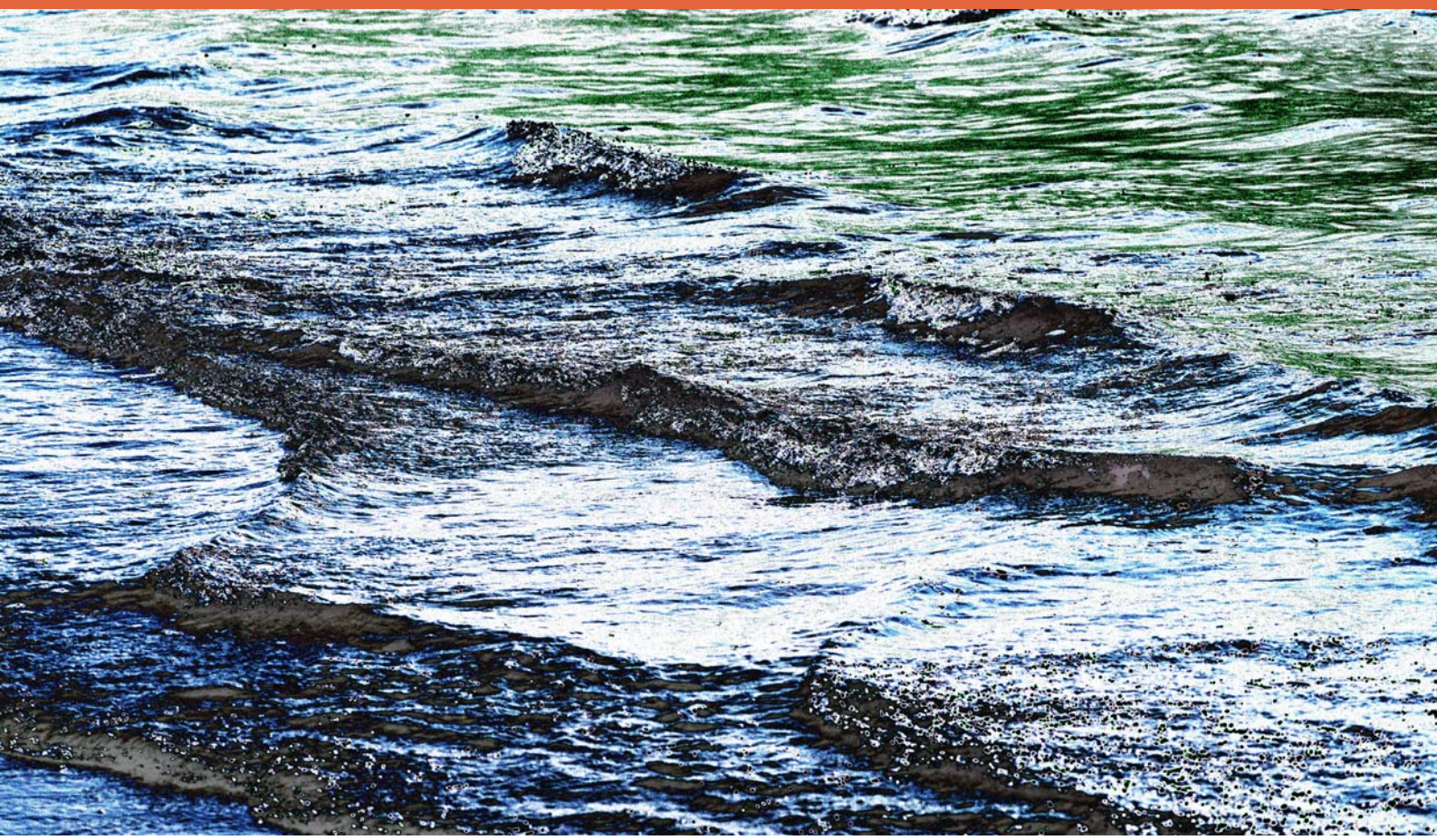
eyeheight



AF-2

AFD decoder

user manual

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I System Overview

This manual describes the function of the AF-2. The AF-2 is a unit that will decode the AFD and AR numbers, translate then into user defined text and display both onto an overlaid screen. It will set appropriate alarm outputs in user-defined conditions.

The main features are as follows:-

- The user can define a 6 digit channel Ident, definable in foreground colour, background colour, flashing or normal mode.
- All the AFD and error messages can be user defined, in foreground colour, background colour, flashing or normal mode and whether that condition triggers an alarm.
- The main “alert” alarm can be “accepted” by the operator setting a second “indication” alarm, which is cleared when the problem is completely resolved.
- The module can cope with AFDs in the range 0-7 or 8-15.
- The module broadcasts information compatible with the MD-2 Master Display module, enabling collation of any unit’s displays and allowing for remote supervision.
- The module displays suitable “Edge of picture” and “Safe action” cursors overlaid onto the video picture.

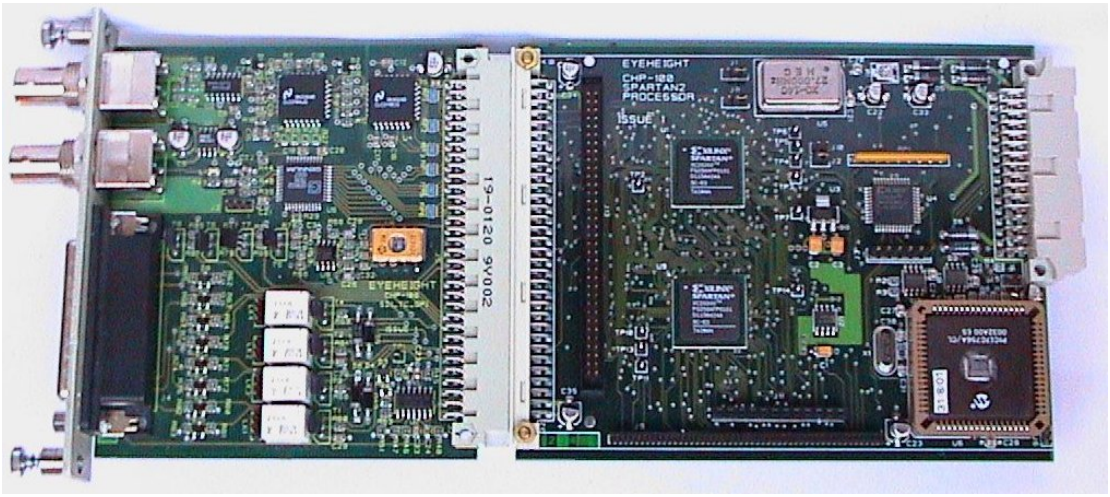

Figure 1 The AF-2 AFD decoder module.

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Figure 2 Typical AF-2 on-screen displays

1.1 Associated Equipment for the AF-2

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

1.1.1 Chassis Types

- **flexiBox** is a 1RU chassis. The order code is FB-9. This will hold a maximum of six AF-2 modules with “Hot Swap” redundant PSU option and “Hot Swap” AF-2 modules.
- **maxiBox** is an alternative low cost 1RU chassis. The order code is MX-9. This also will hold a maximum of six AF-2 modules but it has no redundant PSU option and the AF units must be factory fitted.
- **miniBox** is a half width 1RU high desktop unit capable of holding a single AF-2 unit which must be factory installed. The miniBox includes a control surface allowing recall of up to 8 predefined memories which are either factory configured or set up by the user using an FP-9 or FP-10 connected to the miniBox as a remote panel.

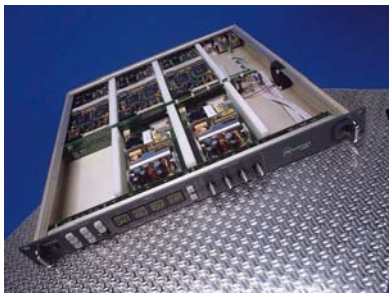

Figure 3 FlexiBox with flexiPanel fitted

1.1.2 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.

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Figure 4 Desktop modular panel FP-10

Figure 5 IRU panel FP-9

Figure 6 miniBox integrated panel

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2 Installation

2.1 Installation of the AF-2 product

If this unit is already pre-installed in a flexiBox (FB-9), a maxiBox or a miniBox, 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 an AF-2 card.

2.2 Installing the AF-2 into a flexiBox

To install the AF-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 four 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 an AF-2

Connections for the AF-2 are shown below.

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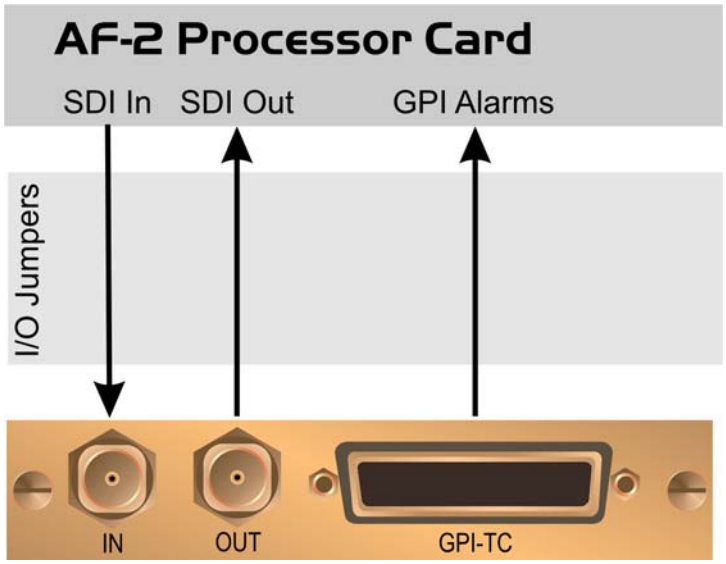

Figure 7 AF-2 Connections

See section 4 – Technical Appendix for pin-out and jumper details.

2.4 Connecting Panels to the AF-2

The AF-2 may be operated using a FP-9 Flexipanel locally mounted. For a more operational environment the AF-2 may be supplied with a desk mounting FP-10 or remotely sited FP-9. For detailed information on connecting remote panels refer to the section “Connection of Remote Panels to a flexiBox” in the geNETics Hardware Installation Guide.

Below is shown a typical system consisting of an geNETics processor card in a flexiBox controlled by a remotely mounted FP-9.

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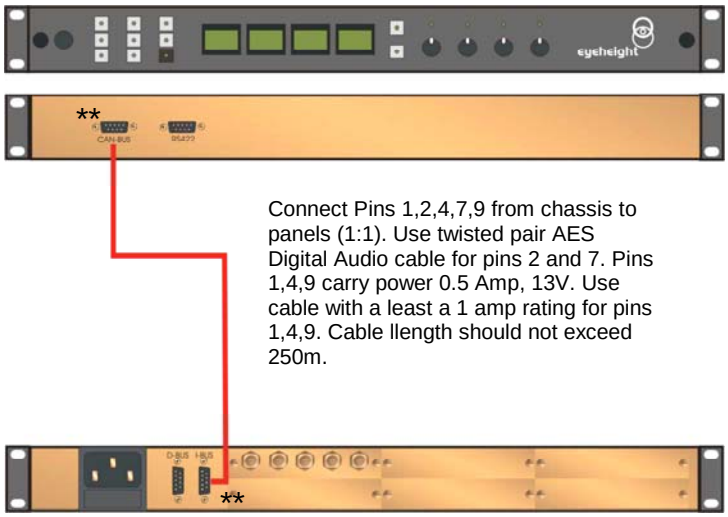

I-Bus pins 2 & 7

** The I-BUS Network requires terminating with 100 Ohms at each extreme end of the network. Ensure that this is done either by an external 100 ohm resistor OR ONE Panel/Product at each end has the termination set. See the "Genetics User Guide" Under the sections "Flexipanel Power/I-BUS Jumpers".For the 4RU Panels see “4RU Panel (FP-10) Jumpers for I-BUS” and “4RU Panel (VP-10, SW-10, AP-10) Jumpers for I-BUS” . Alternatively The termination can be set on a Product (ie the AD-2/AD-2E module). Information about this is given in this manual.

Figure 8 I-Bus connection from chassis to panel

N.B. From 1/10/02 Eyeheight introduced a change in the flexiBox Chassis. Most versions now have two 9 way connectors on the rear labelled “I-Bus” and “D-Bus”. The “I-Bus” connector is the same as the previously labelled “Can-B” connector. Although a maxiBox is shown in this diagram the same arrangement applies for a flexiBox chassis.

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3 Operation

3.1 Manual control of the AF-2

Manual Control of the AF-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 AF-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 AF-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 AF-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 AF-2 can be done 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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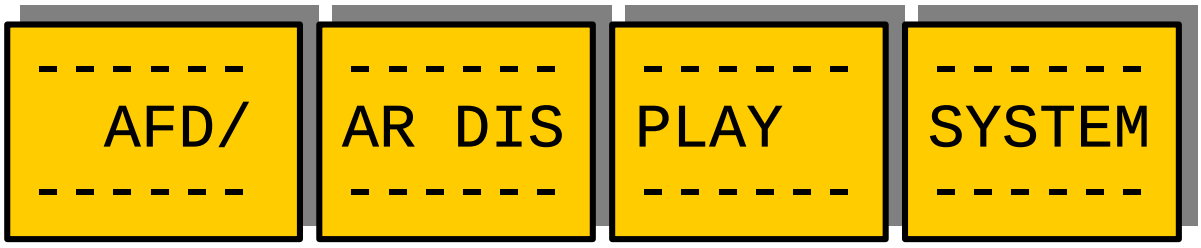
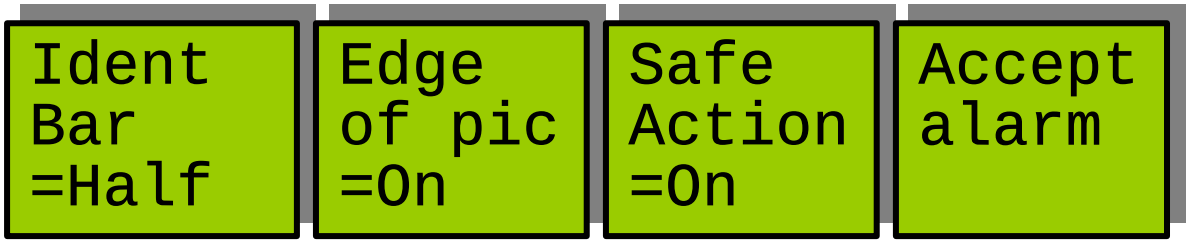
3.3 Operational Menus for the AF-2

Menus 00-03 Top Level Menus



Menus 04-07, Ident Bar and Alarm Accept Menus



Menu Num.	Heading	Automation	Function
4	Ident Bar	Off,Half,On Default is Half	Pressing this will clear the Ident Bar, just draw a Half bar, or draw the entire bar. The half bar consists of the AFD number and AFD text. The full bar also includes a product identifier, in this case AF-2, a user programmed channel Ident and the AR number.
5	Edge of pic	Off, On Default is On	Pressing this button toggles whether the Edge of picture cursor is drawn. This cursor only applies in defined AFD modes.
6	Safe Action	Off,On Default is On	Pressing this button toggles whether the Safe Action cursor is drawn. This cursor only applies in defined AFD modes.
7	Accept Alarm	none	Pressing this button informs the system that the operator has acknowledged the current alarms, converting them to an indication only alarm until they clear.

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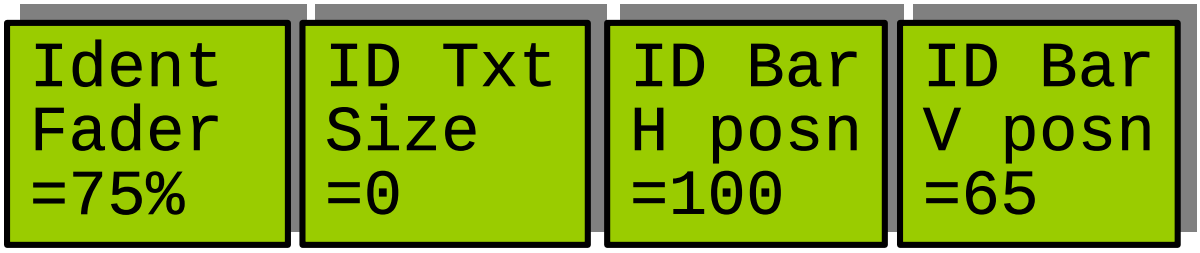
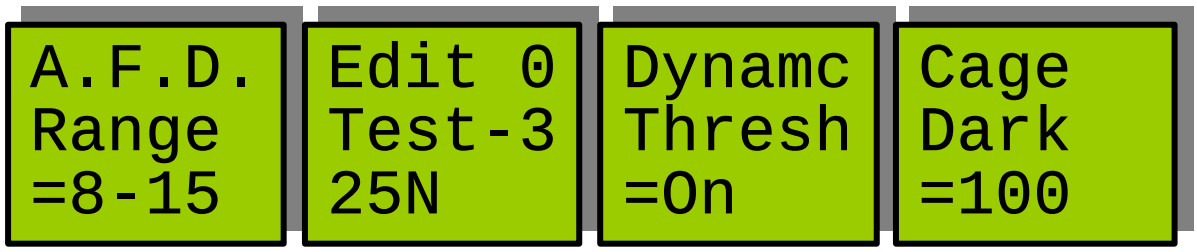
Menus 08-11 Info Bar Menus



Menu Num.	Heading	Automation	Function
8	Ident Fader	0-100% Default is 75%	The Fade level of the Overlaid Ident Bar
9	ID Txt Size	0,1 Default is 0	This set the size of the font used in the Ident bar. 0 is the smallest and less obtrusive.
10	ID Bar H posn	0-999 Default is 100	Adjusts the horizontal position of the Ident bar on the screen.
11	ID Bar V posn	0-999 Default is 65	Adjusted the vertical position of the Ident bar on the screen.

Menus 12-15 Ident bar size and position



12	A.F.D. range	0-7,8-15	The range of the A.F.D. number

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		Default is 8-15	
13	EDIT	none	Pressing the return key switches the system into an editing mode. The memory to be edited is displayed on the top line this can be adjusted by pressing the display button or by turning the associated knob. The first 6 characters form the text of the message, the next two digits define the foreground and background colours. The last digit defines whether the text is flashing (F) or normal (N), the default is normal so the 'N' may be omitted. The colours are defined as : 0=white, 1=cyan, 2=yellow, 3=green, 4=magenta, 5=blue, 6=red and 7=black. Defining either colour to be red, 6, will cause an alarm to be generated when that A.F.D. message or error message occurs. This does not apply to the channel ID. The memory locations are defined as : 0=ID, 1-8=A.F.D. 0 or 8 – 7 or 15, 9=No A.F.D message and 10=No video message. When editing of a message is complete pressing return will revert the system into normal mode.
14	Dynamc Thresh	Off, On Default is Off	This selects whether the cursors are displayed in white, or switch to black at a defined level to enhance visibility.
15	Cage Dark	0-999 Default is 100	If the dynamic threshold is on, this selects threshold where the cursors change from white to black.

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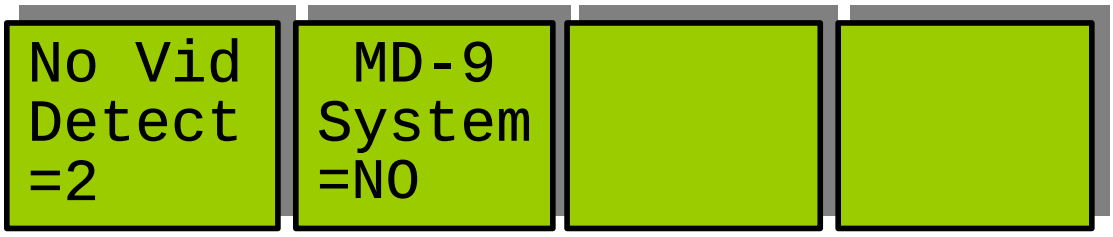
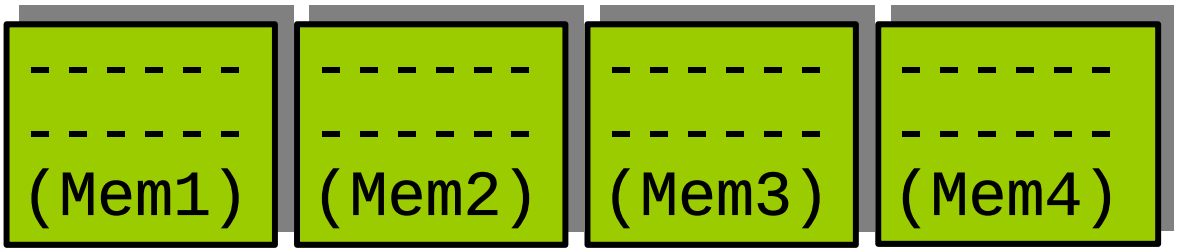
Menus 16-19 Audio bar graph size and position



Menu Num.	Heading	Automation	Function
16	No Vid Detect	0-250 Default is 2	This is the number of fields that have to be missing before a “No Video” alarm is triggered. Once an alarm is triggered it is latched until accepted by the user.
17	MD-9 System	0 or 1 0=off 1=on Default 0	Enables status broadcasts for systems incorporating an MD-9 Master Display system

Menu 20-23: Memory Recall



Menu Num.	Heading	Automation	Function
20	MEM1	1 recalls memory	Recalls configuration memory 1
21	MEM 2	1 recalls memory	Recalls configuration memory 2
22	MEM 3	1 recalls memory	Recalls configuration memory 3
23	MEM 4	1 recalls memory	Recalls configuration memory 3

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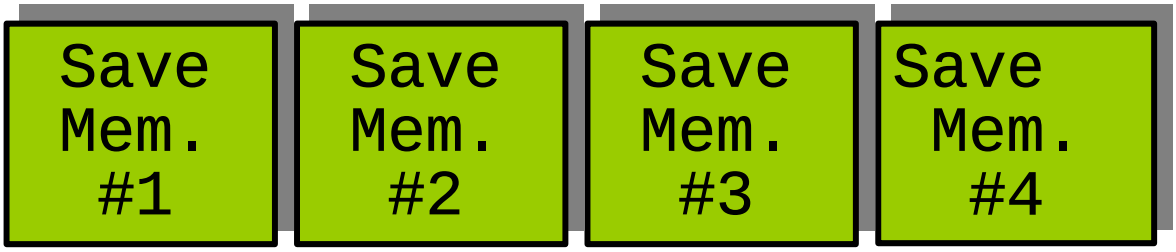
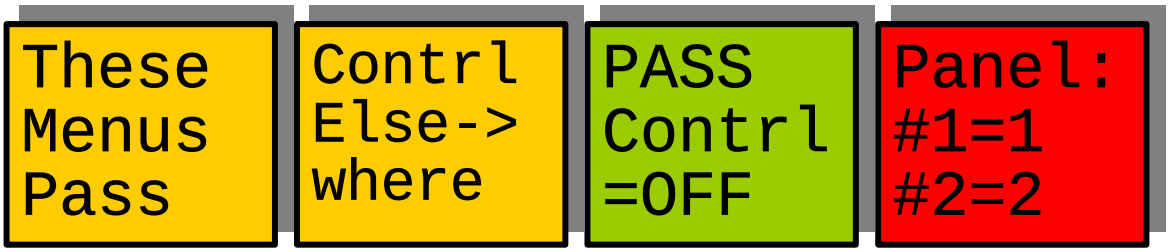
Menu 24-27: Memory Save



Menu Num.	Heading	Automation	Function
24	SAVE MEM1	1 saves configuration	Saves current configuration as memory 1
25	SAVE MEM2	1 saves configuration	Saves current configuration as memory 2
26	SAVE MEM3	1 saves configuration	Saves current configuration as memory 3
27	SAVE MEM4	1 saves configuration	Saves current configuration as memory 4

Menu 28-31: Duplex (second/third panel) control.



Menu Num.	Heading	Automation	Function
28	Info "These menus Pass"	None	
29	Info "Control Elsewhere"	None	
30	Pass Control Enable	0=off 1=on	This causes control to be passed to one or two FlexiPanels 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

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			successfully passed on to either of the selected panels. Further presses of this button will enable or disable the control.
31	"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. “A” will alter the first panel number to which you would like to pass control. “B” will alter the second panel number to which you would like to pass control. The panel number of any panel can be found by a momentary press of the set-up button. Setting either of the above panel numbers to "0" will stop any control being passed.

Menu 32-35: Power On Memory

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Menu Num.	Heading	Automation	Function
32	Save Power On Memory	1 to save memory	Saves current configuration as Power On memory.
33	Recall Power On Memory	1 to recall memory	Recalls the Power On memory configuration.
34	"Total Reset ".	1 to cause Total Reset	This puts all current and power on default settings to the factory default
35	Software version		This displays the current software version.

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4 Technical Appendix

4.1 Technical Specification for the AF-2

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 Technical Specification for the GPI/Tally connector

GPI inputs	1 off, short to ground to activate for alarm accept.
Relay closure outputs	2 off isolated relay closure outputs up to 1 Amp current flow. One for each Alarm.
Current Consumption	<300mA at +5V

4.3 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 AD-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.

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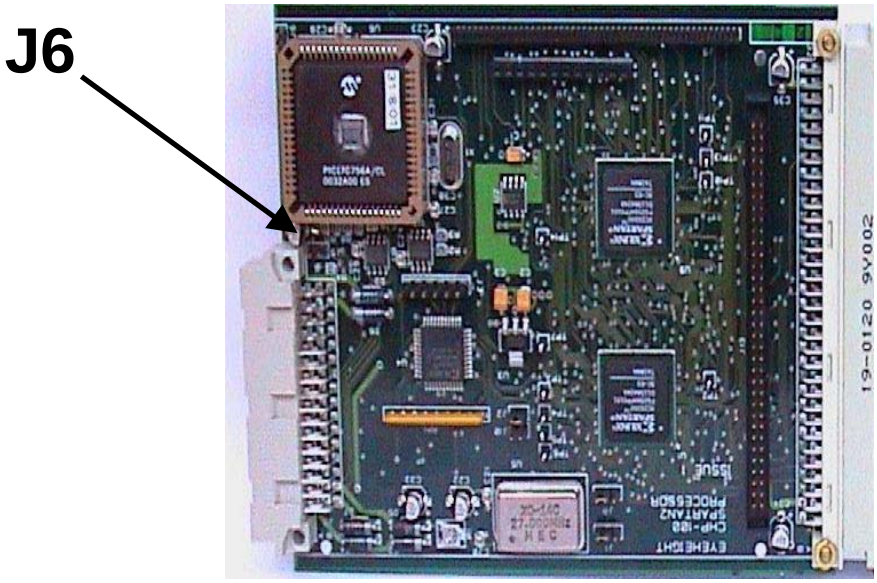

Figure 9 Location Of I-Bus Termination Link

4.4 CHP-100 SDI-TC-GPI Card

Table 1 Jumper settings for GPI-SIO card

Jumper	Function
J2	Set to the Right, SDI Jitter Filtering selection
LK1	Set to Top, Polarity selection for GPI Relay Output#1
LK2	Set to Top, Polarity selection for GPI Relay Output#2
LK3	Set to Top, Polarity selection for GPI Relay Output#3
LK4	Set to Top, Polarity selection for GPI Relay Output#4

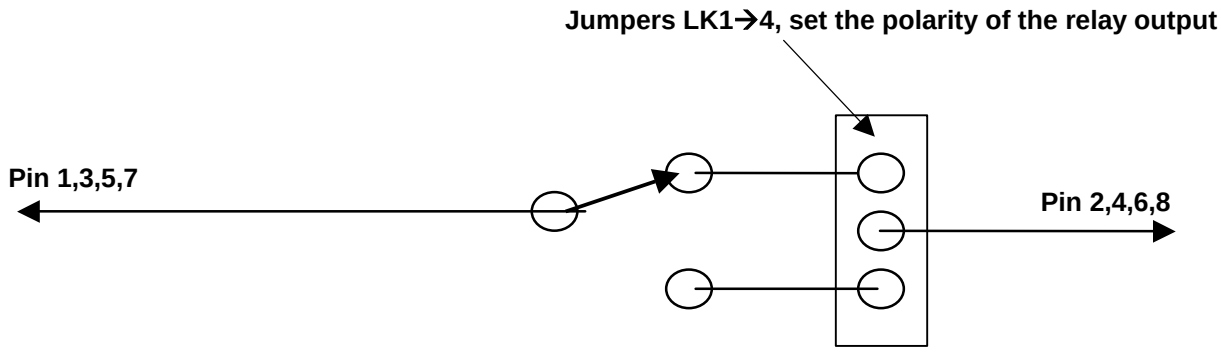

Figure 10 Diagram of GPI Jumpers

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Table 2 25-way female D-type pin out

Pin#	Function
1.	General Purpose Output #1a (GPO1a). Isolated Relay closure. ALERT ALARM
2.	General Purpose Output #1b (GPO1b). Isolated Relay closure.
3.	General Purpose Output #2a (GPO2a). Isolated Relay closure INDICATION ALARM
4.	General Purpose Output #2b (GPO2b). Isolated Relay closure
5.	General Purpose Output #3a (GPO3a). Isolated Relay closure
6.	General Purpose Output #3b (GPO3b). Isolated Relay closure
7.	General Purpose Output #4a (GPO4a). Isolated Relay closure.
8.	General Purpose Output #4b (GPO4b). Isolated Relay closure.
9.	General Purpose Output #5 (GPO5). Open Collector Output (<100mA)
10.	General Purpose Output #6 (GPO6). Open Collector Output (<100mA)
11.	General Purpose Output #7 (GPO7). Open Collector Output (<100mA)
12.	General Purpose Output #8 (GPO8). Open Collector Output (<100mA)
13.	General Purpose Input #1 (GPI1). Pull to Ground to activate. ACCEPT ALARM.
14.	General Purpose Input #2 (GPI2). Pull to Ground to activate.
15.	General Purpose Input #3 (GPI3). Pull to Ground to activate.

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16.	General Purpose Input #4 (GPI4). Pull to Ground to activate.
17.	General Purpose Input #5 (GPI5). Pull to Ground to activate.
18.	General Purpose Input #6 (GPI6). Pull to Ground to activate.
19.	General Purpose Input #7 (GPI7). Pull to Ground to activate.
20.	General Purpose Input #8 (GPI8). Pull to Ground to activate.
21.	N/C
22.	N/C
23.	N/C
24.	N/C
25.	GND

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