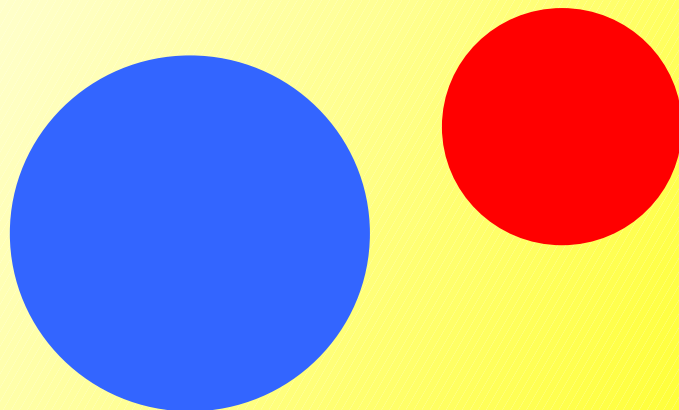




GeNETics Product Information

User Guide For: MD-2 Master Display



Revision1-25 January 2002

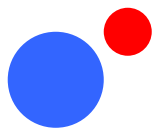


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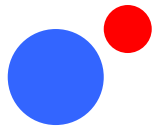
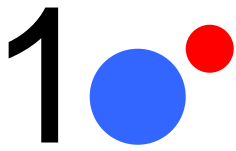


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System Overview

This manual describes the function of the MD-2. This unit supervises other GenNETics modules and displays the information they broadcast collated into a single screen.

Section 1 The MD-2 Product

The MD-2 is a unit that will decode the messages broadcast by other GenNETics modules and display that information onto the screen. It will set appropriate alarm outputs in user defined conditions and it will also supervise the modules themselves and set an alarm if a module stops responding. The main features are as follows:-

- GeNETics modules can simply be added to the system as required, the MD-2 will re-allocate the display to incorporate the new information.
- The system is future compatible as new GeNETics modules will broadcast the new display format they require.
- The system has four separate alarms to indicate the following conditions:-
 - an error condition has occurred on a remote card,
 - the remote error has been accepted by an engineer,
 - a GeNETics module has stopped responding,
 - the timeout has been accepted by an engineer.
- All the alarm outputs are voltless relay contacts, selectable to be normally open or normally closed.
- Alarms can either be accepted by pressing a menu button on the remote panel, or by closing contacts on a hardware input.
- The Allocation table can be reset and the display redrawn either by accepted by pressing a menu button on the remote panel, or by closing contacts on a hardware input.

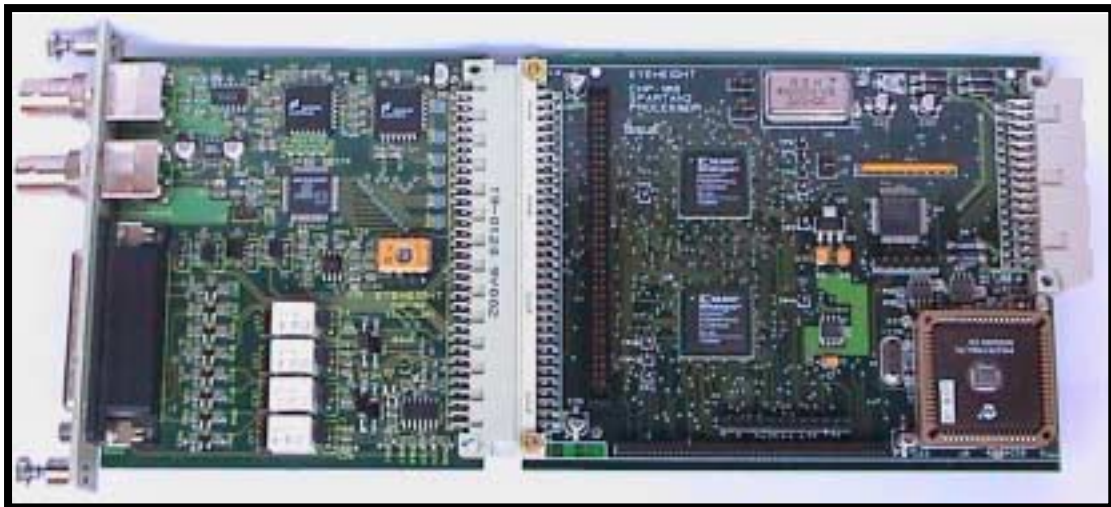


Figure 1 MD-2 Module.

Section 2 Applications for the MD-2

Applications for the MD-2 include the following:-

- Collating the system information of over 20 GeNETics modules onto one easily readable display.
- Automatic monitoring of SDI channels and flagging suitable alarms to alert the operator in user defined situations.



Figure 2 A typical display when supervising several AF-2 modules.

Section 3 Associated Equipment for the MD-2

Hardware Requirements

The MD-2 is a module and requires both a chassis and a control surface to function. For example if the user required four channel AFD monitoring, and a master display in a 1RU Chassis then the recommended requirements would be:

- 4 off AF-2 Modules
- 1 off MD-2 Modules
- 1 off FB-9 Flexi-box
- 1 off FP-9 Flexipanel

Software Requirements

There are no special software requirements. The system is controlled via the front panel, however, it may be alternatively controlled by the Eyeheight front panel emulator, Softpanel which runs on a PC.

Chassis Types Available :-

- The 1RU chassis is called a **Flexibox** (Order code FB-9) This will hold a maximum of 6 MD-2 Modules
- The Desktop Chassis is called a **Minibox** (Order code MB-9) This will hold one MD-2 Module. The Minibox has a very limited control surface as standard. Using this control surface you can only recall the 3 Pre-set memories available on the MD-2.



Figure 3 Flexibox with Flexipanel fitted



Figure 4 Minibox, Front and Rear.

2^o Installation

Section 1 Installation of the MD-2 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 is pre-installed in a Minibox (MB-9) 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 two spare slots above each other for the MD-2 card.

Section 2 Installing the MD-2 into a Flexibox

To install the MD-2 into a flexibox it is desirable (but not necessary) to power down the flexi-box. Follow these instructions.

1. On the rear of the flexibox are 6 slots for Products. Remove any pair of spare blanking plates one above another. There are 2 M2.5 Screws, which require unfastening for each blanking plate.
2. Slide the Product PCB into the spare slots and firmly push it "home".
3. Use the two thumbscrews to fasten the unit in place. Take care that the ribbon cable for the upper circuit board stays attached to the lower board.
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

Section 3 Connecting Video to a MD-2

A diagram of the Video connections for the MD-2 and alarm outputs are shown below.

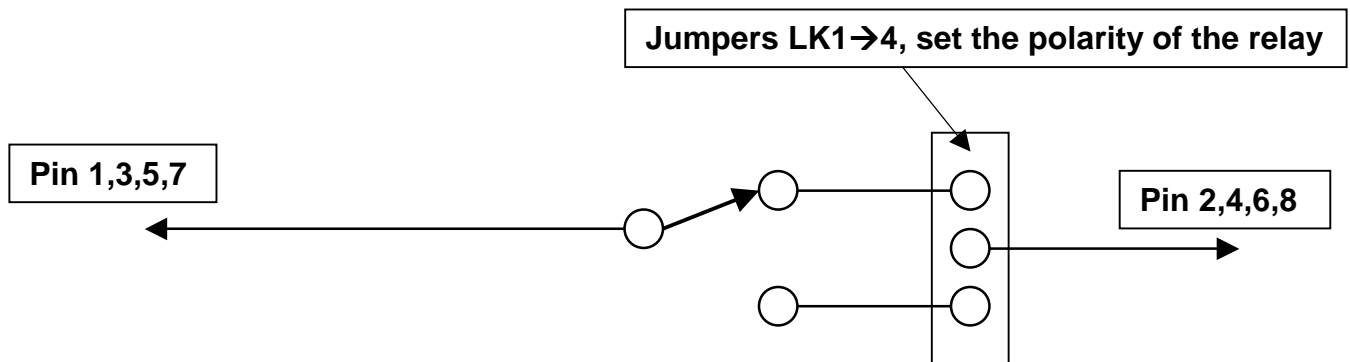


CHP-100 SDI-TC-GPI Card

Jumper Links on the Timecode and GPI I/O 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

Diagram of a GPI Output (GPI1→4)



Rear 25W D-Type connection (AUX)

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 ALERT ALARM ACCEPTED
4.	General Purpose Output #2b (GPO2b). Isolated Relay closure
5.	General Purpose Output #3a (GPO3a). Isolated Relay closure TIMEOUT ALARM
6.	General Purpose Output #3b (GPO3b). Isolated Relay closure
7.	General Purpose Output #4a (GPO4a). Isolated Relay closure. TIMEOUT ALARM ACCEPTED
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. RESET SYSTEM.
14.	General Purpose Input #2 (GPI2). Pull to Ground to activate. ACCEPT ALARM.
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.	Time Code Input (LTC) Balanced (+)
22.	Time Code Input (LTC) Balanced (-)
23.	
24.	
25.	GND

Figure 5 System output connections.

3^o Operation

Section 1 Control of the MD-2

Control of the MD-2 is generally done using an FP-9 Flexi panel. It is also possible to control this unit with an FP-10 Panel (Desktop Panel) or if the unit is mounted in a Mini-Box limited control will be available with the mini-box Preset select buttons which will have been pre-set at the factory. The unit can also be controlled remotely using a PC running the Softpanel software.

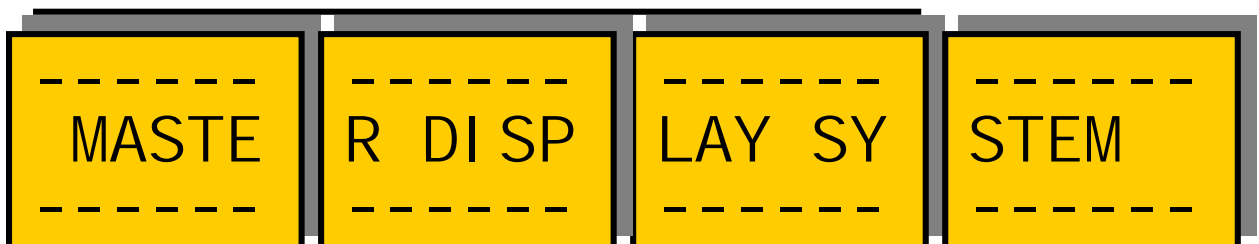
The MD-2 is, as are all genetics modules, controlled using a set of MENUS. Each of these menus contains up to 3 parameters that are adjusted using the rotary digipots. The Menus define all of the adjustable operational parameters in the MD-2. Pressing the rotary digipots brings the parameter to its default 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.

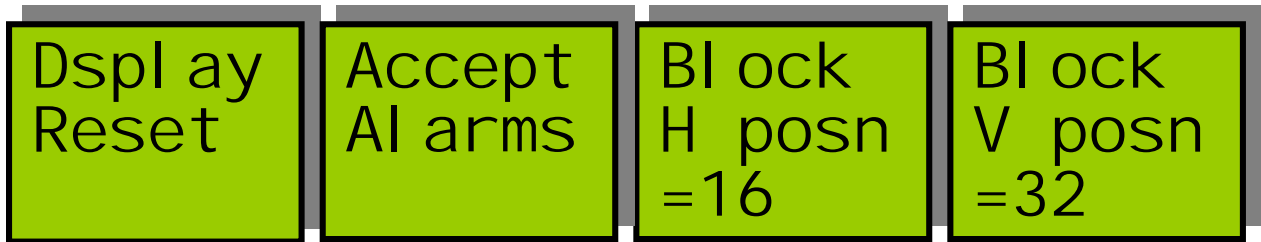
Section 2 Operational Menus for the MD-2

The following set of menus defines the operation of the MD-2. Some of the menus below only apply for the MD-2 and MD-2E units. This is indicated.

Menus 00-03 Top Level Menus



Menus 04-07 Top Level Menus



Menu Num.	Heading	Automation	Function
4	Dsplay Reset	none	Pressing this will reset the entire master display. It will clear the display and scan the CAN-BUS for GeNETics modules that support remote monitoring. On detection they will be allocated a suitable screen area to display their information.
5	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 have been cleared.
6	Block H posn	0-999 Default is 16	Adjusts the horizontal position of the display on the screen.
7	Block V posn	0-999 Default is 32	Adjusted the vertical position of the display on the screen.

4^o Technical Appendix

Technical Specification for the MD-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

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 J5 on the MD-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 6 Location of I-bus termination link