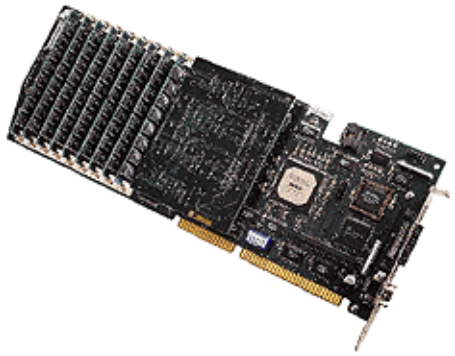
GT5150 SERIES

DYNAMIC DIGITAL I/O CARD

- 32 Input or Output pins
- 8 cards can be daisy-chained for a total of 256 pins
- 1 Mb to 32 Mb memory behind each pin in full I/O configuration
- Up to 64 Mb per pin when 16 I/O pins are used
- Up to 128 Mb per pin when 8 I/O pins are used
- Can be combined with the GT50-DIO
- Programmable clock rate from 5 Hz to 50 MHz
- DISCONTINUED - SEE DETAILS BELOW



*****PRODUCT AVAILABILITY*****

This product has been discontinued.

The initial release of this product was approximately 1990.

Please contact the factory for availability and alternate product offerings.

Please review the GX52xx Series for the latest product alternatives.

DESCRIPTION

The GT5150 is a Dynamic Digital Input or Output card design to capture or stimulate long patterns at rates up to 50 MHz. The GT5150 architecture will accommodate eight memory SIMMs for a total of 128 Mb of memory behind selected input or output pin.

ARCHITECTURE

The GT5150 provides 32 digital Inputs or Outputs for real time capturing or stimuli. Up to eight cards can be daisy-chained for a total of 256 pins.

- **Memory** - The GT5150 can accommodate up to 9 memory SIMMs. Each SIMM provides 1 Mb, 2 Mb, or 4 Mb per pin, for a maximum of 32 Mb. The GT5150 architecture enables the user to stack the memory to reconfigure the GT5150 as a 16-pin I/O with 64 Mb depth or an 8-pin I/O providing a maximum of 128 Mb behind each pin. Due to the variety of memory sizes available, the basic GT5150 board does not come with memory. The minimum requirement to add is two SIMMs, one for data and one for control.
- **Sequencer** - The sequencer, residing in the the 9th SIMM, enables a conditional or unconditional JUMP to two predefined addresses and PAUSE commands. The sequencer commands can be applied every eighth step.
- **Clock** - The Clock and Strobe signals originate on the timing module and are distributed to the slave GT5150 via a ribbon cable. These signals can be provided externally for full synchronization with external events.
- **Trigger** - The Trigger signal initiates the execution of vector capturing (or vector stimuli). The multiple software and hardware trigger sources provide flexibility in synchronizing the GT5150 with real world events.
- **I/O Modules** - The GT59x0 I/O Module is a plug-in unit that piggybacks on the GT5150 PCB. The following I/O modules are currently available for the GT5150: GT5910 - TTL I/O Module, GT5920 - 100MHz I/O Module, GT5930 - Programmable Level I/O Module, GT5940 - PECL I/O Module.

CONFIGURATION

The Timing Module is mounted on the GT5150 to create a master. Up to seven additional GT5150 slave cards can be driven by one master to form a 256-bit wide vector.

The GT5150 is provided without memory. Up to 8 memory SIMMs can be configured. Memory SIMMs are available in the following formats:

- 1 Mb x 32
- 2 Mb x 32
- 4 Mb x 32

All memory SIMMs should be identical. A ninth memory SIMM, serving the sequencer, is added (should match the I/O memory.)

The plug-in I/O modules should be selected to meet the application requirements. The default is the GT5910 TTL Module.

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PROGRAMMING AND SOFTWARE

The The board is supplied a 32-bit DLL driver. Various interface files provide access to the DLL from programming tools and languages such as ATEasy, LabVIEW, C/C++, Microsoft Visual Basic®, Delphi, and more. The available virtual panel can be used to interactively adjust and control the instrument from a window that displays the current instrument settings and measurements.

On-Line help file and PDF User's Guide provides documentation that includes instructions for installing, using and programming the board

APPLICATIONS

- Automatic Test Equipment (ATE)
- High speed digital pattern capture
- High speed digital pattern generation
- CCD testing

SPECIFICATIONS

Timing Module	Minimum	Maximum
Internal Test Clock		
Frequency Range	5 Hz	50 MHz
Resolution	The greater of 1 Hz or 0.01%	
Internal B Clock		
Frequency Range	1 MHz	100 MHz
Resolution	The greater of 1 Hz or 0.2%	
External Clock		
Direct	0 Hz	50 MHz
Ref for Prog.	1 MHz	60 MHz
Pulse Width	10 ns	
Low Input Level	-0.1 V	-0.1 V
High Input Level	-2.0 V	-2.0 V
EXTERNAL EVENTS		
Setup Time		
For Triggering	1 Clk cycle	2 Clk cycles
For Conditions	2 Clk cycles	3 Clk cycles
PHYSICAL		

Size	4.1" x 4.5"	
Weight	100 g	
SUPPLY CURRENT		
@ 5 V_{DC}	200 mA	500 mA
@ 12 V_{DC}	50 mA	100 mA
INPUT / OUTPUT		
Channels Per Module	3 Programmable configurations: 8-bit, 16-bit, and 32-bit I/O	
I/O MEMORY		
W/1 Mb SIMMs	1 Mb	8 Mb
W/2 Mb SIMMs	2 Mb	16 Mb
W/4 Mb SIMMs	4 Mb	32 Mb
PHYSICAL		
Operating Temperature	0 °C to +50 °C	
Storage Temperature	-20 °C to +70 °C	
Size	13.2" x 4.8" (Full Size ISA Card)	
PC Slot Type	ISA (16-bit)	
PC Interface	Win95/NT Plug and Play or Legacy (Selectable)	
Weight	475 g	

Note: Specifications are subject to change without notice

ORDERING INFORMATION

GT5150	Dynamic Digital I/O Master, Accommodates up to 128MB. Includes GT5105 Timing and Control Module. Requires One GT59XX I/O Module and Two or More GT500x Memory Modules
GT5151	Dynamic Digital I/O Slave, Accommodates up to 128MB. Requires One GT59XX I/O Module and Two or More GT500x Memory Modules
I/O MODULE (SELECT ONE)	
GT5910	TTL I/O Module for GT5xxx Cards
GT5920	100 MHz I/O Module for GT515X & GT5900
GT5930	Programmable-Levels I/O Module for GT5xxx Cards
GT5940-R	PECL Input Module for GT515X, 32 PECL Channels at Up to 50MHz
GT5940-T	PECL Output Module for GT515X, 32 PECL Channels at Up to 50MHz

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MARVIN TEST SOLUTIONS

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GT5960	LVDS I/O Module for GT5xxx Cards
MEMORY (SELECT THREE OR MORE)	
GT5001	1M Memory Module for 50 MHz Applications
GT5002	2M Memory Module for 50 MHz Applications
GT5004-40	4M Memory Module for 40 MHz Applications
GT5006	256K Memory Module for 50 MHz Applications
GT60-256K	256K Memory for 60MHz Applications
GT5006-5	256K Memory Module for 50 MHz Applications
GT5001-5	1M Memory Module for 50 MHz Applications
GT5002-5	2M Memory Module for 50 MHz Applications
GT5004-40-5	4M Memory Module for 40 MHz Applications
SOFTWARE	
DIOEasy	Digital I/O Vector Development Software
DIOEasy-DS	2 days DIOEasy training at Marvin Test Solutions (Irvine, CA) for 1-3 persons. Call for larger groups.
DIOEasy-DS2	On-site, 2-days DIOEasy training seminars for 1-3 persons. Call for larger groups.
ACCESSORY	
GT95014	Connector Interface for GT5xxx/GX5xxx/GC5xxx, SCSI to 100 Mil Grid, Single Ended
GT95015	Connector Interface for all 5xxx/35xx, SCSI to 100 Mil Grid, Differential
GT95021	2 ft. Shielded Cable for all 5xxx/35xx (68 Pin)
GT95022	3 ft Shielded Cable for all 5xxx/35xx (68 Pin)
GT95022E	3 ft Shielded Cable for all 5xxx/35xx (68 Pin) Not Terminated One End
GT95028	10 ft shielded cable for 5xxx/35xx products (68 Pin)
GT95031	6 ft Shielded Cable for all 5xxx/35xx (68 Pin)
GT95035E-48	Shielded Flying Lead Cable for all 5xxx/35xx (68 Pin), 48".

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