GX5150 SERIES

MARVIN TEST SOLUTIONS

DYNAMICALLY CONTROLLED HIGH SPEED DIGITAL I/O PXI CARD

- 50 MHz vector rate
- Up to 128 Mb per pin
- Programmable I/O supports 32 / 16 / 8 channel configurations
- Conditional Jump and Pause commands
- Supports up to 512 pins with one GX5150 and 15 GX5151 slave modules

DESCRIPTION

The GX5150 Series are high speed, 6U PXI, sequenced digital I/O instruments. The GX5150 master controller has 32 bits of I/O channels that supports test rates of up to 50 MHz and a vector depth of up to 128 Mb per pin. The GX5151 slave offers the same timing characteristics and multiple I/O level configurations when used in conjunction with the GX5150. The GX5150 can control up to 15 GX5151 boards using the same timing and sequencer.

FEATURES

The GX5150 accommodates between two and nine memory SIMMs. One SIMM is used by the sequencer and the other eight by the I/O pins. Each SIMM provides 256 Kb, 1 Mb, 2 Mb or 4 Mb per pin, for a maximum of 32 Mb. The GX5150 architecture enables the user to stack the memory to reconfigure the board as a 16 pin I/O with 64 Mb depth or as 8 pin I/O providing a maximum of 128 Mb behind each pin.

The GX5150's sequencer, which resides in the ninth SIMM, enables a conditional or unconditional JUMP to two predefined addresses and PAUSE commands. The sequencer commands can be applied every eighth step.

Clock and Strobe signals originate on the timing module and are distributed to the slave GX5151 via a ribbon cable. These signals can be provided externally for full synchronization with external events.

The Trigger signal initiates the execution of vector capturing (or vector stimuli). The multiple software and hardware trigger sources provide flexibility in synchronizing the GX5151 with real world events.

The Timing Module provides clocks, strobes, and additional timing signals to control the timing of the GX5150. The Timing Module Level Adapter (TMLA) is a daughter board that mounts on the Timing Module to change the levels according to the selected I/O module (TTL, PECL, ECL, LVDS, or programmable levels). The default TMLA is TTL.

In addition, the GX5150 offers a variety of I/O modules. The I/O modules are daughter boards that mount directly onto the GX5150 board. Available I/O modules include TTL, PECL, ECL, Programmable Levels, and LVDS.

PROGRAMMING AND SOFTWARE

The board is supplied with GTDIO/DIOEasy, a software package that includes vector editing, a virtual instrument panel, and 32/64-bit DLL driver libraries and documentation. The virtual panel can be used to interactively program and control the instrument from a window that displays the instrument's current settings and status. In addition, interface files are provided to support access to programming tools and languages such as ATEasy, LabView, C/C++, Microsoft Visual Basic®, Delphi, and Pascal. On-Line help file and PDF User's Guide provides documentation that includes instructions for installing, using and programming the board.

DIGITAL I/O

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GX5150 SERIES

MARVIN TEST SOLUTIONS

APPLICATIONS

- Automatic Test Equipment (ATE)
- Semiconductors
- Displays
- Printers
- Disk drives
- ASICs
- A/D and D/A
- T3 signals
- Non-standard frame capturing
- Gang testing of boundary scan devices
- Emulation and simulation

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	10 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	0.8 V
High Input Level	2.0 V	5.1 V
EXTERNAL EVENTS		
Setup Time		
For Triggering	1 Clk cycle	2 Clk cycles
For Conditions	2 Clk cycles	3 Clk cycles
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
SUPPLY CURRENT		
@ 5 V_{DC}	200 mA	500 mA
@ 12 V_{DC}	50 mA	100 mA
PHYSICAL		
Operating Temperature	0 °C to +50 °C	
Storage Temperature	-20 °C to +70 °C	
Weight	100 g	
Size	6U PXI	
PXI Slot Type	Double Slot (GX5150); Single Slot (GX5151)	

Note: Specifications are subject to change without notice

DIGITAL I/O

GX5150 SERIES

ORDERING INFORMATION

GX5150	50MHz Digital I/O & Timing Board. 32 Channels, Master Configuration. Requires One GX59x0 I/O Module and Two or More GT500x Memory Modules
GX5150LV	50MHz Digital I/O & Timing Board. 32 LV Channels, Master Configuration. Requires One GX59x0 I/O Module and Two or More GX500x Memory Modules
GX5151	50MHz Digital I/O Board. 32 Channels, Slave Configuration. Requires One GX59x0 I/O Module and Two or More GX500x Memory Modules
I/O MODULE (SELECT ONE)	
GX5910	TTL I/O Module
GX5930	Programmable Level I/O Module
GX5940	PECL I/O Module
GX5960	LVDS I/O Module
MEMORY (SELECT TWO OR MORE)	
GX5001	GX515x Memory Module, 1Mbx32, for 50MHz applications. 2-9 modules per GX515x
GX5001-5	GX515x Memory Module, 1Mbx32, for 50MHz applications. 2-9 modules per GX515x
GX5002	GX515x Memory Module, 2Mbx32, for 50MHz applications. 2-9 modules per GX515x
GX5002-5	GX515x Memory Module, 2Mbx32, for 50MHz applications. 2-9 modules per GX515x
GX5004-40	GX515x Memory Module, 4Mbx32, for 40MHz applications. 2-9 modules per GX515x
GX5004-40-5	GX515x Memory Module, 4Mbx32, for 40MHz applications. 2-9 modules per GX515x
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	
TS-900e-5G-BMC	Blind mate connectors (one pair), DC - 40 GHz, 2.92mm
GT95015	Connector Interface for all Gx5xxx/GX3xxx, 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
GT95025	Connector Interface, 68-Pin SCSI to TTI Testron 170-Pin Signal Block
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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