eyeheight

BF-2

Fade to black and silence processor.

user manual

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1 System overview

The BF-2 is a fade to black and silence processor. This system will fade an SDI signal to black while also fading embedded audio group 1 to silence. The unit also has two channels of AES audio, which can be faded to silence also. The main features of the BF-2 are as follows:

- Full 10-bit processing.
- Programmable auto fade to Black and Silence.
- AES and embedded audio fade with 2 AES channels and one embedded group (A1234)
- Manual panel or automation control.
- GPI Control.
- EDH re-insertion
- Passes all horizontal and vertical interval data.

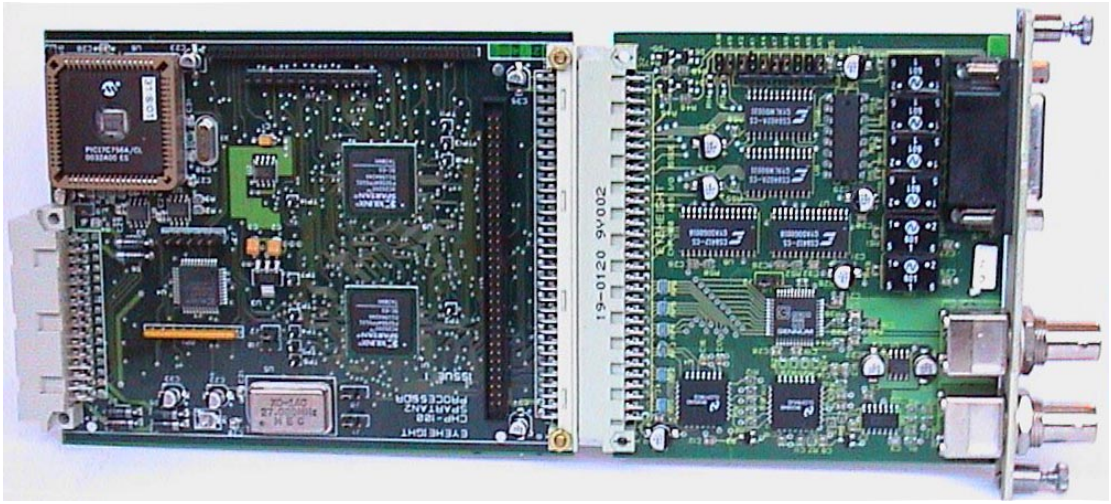

Figure 1-1 BF-2, fade to black and silence PCB.

1.1 Applications for the BF-2

Applications for the BF-2 include the following:

- Add on unit for eyeheight **playout** master control.
- Any simple FTB applications. The unit will stand-alone for miscellaneous applications

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1.2 Associated Equipment for the BF-2

The BF-2 is a module and requires both a chassis and a control surface to function.

1.2.1 Chassis Types

- **flexiBox** is a 1RU chassis. The order code is FB-9. This will hold a maximum of 6 BF-2 Modules with “Hot Swap” redundant PSU option and “Hot Swap” BF-2 modules.
- **maxiBox** is an alternative low cost 1RU chassis. The order code is MX-9. This also will hold a maximum of 6 BF-2 modules but it has no redundant PSU option and the BF-2 units must be factory fitted.

Figure 1-2 FlexiBox with flexiPanel fitted

1.2.2 Control Surfaces

- **FlexiPanel** is a IRU control surface that fits on the Front of a 1RU flexiBox. The order code is FP-9. A FlexiPanel can also be used in conjunction with a miniBox, in this case the extra accessory (Order code RR-9) will be required
- **FP-10** is a desk mounting control surface (Order code FP-10). This unit is a modular unit, which can be used in conjunction with the units below.

Figure 1-3 FP-10 desktop modular panel

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Figure 1-4 FP-9 1RU panel.

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2 Installation

2.1 Installation of the BF-2 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 BF-2 card.

2.2 Installing the BF-2 into a flexiBox

To install the BF-2 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 Connecting to a BF-2.

Figure 2-1 SDI video in/out and AES connections

Pin Number	Function
1	AES 1 Input+
2	AES 1 Input-
3	AES 2 Input+
4	AES 2 Input-
5	AES 1 Output A+
6	AES 1 Output A-
7	AES 2 Output A+

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8	AES 2 Output A-
9	AES 1 Output B+
10	AES 1 Output B-
11	AES 2 Output B+
12	AES 2 Output B-
13	GPI1 Activate/de-activate FTB
14	GPI2 De-activate FTB
15	GND

Figure 2-2 15W D-type connections.

GPI's are short to ground to activate.

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3 Operation

3.1 Manual control of the BF-2

Manual Control of the BF-2 is done using one or more of the following control surfaces:

- The 1RU FP-9 Flexipanel.
- The FP10 Desk mounting Panel

The FP-9 and the FP-10 have identical manual control systems. (The FP-10 is simply a desktop version of the FP-9). The BF-2 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 BF-2. 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 section 3 of this chapter.

3.2 Automation Control of the BF-2

Automation of the geNETics products is achieved via an RS422 port.** This port is marked RS422 on the rear of a flexiBox. For the port to work a flexiPanel MUST be connected locally on the front of the flexiBox.

Automation control of the BF-2 is possible using the geNETics automation protocol.

Genetics protocol is described in detail in the “GeNETics User Guide” section titled “Automation Protocol on the geNETics Platform”. The menu list in section 3 of this chapter contains the data information for the protocol.

**On most flexiBoxes later than 1/10/02 the RS422 port has been replaced by a “D-Bus” Port. The D-Bus port is for High Speed data transfer and is not used for serial control. In order to achieve serial control of any products on an I-Bus network Eyeheight Ltd have developed a RS232→I-bus converter “dongle”, (DG-9) which enables greater flexibility of products on the I-Bus network whilst using the same protocols as the RS422 port. Please refer to the “User guide for the DG-9 eyeheight dongle and set-up software.

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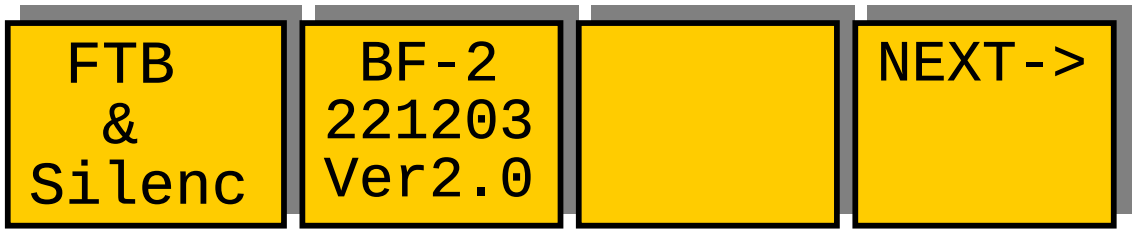
3.3 Operational Menus for the BF-2.

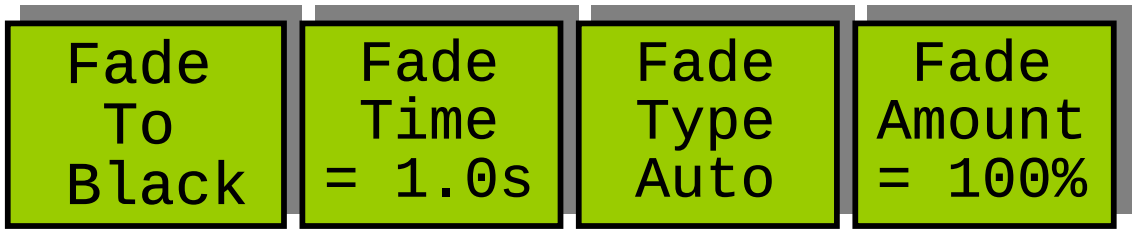
Menus 00-03 Top Level Menus.



Menu Num.	Heading	Automation	Function
00	Title	none	
01	Software version	none	This can be programmed by the user. See genetics user guide.
02			
03	Next		This prompts the user to hit the next key for further menus.

Menus 04-07 Set-up and Take.

(Press “NEXT/PREV” to navigate)



Menu Num.	Heading	Automation	Function
4	Fade "To" or "From" Black Status (Take button)	Fade To Fade From [0→1]	This is effectively the "Take" button causing a fade FROM black and silence or a fade TO Black and silence.
5	Fade Time	0 Secs→ 20 Secs [0→200] (1/10th sec's)]	This indicates the time taken to fade to and from black and silence.
6	Fade Type	Auto Manual [0→1]	This indicates the option of automatic (programmed) or manual "fade to Black and silence"

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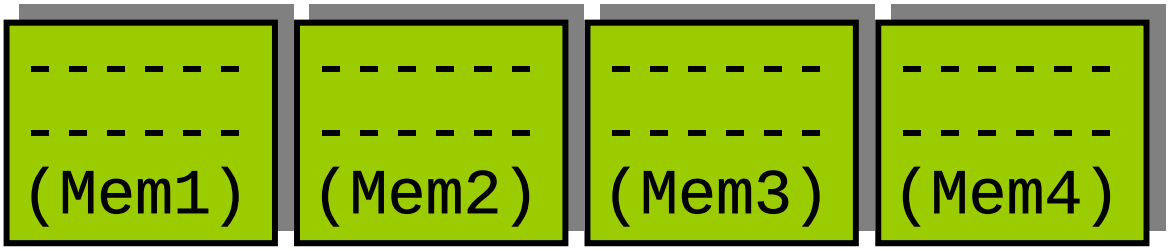
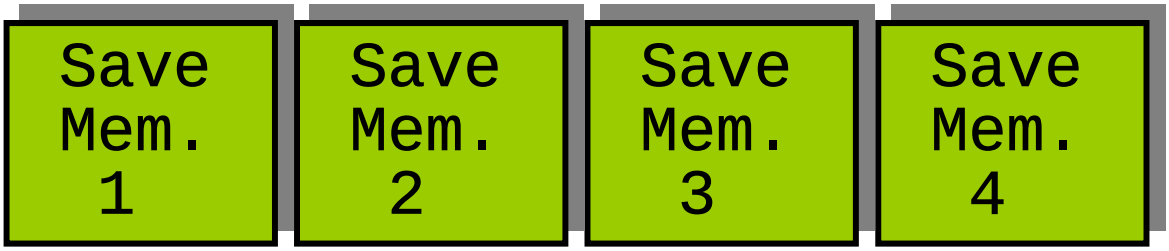
7	Fade Amount	0→100% [0→256]	This indicates the amount of fade when the system is in manual mode. 0% indicates Black and silence and 100% indicates fully faded up.

Menu 08-11: 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

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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: Top Level Controls

Menu Num.	Heading	Automation	Function
16	Set As Pow On Memory	1=save	Pressing this will save the current set up as the power on default.
17	Recall Pow On Memory	1=Recall	Pressing this will recall the power on default settings.
18	TOTAL RESET	1=Reset	Pressing this will reset the system.
19	Software Version	N/A	Shows the current software version.

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4 Technical Appendix

4.1 Technical Specification for the BF-2

Number of Inputs	3
Type of Inputs	1 off 270 Mbit Serial Digital Video Inputs 75 Ohm, 2 off AES Audio Inputs
Line Length	At least 200 Meters of PSF1/3 (Typically 275 Meters) for video input.
Number of Outputs	1 Output BNC's , 1 SDI output. 2 off AES audio output streams.
Type Of Outputs	270Mbit Serial Digital Video Outputs, 75 Ohm, 800mV
Total Number Of BNC Connections	2, consisting of 1 Input, 1 output.
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 BF-2 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.

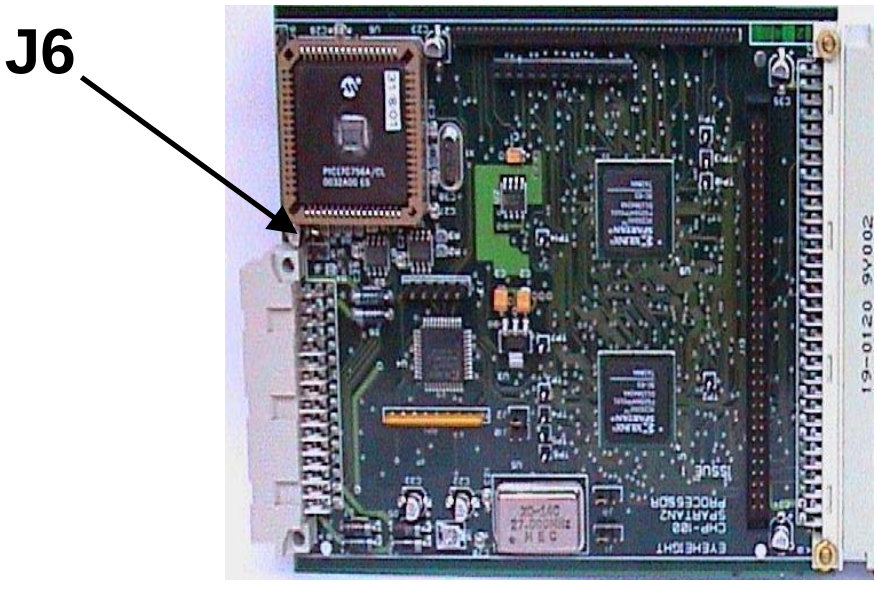

Figure 4-1 Location Of I-Bus Termination Link

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4.3 CHP-100 SDI-TC-GPI Card

4.3.1 Jumper Links on the Timecode and GPI I/O card

The AES output has a number of jumper links, which effect the formatting of the AES, output data.

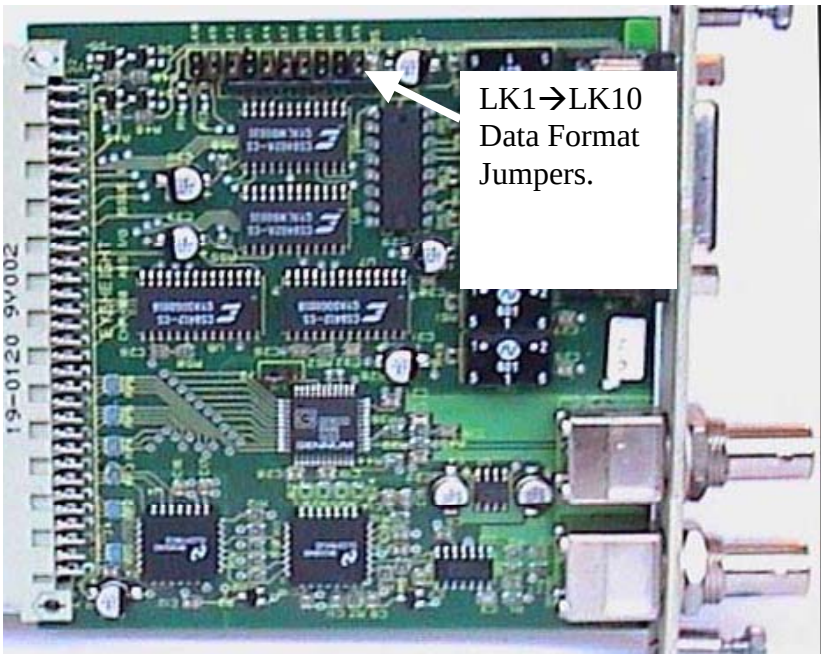

Figure 4-2 jumpers on the BF-2 I/O card

Link No.	Function of LK1→LK10 Links	Standard
10	Emphasis1, combined with Emphasis0 sets the Equalisation data on the channel status bits	No Link
9	Emphasis0, combined with Emphasis1 sets the Equalisation data on the channel status bits	Link
2	Stereo mode set in Channel Status bits. (Link to set)	Link
1	User Bit set in Channel Status bits. (Link to clear)	Link
4	Diagnostic MUST BE LINKED!!	Link
7	Validity Bit set in Channel Status bits. (Link to clear)	No Link
8	Sampling Freq1. combined with Sampling Freq0 sets the Sampling Frequency data on the channel status bits.	No Link
3	Non-Audio Bit set in Channel Status bits. (Link to set)	No Link
6	Professional Mode Bit set in Channel Status bits.	Link

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	(Link to set)	
5	Sampling Freq0. combined with Sampling Freq1 sets the Sampling Frequency data on the channel status bits.	Link

Emphasis0	Emphasis1	Function
No Link	No Link	Undefined Emphasis
Link	No Link	No Emphasis
No Link	Link	50/15uS Emphasis
Link	Link	CCITT J17 Emphasis

Sampling Freq0	Sampling Freq1	Function
No Link	No Link	32.0K Sampling
Link	No Link	48.0K Sampling
No Link	Link	44.1K Sampling
Link	Link	Sampling Freq Not Indicated.

4.3.2 Rear 15W D-Type Pinout

Pin Number	Function
1	AES 1 Input+
2	AES 1 Input-
3	AES 2 Input+
4	AES 2 Input-
5	AES 1 Output A+
6	AES 1 Output A-
7	AES 2 Output A+
8	AES 2 Output A-
9	AES 1 Output B+
10	AES 1 Output B-
11	AES 2 Output B+
12	AES 2 Output B-
13	GPI1 Activate/de-activate FTB
14	GPI2 Not currently used
15	GND

GPI's are short to ground to activate.

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