

**IVS-HDMI-12**

**IVS-SDI-12**

**HD Interface Boards  
With  
SONY FCB - EH6300/4300**



**USER Manual**

# IVS-HDMI-12

# LVDS to HDMI

## Introduction:

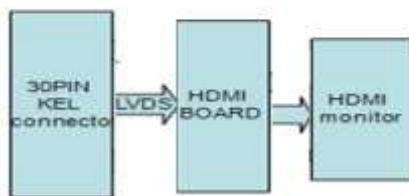
The IVS-HDMI-12 is a small form factor interface for formatting and converting digital video streams to standard compliant formats. Different interface standards are supported from the transmitter side including DVI or HDMI

These modules connect to the digital video interface of Sony's FCB-EH series block cameras and support several progressive and interlace HDTV formats. As no analog to digital conversion is performed on these modules the output picture quality is excellent.

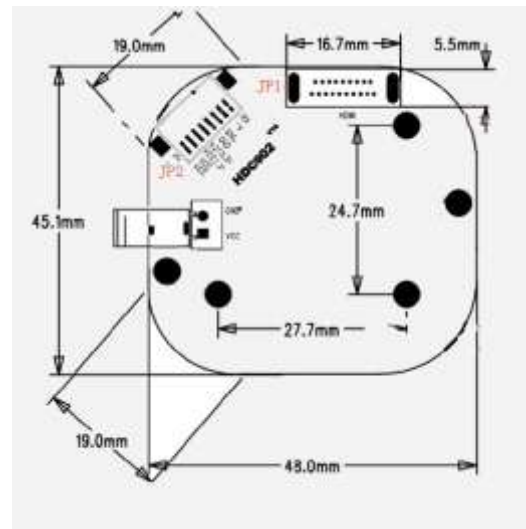
## HDMI Output Video transceiver

- Connects to Sony FCB-EH6300/4300 HD camera blocks
- Digital LVDS video input from camera
- HDMI Video output (or DVI-D with board Mod)
- Digital signal processing for best image quality
- NO Image Compression
- Supported resolutions (Camera dependent)
  - 1080P/30, 1080P/25
  - 1080I/60(30PsF), 1080I/50(25PsF)
  - 720/60, 720P/50, 720P/30, 720P/25
- RS232 Communication Port with VISCA protocol Pass through

## Block Diagram



- Supply voltage: 6-12v DC regulated
- Module size: 46mm\*42mm (For 6300)
- Serial control interface RS232, 3.3V TTL



# IVS-SDI-12

# LVDS to SDI

## Introduction:

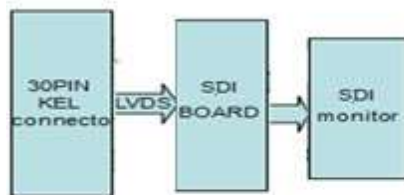
The IVS-SDI-12 is a small form factor interface for formatting and converting digital video streams to standard compliant formats. Different interface standards are supported from the transmitter side including SDI and HD-SDI.

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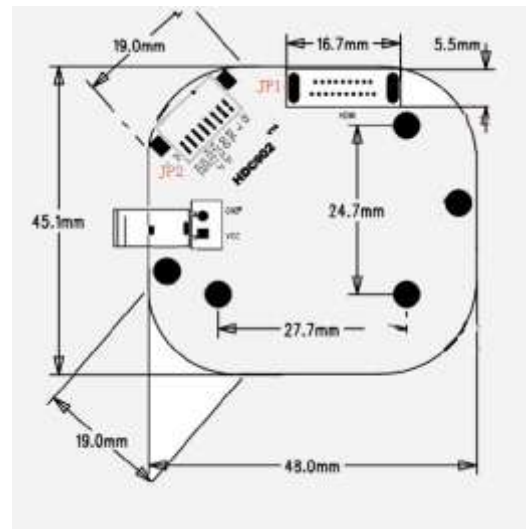
## HDMI Output Video transceiver

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- SDI Video output
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- RS232 Communication Port with VISCA protocol Pass through

## Block Diagram



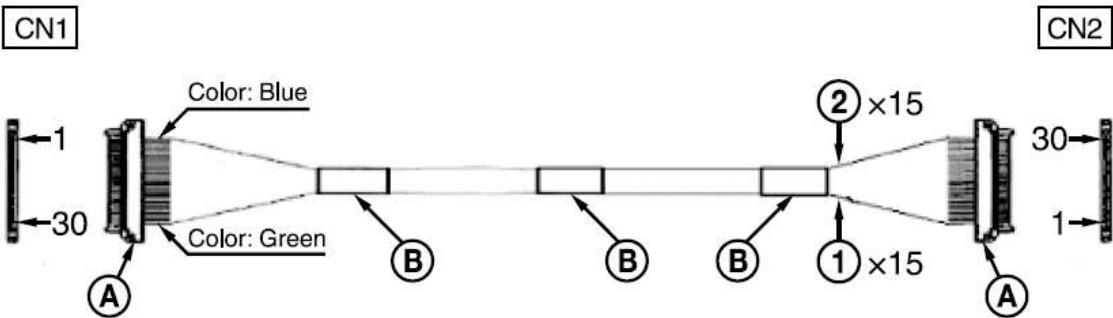
- Supply voltage: 6-12v DC regulated
- Module size: 46mm\*42mm (For 6300)
- Serial control interface RS232, 3.3V TTL



# Connections

Connecting the camera to the interface is achieved via the supplied LVDS micro coaxial cable.  
J3-30PIN KEL connector , EH6300/4300 video output to HDMI

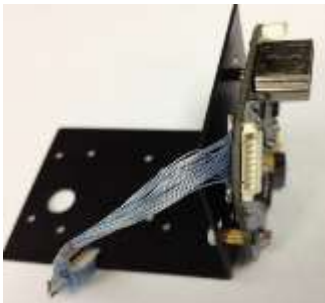
## Cable reference specifications (crossover)



- Recommended connectors and cables  
Cable① green: #42 thin coaxial cable  
Cable② blue: #42 thin coaxial cable  
Connector(A): USL20-30S (KEL)  
Binding tape(B)

EH6300/4300 LVDS  
Pin Out is illustrated here.

The Digital Interface board is mounted on an L-shape tray that can be attached to the bottom of the Sony camera block.



The Micro-coaxial cable is already attached to the interface board and the user can connect the other end to the Sony camera as illustrated.



Pin No.	Name	Level
1	TXOUT3+	
2	TXOUT3-	
3	TXCLKOUT+	
4	TXCLKOUT-	
5	TXOUT2+	
6	TXOUT2-	
7	TXOUT1+	
8	TXOUT1-	
9	TXOUT0+	
10	TXOUT0-	
11	GND	
12	TxD	CMOS 5 V (Low: MAX 0.1 V, High: min 4.4 V)
13	RxD	CMOS 5 V (Low: Max 0.8 V, High: min 2.0 V)
14	DC IN	6 to 12 V DC
15	DC IN	6 to 12 V DC
16	DC IN	6 to 12 V DC
17	DC IN	6 to 12 V DC
18	DC IN	6 to 12 V DC
19	GND	
20	GND	
21	GND	
22	GND	
23	GND	
24	GND	
25	NC	
26	RESET	
27	VBS-OUT	
28	Y	HD Analog Component
29	Pb	HD Analog Component
30	Pr	HD Analog Component

To complete the assembly attach the bracket to the bottom of the camera block using the small screws provided with the package as illustrated.



**NOTE:** The connections for the IVS-SDI-12 interface are similar in nature and not illustrated in this section of the user manual.

**NOTE:** Optional Modification to convert the HDMI output to a DVI-D output.

In some cases according to specific customer requirements it is necessary to have compatibility with a DVI-D monitor input. In this case a jumper is required between Pins 7&8 on U2 on the HDMI Interface board. The illustration below shows this modification.

**CAUTION:** Some DVI Monitors do not support all available output resolutions from Sony cameras FCB-EH6300. Please verify selected video mode for compatibility.



## Control boards

There are two options available to power and control the camera at this stage.

### IVS- RS232/TTL

The Sony camera is equipped with a CMOS/TTL level serial communication interface. In order to be able to connect it to a standard RS232 serial port and communicate with the camera using the VISCA protocol, a small interface board is required as illustrated. This board is equipped with a cable harness that has a DB9 Serial RS232 connector and a DC power connector (male). Power input is 12VDC.



### IVS- CTRLB

Another option to power and control the camera is using a serial interface that offers two methods of controlling the camera.

- a. A small handheld IR remote control giving the user access to an OSD feature-rich menu
- b. Five push buttons located on the top side of the control board allowing the user to access the OSD menu for the camera
- c. An RS485 connection with PELCO/D compatibility.



Power is connected via a 2position screw terminal block on the control board (green connector) at 12VDC.

A plug-in transformer is included rated at 120VAC input -12VDC 2Amps output.

## OSD Menu Navigation using Buttons

Using the buttons on the top side of the Control board you can access the built-in OSD menu for the interface.

Press the center button labeled Menu/Setup on the control board to display the OSD menu.

Press the Near/Up or the Wide/Left key to change selection and move up/down

Press the Far/Down key to enter the sub menu for this function.



Press the Tele/Right Key to return to previous menu.

In Resolution mode press the Far/Down key to change to a desired resolution (selection will be flashing).

Press Menu/Setup key to confirm. Screen will go blank for a brief moment followed by image display at the new resolution.


Press Menu/Setup in main menu to display a power cycle save function.

Use Near/Up or the Wide/Left key to make a selection followed by Menu/Setup key to confirm.







## OSD Menu Navigation with IR Remote control




Using the buttons on the remote control you can access the built in OSD menu for the interface.




Press the  button on the remote control illustrated on the right to display the OSD menu.




Press the  or  buttons to change selection and move up/down on the displayed menu.


Press the  button to enter the sub menu for this function. Press the  key again to change your selection.

Move using the  or  buttons until the **[Return]** selection is highlighted and then press the  button to return to the previous menu.

Move using the  or  until the **[Exit]** selection is highlighted and then press the  button to return to display the power save option.

Move using the  or  to Select **[Yes]** or **[No]**.

Select **[Yes]** to save your selected camera features and press  to confirm and exit the OSD menu.

Press the  power Button to turn the camera On / Off.



Using the two different methods described above enter the OSD menu. The initial screen is displayed on the right. Several of the selections have sub menus; others have just different line item selections. To exit the OSD menu select exit and follow the instructions given above.

Under [**Lens Setup**] the Sub menu allows to interact with different lens functions.

- Focus Mode is Auto or Manual
- Focus Speed has a value of 1-8
- Digital Zoom is On or Off
- Zoom Speed has a value of 1-8
- Camera Init is disabled currently

```

CAMERA SETUP
LENS SETUP
EXPOSURE SETUP
WHITE BALANCE SETUP
DAY NIGHT MODE:AUTO
NOISE-REDUCTION:3
WIDE DYNAM RANG:AUTO
FUNCTION SETUP
EXIT

```

```

LENS SETUP
FOCUS MODE:AUTO
FOCUS SPEED:5
DZOOM:ON
ZOOM SPEED:5
CAMERA INIT
RETURN

```

Under [**Exposure Setup**] the sub menu allows to interact with exposure parameters.

- AE-Mode: Full Auto, Manual, Bright  
Shutter Priority, Iris Priority

The parameters displayed in green color can be adjusted only under AE: manual mode selection

- Slow Shutter: Auto or Manual
- Exposure Comp: -9db up to 10.5db
- Backlight: On / Off

```

CAMERA SETUP
LENS SETUP
EXPOSURE SETUP
WHITE BALANCE SETUP
DAY NIGHT MODE:AUTO
NOISE-REDUCTION:3
WIDE DYNAM RANG:AUTO
FUNCTION SETUP
EXIT

```

```

CAM-AE SETUP
AE-MODE:FULL-AUTO
SHUTTER:1/25
CAM-LRIS:F1.2
GAIN: 10DB
SLOW-SHUTTER:MANUAL
EXP-COMP:0DB
BACKLIGHT:OFF
RETURN

```

Under [**White Balance Setup**] the sub menu allows interaction with the white balance and gain parameters.

- WB-Mode: ATW, Manual, Auto, Indoor  
Outdoor, One Push WB

The parameters CAM-RGAIN and CAM-BGAIN displayed in green color can be adjusted only under WB-Mode: manual mode selection

```

CAMERA SETUP
LENS SETUP
EXPOSURE SETUP
WHITE BALANCE SETUP
DAY NIGHT MODE:AUTO
NOISE-REDUCTION:3
WIDE DYNAM RANG:AUTO
FUNCTION SETUP
EXIT

```

```

CAM-WB
WB-MODE:ATW
CAM-RGAIN:0
CAM-BGAIN:0
RETURN

```

Under [**Day Night Mode**] you can select

- Auto: D/N mode is automatic
- On: Switch to Night mode
- Off: Remain in Day mode

```

CAMERA SETUP
LENS SETUP
EXPOSURE SETUP
WHITE BALANCE SETUP
DAY NIGHT MODE:AUTO
NOISE-REDUCTION:3
WIDE DYNAM RANG:AUTO
FUNCTION SETUP
EXIT

```

Under **[Noise Reduction]** you can select Off or a value between 1 and 5. Additional information about this function is available in the Sony camera user manual.

```

CAMERA SETUP
LENS SETUP
EXPOSURE SETUP
WHITE BALANCE SETUP
DAY NIGHT MODE:AUTO
NOISE-REDUCTION:3
WIDE DYNAM RANG:AUTO
FUNCTION SETUP
EXIT

```

Under **[Wide Dynamic Range]** you can select Auto, On or Off. Additional information about this function is available in the Sony camera user manual.

```

CAMERA SETUP
LENS SETUP
EXPOSURE SETUP
WHITE BALANCE SETUP
DAY NIGHT MODE:AUTO
NOISE-REDUCTION:3
WIDE DYNAM RANG:AUTO
FUNCTION SETUP
EXIT

```

Under **[Function Setup]** you can select

- Resolution: scroll through all supported resolution for the connected camera.
- Installation: Positive or Inverted picture
- Display: On/Off for selected parameters
- Restore-Defaults: Camera or Lens.  
When selected, camera will power cycle.

```

CAMERA SETUP
LENS SETUP
EXPOSURE SETUP
WHITE BALANCE SETUP
DAY NIGHT MODE:AUTO
NOISE-REDUCTION:3
WIDE DYNAM RANG:AUTO
FUNCTION SETUP
EXIT

```

```

FUNCTION SETUP
RESOLUTION:1080160
INSTALLATION:POSITI
DISPLAY:ON
RESTO-DEFAULTS:CAMER
BAUD RATE:2400
CAMERA-ID:1
SYSTEM INFORMATION
RETURN

```

Under **[System Information]** the current firmware version, camera ID, communication parameters and selected resolution are displayed.

```

SYSTEM INFORMATION
FIRMWARE VERSION:601
MODEL:HDC7003
CAMERA-ID:1
BAUD RATE:2400
PROTOCOL:PELCO-D
RESOLUTION:1080160

```

Under **[Exit]** the interface will display the power save option. Select [Yes] to save your desired parameters after a power cycle.

```

CAMERA SETUP
LENS SETUP
EXPOSURE SETUP
WHITE BALANCE SETUP
DAY NIGHT MODE:AUTO
NOISE-REDUCTION:3
WIDE DYNAM RANG:AUTO
FUNCTION SETUP
EXIT

```

```

YES
WANT POWER-OFF-SAVE?
NO

```

## **Contents:**

Each kit contains the following:

### **IVS-HDMI-12**

- HDMI Interface board
- LVDS Micro Coaxial cable
- L-shape mounting bracket with spacers and screws
- 12VDC Regulated Power Supply (Plug-in)
- User manual

### **IVS-SDI-12**

- SDI Interface board
- SDI Cable with BNC connector
- LVDS Micro Coaxial cable
- L-shape mounting bracket with spacers and screws
- 12VDC Regulated Power Supply (Plug-in)
- User manual

### **IVS-CTRLB**

- IR-enabled Serial Control board
- Infrared remote control
- Spacers and screws
- Power cable
- User manual

### **IVS-RS232/TTL**

- Serial Control board
- DB9 serial connector and power harness
- Spacers and screws
- User manual

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