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IFB-FULLHD V3
HDMI V1.4

Datasheet

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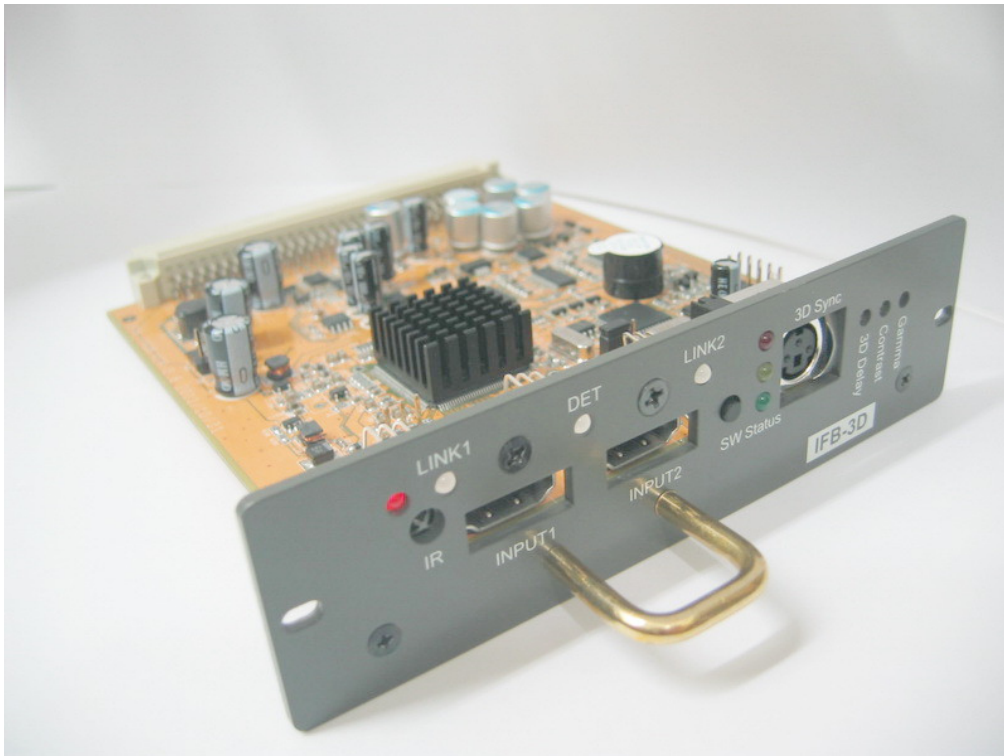## ◆ IFB-FULLHD V3 brief

IFB-FULLHD V3 is a newly card for SONY VPH-1251 VPH-1252 VPH-1270 VPH-1271 VPH-1272 VPH-1292 VPH-D50 VPH-G70 VPH-G90 CRT projector. It has two HDMI V1.4 input port with **True 12bit** deep color support, and using three high precision 14bit video DACs convert to high precision analog RGB video signal. Build-in **advanced Gamma** circuit create real nature image for your SONY projector. Gain control can adjust pure white of the image. The IFB-FULLHD V3 is an ideal HDMI card for SONY CRT projector to connect feature digital HD source, such as SONY PS3, Blue-ray Disc, HDTV Set top-box and HD-DVD.

◆FEATURES

■HDMI input path

- HDMI 1.0, 1.1, 1.2, 1.3 ,1.4,HDCP 1.1,1.2 , and DVI 1.0 compliant
- DTV mode support (480P,576P,720P,1080i,1080P) up to 75Hz
- PC mode support VGA, SVGA, XGA, SXGA, UXGA .etc
- Support 4:4:4 RGB / YCbCr input
- Support 4:2:2 YCbCr input
- Support both 16-235 and 0-255 color range
- 14bit Data processing with High precision **250MHz 14bit** DAC
- Improved advanced gamma correction processing and white level adjust
- High speed and ultra 1.65GHz bandwidth output Buffer
- Support deep color mode for 10bit and 12bit
- Support 100/120Hz for 720P and 1080i

■Board

- Fully compatible with SONY VPH series projector's IFB input slot
- Fully compatible with SONY Switcher PC-1270, PC1271, PC-3000
- IR control input selection and gamma level adjust
- Ultra Low ESR capacitor to filter noise, and lead to cleanest image
- ESD improved to prevent Electrostatic Discharge damage while plug HDMI cable

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◆   **What difference between IFB-FULLHD V2 and IFB-FULLHD V3**

Features	IFB-FULLHD V2	IFB-FULLHD V3
HDMI	**V1.3**	**V1.4**
Gamma	Improved gamma (suggested by WTS)	Advanced Opamp
sharpness	More sharper image (improved suggested by MP)	Advanced Opamp
Picture purity	More clean (improved suggested by MP)	Advanced Opamp and new analog power supply design
Range expand	Support	Support
Stability	ESD enhanced	ESD enhanced
BBF(black boost function)	Support	Support
Manual select input color space by remote	Support	Support
Sync Polarity adjust	--	Yes
Optional image horizontal shift	--	Yes
3D sync output	**--**	Support
Lumagen 3D support	**--**	Input1

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■ HDMI support mode table

PC mode	640X480	60HZ 72HZ 75HZ 85HZ
	800X600	56HZ 60HZ 72HZ 75HZ 85HZ
	1024X768	43HZ 60HZ 70HZ 75HZ 85HZ
	1152X864	60HZ 70HZ 75HZ 85HZ
	1366X768	60HZ 70HZ 75HZ
	1280X1024	43HZ 60HZ 75HZ 85HZ
	1600X1200	48HZ 60HZ 70HZ 72HZ 75HZ
	1920X1200	60Hz 70Hz 75Hz
	1440X960	43HZ 60HZ 72HZ
HDTV mode	480P	60HZ
	576P	50HZ
	720P	50HZ 59HZ 60Hz 100Hz 120Hz
	1080I	29HZ 30HZ 50HZ 59HZ 60HZ 96HZ^{*1} 100Hz 120Hz
	1080P	50HZ 59HZ 60Hz 70HZ 72HZ 75HZ 24HZ^{*2} 25HZ^{*2} 29.9HZ^{*2} 30HZ^{*2}
	1035I	30HZ

【Notice】

*1 need use powerstrip to set graphic card output this mode

*2 IFB-FULLHD V3 support these modes, and will output these signal with same refresh rate as same as input source, but most CRT projector are only support 30Hz-150Hz, using such low refresh rate may let SONY projector working with incorrect behavior.

◆ **Board overview**
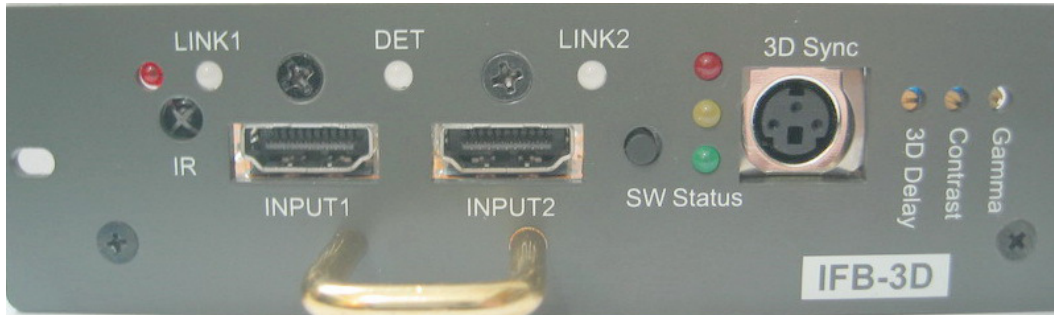
HDMI input ports:
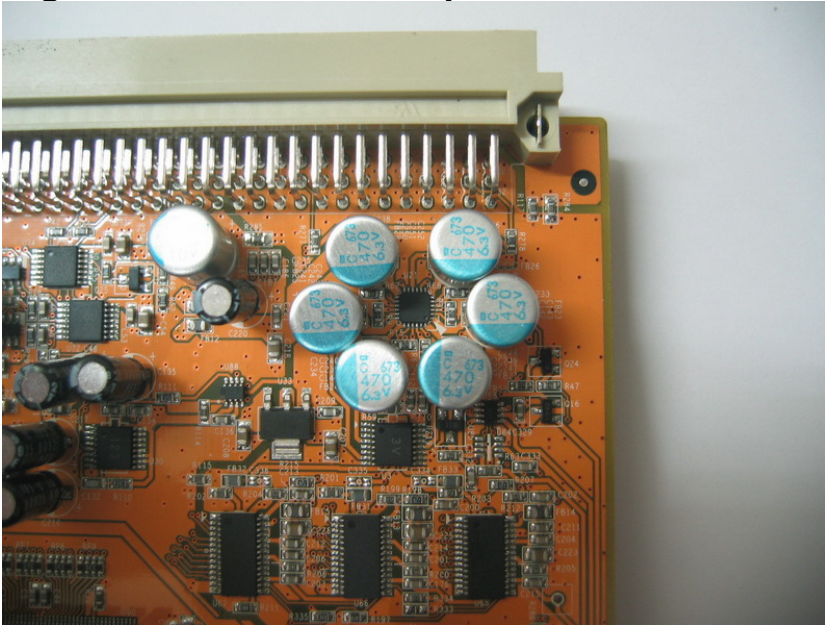 Connect HDMI cable to video source

3D sync port:
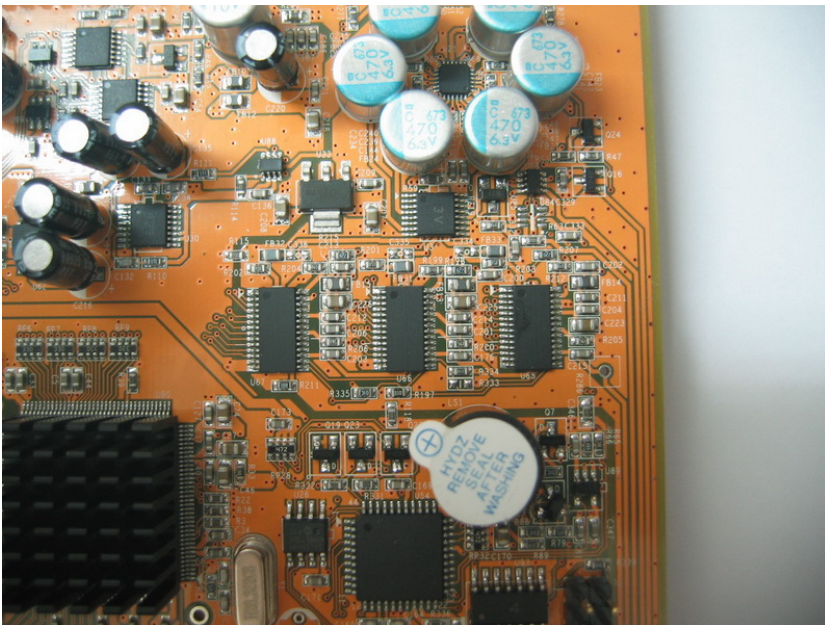 3D Stereo sync output for 3D glasses emitter

IR control:
  IR control can let you switch between input sources and adjust gamma level

High bandwidth video amp use:

14Bit Video DAC use:

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IR Valid Key List:

Key name	function	note
1	Select input HDMI0	
2	Select input HDMI1	
4	Auto Detect Input Color Space	
5	Set Input Color Space at YCbCr 422	
6	Set Input Color Space at YcbCr 444	
7	Set Input Color Space at RGB 444	
gamma	gamma up/down	Total 20 step
0	Select minima gamma	For test only
100	Select maxima gamma	For test only
A	Output range 16-235	(range expand off)
B	Output range 0-255	(range expand on)
C	Output range 16-235 with BBF	Black Boost Function
MUTE	Video Mute	
MODE	3D glasses signal on/off	
8	3D sync delay on/off	Enable 3D glasses sync delay to prevent ghost (adjust delay by VR on the panel)
9	3D sync polarity adjust	Adjust 3D glasses sync polarity
D	Output sync process on/off	When yellow LED on, you can use display key to adjust output sync polarity
Display	output sync polarity adjust	
Adjust +-	Adjust image horizontal shift	Optional image shift function

【**Notice**】 With range expand function on, you will not see BTB and WTW. But you can get more black and white picture.

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◆ **Manual gamma VR adjustment:**
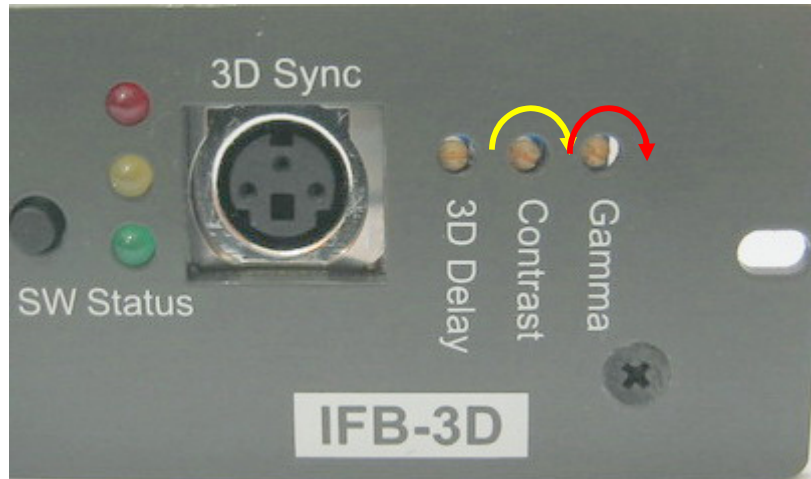
There are three little pots on the panel, one for contrast adjustment (need professional person to do this), and another one use for gamma level adjustment. Below is adjustment way:

Step 1: Turn clockwise the little screw to maxima value, when reach maxima value you will hear tiny click sound when you keep turn the pot. Note: **total 25 turns**

Step 2: Using **remote controller gamma up/down key** to set little higher gamma level than you want. This is crose adjustment for gamma step, you will have **total 20 levels** to use. Please note: when you reach the maxima or minima gamma, the IR LED will keep on with longer beep sound when press the remote.

Step 3: Fine tune the **gamma level** by turning the little screw. (You will not need this step, if you get correct gamma in Step 2.

【**Notice**】：**1.** While adjusting the gamma level, the **RED led** will be blinking with short beep sound.

2. Gamma value will be memorized after projector power off, each input has its own gamma value. (IFB only memorized when use up/down key)
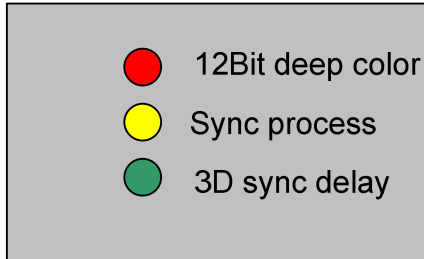
◆Using grayscale to check gamma

No gamma (gamma level=0)

Well tuned gamma

Too much gamma

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◆ STATUS LED:

12bit LED:

When feed 12bit deep color video source, this LED lights up

Sync process LED:

One time press remote button "D", this LED light up, and you are able to adjust horizontal and vertical sync polarity

Two times press remote button "D", this LED light up, and you are able to adjust image horizontal shift

Three times press remote button "D", this LED will be off, and back to normal mode, you can change image shift or horizontal and vertical sync polarity

3D sync delay LED:

One time press remote button "8", this LED light up, and you are able to adjust 3D sync delay by small pot on the panel

Two times press remote button "8", this LED will be off, and back to normal mode, there is no delay for 3D sync

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◆ Installation example on SONY VPH-G90 and play with SONY PS3

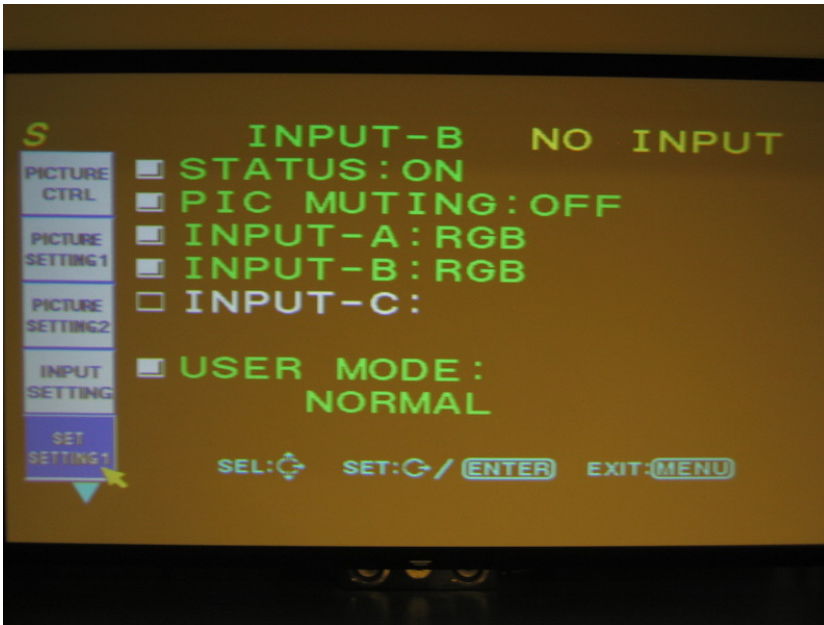1. Insert to SONY projector input slot, for G90, you can use either input B or C

2. Enter projector's service mode

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3. Set input as RGB mode

4. Set input clamp as H/C mode

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5. Connect to PS3 with HDMI cable, and turn on PS3

6. Select input B or C that HDMI card is installed, the projector should be synced.
   (Please turn off the 1080P 24HZ output mode on the PS3, CRT projector will
   not accept such low refresh rate)

7. Use gray scale pattern to adjust gamma if need.

【Note】Please don't turn the contrast pot if you have no instrument to measure
   white level. (The factory default is 0.7V for white)

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◆ IFB-FULLHD V3 Spec:

Weight: 125g

Dimension: 130mmX150mmX36mm

Power consumption: 3W   (1080P 60Hz)

Maxima resolution: 1920X1200 75Hz

Analog bandwidth: 1650MHz

Output white level: 0.6V-1.0V adjustable

◆ Technical support:

moome@seed.net.tw

moome@curtpalme.com

◆ Warranty:

One year

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