

HD/SD-SDI to HDMI adaptor board
HD-3000
Manual

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1. Introduction

The HD-3000 converts SD/HD-SDI (SD, HD and 3G) signal to HDMI for driving HDMI monitors. The HD-3000 provides re-clocked loop through outputs for “daisy chaining” multiple monitors or other equipments to the same HD-SDI source. It also supports embedded audio.

Fully compliant with the SMPTE 259M-C, SMPTE 292M, SMPTE 424M, 425M standards.

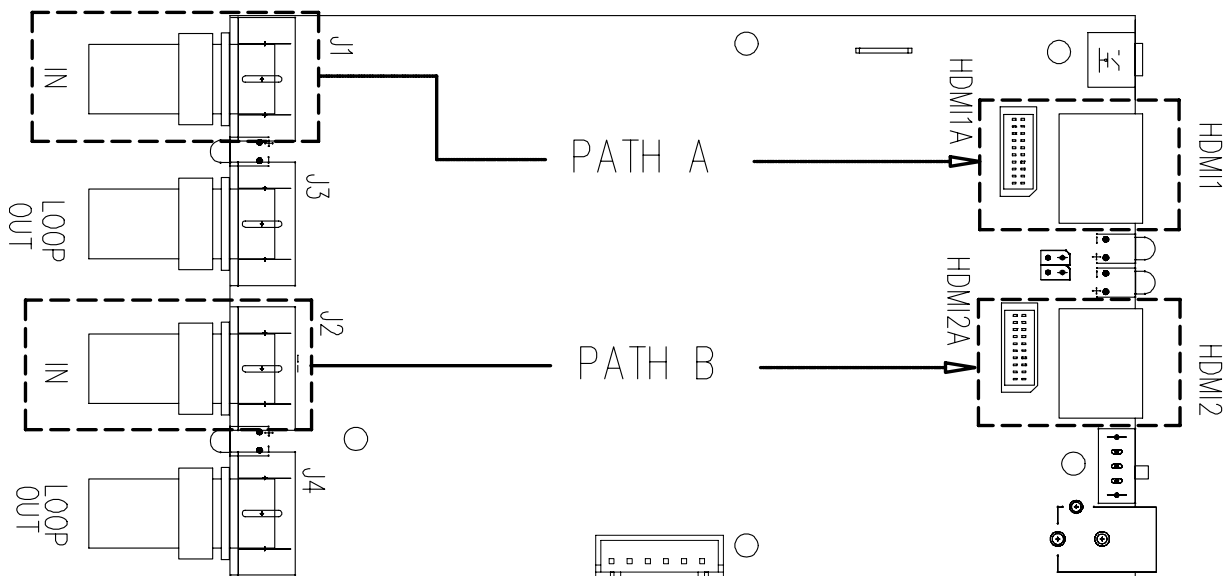
HD-3000 Key Features

a. Supports 1.5Gbits & 3Gbits bit rate input signal support.

The mode support is listed in page 11.

b. Dual channels input port supported.

HD-3000 supports Path A (HD-SDI input from J1 port convert to output HDMI at HDMI1/HDMI1A port) and Path B (HD-SDI input from J2 port convert to output HDMI at HDMI2/HDMI2A port). See Figure below :



c. HD-SDI re-clock loop through output.

J1 HD-SDI input and re-clock loop through to J3 HD-SDI output. J2 HD-SDI input and re-clock loop through to J4 HD-SDI output.

d. HDMI (v1.3) x 2 output port.

Two HDMI output ports are HDMI1/HDMI1A, HDMI2/HDMI2A.

e. Stereo embedded audio support

f. On-board power on/off switch – The power on/off switch is installed on SW1.



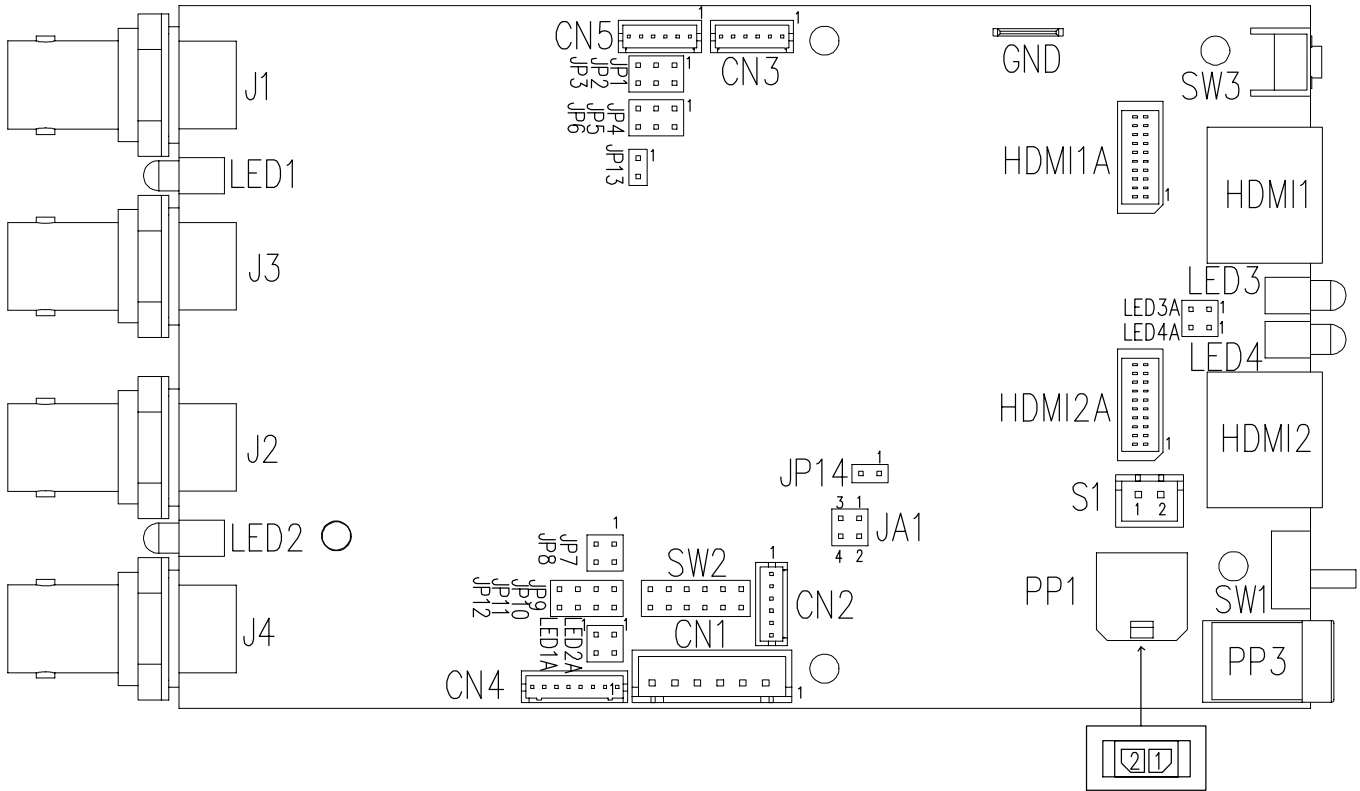
g. Status LEDs on board :

The definition of the LED1, LED2, LED3, LED4 are :

| Ref | Description |
|--------------|---|
| LED1 / LED2 | Green LED on : Signal detected Green LED Blinking : No signal detected |
| LED3 / LED 4 | Green LED on : Signal output Green LED off : No signal output |

2. CONNECTORS, PINOUTS & JUMPERS

The various connectors are:



Summary: Connectors

| Ref | Description | Type / Use |
|-------|---|---|
| J1 | SD/HD-SDI 1 Input | BNC connector |
| J2 | SD/HD-SDI 2 Input | BNC connector |
| J3 | SD/HD-SDI 1 re-clock loop through output | BNC connector |
| J4 | SD/HD-SDI 2 re-clock loop through output | BNC connector |
| CN1 | RS-232 & I ² C control connector | JST 6-way, B6B-XH-A (Matching type : XHP-6) |
| CN2 | Reserved for programming use | Reserved |
| CN3 | Reserved for programming use | Reserved |
| CN4 | External I/O connector | Hirose DF13-6P-1.25DSA (Matching type : Hirose DF13-8S-1.25C) |
| CN5 | Reserved for programming use | Reserved |
| HDMI1 | HDMI 1 Output | HDMI connector |

Specifications subject to change without notice

| Ref | Description | Type / Use |
|--------|---|--|
| HDMI2 | HDMI 2 Output | HDMI connector |
| HDMI1A | Alternate HDMI 1 Output | JST BM20B-SRDS (Matching type : JST SHDR-20V-S-B) |
| HDMI2A | Alternate HDMI 2 Output | JST BM20B-SRDS (Matching type : JST SHDR-20V-S-B) |
| PP1 | Power Input (Alternate) | Molex 43650-0200 compatible (Matching connector type : Molex 43645-0200 compatible) (Matching power cable : P/N 426013800-3) |
| PP3 | Power Input | DC power jack, 2.5mm contact pin diameter positive |
| S1 | Alternate power on/off switch connector | JST B2B-XH-A (Matching type : XHP-2) |
| SW1 | Power on/off slide switch | Slide switch |
| SW3 | No function | Reserved |

Summary: Jumper settings :

| Ref | Purpose | Note |
|--------|---------------------------------|--|
| JA1 | On board +5V logic power enable | 1-2 & 3-4 closed, factory set, do not remove |
| LED1A | External LED connection | Refer to pin assignment in page 7 |
| LED2A | External LED connection | Refer to pin assignment in page 7 |
| LED3A | External LED connection | Refer to pin assignment in page 7 |
| LED4A | External LED connection | Refer to pin assignment in page 7 |
| JP1-12 | No function | No function |
| JP13 | Reserved for programming use | Reserved |
| JP14 | Reserved for programming use | Reserved |
| SW2 | No function | No function |

Summary : PinOuts :

CN1 – RS-232 & I²C control : JST B6B-XH-A (Matching type : XHP-6)

| PIN | SYMBOL | DESCRIPTION |
|-----|--------|----------------|
| 1 | SCLK | I2C_SCLK |
| 2 | SDATA | I2C_SDATA |
| 3 | VCC | +5V |
| 4 | TXD | RS-232 Tx data |
| 5 | GND | Ground |
| 6 | RXD | RS-232 Rx data |

CN4 – External I/O connector : Hirose DF13-6P-1.25DSA (Matching type : Hirose DF13-8S-1.25C)

| PIN | SYMBOL | DESCRIPTION |
|-----|----------|-------------|
| 1 | 3V3 | 3.3V output |
| 2 | LED3 | LED3 Anode |
| 3 | LED4 | LED4 Anode |
| 4 | EXT_IP_0 | Reserved |
| 5 | EXT_IP_1 | Reserved |
| 6 | LED1 | LED1 Anode |
| 7 | LED2 | LED2 Anode |
| 8 | GND | LED Cathode |

LED1A, LED2A, LED3A, LED4A – External LED connection

| PIN | SYMBOL | DESCRIPTION |
|-----|--------|-------------|
| 1 | + | LED Anode |
| 2 | - | LED Cathode |

HDMI1A – Alternate HDMI connector: JST BM20B-SRDS (Matching type : JST SHDR-20V-S-B)

| PIN | SYMBOL | DESCRIPTION |
|-----|--------|--------------|
| 1 | GND | Ground |
| 2 | GND | Ground |
| 3 | RXC+ | TMDS Data C+ |

Specifications subject to change without notice

| PIN | SYMBOL | DESCRIPTION |
|-----|-----------|-------------------------------------|
| 4 | RXC- | TMDS Data C- |
| 5 | RX0+ | TMDS Data 0+ |
| 6 | RX0- | TMDS Data 0- |
| 7 | RX1+ | TMDS Data 1+ |
| 8 | RX1- | TMDS Data 1- |
| 9 | RX2+ | TMDS Data 2+ |
| 10 | RX2- | TMDS Data 2- |
| 11 | GND | Ground |
| 12 | GND | Ground |
| 13 | MSTR2_SCL | Reserved |
| 14 | MSTR2_SDA | Reserved |
| 15 | DDC_5V | +5V power supply for DDC (optional) |
| 16 | HPD | Hot plug detection |
| 17 | DDC_SCL | DDC serial clock |
| 18 | DDC_SDA | DDC Data |
| 19 | VCC1 | VCC 5V output |
| 20 | VCC2 | VCC 5V output |

HDMI2A – Alternate HDMI connector: JST BM20B-SRDS (Matching type : JST SHDR-20V-S-B)

| PIN | SYMBOL | DESCRIPTION |
|-----|--------|--------------|
| 1 | GND | Ground |
| 2 | GND | Ground |
| 3 | RXC+ | TMDS Data C+ |
| 4 | RXC- | TMDS Data C- |
| 5 | RX0+ | TMDS Data 0+ |
| 6 | RX0- | TMDS Data 0- |
| 7 | RX1+ | TMDS Data 1+ |
| 8 | RX1- | TMDS Data 1- |
| 9 | RX2+ | TMDS Data 2+ |

Specifications subject to change without notice

| PIN | SYMBOL | DESCRIPTION |
|-----|-----------|-------------------------------------|
| 10 | RX2- | TMDS Data 2- |
| 11 | GND | Ground |
| 12 | GND | Ground |
| 13 | MSTR2_SCL | Reserved |
| 14 | MSTR2_SDA | Reserved |
| 15 | DDC_5V | +5V power supply for DDC (optional) |
| 16 | HPD | Hot plug detection |
| 17 | DDC_SCL | DDC serial clock |
| 18 | DDC_SDA | DDC Data |
| 19 | VCC1 | VCC 5V output |
| 20 | VCC2 | VCC 5V output |

S1 – Alternate power on/off switch connector (Matching type : XHP-2)

| PIN | SYMBOL | DESCRIPTION |
|-----|---------|-------------|
| 1 | 12V_IN | +12V INPUT |
| 2 | 12V_OUT | +12V OUTPUT |

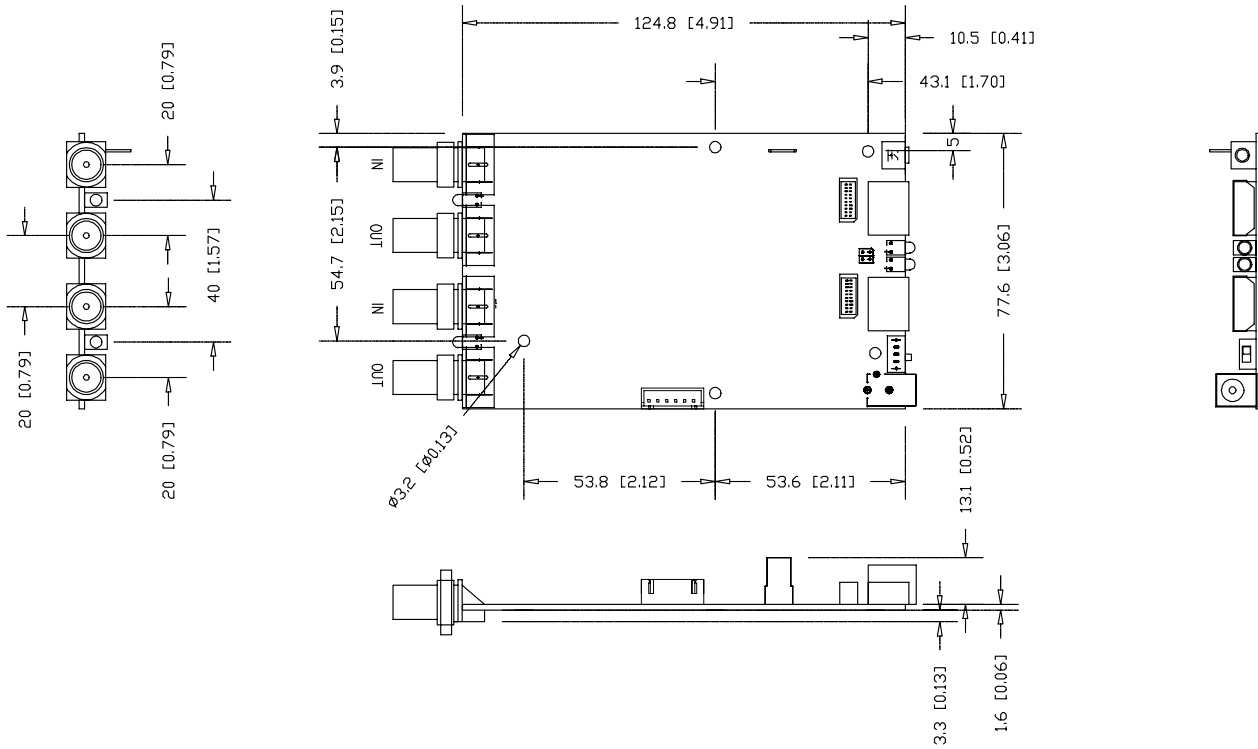
PP1 – Alternate 12VDC power supply

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | +12VDC in |
| 2 | Ground |

PP3 - 12VDC power supply

| PIN | DESCRIPTION |
|-----|-------------|
| 1 | +12VDC in |
| 2 | Ground |

3. BOARD DIMENSIONS



Ready-made 3D Pro-E (SLDPRT) drawing files - Save time and effort for your system volumetric analysis design. Includes jpg file previews. Please go to download at <http://www.digitalview.com/accessories/hd-3000>

The maximum thickness of the adaptor board is 18mm (measured from bottom of PCB to top of components, excluding the BNC connectors). We recommend clearances of:

- 5mm from bottom of PCB - if mounting on a metal plate we also recommend a layer of suitable insulation material is added to the mounting plate surface.
- 10mm above the components
- 3~5mm around the edges

Any of the holes shown above can be used for mounting the PCB, they are 3.2mm in diameter.

CAUTION: Ensure adequate insulation is provided for all areas of the PCB with special attention to high voltage parts such as the inverter.

4. SIGNAL SUPPORT MODE TABLE

| Mode |
|----------------------|
| 576i50 (PAL) |
| 480i60 (NTSC) |
| 720p60 (4:2:2) |
| 720p59.94 (4:2:2) |
| 720p50 (4:2:2) |
| 720p30 (4:2:2) |
| 720p29.97 (4:2:2) |
| 720p25 (4:2:2) |
| 1035i60 (4:2:2) |
| 1035i59.94 (4:2:2) |
| 1080p30 (4:2:2) |
| 1080p29.97 (4:2:2) |
| 1080p25 (4:2:2) |
| 1080p24 (4:2:2) |
| 1080p23.98 (4:2:2) |
| 1080psf30 (4:2:2) |
| 1080psf25 (4:2:2) |
| 1080psf24 (4:2:2) |
| 1080psf23.98 (4:2:2) |
| 1080i60 (4:2:2) |
| 1080i59.94 (4:2:2) |
| 1080i50 (4:2:2) |
| 1080p60 (4:2:2) |
| 1080p50 (4:2:2) |

5. Specification

| | |
|--|--|
| Supported serial interface standard | SMPTE 292M, 259M-C, 424M, 425M (Level A) |
| Supported video mode | 576i50 (PAL) 480i60 (NTSC) 720p60 (4:2:2) 720p59.94 (4:2:2) 720p50 (4:2:2) 720p30 (4:2:2) 720p29.97 (4:2:2) 720p25 (4:2:2) 1035i60 (4:2:2) 1035i59.94 (4:2:2) 1080p30 (4:2:2) 1080p29.97 (4:2:2) 1080p25 (4:2:2) 1080p24 (4:2:2) 1080p23.98 (4:2:2) 1080psf30 (4:2:2) 1080psf25 (4:2:2) 1080psf24 (4:2:2) 1080psf23.98 (4:2:2) 1080i60 (4:2:2) 1080i59.94 (4:2:2) 1080i50 (4:2:2) 1080p60 (4:2:2) 1080p50 (4:2:2) |
| Number of channel input port supported | 2 |
| HD-SDI re-clock loop through output | Yes |
| Output port | HDMI (v1.3) x 2 |
| Embedded audio | Supported with Stereo |
| LEDs | Status LED (Green) |
| On board power on/off switch | Yes |
| Power requirement | Regulated DC 12V input (2.5mm center positive) |
| Power consumption | +12VDC ±5%, 5W |
| Environmental | Operating temperature : 0°C to 60°C Relative humidity : 5%-95% relative humidity (Non-condensing) |
| RoHS Compliant | Yes |
| Dimensions | 124.8(W) x 77.6 (D) x 18(H) mm |

6. WARRANTY

The products are warranted against defects in workmanship and material for a period of three (3) year from the date of purchase provided no modifications are made to it and it is operated under normal conditions and in compliance with the instruction manual.

The warranty does not apply to:

- Product that has been installed incorrectly, this specifically includes but is not limited to cases where electrical short circuit is caused.
- Product that has been altered or repaired except by the manufacturer (or with the manufacturer's consent).
- Product that has subjected to misuse, accidents, abuse, negligence or unusual stress whether physical or electrical.
- Ordinary wear and tear.

Except for the above express warranties, the manufacturer disclaims all warranties on products furnished hereunder, including all implied warranties of merchantability and fitness for a particular application or purpose. The stated express warranties are in lieu of all obligations or liabilities on the part of the manufacturer for damages, including but not limited to special, indirect consequential damages arising out of or in connection with the use of or performance of the products.

CAUTION

Whilst care has been taken to provide as much detail as possible for use of this product it cannot be relied upon as an exhaustive source of information. This product is for use by suitably qualified persons who understand the nature of the work they are doing and are able to take suitable precautions and design and produce a product that is safe and meets regulatory requirements.

LIMITATION OF LIABILITY

The manufacturer's liability for damages to customer or others resulting from the use of any product supplied hereunder shall in no event exceed the purchase price of said product.

TRADEMARKS

The following are trademarks of Digital View Ltd:

- Digital View
- HD-3000

7. CONTACT DETAILS

Digital View has offices in Asia, Europe and USA :

USA

Digital View Inc.
18440 Technology Drive
Building 130
Morgan Hill,
California, 95037
USA

Tel: (1) 408-782 7773

Fax: (1) 408-782 7883

Sales: ussales@digitalview.com

EUROPE

Digital View Ltd.
6 Marylebone Passage,
London, W1W 8EX,
UK.

Tel: +44-(0)20-7631-2150

Fax: +44-(0)20-7631-2156

Sales: uksales@digitalview.com

ASIA

Digital View Ltd
Unit 705-708, 7/F Texwood Plaza
6 How Ming Street
Kwun Tong, Hong Kong

Tel: (852) 2861 3615

Fax: (852) 2520 2987

Sales: hksales@digitalview.com

WEBSITE

www.digitalview.com

Revision History

| Date | Rev No. | Page | Summary |
|--------------|---------|------|---|
| 30 Sept 2016 | 1.00 | All | First Issue version. |
| 7 July 2017 | 1.01 | 7 | - Correct pin definition of CN1 pin 1 & 2 |
| | | 14 | - Update new Digital View HK office address |
| | | 15 | - Add document revision history section |
| | | | |
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