January 2005

LVDS (EIA644) – USB2.0 Converter Unit

ARTUST-0405A-LV (no memory)

Safety Concern:

*Safety instructions should be read before the product is operated.

*All operating and use instructions should be followed.

Warning and Caution:

Warning ⚠	Ignoring this Warning mark and operating this product incorrectly may lead to serious injury or death
Caution ⚠	Ignoring this Caution mark and operating this product incorrectly may lead to injury or damage to the product.

⚠Warning
● To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture
● Do NOT use this equipment in the vicinity of flammable or explosive gas
● Do NOT leave this equipment within the reach of infants or children
● Do NOT store this equipment in humid or dusty places. This may cause fire or electric shock
⚠Caution
● To reduce the risk of electric shock, do NOT remove cover
● Never attempt to disassemble this equipment. It contains high-voltage circuitry that may cause electric shock and injury.
● Do NOT operate the equipment with wet hands as you may get an electric shock
● Do NOT store the equipment in any place exposed to excessive heat. This may weaken the parts or cause a fire

1. Description

LVDS-USB2.0 converter unit enables you to transfer parallel output signal from LVDS digital camera output (EIA644, etc.) into your PC via USB2.0 interface.

2. Main Features

*High-speed transfer of up to 35M byte/s via USB2
(Actual value obtained by PC's with ICH4 host controller. Jan 2003).
(Theoretical value=60Mbyte/s)

*IO interface that can be externally controlled by API is also available
LTTL: 8 bit (output), LVDS: 5 bit (option)

*Size of capturing images can be altered from software conrol

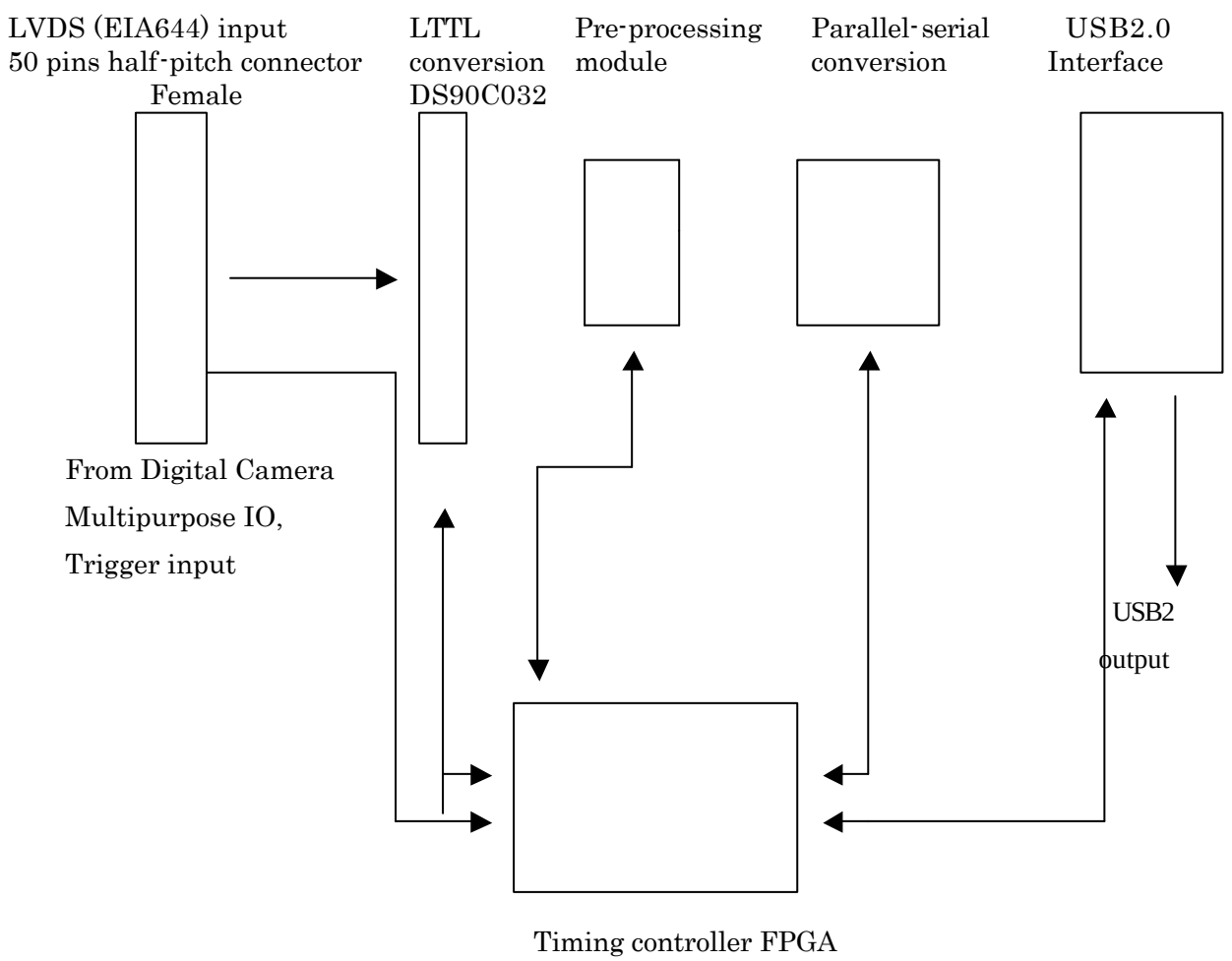
* The size of outer shape (PCB) is 150mm×100mm×15mm

*Power consumption: 5V, below 0.5A

*Format of driver: WDM format, compatible with Windows2000/XP

3. Block Diagram: ARTUST-0405A-LV

LVDS(EIA644) input LTTL conversion



4. Input Pin Assignment

Connector: DX10A-50S (Hirose) Cable side: DX30-50P (Hirose)

Input ＩＣ：DS90LV032TM Cover: DX-50-CV1 (Hirose)

PIN	SIGNAL	PIN	SIGNAL	PIN	SINGLE	PIN	SINGLE
1	CTL0(+)	14	Cam_IO5	27	D4(+)	40	D10(-)
2	CTL0(-)	15	Cam_IO6	28	D4(-)	41	D11(+)
3	CTL1(+)	16	Cam_IO7	29	D5(+)	42	D11(-)
4	CTL1(-)	17	GND	30	D5(-)	43	vd(+)
5	CTL2(+)	18	GND	31	D6(+)	44	vd(-)
6	CTL2(-)	19	D0(+)	32	D6(-)	45	hd(+)
7	CTL3(+)	20	D0(-)	33	D7(+)	46	hd(-)
8	CTL3(-)	21	D1(+)	34	D7(-)	47	PCLK(+)
9	Cam_IO0	22	D1(-)	35	D8(+)	48	PCLK(-)
10	Cam_IO1	23	D2(+)	36	D8(-)	49	EXT_TRG(+)
11	Cam_IO2	24	D2(-)	37	D9(+)	50	EXT_TRG(-)
12	Cam_IO3	25	D3(+)	38	D9(-)		
13	Cam_IO4	26	D3(-)	39	D10(+)		

D0：LSB

D11：MSB

VD： Vertical valid

HD： Horizontal valid

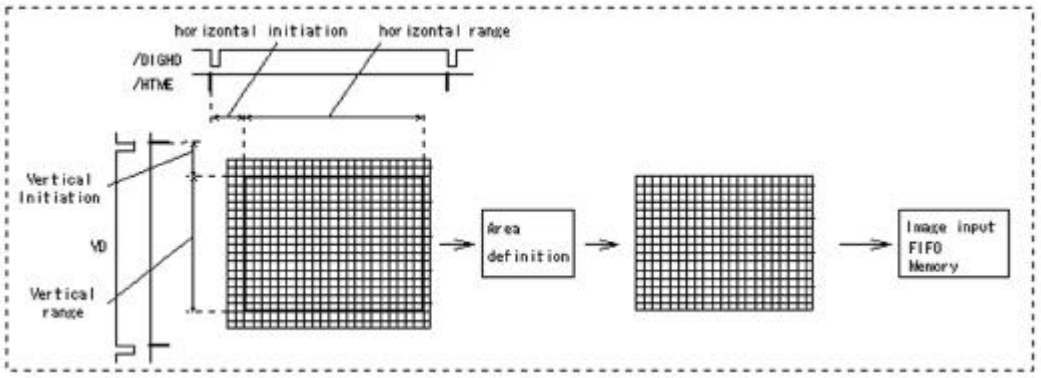
PCLK：Dot clock

Remark1: Cam_IO0-7, CTL0-3 & EXT_TRG pin are only used for customization (i.e. not used in standard product).

Remark2: The standard version is 10 bits compatible. Connect cable to D9-D0.
With the Viewer Software, 8 bits data of D9(MSB)-D2(LSB) are displayed.
Please contact one of our sales rep. for 12 bits connection.

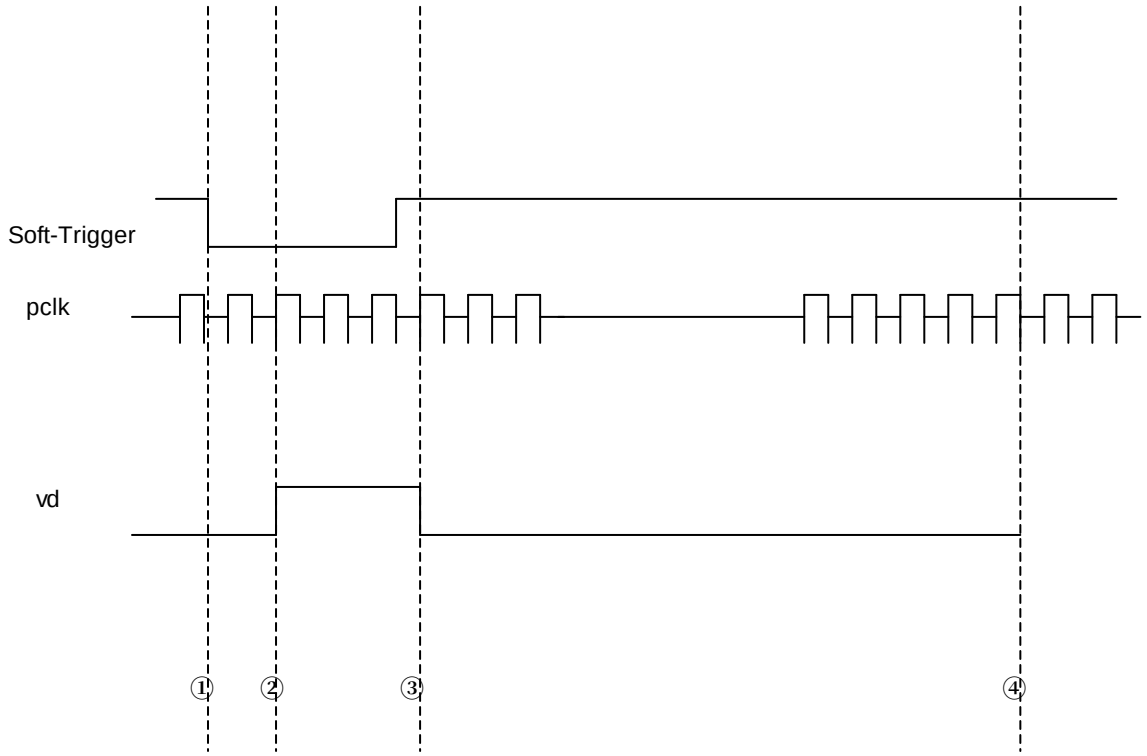
5. Image Signal

Image: Update 1 pixel by 1 clock



Size of board is 150**mm**×100**mm**×15**mm**.

6. Timing for capturing



① Trigger from software. Wait for leading edge of “vd” at falling edge of “Soft-trigger”.

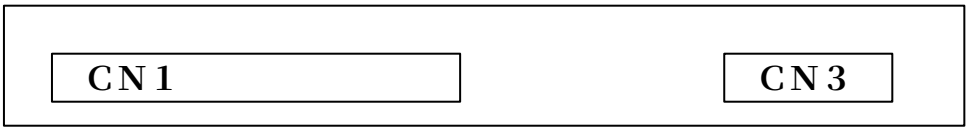
② After detecting leading edge of “vd”, image data transfer is prepared.

③～④ Transfer image for the amount of vertical pixels set.

Remark3: In external trigger mode, one transfer is automatically finalized when number of line is counted using “hd” signal, and effective line is transferred. (applies in customization)

Remark4: Image data is latched by falling edge of pixel clock.

7. Connector



CN1: LVDS input
Input LDVD signal from camera
Purpose-build cable for camera is required.

CN3; USB2 output
Connect USB2 cable to the PC.
