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PRODUCT USER GUIDE FOR: THE BL-1 BASIC LEGALISER

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Basic Legaliser BL-1

The BL-1 is a basic Legaliser system. The correction is done in RGB colour space.

The main features of the BL-1 are as follows:

- ◆ Full legalisation to RGB colour space.
- ◆ Out of Gamut "Indicate" Mode
- ◆ 8 User Memories.
- ◆ Automation control

Installation of the BL-1 Product

If this unit is already pre-installed in a Flexibox (FB-9) with either a local or remote panel from the Factory then refer to the "Hardware Installation Guide" which will be enclosed with the system.

If this unit has been ordered separately we assume here that you already have a Flexibox system with a Flexipanel and that the Flexibox has at least one "Spare Slot" for the BL-1 card.

Installing the BL-1 into a Flexibox

To install the BL-1 into a flexibox it is not necessary to power down the box. Follow these instructions.

1. On the rear of the flexibox are 6 slots for Products. Remove any spare blanking plate on an unused slot. There are 2 M2.5 Screws, which require unfastening.
2. Slide the Product PCB into the spare slot and firmly push it "home".
3. Use the two thumbscrews to fasten the unit in place.
4. Now refer to the "GeNETics User Guide". If your system consists of a single Flexibox with a single Flexipanel then refer to the section titled "Flexipanel Auto Set-up". If your system is part of a network with more than one Flexipanel then refer to the section titled "Flexipanel Manual Set-up". This will guide you through acquiring your product as a device on the Flexipanel.

Legaliser Processing

The Legaliser consists of a colour space conversion from Y,Cr,Cb to R,G,B. This first conversion then enters the RGB Clip unit. This has three purposes:

- 1 To Clip, and therefore legalise the incoming signal.
- 2 To provide a signal that indicates that a particular part of the signal is legal or illegal ("Not in clip", or "In clip").
- 3 To provide information to a "Colour Field Generator" (Not shown) to show parts of the picture that are illegal on the SDI Output.

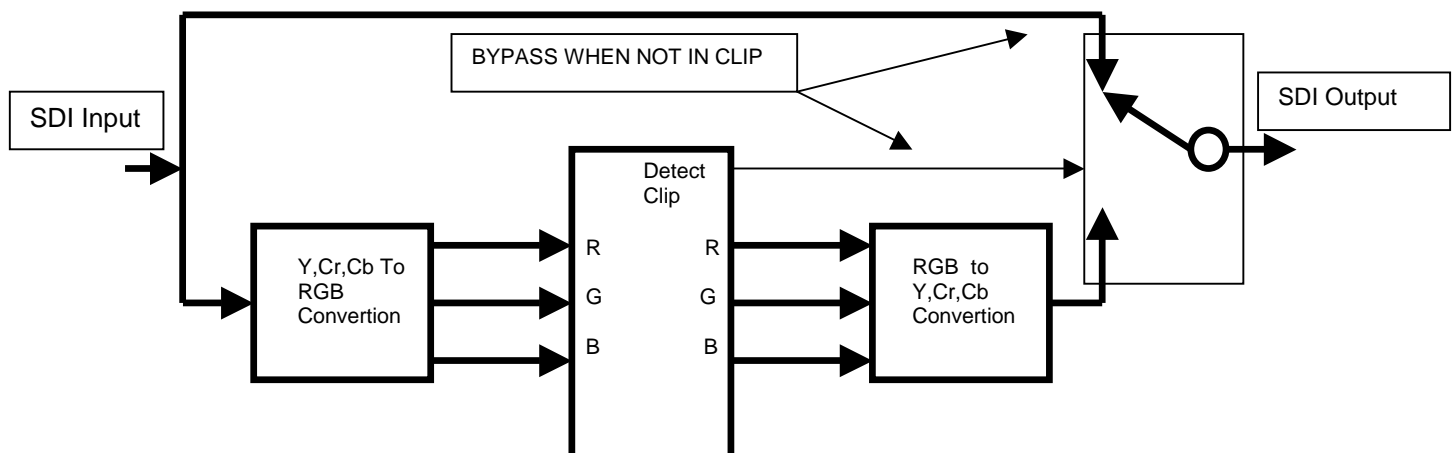
The Legaliser section has a switch that either selects the fully bypassed input signal or the "Clipped" or "Legalised" signal. Any signal that is within the specified RGB Legal parameters will pass through the unit transparently. When the unit senses that it is in an "Illegal" part of the signal, it will switch in its processing to output the Clipped (Modified) part of the signal. The Processed part of the signal is to a rounded 8 bit accuracy. This is acceptable because it is only the Clipped portion of the signal that will pass through the processing chain.

Memory operation on Single and Dual BL-1 Units

A single BL-1 Unit has 8 memories. These memories both store the TOTAL set-up of the unit.

A dual unit has 8 memories. These Store all the settings for **BOTH** Units. The memories cannot be operated independently.

BL-1 Safe And Legal Processing Block Diagram



Menus for the BL-1 Unit

The BL-1 has the following menu structure. Automation control also is implicit in the menu structure. Refer to the "GeNETics User Guide" in the section titled "Automation Protocol on the geNETics Platform" for detailed information. The values given in square brackets indicate the values for Automation system purposes.

| Menu # | Function | Range of Value | Notes |
|--------|--|---|---|
| 0 | Unit Title (Basic Legl'r) | None | |
| 1 | User Programmable Unit Name (e.g " EDIT#5") | None | The user name of the unit can be programmed in from a Flexi-panel using a PS-2 Keyboard. See the section <u>Using the messaging system for giving products user names.</u> |
| 2 | Not Used-Information only | None | |
| 3 | Not Used-Information only | None | |
| 4 | Legaliser Status. | On Show Flash Off [0→3] | This shows the status of the Legaliser block only. (NOT the Proc amp (Input Gain) or the Overshoot suppression. On=ON, Legaliser is active Show= Indicate Illegal parts of the picture with a fill-in colour Flash= Indicate Illegal parts of the picture with a fill-in Flashing colour. Off=OFF, Legaliser is in Bypass |
| 5 | High Clip Level | 51% → 109% [128→255] | This indicates the High Clip point for the RGB Clipping. This is normally set to 100% for clipping at 0.7V in the analogue domain. |
| 6 | Low Clip Level | -8%→ 50% [0→127] | This indicates the Low Clip point for the RGB Clipping. This is normally set to 0% for clipping at 0V in the analogue domain. |
| 7 | Out of Gamut Colour | Black Blue Red Purple Green Cyan Yellow White [0→7] | This is the colour used to fill in the illegal parts of the picture in "Show" or "Flash" indicate modes. |
| 8→15 | Recall Memory #1→8 | [Automation must write a "1" to cause a recall Memory command] | Pressing this will overwrite all current settings in favour of those settings saved when the "Save Memory#1→8" Buttons (respectfully) was pressed |
| 16→23 | Save Memory #1→8 | [Automation must write a "1" to cause a save | Pressing this will store all current settings in Memory#1→8. |

| | | | |
|----|--|--|--|
| | | Memory command] | |
| 24 | Info "These menus Pass" | None | |
| 25 | Info "Control Elsewhere" | None | |
| 26 | Pass Control Enable | None | This causes control to be passed to one or two flexipanel on the same I-BUS network with "panel numbers" shown in the next red LCD Window. When control is passed you will see the middle and lower lines of the LCD Display say either "OK" or "FAIL" depending on whether control was successfully passed on to either of the selected panels. Further presses of this button will enable or disable the control. |
| 27 | "Panel" numbers to which control can be passed. This feature is used to pass temporary control over to another panel. Upon passing temporary control over to another panel, that panel will have a flashing "device button LED" indicating that control is available on this device button. | <u>Digipot A</u> 0→58 [0→58] <u>Digipot B</u> 0→58 [0→58] | When this button is pressed, it changes to "Green". The Three-line display in the window then indicates the two options, which can be changed by adjusting the two rotary digipots A and B. This will alter the first panel number to which you would like to pass control. This will alter the second panel number to which you would like to pass control. The panel number of any panel can be found by pressing the set-up button momentarily. Setting either of the above panel numbers to "0" will stop any control being passed. |
| 28 | Save PowON mem | [Automation must write a "1" to cause a recall Memory command] | Saves the current settings to be the "power on reset" settings |
| 29 | Recall PowON mem | [Automation must write a "1" to cause a recall Memory command] | Recalls the "power on reset" settings |
| 30 | "Total Reset ". Note also there is a number like "K15090" This is a software version of the GeNETics product's "Kernel" | [Automation must write a "1" to cause a recall Memory command] | This puts all current and power on default settings to the factory default |
| 31 | Info - Software Versions | None | This shows the Software Versions of the unit. |

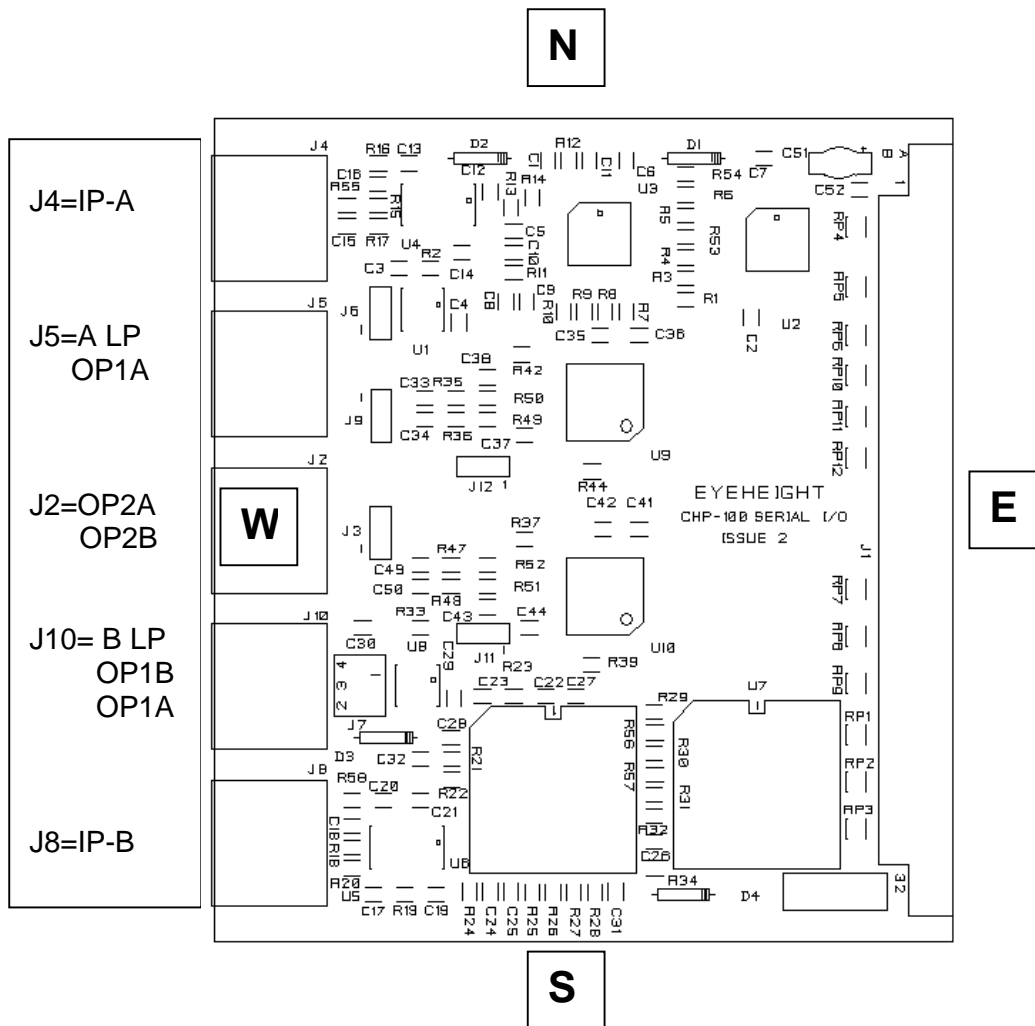
BL-1 Configuration of the Serial Digital I/O cards

All GeNETics Products have exchangeable I/O cards. A single channel BL-1 is supplied with the SIO-1 Card. The following table shows the jumper settings on the PCB for the factory delivered unit. This configuration gives the user 2xBL-1 main outputs and an active SDI input loop on channel A.

| Rear Legend | Explanation | Jumper settings |
|----------------------|---------------------------------|-------------------------|
| IP-A | SDI Input of channel A | None |
| A-LP OP1A | Input A active loop through | Jumper J6 to N |
| OP2A OP2B | BL-1 Output number 1 | Jumper J3 to N |
| B LP OP1B OP1A | BL-1 Output number 2 | Jumper J7 to E, J9 to S |
| IP-B | SDI I/P of channel B (not used) | None |

A dual channel BL-1 is supplied with the SIO-2 Card. The following table shows the jumper settings on the PCB for the factory delivered unit. This configuration gives the user 1xBL-1 main outputs for each channel and an active SDI input loop on channel A.

| Rear Legend | Explanation | Jumper settings |
|----------------------|-----------------------------|----------------------------------|
| IP-A | SDI Input of channel A | None |
| A-LP OP1A | Input A active loop through | Jumper J6 to N |
| OP2A OP2B | BL-1 ch A Output | Jumper J3 to N |
| B LP OP1B OP1A | BL-1 ch B Output | Jumper J7 to S J9 not fitted. |
| IP-B | SDI Input of channel B | None |



Technical Specification for the SIO-1/2 Dual Serial Digital Card

| | |
|--|---|
| Number of inputs | 2 (SIO-2) or 1 (SIO-1) |
| Type of Inputs | 270Mbit Serial Digital Video Inputs 75 Ohm |
| Line Length | At least 200 Meters of PSF1/3 (Typically 275 Meters) |
| Number of Outputs | 3 Outputs per Card. |
| Type Of Outputs | 270Mbit Serial Digital Video Outputs, 75 Ohm, 800mV |
| Total Number Of BNC Connections | 5, consisting of 1 or 2 Fixed Inputs and 3 Jumper Configurable outputs. |
| SDI Output Jitter | The system will add less than 0.2UI to the input Jitter.(This is only guaranteed on issue 2 or later cards) |

Jumpering the I-BUS (CAN-BUS) Termination

The I-BUS Network is the "control system" under which all Products and Panels are networked together. Under certain circumstances it is necessary to terminate the network. This can be done on a Flexi-panel or a "Product". Should the network require terminating at the point of this product. To terminate this product, locate J5 on the BL-1 Product supplied which is between U1 (The large square "chip") and the Edge connector. (This is on the half of the card labelled "CHP-100 Processor"). Jumper this with a 2mm Jumper link.

The user should read the "Hardware Installation Guide" to know if this link is to be jumpered.