



Customer :

Specification for

Model : DDAX

Revised : May 19, 2008
Original Release Date : May 19, 2008

OPHIT



Revision History

Version Number	Revision Date	Author	Description of Changes
1.0	May 19, 2008	H.S.Yang	Initial Version

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1. General Description

DDAX, This unique DVI converter transports your PC's DVI signal to analog graphic signal so that analog display devices without DVI output can be connected to your PC and Laptop with digital output easily and conveniently.

- Input : DVI (Single Link)
- Output : Analog VGA signal, DVI (Single Link)
- DVI Specification 1.0 Compliant
- Compatible with DVI Standard by DDWG
- HDMI Specification 1.3b Compliant(Digital Output)
- Supports HDCP Compliant Device with HDCP Rev 1.1 Specification
- PC Maximum Resolution WUXGA, HD Maximum Resolution 1080P

2. General Specification

Specifications	
DVI Input and Output	
Input / Output Channels	1 Input / 1 Output
Clock Frequency	25Mhz - 225Mhz
DVI Version	1.0
HDMI Version	1.2a
Support Deep Color	12 Bit
Input / Output Signal	TMDS
HDCP Version	Compliant with HDCP Rev 1.1
HDMI Connector	Type A 24 Pin Female
Support Resolution	Max1080P(HD) / Max 1920x1200(PC)
Analog Output	
Input Channels	1 Output
Clock Frequency	25Mhz – 165Mhz
HDCP Version	Compliant with HDCP Rev 1.2
Support Resolution	Max 1080P(HD) / Max 1920x1200(PC)
VGA Connector	15 Pin Female
General Specifications	
Voltage(Adaptor)	5V DC(110-220V 60HZ)
Power Consumption	3.5 watts(WUXGA 2 Output)
Operating Temperature Range	0 to 50°C
Operating Humidity Range	30 to 80% RH (no condensation)
Size	112(W) x 22.5(H) x 99(D) mm (4.4" x 0.8" x 3.9") inch
Weight	319 g (0.7 lbs)

3. Absolute Maximum Ratings

Parameter	Rating
Storage temperature	-20°C to +70°C
Operating temperature	0°C to +50°C,
Supply Voltage	DC 5V
Current(MAX) / Resolution(PC)	700mA / WUXGA
Power Dissipation	3.5W

NOTICE

Stresses greater than those listed under “Absolute Maximum Ratings” may cause permanent damage to the device. This is a stress rating 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

	Parameter	Symbol	Min	Typ	Max	Units	Condition
P O W E R	Supply Voltage (Option External Power)	Vcc	+4.5	+5.0	+5.5	V	
	Supply Current	Icc		0.71		A	UXGA 2 Out
	Power Dissipation	Po		3.55		W	UXGA 2 Out
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	

4.2 Current Test Report

State	Resolution	Current		Out Port	e. t. c.
Supply Current (25°C Ambient)	Not Connect (Power On)	260	mA	DVI Out D-Sub Out (2 Out)	
	640 x 480, 60Hz Typical Case Pattern	470	mA		
	640 x 480, 60Hz Worst Case Pattern	470	mA		
	800 x 600, 60Hz Typical Case Pattern	490	mA		
	800 x 600, 60Hz Worst Case Pattern	500	mA		
	1024 x 768, 60Hz Typical Case Pattern	530	mA		
	1024 x 768, 60Hz Worst Case Pattern	540	mA		
	1280 x 1024, 60Hz Typical Case Pattern	590	mA		
	1280 x 1024, 60Hz Worst Case Pattern	610	mA		
	1600 x 1200, 60Hz Typical Case Pattern	670	mA		
	1600 x 1200, 60Hz Worst Case Pattern	710	mA		
	1920 x 1200, 60Hz Typical Case Pattern	670	mA		
	1920 x 1200, 60Hz Worst Case Pattern	710	mA		

Typical Case Pattern : Quantum Data 882 VTG -- Pattern master.

Worst Case Pattern : Quantum Data 882 VTG -- Pattern check_11

4.3 Connector Pin Assignment

Transmitter(Input) - DVI

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	14	+5V Power	22	T.M.D.S Clock Shield
7	DDC Data	15	Ground (for +5V)	23	T.M.D.S Clock+
8	No Connect	16	Hot Plug Detect	24	T.M.D.S Clock-

Receiver(Output) - DVI

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	14	+5V Power	22	T.M.D.S Clock Shield
7	DDC Data	15	Ground (for +5V)	23	T.M.D.S Clock+
8	No Connect	16	Hot Plug Detect	24	T.M.D.S Clock-

Receiver(Output) – D-Sub

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	RED	6	RGND	11	No Connect
2	GREEN	7	GGND	12	No Connect
3	BLUE	8	BGND	13	H Sync
4	GND	9	No Connect	14	V Sync
5	GND	10	SGND	15	No Connect

4.4 Support Resolution

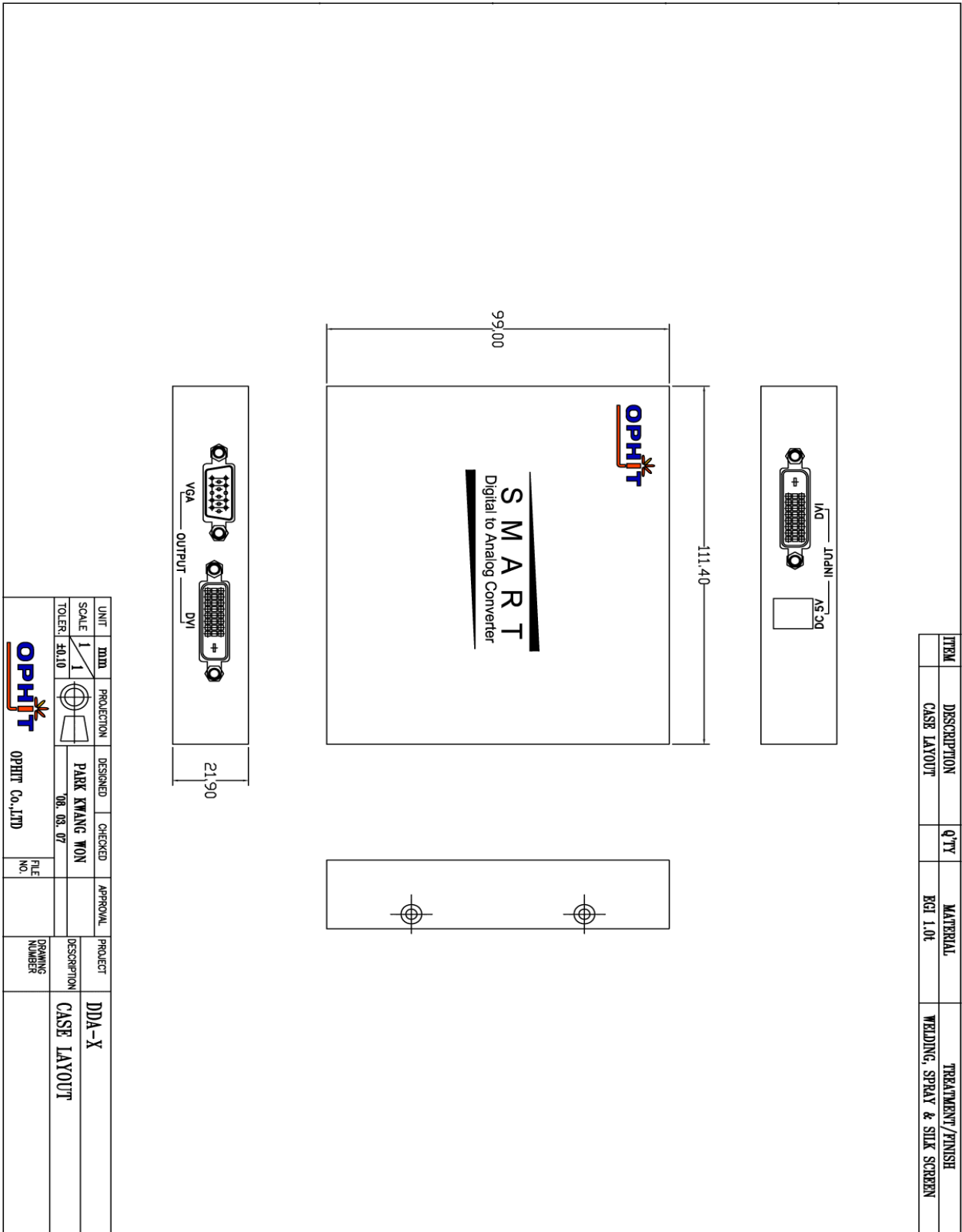
Resolution	Frequency(Hz)	Scan Type	Picture Ratio
640 x 480	60Hz or 59.94Hz	Progressive	4:3
720 x 480	60Hz or 59.94Hz	Progressive	4:3
720 x 480	60Hz or 59.94Hz	Progressive	16:9
1280 x 720	60Hz or 59.94Hz	Progressive	16:9
1920 x 1080	60Hz or 59.94Hz	Interlaced	16:9
720(1440) x 480	60Hz or 59.94Hz	Interlaced	4:3
720(1440) x 480	60Hz or 59.94Hz	Interlaced	16:9
720(1440) x 240	60Hz or 59.94Hz	Progressive	4:3
720(1440) x 240	60Hz or 59.94Hz	Progressive	16:9
2880 x 480	60Hz or 59.94Hz	Interlaced	4:3
2880 x 480	60Hz or 59.94Hz	Interlaced	16:9
2880 x 240	60Hz or 59.94Hz	Progressive	4:3
2880 x 240	60Hz or 59.94Hz	Progressive	16:9
1440 x 480	60Hz or 59.94Hz	Progressive	4:3
1440 x 480	60Hz or 59.94Hz	Progressive	16:9
1920 x 1080	60Hz or 59.94Hz	Progressive	16:9
720 x 576	50Hz	Progressive	4:3
720 x 576	50Hz	Progressive	16:9
1280 x 720	50Hz	Progressive	16:9
1920 x 1080	50Hz	Interlaced	16:9
720(1440) x 576	50Hz	Interlaced	4:3
720(1440) x 576	50Hz	Interlaced	16:9
720(1440) x 288	50Hz	Progressive	4:3
720(1440) x 288	50Hz	Progressive	16:9
2880 x 576	50Hz	Interlaced	4:3
2880 x 576	50Hz	Interlaced	16:9
2880 x 288	50Hz	Progressive	4:3
2880 x 288	50Hz	Progressive	16:9
1440 x 576	50Hz	Progressive	4:3
1440 x 576	50Hz	Progressive	16:9
1920 x 1080	50Hz	Progressive	16:9
Resolution	Frequency(Hz)	Scan Type	Picture Ratio

1920 x 1080	24Hz	Progressive	16:9
1920 x 1080	25Hz	Progressive	16:9
1920 x 1080	30Hz	Progressive	16:9
2880 x 480	60Hz or 59.94Hz	Progressive	4:3
2880 x 480	60Hz or 59.94Hz	Progressive	16:9
2880 x 576	60Hz or 59.94Hz	Progressive	4:3
2880 x 576	60Hz or 59.94Hz	Progressive	16:9
1920 x 1080	50Hz, H = 31.25KHz	Inter laced	16:9
1920 x 1080	100Hz	Inter laced	16:9
1280 x 720	100Hz	Progressive	16:9
720 x 576	100Hz	Progressive	4:3
720 x 576	100Hz	Progressive	16:9
720(1440) x 576	100Hz	Inter laced	4:3
720(1440) x 576	100Hz	Inter laced	16:9
1920 x 1080	120Hz or 119.88Hz	Inter laced	16:9
1280 x 720	120Hz or 119.88Hz	Progressive	16:9
720 x 480	120Hz or 119.88Hz	Progressive	4:3
720 x 480	120Hz or 119.88Hz	Progressive	16:9
720(1440) x 480	120Hz or 119.88Hz	Inter laced	4:3
720(1440) x 480	120Hz or 119.88Hz	Inter laced	16:9
720 x 576	200Hz	Progressive	4:3
720 x 576	200Hz	Progressive	16:9
720(1440) x 576	200Hz	Inter laced	4:3
720(1440) x 576	200Hz	Inter laced	16:9
720 x 480	240Hz or 239Hz	Progressive	4:3
720 x 480	240Hz or 239Hz	Progressive	16:9
720(1440) x 480	240Hz or 239Hz	Inter laced	4:3
720(1440) x 480	240Hz or 239Hz	Inter laced	16:9
PC Graphic Resolution			
640 x 350	60Hz and 75Hz	Progressive	

640 x 400	60Hz and 75Hz	Progressive	
720 x 400	60Hz and 75Hz	Progressive	
640 x 480	60Hz and 75Hz	Progressive	
800 x 600	60Hz and 75Hz	Progressive	
848 x 480	60Hz and 75Hz	Progressive	
1024 x 768	60Hz and 75Hz	Progressive	
1152 x 864	60Hz and 75Hz	Progressive	
1280 x 768	60Hz and 75Hz	Progressive	
1280 x 960	60Hz and 75Hz	Progressive	
1280 x 1024	60Hz and 75Hz	Progressive	
1360 x 768	60Hz and 75Hz	Progressive	
1400 x 1050	60Hz and 75Hz	Progressive	
1440 x 900	60Hz and 75Hz	Progressive	
1600 x 1200	60Hz	Progressive	
1680 x 1050	60Hz	Progressive	
1792 x 1344	60Hz	Progressive	
1856 x 1392	60Hz	Progressive	
1920 x 1200	60Hz	Progressive	
1920 x 1440	60Hz	Progressive	

5. Mechanical Specification

5.1 Case Dimension



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 (Cr 6), 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:

- DDAX

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.