



PA-I

Processing Amplifier

user manual

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I System Overview

This manual describes the function of the PA-1. This unit provides luminance lift, luminance gain and chroma gain control over an SDI signal. Additionally the unit contains an internal test signal generator and simple split screen wipe to enable easy comparison between the incoming SDI signal and the internal test signal.

I.1 The PA-1 Product

The main features of the PA-1 are:

- Luminance lift and gain
- Chroma gain
- Internal test signal generator
- Split screen function
- 4 user memories

I.2 Applications for the PA-1

The PA-1 would typically be used for correcting luminance gain, luminance lift and chroma gain errors on incoming feeds.

I.3 Chassis

There are two 1RU chassis available.

- The most cost effective one is called the maxiBox MX-9, this can hold up to 6 PA-1 processing modules.
- The flexiBox FB-9 has optional dual redundant power supplies and allows user replacement of modules, this can also hold up to 6 PA-1 processing modules.

I.3.1 Control Equipment for the PA-1

There are two options available for controlling the PA-1. The available modules are:

- A 1RU control surface that fits on the front of a maxiBox or flexiBox. This is called a flexiPanel (Order code FP-9) and provides access to the control and configuration menus as detailed in section 3.
- A desk mounting control surface (Order code FP-10). This is a 4RU version of the FP-9 above designed to be desk mounted and is functionally compatible with the FP-9 control panel.



Figure 1-1 flexiPanel (FP-9)



Figure 2 deskPanel (FP-10)

2 Installation

2.1 Installation of the PA-I product

If this unit is already pre-installed in a flexiBox (FB-9), or a maxiBox, with either a local or a remote panel from the factory then refer to the "Hardware Installation Guide" which will be enclosed with the system. If this unit is pre-installed in a miniBox (MB-9), then also 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 PA-1 card.

2.2 Installing the PA-I into a flexiBox

To install the PA-1 into a flexiBox it is desirable (but not necessary) to power down the flexiBox. Follow these instructions.

On the rear of the flexiBox are 6 slots for Products. Remove any spare blanking plate. There are 2 off M2.5 Screws, which require unfastening for each blanking plate.

Slide the Product PCB into the spare slot and firmly push it "home".

Use the two thumbscrews to fasten the unit in place.

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.

2.3 Connections to an PA-I

Below is the connections to the PA-1.

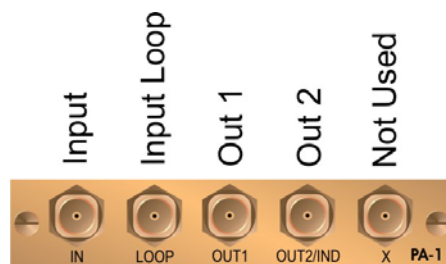


Figure 3- PA-1 Connections

2.4 Connecting Panels to the PA-1

The PA-1 is usually operated using a FP-9 Flexipanel locally mounted. The PA-1 may be controlled via a remote mounted FP-9 or FP-10 control panel. For detailed information on connecting remote panels refer to the section “Connection of Remote Panels to a flexiBox” in the geNETics Hardware Installation Guide.

3 Operation

3.1 Menu Control of the PA-1

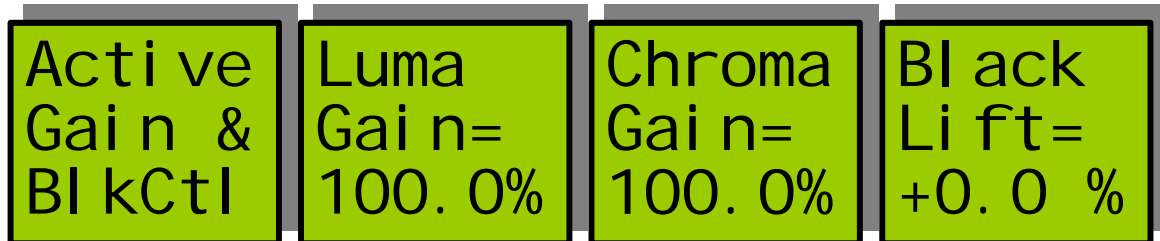
Using the FP-9 or FP-10 with the PA-1 is, as are all genetics modules, controlled using a set of **menus**. Each of these menus contains up to 3 parameters that are adjusted using the rotary 'digipots'. The Menus define all of the adjustable operational parameters in the PA-1. Pressing the rotary 'digipots' brings the parameter to its default value. Device selection is done using the device select switches which, when pressed, will offer the name of the device in the LCD Window. Modules can be acquired and then de-acquired using the set-up switch. For a full description of the operation philosophy of the geNETics system refer to the "geNETics User Guide" (section "Operation of the FlexiPanel")

A full list of the Menus and their functions are given in the following section

Operation menus for the PA-1

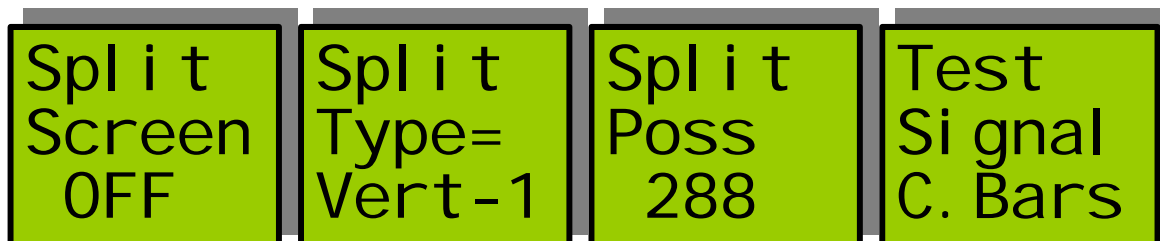
The following set of menus defines the operation of the PA-1.

Menu 00-03: Top Level Controls



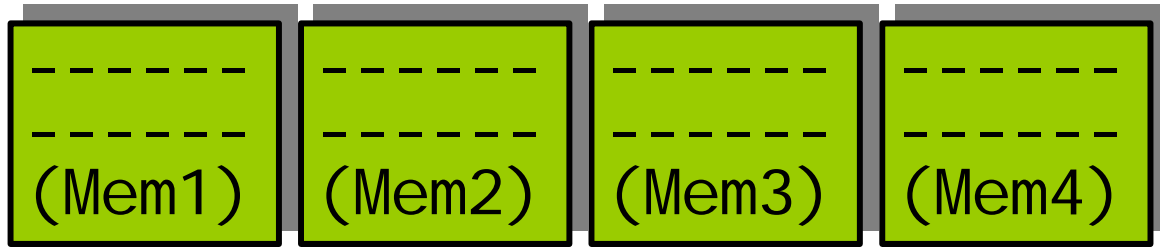
Menu Num.	Heading	Automation	Function
0	Gain & BlkCtl	Active -> 0 Bypass -> 1	Controls bypassing of the unit. When top line reads "Active" unit is in circuit.
1	Luma Gain	0 -> 199.7% [0 -> 511]	Sets the Luminance Gain
2	Chroma Gain	0 - 199.7% [0 -> 511]	Sets the Chroma Gain
3	Black Lift	-29.0% -> 28.9% [-256 -> 255]	Sets the Black Lift

Menu 04-07: GPI#1 Control



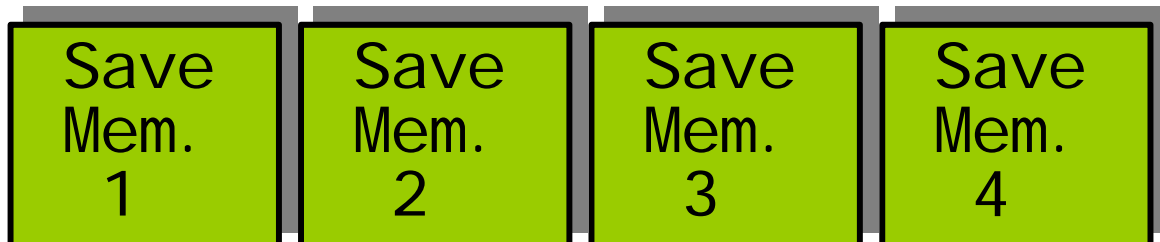
Menu Num.	Heading	Automation	Function
4	Split Screen	Off//On [0,1]	Enables the split screen function
5	Split Type	Vert-1 = 0 Vert-2 = 1 Horz-1 = 2 Horz-2 = 3	Defines the type of split screen. Vert-1 – split screen with test signal on bottom. Vert-2 – split screen with test signal on top. Horz-1 – split screen with test signal on right. Horiz-2 – split screen with test signal on left.
6	Split Poss	0->719 [0->719]	Controls the position of the split by lines from the top for vertical splits and by pixels from the left for horizontal splits.
7	Test Signal	Y.Ramp = 0 C.Ramp = 1 U.Ramp = 2 V.Ramp = 3 Path-1 = 4 y/cRmp = 5 u/vRmp = 6 C.Bars = 7	Selects the type of internal test signal. C.Bars – Colour bars Y.Ramp – luminance ramp C.Ramp – Chroma ramp U.Ramp – Cr ramp V.Ramp – Cb ramp Path-1 – Pathological y/cRamp – Chroma ramp in top half of screen, Luminance ramp in bottom half u/vRmp – Cr ramp in top half of screen, Cb ramp in bottom.

Menu 8-11: Memory Controls



Menu Num.	Heading	Automation	Function
8	MEM1	1=Recall	Pressing this will recall Memory number 1. User Names can be programmed in to the memories using a keyboard. See "geNETics User guide", section "Giving product Memories names"
9	MEM2	1=Recall	Pressing this will recall Memory number 2.
10	MEM3	1=Recall	Pressing this will recall Memory number 3.
11	MEM4	1=Recall	Pressing this will recall Memory number 4.

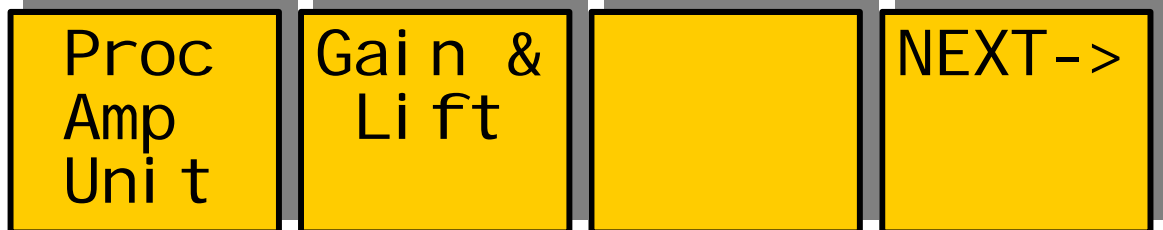
Menu 12-15: Memory Controls



Menu Num.	Heading	Automation	Function
12	Save Mem. 1	1= Save	Pressing this will Save Memory number 1.
13	Save Mem. 2	1= Save	Pressing this will Save Memory number 2.

14	Save Mem. 3	1= Save	Pressing this will Save Memory number 3.
15	Save Mem. 4	1= Save	Pressing this will Save Memory number 4.

Menu 16-19: Info Menus



Menu Num.	Heading	Automation	Function
16	Proc Amp Unit	none	Unit Description
17	Gain & Lift	none	User Programmable Unit Name
18		none	none
19	Next ->	none	none

Menu 20-23: Power Resets.



Menu Num.	Heading	Automation	Function
20	Set As Pow On Mem	1=save	Pressing this will save the current set up as the power on default.
21	Recall Pow On Mem	1=Recall	Pressing this will recall the power on default settings.
22	TOTAL RESET	1=Reset	Pressing this will reset the system.

23	Software Version	N/A	Shows the current software version.
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4 Technical Appendix

4.1 Technical Specification for the PA-I

Number of Inputs	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 Output BNC's per Card (Configurable).
Type Of Outputs	270Mbit Serial Digital Video Outputs, 75 Ohm, 800mV
Total Number Of BNC Connections	5, consisting of 1 Fixed Input and 3 Jumper Configurable outputs. (One BNC not used)
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)
Current Consumption	<800mA at +5V
Size	215mm by 100mm

4.2 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 Panel or a "Product". To terminate this product, locate J6 on the SA-1 Processor Card supplied which is between U1 (The large square "chip") and the Edge connector. (This is on the half of the card labelled "CHP-100 Spartan2 Processor"). Jumper this with a 2mm link.

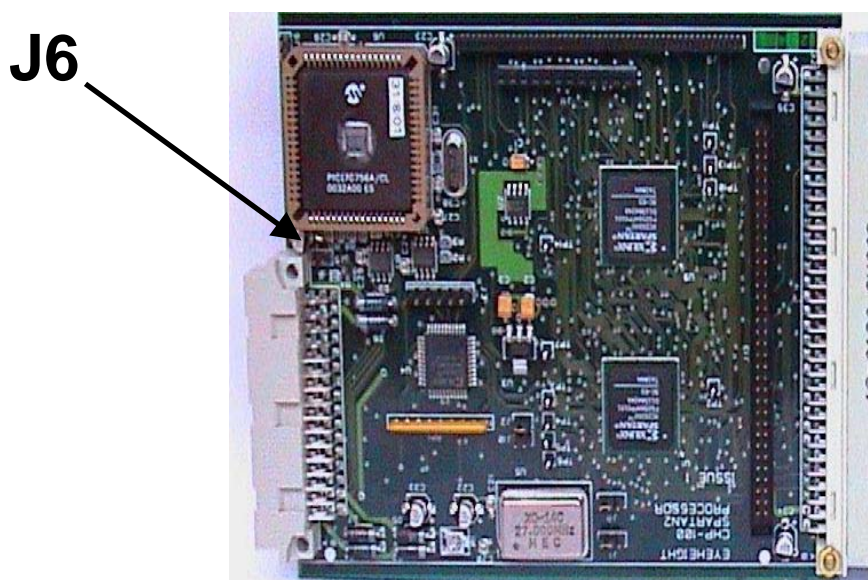


Figure 4-1 Location Of I-Bus Termination Link