GT50-DIO

DYNAMICALLY CONTROLLED HIGH SPEED DIGITAL I/O CARD

- 32 bi-directional I/O pins
- Eight cards may be daisychained for a total of 256 pins
- 256 Kb to 1 Mb memory behind each pin
- Programmable clock rates from 750 Hz to 50 MHz
- Sequencer allows conditional branches, loops, and subroutines
- Advanced features for UUT synchronization
- Graphical programming of sequencer and vector generation
- 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 GT50-DIO is a high-speed dynamic digital I/O card. The GT50-DIO provides all the features of high-speed dynamic digital testers normally seen only in large functional test systems. The GT50-DIO may be combined with other PC instruments to form a mixed-signal test system.

FEATURES

The GT50-DIO provides real-time digital stimulus and capture with 32 pins per card. Up to 8 cards can be daisy-chained in an IBM-compatible computer for a total of up to 256 pins. The supports up to 50 MHz (60 MHz optional) data rates. In all other respects the cards are the same. The 32 pins can be configured as input or output in groups of eight. The direction of each group may be changed dynamically within the sequencer, externally, or both.

Clock and strobe signals are distributed to the cards via a daisy-chained ribbon cable. These signals can be generated internally or externally. The external control signals allow full synchronization with the unit under test (UUT) and minimizes the initialization part of the test. The test step sequencer lets you create loops and branches to manipulate the output vectors. All of the sequencer commands can be conditioned using the external event bus. This gives the GT50-DIO card the capability to generate test vectors indefinitely at maximum test rates.

Internal and external trigger and pause commands are available in several modes. The memory behind each pin is configurable from 256 Kbit to 1 Mbit and is user upgradable. Separate memories are provided for output data, response data, and test step sequencing commands. The separate memory for response data lets the application read the activity on the UUT pins independent of the bi-directional mode. This is an important feature lacking in most high speed digital I/O cards.

CONFIGURATION

The Timing Module is mounted on the GT50-DIO to create a master. Up to seven additional GT50-DIO slave cards can be driven by one master to form a 256 bit wide vector. The GT50-DIO is provided with 256 K memory. Up to 3 additional memory blocks can be added for a maximum of 1 Mb.

PROGRAMMING AND SOFTWARE

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 functional digital test
- Digital pattern generator
- Vector capture
- Hybrid and digital device test
- Memory testing
- Event sequencer, logic pattern capture

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SPECIFICATIONS

TIMING	
Internal Test Clock	750 Hz to 50 MHz (GT25-DIO max 25 MHz)
Resolution	1 Hz or 0.01% (whichever is greater)
Auxiliary Internal Clock	400 kHz to 100 MHz
Internal Strobe	5, 10 or 15 ns before next clock
External Test Clock	0 to 50 MHz (GT25-DIO 25 MHz)
Skew	3 ns max on the same card 5 ns max between cards
I/O	
Channels Per Card	32
Output Level Low	0.3 V (typ)
Output Level High	3.5 V (typ)
Source/Sink Current	-15/64 mA (max)
Input Level Low	0.8 V (max)
Input Level High	2.0 V (min)
Memory	256 Kb to 1 Mb per I/O pin
Triggering	Software generated trigger External Input trigger override Conditional triggering (Conditioned by one or two sequential external events)
Pause	Software generated pause External Input pause override conditional pause (Conditioned by an external event) Sequencer Pause command
EXTERNAL CONTROL AND STATUS	
Output Enable	Tri-state control for groups of 8 I/O pins
External Clock Enable	Internal, external clock selection
Clock Output	The selected clock
External Strobe	The selected strobe
External Event Bus	16-bit input bus for monitoring events used for conditional commands
CPause	External pause override input
Trigger	External trigger override input
Run	Run indicator output
B Clock	Auxiliary clock output

V_{CC}	+5 V_{DC} output
ENVIRONMENTAL	
Operating Temperature	0 °C to +50 °C
Storage Temperature	-20 °C to +70 °C
Vibration	5 g @ 500 Hz
Shock	10 g for 6 ms ½ sine
Size	Full ISA slot 13.25" x 4.875" (337 mm x 124 mm)
Weight	1.2 lbs (520 g)
CONNECTIONS	
Timing	Module 50 position, 25 mil double row male receptacle (one per system)
I/O Module	50 position, 25 mil double row male receptacle (one per module)

Note: Specifications are subject to change without notice

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ORDERING INFORMATION

GT50-DIO-M	Dynamic Digital I/O, up to 50 MHz w/ Timing & Control Module, 256Kbx32
GT50-DIO-S	Dynamic Digital I/O, up to 50 MHz, with 256K Memory
GT60-DIO-M	Dynamic Digital I/O, up to 60 MHz w/ Timing & Control Module, 256K (Limited Sequencer Functions, 256K Maximum Memory)
GT60-DIO-S	Dynamic Digital I/O, up to 60 MHz, 256K (Limited Sequencer Functions, 256K Maximum Memory)
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
GT5960	LVDS I/O Module for GT5xxx Cards
GT5900	Digital I/O Module Carrier Card
MEMORY (SELECT 3 OR MORE)	
GT50-256K	256K Memory Block for GT50-DIO (Previously GT50-256K-12)
GT60-256K	256K Memory for 60MHz Applications
TIMING (SELECT FOR MASTER ONLY)	
GT50-TIM	Timing and Control Module for GT50-DIO-S (for Up to 8 Cards)
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.

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