	
Module Size	134.9 x 25.0 x 81.7 mm (W x H x D)	
Module Weight	--	--
Used electrical connector	24 PIN DVI-D Plug (Dual)	
Optical Connector	2 LC Connector	2 LC Connector
Recommended Fiber	50/125 μ m Multi-mode glass-fiber	
Link Connector	RJ-45 Jack	
Maximum Supported Resolution	-Single Link : WUXGA(1920x1200)60Hz -Dual Link : WQXGA(2560x1600)60Hz	

3. Absolute Maximum Ratings

Parameter	Rating
Storage temperature	-20°C ~ +70°C
Operating temperature	0°C ~ +50°C
Power Supply	-0.3 ~ 5.5 V
Relative Humidity	10 ~ 80 %
Lead-free solder temperature	260°C, 10 seconds

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)	Vcc		+5.0		V	
	Supply Current	Icc		380		mA	Dual
				280			Single
	Power Dissipation	Po		1.9		W	Dual
1.4				Single			
T M D S	Reference voltage for graphic signal	Vref	+3.1	+3.3	+3.5	V	
	Single-ended high level input voltage	VH	Vref-0.01		Vref+0.01	V	
	Single-ended low level input voltage	VL	Vref-0.6		Vref-0.4	V	
	Single-ended input swing voltage	Vswing	0.4		0.6	V	
	Single-ended standby input voltage		Vref-0.01		Vref+0.01	V	
	Data Output Load	RLD		50		Ohms	

Transmitter module of Model DQSL includes 2 channel VCSEL(Vertical Surface Emitting Laser Diode) with 850 nm 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 DQSL is Class 1M Laser Product.

4.1.2 Receiver Module

	Parameter	Symbol	Min	Typ	Max	Units	Condition
P O W E R	Supply Voltage (External Power)	Vcc		+5.0		V	
	Supply Current	Icc		250		mA	
	Power Dissipation	Po		1.25		W	
T M D S	Reference voltage for graphic signal	Vref	+3.1	+3.3	+3.5	V	
	Single-ended output swing voltage	Voswing	0.4		0.6	V	AC couple
	Data Input Load	RLD		50		Ohms	

4.2 Connector Pin Assignment

4.2.1 Transmitter

DVI Connector (Dual-mode)

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. Data2/4 Shield	11	T.M.D.S. Data1/3 Shield	19	T.M.D.S. Data0/5 Shield
4	T.M.D.S. Data4-	12	T.M.D.S. Data3-	20	T.M.D.S. Data5-
5	T.M.D.S. Data4+	13	T.M.D.S. Data3+	21	T.M.D.S. Data5+
6	DDC Clock (SCL)	14	+5V Power	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-

DVI Connector (Single-mode)

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	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-

RJ-45 Connector

Pin	Signal Assignment	Pin	Signal Assignment
1	SCL	2	GND
3	SDA	4	GND
5	+5V Power	6	GND
7	+5V Power	8	Hot Plug Detect

4.2.2 Receiver

DVI Connector (Dual-mode)

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S. Data 2-	9	T.M.D.S. Data 1-	17	T.M.D.S. Data 0-
2	T.M.D.S. Data 2+	10	T.M.D.S. Data 1+	18	T.M.D.S. Data 0+
3	T.M.D.S. Data 2/4 Shield	11	T.M.D.S. Data 1/3 Shield	19	T.M.D.S. Data 0/5 Shield
4	T.M.D.S. Data 4-	12	T.M.D.S. Data 3-	20	T.M.D.S. Data 5-
5	T.M.D.S. Data 4+	13	T.M.D.S. Data 3+	21	T.M.D.S. Data 5+
6	DDC Clock (SCL)	14	Out +5V Power	22	T.M.D.S Clock Shield
7	DDC Data (SDA)	15	Ground (for out +5V)	23	T.M.D.S Clock+
8	No Connect	16	Hot Plug Detect	24	T.M.D.S Clock-

DVI Connector (Single-mode)

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	Out +5V Power	22	T.M.D.S Clock Shield
7	DDC Data (SDA)	15	Ground (for +5V)	23	T.M.D.S Clock+
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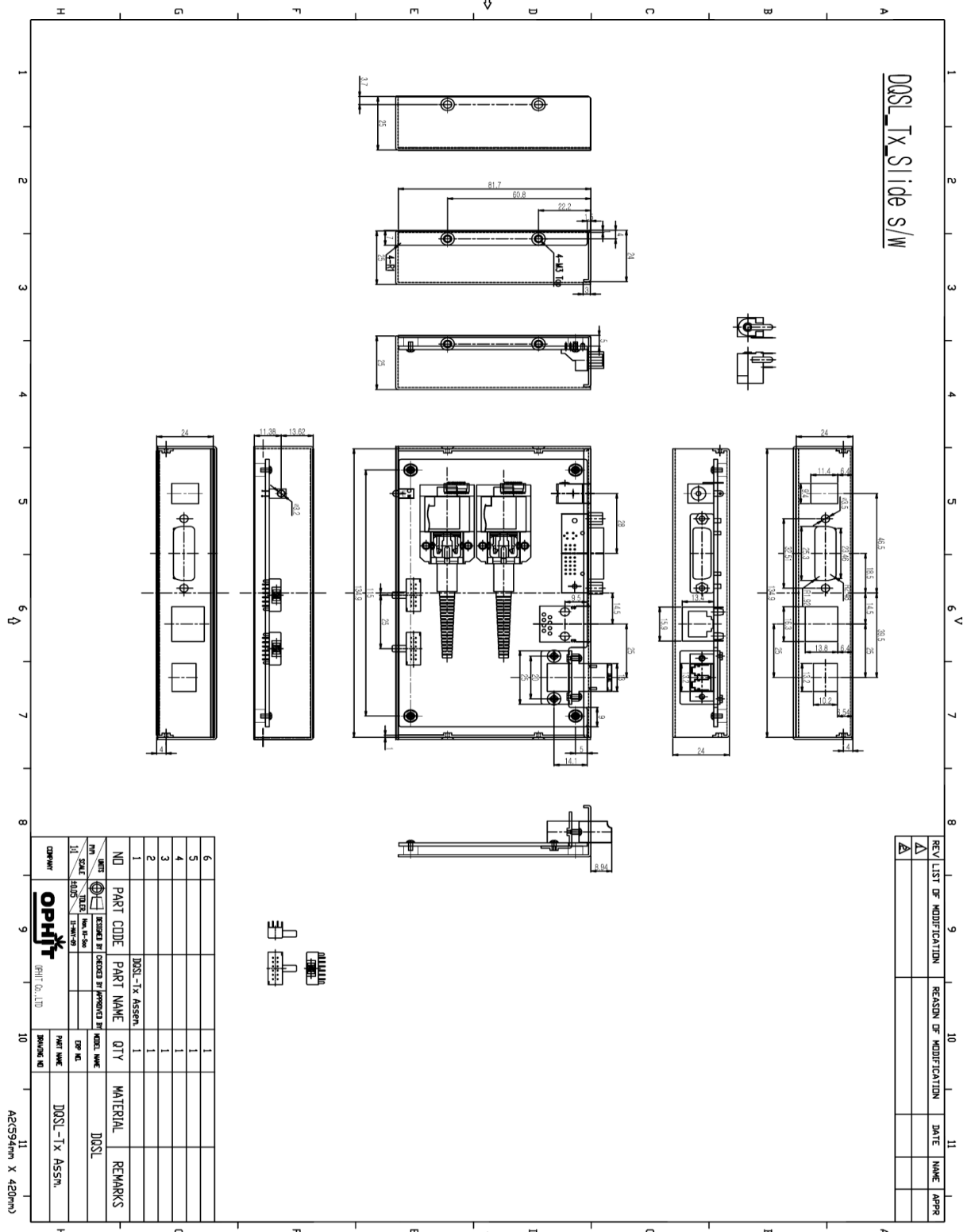
RJ-45 Connector

Pin	Signal Assignment	Pin	Signal Assignment
1	SCL	2	GND
3	SDA	4	GND
5	+5V Power	6	GND
7	+5V Power	8	Hot Plug Detect

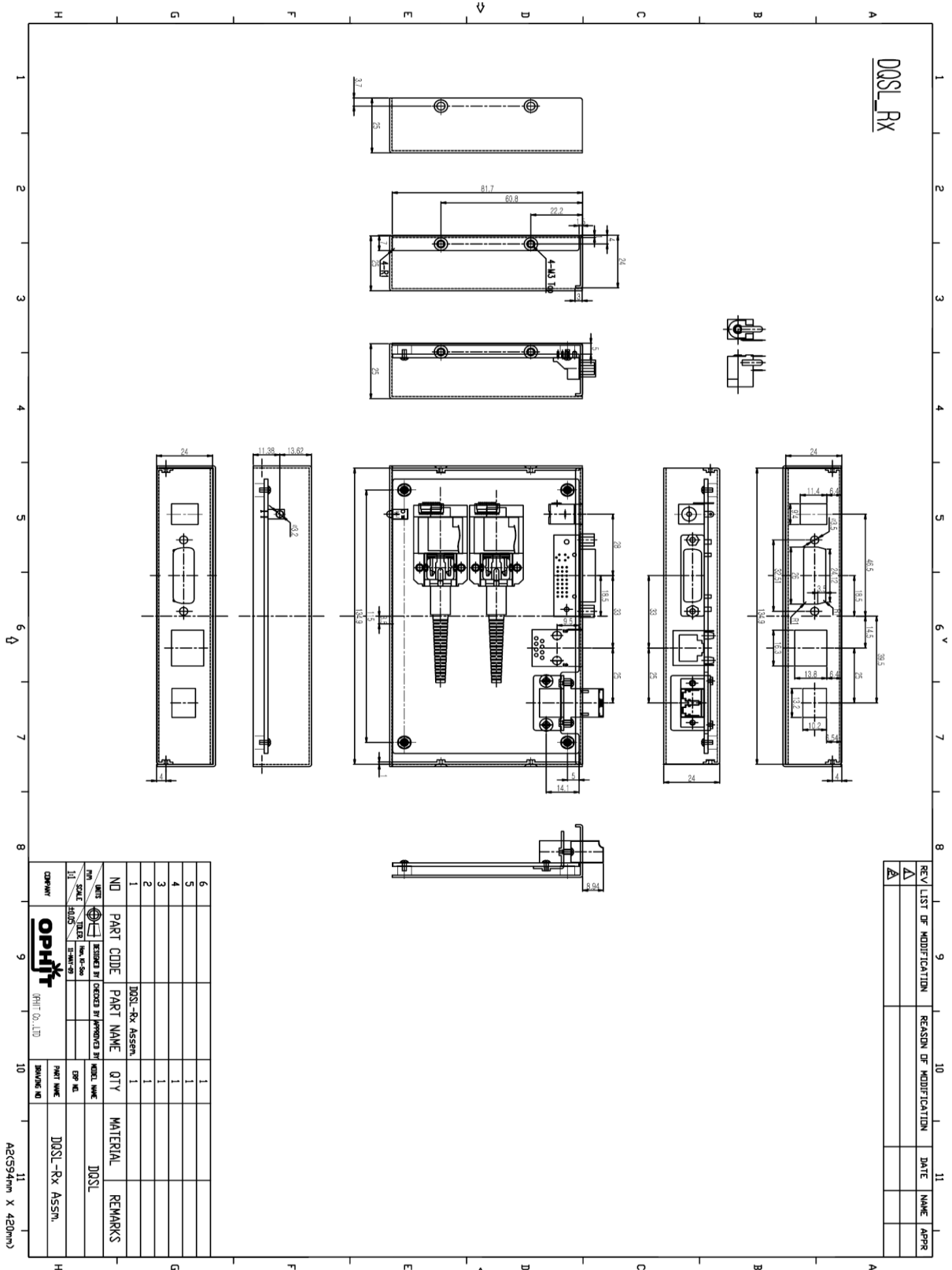
5. Mechanical Specification

5.1 Case Dimension

5.1.1 Transmitter

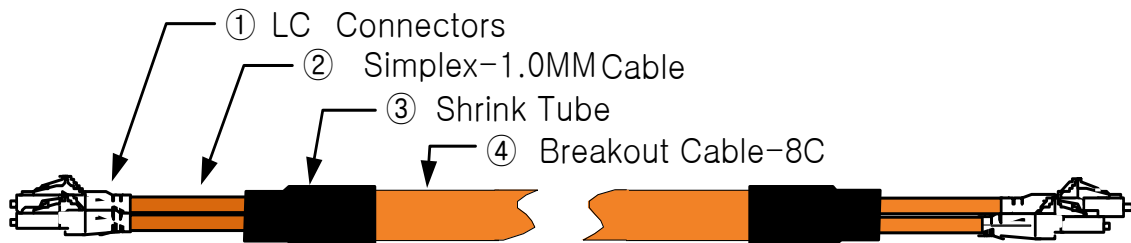


5.1.2 Receiver

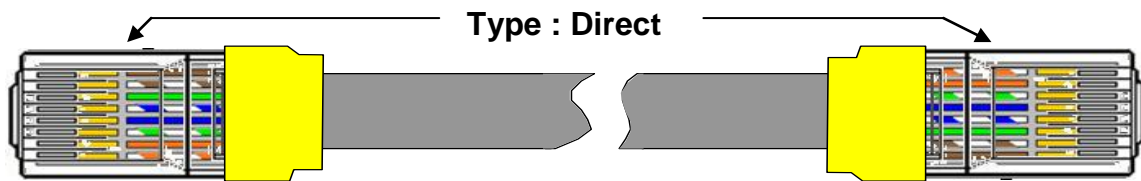


5.2 Cable Information

- Optical Fiber Cable



- UTP Cable Cat. 5 (RJ-45 Jack)



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:

- DQSL

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.