GX5731

224 CHANNEL DIGITAL I/O MODULAR PXI CARD

- Four 32-bit TTL ports for a total of 128 TTL input or output channels
- Three 32-bit ports accept GX57xx I/O modules for customized input or output levels (96 customizable I/O channels)
- Available I/O modules include Digital Input Latch, Digital Output Latch, Digital Power Outputs, Differential TTL (RS-422), and LVDS
- I/O modules available with on-board memory for vector I/O sequencing
- I/O modules can be used to replace obsolete Summation Digital I/O products (DIL, DOL, and DPO
- 6U PXI Instrument

DESCRIPTION

The GX5731 is a 6U modular digital I/O card with 224 I/O channels. Designed for ATE, data acquisition, or process control systems where a large number of discrete I/O channels are required, the GX5731 offers the highest density in the industry for a single PXI plug-in board. Of the 224 channels, 128 support TTL levels with the direction of each group of eight channels programmable as input or output. The other 96 channels can be used for customized I/O using MTS' GX57xx series I/O modules.

FEATURES

The GX5731's 224 digital inputs or outputs are arranged as seven 32-bit ports. Four of the ports provide 128 TTL levels and can be programmed for input or output in groups of 8. The other three ports require GX57xx I/O modules that provide customized levels, handshaking, and on-board memory. The GX57xx modules expand the I/O capability of the GX5731's input or output channels.

I/O MODULES

The GX5731 can accommodate up to three I/O modules to achieve custom I/O levels and functions. I/O modules provide between 16 and 32 channels. Some offer on-board memory for vector I/O sequencing.

GX5701 - Digital Input Latch (DIL)
The GX5701 module provides 32 input channels with programmable threshold (-12 V to +12 V), handshaking for synchronization, and 4 K of vector memory. The GX5701 is compatible with the obsolete Summation DIL card.

GX5702 - Digital Output Latch (DOL)
The GX5702 module provides 32 TTL output channels, handshaking for synchronization, and 4 K of vector memory. The GX5702 is compatible with the obsolete Summation DOL card.

GX5704 - Digital Power Output Latch (DPO)
The GX5704 module provides 32 optically isolated open-collector outputs which are capable of driving signals up to 50 V with 500 mA of current sink capability. The module also supports handshaking for synchronization, and 4 K of vector memory. The GX5704 is compatible with the obsolete Summation DPO card.

GX5709 - RS-422 Differential Digital I/O
The GX5709 module provides 32 RS-422 differential I/O channels. Direction is programmable in groups of eight.

GX5711 - LVDS to TTL Converter
The GX5711 module is a bi-directional I/O module and converts 16 differential LVDS inputs to TTL outputs or 16 TTL inputs to 16 differential LVDS outputs.

GX5712 - RS-422 to TTL Converter
The GX5712 is a bi-directional I/O module and converts 16 differential RS-422 inputs to TTL outputs or 16 TTL inputs to 16 differential RS-422 outputs.

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PROGRAMMING AND SOFTWARE

The board is supplied with the GXPIO library, a software package that includes a virtual instrument panel, and a Windows 32/64-bit DLL driver library 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, LabView/Real-Time, C/C++, Microsoft Visual Basic®, Delphi, and Pascal. An On-Line help file and PDF User's Guide provides documentation that includes instructions for installing, using and programming the board.

A separate software package - GtLinux - provides support for Linux 32/64 operating systems.

APPLICATIONS

- Factory Automation
- Process Control
- Data Acquisition
- Automatic Test Equipment (ATE)
- Summation Instrument Replacement

SPECIFICATIONS

GX5731

DIGITAL I/O CHANNELS	
Number of Channels	128 TTL I/O, 96 customizable I/O channels using the GX57xx I/O modules
TTL Logic Low	0 V (min); 0.8 V (max)
TTL Logic High	2.0 V (min); 5.0 V (max)
POWER	
3.3 V_{DC}	0.6 A
5 V_{DC}	0.8 A max
ENVIRONMENTAL	
Operating Temperature	0 °C to +55 °C
Storage Temperature	-20 °C to +85 °C
Size	6U PXI
Weight	9 oz

GX57XX MODULE SPECIFICATIONS

GX5701 DIGITAL INPUT LATCH	
Input Range Threshold (Programmable)	-30 V (min) 30 V (max)
Programming Resolution	1 mv
Accuracy	±0.05 V (typ)
Setup Time	100 ns (typ)
Number of Channels	32 (all input)
Memory	4,096 vectors
Max. Input Rate	>1 kHz
Power	Supplied by GX5731
Operating Temperature	0 °C to +55 °C
Storage Temperature	-20 °C to +85 °C
Size	5" x 2.1"
Weight	6 oz
GX5702 DIGITAL OUTPUT LATCH	
Output Level	TTL (5 V)
Sink Current	40 mA (max)
Source Current	1.8 mA (max)
Skew Between Channels	10 ns (typ)
Number of Channels	32 (all output)
Memory	4,096 vectors
Max. Output Rate	>1 kHz
Power	Supplied by GX5731
Operating Temperature	0 °C to +55 °C
Storage Temperature	-20 °C to +85 °C
Size	5" x 2.1"
Weight	6 oz
GX5703 DIGITAL INPUT LATCH	
Input Levels	LVDS (differential)
Setup Time	100 ns (typ)

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Number of Channels	32 (all input)
Memory	4,096 vectors
Max. Input Rate	>1 kHz
Power	Supplied by GX5731
Operating Temperature	0 °C to +55 °C
Storage Temperature	-20 °C to +85 °C
Size	5" x 2.1"
Weight	6 oz

GX5704 DIGITAL POWER OUTPUT LATCH

Output Characteristics	Optically Coupled, Open Collector Output (50 V max)
Sink Current (per byte)	125 mA per channel, max (simultaneous)
Sink Current (One Channel)	400 mA (max)
Number of Channels	32 (all output) isolated
Memory	4,096 vectors
Max. Output Rate	>1 kHz
Power	Supplied by GX5731
Operating Temperature	0 °C to +55 °C
Storage Temperature	-20 °C to +85 °C
Size	5" x 2.1"
Weight	6 oz

GX5709 RS-422 DIFFERENTIAL I/O MODULE

Output Levels	RS-422 (differential)
Input Levels	RS-422 (differential)
Number of Channels	32 (input or output, programmable in groups of eight)
Power	Supplied by GX5731
Operating Temperature	0 °C to +55 °C
Storage Temperature	-20 °C to +85 °C
Size	5" x 2.1"
Weight	6 oz

GX5711 BI-DIRECTIONAL LVDS - TTL CONVERTER MODULE

Output Levels	TTL or LVDS (differential)
Input Levels	LVDS (differential) or TTL
Number of Channels	16 (all input or output)
Power	Supplied by GX5731
Operating Temperature	0 °C to +55 °C
Storage Temperature	-20 °C to +85 °C
Size	5" x 2.1"
Weight	6 oz

GX5712 BI-DIRECTIONAL RS-422 TO TTL CONVERTER MODULE

Output Levels	TTL or RS-422 (differential)
Input Levels	RS-422 (differential) or TTL
Number of Channels	16 (all input or all output)
Power	Supplied by GX5731
Operating Temperature	0 °C to +55 °C
Storage Temperature	-20 °C to +85 °C
Size	5" x 2.1"
Weight	6 oz

Note: Specifications are subject to change without notice

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ORDERING INFORMATION

GX5731	Advanced Static I/O Board supports 128 TTL I/O Channels and (3), 32 channel GX570x I/O Modules
GX5731-3x09	GX5731 Advanced Static I/O Board with 224 TTL I/O Channels and 3x GX5709 I/O Interface cards
I/O MODULE (SELECT ONE TO THREE)	
GX5701	32 Channel Digital Input Latch Module for GX5731/GX5733
GX5702	32 Channel Digital Output Latch Module for GX5731/GX5733
GX5704	32 Channel Digital Power Output Latch Module for GX5731/GX5733
GX5709	32 Channel RS-422 Digital I/O Module for GX5731/GX5733
GX5711	16 Channel LVDS to TTL Converter for GX5731/GX5733
GX5712	16 Channel RS-422 to TTL Bi-Directional Converter for GX5731/GX5733
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
GT95020	Connector Interface for GC5050/GT5050 products, SCSI to 100 Mil Grid, Single Ended
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".
GX98603	6U "Wireless" Scout Adapter for GX5731/GX5732 (2 x 200-Pin Scout Signal Connectors)