

**XG-FULLHD**  
**HDMI V1.3**

# Datasheet

**DOC V1.00**  
**PCB V1.00**

- A. spec
- B. input function
- C. gamma adjustment
- D. white level adjust (need done by professional person)

### XG-FULLHD brief

XG-FULLHD is a newly card for NEC XG series CRT projector. It has two HDMI V1.3 input port with deep color support, and using three 12bit DACs convert to high precision analog RGB video signal. Build-in Gamma circuit create real nature image for your XG projector. Gain control can adjust pure white of the image. The XG-FULLHD is an ideal card for NEC XG projector connect feature digital HD source, like PS3, HD-DVD and Blue-ray Disc.

#### FEATURES

##### ■ HDMI input path

- HDMI 1.0, 1.1, 1.2, 1.3 ,HDCP 1.1, and DVI 1.0 compliant
- DTV mode support (480P,576P,720P,1080i,1080P) for 50 and 60Hz
- 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 200MHz 12bit DAC
- Gamma correction processing and white level control
- High speed 1GHz output Buffer
- Support deep color mode for 10bit and 12bit
- Support 120Hz for 720P and 1080i

##### ■ Board

- Compatible with NEC XG projector input slot B, C
- 2ch analog audio output (not ready yet)
- Toslink output, support up to 8ch audio
- IR control input select and gamma level

##### ■ 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
	1280X1024	43HZ 60HZ 75HZ 85HZ
	1600X1200	48HZ 60HZ
	1440X960	43HZ 60HZ 72HZ
HDTV mode	480P	60HZ
	576P	50HZ
	720P	50HZ 59HZ 60Hz 120Hz
	1080I	29HZ 30HZ 50HZ 59HZ 60HZ 96HZ*1 120Hz
	1080P	50HZ 59HZ 60Hz 24HZ*2 25HZ*2 29.9HZ*2 30HZ*2

PRELIMINARY, SUBJECT TO CHANGE WITHOUT NOTICE

	1035I	30HZ
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\*1 need use powerstrip to set graphic card output this mode

\*2 XG-FULLHD 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 XG projector working with incorrect behavior.

### Board overview



### HDMI input ports:

Connect HDMI cable to video source

### SPDIF port (Toslink):

Optical digital sound output, support 2ch PCM and 8ch compressed sound

### Long cable support:

30 meter MOLEX HDMI cable test ok 720P BOK HDMI player

### Optional IR control:

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

### Key function for IR :

Key name	function	note
1	input select HDMI0	
2	input select HDMI1	
gamma	gamma up/down	Total 20 step
0	Select minima gamma	
100	Select maxima gamma	

**Manual gamma VR location & optional SW:**

We can see the panel between Switch and TOSLINK output, there is two little screw, one for contrast adjustment (need professional person to do this), another one use for gamma level adjust. Below is adjustment way:

Step 1: Turn the little screw to max, un-clockwise (right to left),

Note: total 25 turns

Step 2: using remote controller gamma up/down key to set little higher gamma level you want. This is coarse adjust for gamma step, you will have total 20 level to use. Please note: when you reach the maxima or minima gamma, the IR LED will keep on when press the remote.

Step 3: fine tune the gamma level by turning the little screw. (You will not need this step, if 20 step gamma is enough for your system.)

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While adjusting the gamma level, the led will be blinking.

White control:

Adjust to output 0.87V will have max 0.7V output swing

Optional switch to manual set DVI-RGB 0-255 mode (only valid when video source send DVI-RGB signal, default is 16-235 range):

SW    1    2    3    4    5

off   off   off   off   on      will active DVI-RGB mode (0-255 Range).