



eyeheight



# GP-2

User Programmable GPI Card

**user manual**

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# I System Overview

This manual describes the function of the GP-2. This unit adds GPI support to any other eyeheight products on a common I-Bus network.

## I.1 The GP-2 Product

The main features of the GP-2 are:

- 8 user assignable Input GPI's
- 4 output GPI's with fully isolated relay closures. \*
- 4 output GPI's with open collector outputs \*
- Linear Timecode Reader. \*

\*These items are physically provided on the card however they are not usable universally. These items only apply when the card is used in conjunction with certain eyeheight products. In cases where they are used it will be stated within the individual product manual.

## I.2 Applications for the GP-2

An example of the application of the GP-2 would be to provide external triggers for eyeheight products such as the BB-2 logo inserter. One trigger can fade up a logo, another can fade down. Another example is the MW-2 mixer/wipe system. This may have an external trigger for the "TAKE" button. External triggers can also trigger a memory set-up on any of the eyeheight products providing triggers for user defined memory configurations.

## 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 GP-2 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 GP-2 processing modules.

### I.3.1 Control Equipment for the GP-2

There are two options available for controlling the GP-2. 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 GP-2 product

The unit can be installed in a spare slot by a user in a flexiBox (FB-9) or by Eyeheight in a maxiBox (MX-9) with an associated FP-9 or FP-10 for control.

The FP-9 and FP-10 can be used to control the GP-2 remotely. Whereas the FP-9 can also be mounted on the front of the FB-9/MX-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.

A diagram of the GP-2 I/O connector is shown below.

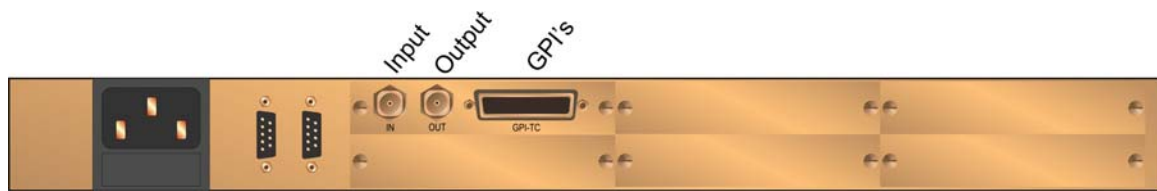


Figure 3 GP-2 Connections

**NOTE: Input and Output BNC's are NOT USED with this product**

The GPI's connector is a 25 way DIN socket with pin outs as below.

Pin#	Function
1.	General Purpose Output #1a (GPO1a). Isolated Relay closure
2.	General Purpose Output #1b (GPO1b). Isolated Relay closure.
3.	General Purpose Output #2a (GPO2a). Isolated Relay closure
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 (<150mA)
10.	General Purpose Output #6 (GPO6). Open Collector Output (<150mA)
11.	General Purpose Output #7 (GPO7). Open Collector Output (<150mA)

12.	General Purpose Output #8 (GPO8). Open Collector Output (<150mA)
13.	General Purpose Input #1 (GPI1). Pull to Ground to activate
14.	General Purpose Input #2 (GPI2). Pull to Ground to activate.
15.	General Purpose Input #3 (GPI3). Pull to Ground to activate.
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.	LTC Input+
22.	LTC Input-
23.	
24.	
25.	GND

# 3 Operation

## 3.1 GPI user set-up.

The GPI inputs can be user programmed to activate any geNETics product. Each GPI Input has a set of 4 menus, which enable the user to set any menu of any product to any value. The GPI inputs are internally pulled up to +5V. Activation of a GPI entails pulling the GPI down to 0V.

Upon activation of, for example, GPI#1 a message is sent from the GP-2 Card along the I-Bus network to the Unit which is in the Slot and Box number specified in Menu#5. The setting in Menu#6 specifies the menu number in the Specified unit and Menu#7 specifies the value to which you wish to set the menu parameter. Different I-Bus commands can be sent on each activation state change, so a different command can be sent on activation and deactivation of the GPI.

### Example:

You have a geNETics product in Box#1 Slot2 which is a BL-1 (Basic Legaliser) and you wish to activate Memory#1 by using GPI#1.

Steps:

Set Menu#4 on the GP-2 card to ON.

Set Menu#5 on the GP-2 card to SLOT#2 and BOX#1.

Set Menu#6 on the GP-2 card to 8. (This is the menu number for "Memory#1" on a BL-1.)

For Menu#7 there are two parameters, the HL specifies the value that will be sent when the GPI is first activated (Pulled from +5V down to Ground). The LH specifies the value that will be sent when the GPI is released (Released from GND to +5V).

Set menu#7 HL on the GP-2 card to VALUE=1.

Set menu#7 LH on the GP-2 card to VALUE=128. (This is a NULL value, no command will be sent)

(This is the value that is in Square Brackets on the BL-1 Manual Menu list which will cause a Memory recall to occur).

Upon activation of GPI#1, Memory#1 will activate on the BL-1.

## 3.2 Tallies.

The GP-2 Output tallies will be programmed from a geNETics product.

Instructions about this will be given in any appropriate product manual.

### 3.3 Time Code.

Similarly the timecode aspects of this product will be described in any applicable product manual.

### 3.4 Menu Control of the GP-2

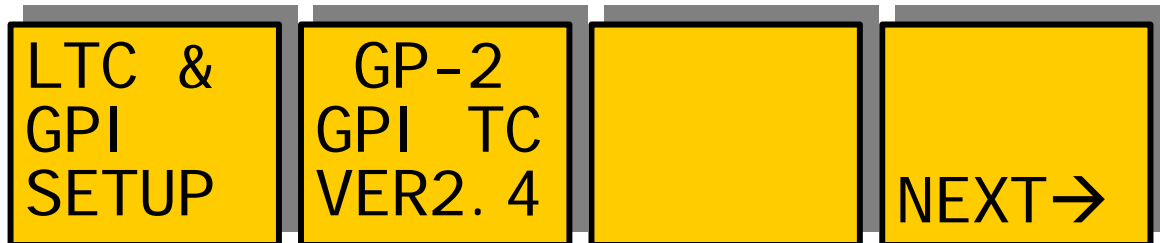
Using the FP-9 or FP-10 with the GP-2 is, as are all genetics modules, controlled using a set of **menus**. Each of these menus contains up to 3 parameters that are adjusted using the rotary 'digipots'. The Menus define all of the adjustable operational parameters in the GP-2. Pressing the rotary 'digipots' 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 the following section

#### Operation menus for the GP-2

The following set of menus defines the operation of the GP-2.

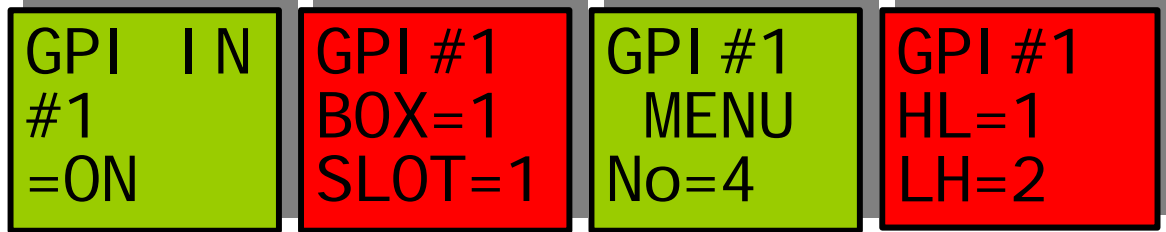
#### Menu 00-03: Top Level Controls



Menu Num.	Heading	Automation	Function
0	Unit Title	None	
1	User Programmable Unit Name (e.g "GPI#A" )	None	The user name of the unit can be programmed in from a Flexi-panel using a PS-2 Keyboard. Refer to the "GeNETics User Guide under the section titled "Giving Products User Names".
2	Not Used- Information only	None	

3	Not Used- Information only	None	
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### Menu 04-07: GPI#1 Control



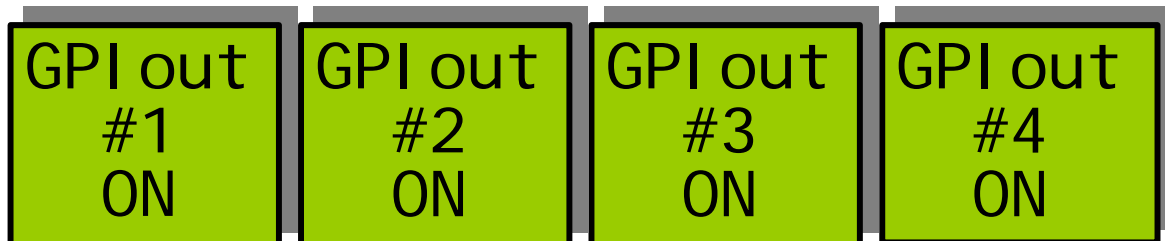
Menu Num.	Heading	Automation	Function
4	GPI IN #1. OFF or ON or Panel Assign	Off//On [0,1]	Off=Input GPI#1 is disabled. On=Input GPI#1 is enabled. Panal Assign Is no longer used and is for legacy applications only.
5	GPI#1 Slot No. and Box No.  This selects the destination of the GPI#1. This is specified as the slot number and the box number of the PCB to which the GPI is to take effect.	<u>Digipot A</u> 1→6 [1→6]  <u>Digipot B</u> 1→16 [1→16]	When this button is pressed to "Green". The Three-line display in the window indicates the two options, which can be changed by adjusting the two rotary digipots A and B.  Select the Slot location (1-- >6) in the flexibox of the PCB in which the GPI#1 is to take effect.  Select the Box number of the Flexibox (1-->16) of the PCB in which the GPI#1 is to take effect.
6	GPI#1 menu.	0→99 [0→99]	This selects the menu number of the specified PCB to which GPI#1 will take effect.
7	GPI#1 Value HL	0→255 [0→255]	This specifies the value of the parameter in the above

	LH		<p>specified menu that target unit will take in when the GPI transition from High to Low occurs. If the value is set to 128, NO command will be sent and this activation change is ignored.</p> <p>This specifies the value of the parameter in the above specified menu that target unit will take in when the GPI transition from Low to High occurs. If the value is set to 128, NO command will be sent and this activation change is ignored.</p>
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**Menu 08-35: GPI#2→GPI#8 Control**

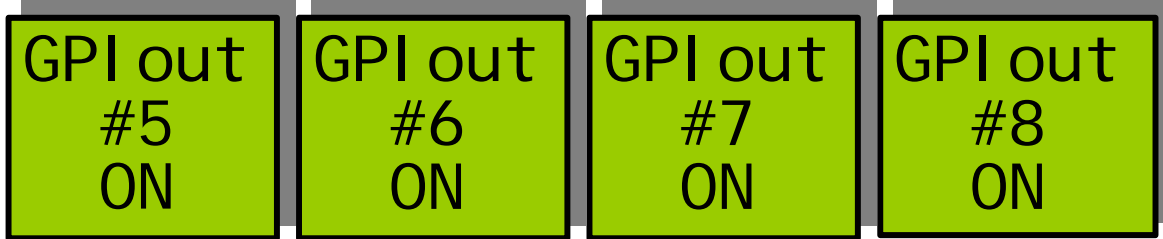
Repeat of the above menu for GPI's 2→8

**Menu 36-39: Tally output controls.**



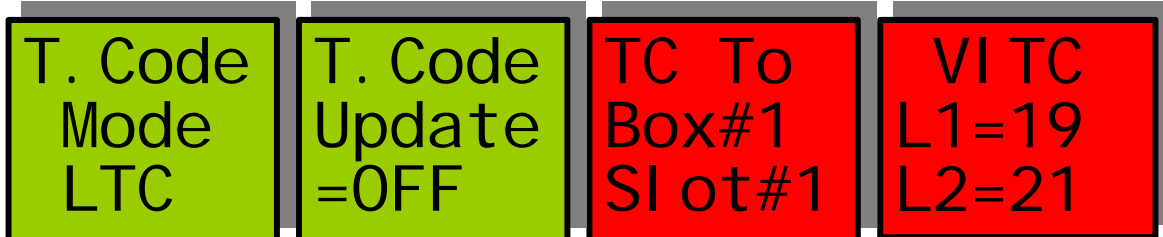
Menu Num.	Heading	Automation	Function
36	GPI Out #1	On/Off[0,1]	Off=Output GPI#1 is disabled. On=Output GPI#1 is enabled.
37	GPI Out #2	On/Off[0,1]	Off=Output GPI#2 is disabled. On=Output GPI#2 is enabled.
38	GPI Out #3	On/Off[0,1]	Off=Output GPI#3 is disabled. On=Output GPI#3 is enabled.
39	GPI Out #4	On/Off[0,1]	Off=Output GPI#4 is disabled. On=Output GPI#4 is enabled.

**Menu 40-43: WSS Input Controls**



Menu Num.	Heading	Automation	Function
40	GPI Out #5	On/Off[0,1]	Off=Output GPI#5 is disabled. On=Output GPI#5 is enabled.
41	GPI Out #6	On/Off[0,1]	Off=Output GPI#6 is disabled. On=Output GPI#6 is enabled.
42	GPI Out #7	On/Off[0,1]	Off=Output GPI#7 is disabled. On=Output GPI#7 is enabled.
43	GPI Out #8	On/Off[0,1]	Off=Output GPI#8 is disabled. On=Output GPI#8 is enabled.

**Menu 44-47: Timecode Controls**

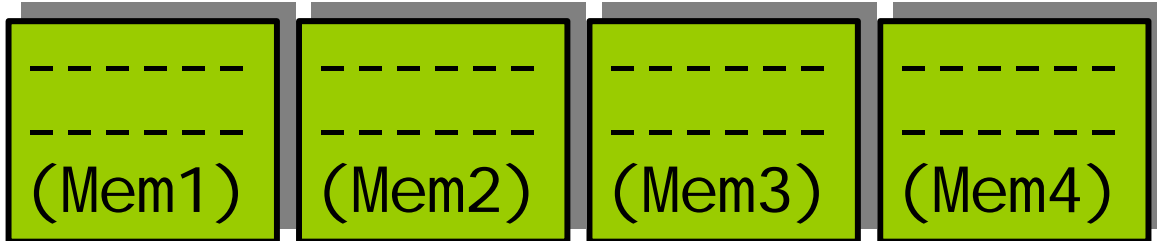


Menu Num.	Heading	Automation	Function
44	T.Code Mode	VITC LTC AuVITC AuLTC [0→3]	This selects the operation mode of the Time Code Reader  VITC -Read VITC Only LTC -Read LTC Only AuVITC -Read VITC, but if the VITC is not valid, read LTC. AuLTC -Read LTC, but if the LTC is not valid, read VITC.

45	T.Code Update	OFF Auto On Sec On Min [0→3]	This sets the rate at which the Timecode is read and sent to the Destination PCB.  OFF -The Timecode is not sent Auto -The Destination is updated approximately every 1/4 sec. OnSec -The Destination is updated upon each change of the seconds. OnMin -The Destination is updated upon each change of the minutes. <b>PLEASE NOTE, VITC OPTION IS ONLY FITTED FOR SOME SPECIALIST APPLICATIONS. IT IS NOT STANDARD ON THE GP-2 PRODUCT</b>
46	Timecode To Slot and Box No.	Digipot A 1→6 [1→6]  Digipot B 1→16 [1→16]	When this button is pressed to "Green". The Three-line display in the window indicates the two options, which can be changed by adjusting the two rotary digipots A and B.  Select the Slot location (1-->6) in the flexibox of the PCB in which the Timecode is directed.  Select the Box number of the Flexibox (1-->16) of the PCB in which the Timecode is directed.

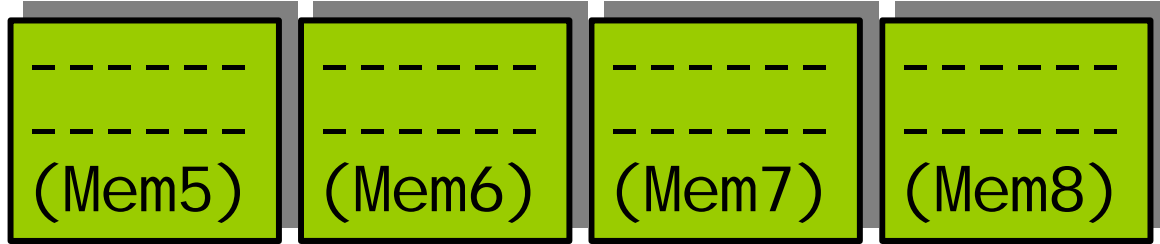
47	Select VITC Line numbers	Digipot A 1→22 [1→22] Digipot B 1→22 [1→22]	<p>When this button is pressed to "Green". The Three-line display in the window indicates the two options, which can be changed by adjusting the two rotary digipots A and B.</p> <p>Select VITC Line number 1</p> <p>Select VITC Line number 2</p> <p><b>PLEASE NOTE, VITC OPTION IS ONLY FITTED FOR SOME SPECIALIST APPLICATIONS. IT IS NOT STANDARD ON THE GP-2 PRODUCT</b></p>
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### Menu 48-51: Memory Controls



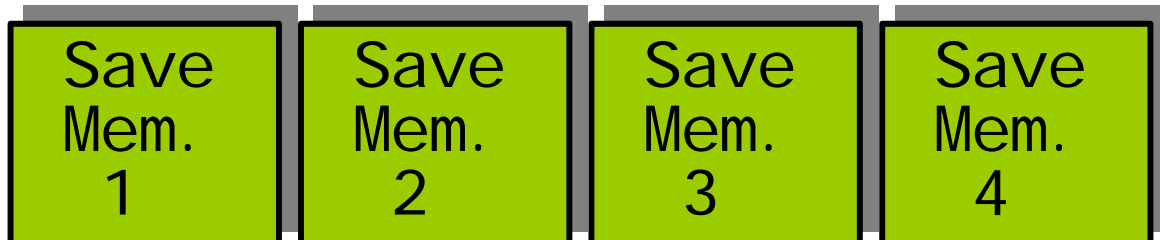
Menu Num.	Heading	Automation	Function
12	MEM1	1=Recall	Pressing this will recall Memory number 1. User Names can be programmed in to the memories using a keyboard. See "geNETics User guide", section "Giving product Memories names"
13	MEM2	1=Recall	Pressing this will recall Memory number 2.
14	MEM3	1=Recall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

### Menu 52-55: Memory Controls



Menu Num.	Heading	Automation	Function
16	MEM5	1=Recall	Pressing this will recall Memory number 5.
17	MEM6	1=Recall	Pressing this will recall Memory number 6.
18	MEM7	1=Recall	Pressing this will recall Memory number 7.
19	MEM8	1=Recall	Pressing this will recall Memory number 8.

### Menu 56-59: Memory Controls



Menu Num.	Heading	Automation	Function
20	Save Mem. 1	1= Save	Pressing this will Save Memory number 1.
21	Save Mem. 2	1= Save	Pressing this will Save Memory number 2.
22	Save Mem. 3	1= Save	Pressing this will Save Memory number 3.
23	Save	1= Save	Pressing this will Save Memory

	Mem. 4		number 4.
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**Menu 60-63: Memory Controls**



Menu Num.	Heading	Automation	Function
24	Save Mem. 5	1= Save	Pressing this will Save Memory number 5.
25	Save Mem. 6	1= Save	Pressing this will Save Memory number 6.
26	Save Mem. 7	1= Save	Pressing this will Save Memory number 7.
27	Save Mem. 8	1= Save	Pressing this will Save Memory number 8.

**Menu 64-67: Power Resets.**



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

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

## 4.1 Technical Specification for the GP-2

Number of GPI Inputs	8 pull to ground (Internal pullup resistors provided)
Number of Isolated Relay Tally Outputs	4
Number of open collector tally Outputs	4 Internal 10ohm protection resistor. 150mA max drain per output.
Current Consumption	<500mA at +5V (With no external connections)
Size	215mm by 100mm