GX5280 SERIES

MARVIN TEST SOLUTIONS

DYNAMICALLY CONTROLLED HIGH SPEED DIGITAL I/O PXI CARD

- 32 input or output channels
- Industry-leading 512 MB on-board memory standard (GX5283)
- Supports 1.5 V, 1.8 V, 2.5 V, 3.3 V, and 5 V TTL / LVTTL interfaces
- Supports LVDS, M-LVDS, LVDM interfaces (GX5282 and GX5283)
- Test rates up to 200 MHz (GX5283)
- Operates as a stand-alone card or with up to seven additional synchronous slave boards
- 3U PXI Instrument



DESCRIPTION

The GX5280 Series are high performance, cost-effective 3U PXI dynamic digital I/O boards with 32 TTL input or output channels and 32 LVDS input or output channels. The GX5280 Series offers an industry leading 512 MB of on-board memory and supports test rates up to 200 MHz. The single board design supports both master and slave functionality without the use of add-on modules.

FEATURES

The GX5280 Series supports selectable I/O levels of 1.5 V, 1.8 V, 2.5 V, 3.3 V, or 5 V (TTL, LVTTL, CMOS, LVCMOS). In addition, the GX5282 and GX5283 also support 32 differential channels for LVDS, M-LVDS, or LVDM logic families.

The TTL / LVTTL interface utilizes a programmable voltage source which sets the output logic levels from 1.4 V to 3.6 V. Programmable thresholds of 1.5 V, 1.8 V, 2.5 V or 3.3 V (5 V compatible) are supported for input signals. Recommended operating input voltage range is from 0 V to 5.5 V. The GX5282 and GX5283 can operate as stand-alone cards or with up to seven additional slave boards, providing a total of 256 synchronous channels.

A windowing method is utilized for PCI memory accesses to limit the required PCI memory space for each board to only 16 MB, thus preserving test system resources. A direct mode, for continuous data transfer between the test system controller and the I/O pins of the GX5280 series board is also supported.

Data direction is bi-directional, with direction configured on a per byte basis. Individual channel output enable control is also supported.

The GX5281 provides 128 MB of total memory with 32 Mb per channel while the GX5282 provides 256 MB of total memory with 64 Mb per channel. The GX5283 has 512 MB of total memory.

Programmable I/O width allows trading vector width for vector depth. The GX5283 supports 128 Mb per channel when in 32 channel configuration, and is programmable down to a width of 1 channel with a depth of 4 GB. Widths of 32, 16, 8, 4, 2 and 1 channel(s) are supported.

All GX5280 Series boards provide programmable TTL / LVTTL output clocks and strobes, and support external clock and strobe. Programmable PLL's (phase locked loop) provide configurable clock frequencies and delays. The GX5283 additionally provides a LVDS output clock.

All GX5280 Series boards can halt or pause on a defined address or loop through the entire memory. The GX5283 can loop on a defined address or through a defined block of memory.

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.

APPLICATIONS

- Automatic Test Equipment (ATE)
- Semiconductor test
- Displays, printers, and disk drive testing
- ASIC testing
- A/D and D/A testing
- Please see product manual for further applications

DIGITAL I/O

GX5280 SERIES

MARVIN TEST SOLUTIONS

SPECIFICATIONS

Logic families	TTL / LVTTL / CMOS / LVCMOS (1.5 V, 1.8 V, 2.5 V, 3.3 V, or 5 V) LVDS / LVDM / M-LVDS (GX5282 and GX5283)
I/O Levels	TTL / LVTTL / CMOS / LVCMOS Programmable Output Voltage Level 1.4 V (min); 3.6 V (max) Input Threshold 1.5 V, 1.8 V, 2.5 V, or 3.3 V (5 V tolerant) Recommended Operating Conditions 0.0 V (min); 5.5 V (max) LVDS / LVDM / M-LVDS Differential Output Voltage 480 mV (min); 650 mV (max) Input Threshold Positive going threshold: 50 mV (max) Negative going threshold: -50mV (min) Input voltage hysteresis: 25 mV (typ) Recommended Operating Conditions 1.4 V (min); 3.8 V (max) Magnitude of Differential Voltage 0.05 V (min); 3.3 V (max)
Number of Channels:	32
Memory Per Channel:	GX5281 - 32 Mb GX5282 - 64 Mb GX5283 - 128 Mb - 4 Gb
TIMING	
Internal Test Clock	
Frequency Range	GX5281 - 5 Hz (min); 50 MHz (max) GX5282 - 5 Hz (min); 100 MHz (max) GX5283 - 5 Hz (min); 200 MHz (max)
Resolution	Greater of 1 Hz or 0.05%
Internal B Clock Output (TTL / LVTTL)	
Frequency Range	300 KHz (min); 200 MHz (max)
Resolution	Greater of 1 Hz or 0.5%
Internal C Clock Output (LVDS / LVDM / M-LVDS)	
Frequency Range	300 KHz (min); 200 MHz (max)
Resolution	Greater of 1 Hz or 0.5%

External Clock Input	
Direct	0 Hz (min); 200 MHz (max)
PLL	3 MHz (min); 200 MHz (max)
Pulse Width	40% (min); 60% (max)
Input Level	Per selected I/O level (1.5 V, 1.8 V, 2.5 V, 3.3 V, or 5 V)

POWER	
3.3 V_{DC}	200 mA (min); 4 A (max)
5 V_{DC}	50 mA (min); 2 A (max)
12 V_{DC}	0.03 mA (min); 0.1mA (max)
ENVIRONMENTAL	
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +70 °C
Size	3U PXI
Weight	200 g

Note: Specifications are subject to change without notice

DIGITAL I/O

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GX5280 SERIES

ORDERING INFORMATION

GX5282	Dynamic Digital I/O (3U), 32 Channels up to 100 MHz w/256MB On-Board memory, w/LVDS
GX5283	Dynamic Digital I/O (3U), 32 Channels up to 200 MHz w/512MB On-Board Memory, w/LVDS
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	
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
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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