



## BUF2000 Video Buffer Amplifier with Gamma



### Introduction

The **Crescendo-Systems BUF2000** video buffer amplifier is a highly flexible device to buffer a RGB or a YPrPb component signal. The **RTC2000** will support any known video format up to at least (1600 x 1200 @75Hz) and beyond.

Although most display devices can handle a wider range of sync options, some displays have a narrower range of acceptable options. Therefore, the **BUF2000** a wide range of sync options as explained below. Additionally the low-level gamma curve of the **BUF2000** is user adjustable, an indispensable feature for optimum picture quality.

**Warning!** Using incorrect scan-frequencies or sync modes can seriously damage your TV or front projector, Crescendo-Systems takes no responsibly implied or otherwise and Crescendo-Systems' total liability to any customer for any and all claims relating to the use of the **BUF2000** shall not exceed the total amount paid by such user to Crescendo-Systems for obtaining this product.

## Specifications

The **BUF2000** offers the user total flexibility and has the following specifications and features:

- Very high-Bandwidth RGB and Component video buffer
- Accepts bi- and tri-level sync
- Accepts all known video resolutions at least up to UXGA (1600 x 1200 @75Hz)
- Manual setting of H-width, H-polarity and V-polarity
- Drives cables of up to 50 feet (16m)
- Unity gain when driving 75 Ohm
- Sync outputs have a 75 Ohm source resistance and can drive a 75 Ohm load

Included in this package are one **BUF2000** and one external power supply. The manual with warrantee statement will be sent by email and optionally can be directly downloaded from the [Crescendo-Systems](http://www.crescendosystems.com) website.

## Setup

In order to successfully use your **BUF2000** in just follow the simple steps outlined below.

1. Make sure that your source device has the ability to correctly set the timing needed by your display. **If this is not the case, do not use the BUF2000.**
2. Connect the component output of your source to the component input of the **BUF2000**.
3. Connect the **BUF2000** to your display using the VGA output connector.
4. Connect the power supply to the transcoder. Use only the supplied unit or an exact equivalent.

## Additional features

The **BUF2000** is shipped in the following configuration:

- The horizontal and vertical sync are set to negative polarity with a horizontal sync width of approximately 1 $\mu$ s
- The gamma control is set to just off

Normally the factory settings should work in most cases. If it does not, the sync features mentioned above can be overruled manually. To do so the case has to be opened and some switches changed. **Before opening the case please remove the power supply first.** To open the case place a flathead screwdriver in one of the four slits on the side and carefully twist to separate the two halves. To reach the switches on the bottom board remove the top board by carefully pulling it up. On the bottom PCB is a switch block that can be used to customize the various sync options of the **BUF2000**. A description of the jumpers is given below.

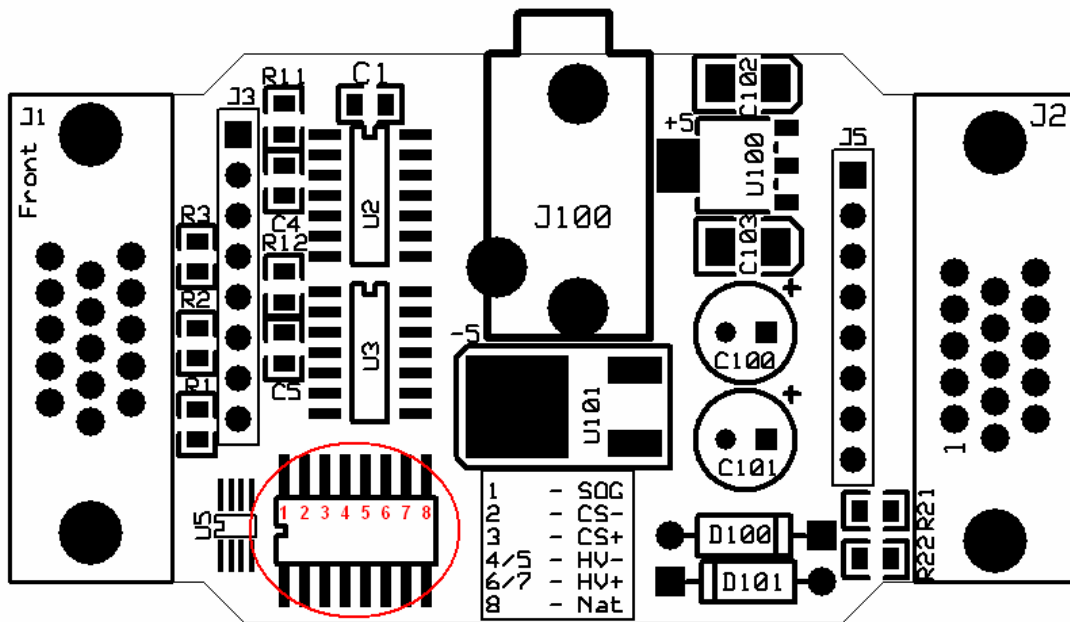
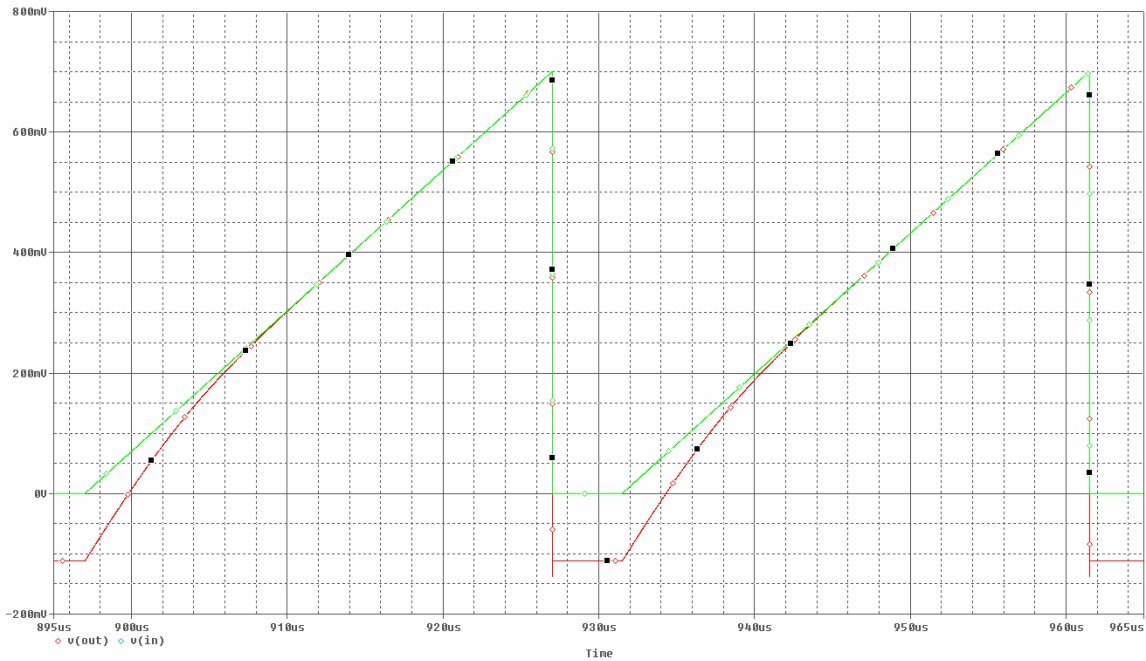


Figure 1 BUF2000 printed circuit board

- SW1:** Sync on Green, in this mode all other switches have to be off.
- SW2:** Negative composite sync on H, in this mode all other switches have to be off.
- SW3:** Positive composite sync on H, in this mode all other switches have to be off.
- SW4:** Negative vertical sync, this mode must be combined with SW5, SW6 or SW8.
- SW5:** Negative horizontal sync, this mode must be combined with SW4 or SW7.
- SW6:** Positive horizontal sync, this mode must be combined with SW4 or SW7.
- SW7:** Positive vertical sync, this mode must be combined with SW5, SW6 or SW8.
- SW8:** Native horizontal sync, this mode must be combined with SW4 or SW7

In all modes except native horizontal sync, the H-sync width can be changed by turning the potmeter on the bottom of the board. Turning clockwise will increase the sync width, counter clockwise will decrease it, the range is approximately from 200ns to 5 $\mu$ s.

## Gamma settings



**Figure 2** BUF20000 gamma settings

When shipped the gamma correction is adjusted to off. To increase low level gamma, rotate the 25-turn potmeter on the side labeled GAMMA clockwise. Figure 2 above shows the response of the minimum and maximum gamma setting. As can be seen, the amplitude of the video signal increases from 700mVpp at minimum gamma setting to about 800mVpp at maximum gamma setting. After dialing in the gamma the contrast setting of the display may have to be adjusted to compensate for this.

When the **BUF2000** is used to buffer a YPrPb component signal, the gamma correction **cannot** be used. In order to quickly switch the gamma correction off, please slide the switch on the side into the off position.

## **Warranty**

Crescendo-Systems designs and builds all products with the highest of care and every product should operate trouble-free for many years when used under normal operating conditions. Therefore, every **BUF2000** carries a 1-year no-hassle replacement warranty. Should a warranty replacement be needed, please contact [sales@crescendo-systems.com](mailto:sales@crescendo-systems.com) first.