# GX5733 SERIES

MARVIN TEST SOLUTIONS

## 128 CHANNEL DIGITAL I/O MODULAR PXI CARD

- Three 32-bit LVTTL ports for a total of 96 LVTTL input or output channels
- One 32-bit configurable port accepts the GX57xx I/O module for customized I/O levels
- Compatible with PXI Express hybrid peripheral slots

## DESCRIPTION

The GX5733 is a 3U modular digital I/O card that offers up to 128 I/O channels. Designed for ATE, data acquisition, or process control systems where a large number of discrete I/O channels are required, the GX5733 offers the highest channel density and flexibility in the industry for a single-slot, 3U PXI plug-in board. 96 channels support TTL levels and an additional 32 I/O channels can be customized by installing one of Marvin Test Solutions' GX57xx series I/O modules. Alternatively, the remaining port can be configured to support 32 TTL channels.

## FEATURES

The GX5733's 128 digital inputs or outputs are arranged as four, 32-bit ports. Three of the ports provide 96 TTL levels and can be programmed for input or output in groups of 8. The remaining port can be used with a GX57xx I/O module and offers customized levels, handshaking, and on-board memory. The GX57xx expands the I/O capability of the GX5733 to 128 input or output channels.

## I/O MODULES

The GX5733 can accommodate one GX57xx module and provides custom I/O levels and functions. I/O modules provide between 16 and 32 channels with some versions offering on-board memory.

**GX5701 - Digital Input Latch (DIL)**
The GX5701 provides 32 input channels with programmable threshold (-30 V to +30 V), handshaking for synchronization, and 16 KB of vector memory.

**GX5702 - Digital Output Latch (DOL)**
The GX5702 provides 32 TTL output channels, handshaking for synchronization, and 16 KB of vector memory.

**GX5704 - Digital Power Output Latch (DPO)**
The GX5704 provides 32 optically isolated Open-Collector Outputs capable of driving signals up to 50 V with 500 mA current sink capability, handshaking for synchronization, and 16 KB of vector memory.

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

**GX5711 - LVDS to TTL Converter**
The GX5711 bi-directional I/O module 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 bi-directional I/O module converts 16 differential RS-422 inputs to TTL outputs or 16 TTL inputs to 16 differential RS-422 outputs.

## 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.

DIGITAL I/O

# GX5733 SERIES

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

## APPLICATIONS

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

## SPECIFICATIONS

| TTL I/O LEVELS | |
|---|---|
| Input Low Voltage | 0 V (min); 0.8 V (max) |
| Input High Voltage | 2.0 V (min); 5.0 V (max) |
| Input Hysteresis | 100 mV (typ) |
| Ouput Low Voltage | 0.55 V (max) |
| Output High Voltage | 2.0 V (min) |
| Source Current | 24 mA (max) |
| Sink Current | 24 mA (max) |
| Number of Channels | 96 / 128*<br>(*Requires installing jumpers on board) |
| **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 | 3U PXI |
| Weight | 9 oz |
| **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 |
| Maximum Input Rate | >1 kHz |
| Power | Supplied by GX5733 |
| **Environmental** | |
| 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 |
| Maximum Output Rate | >1 kHz |
| Power | Supplied by GX5733 |
| **Environmental** | |
| Operating Temperature | 0 °C to +55 °C |
| Storage Temperature | -20 °C to +85 °C |
| Size | 5" x 2.1" |
| Weight | 6 oz |

# GX5733 SERIES

MARVIN TEST SOLUTIONS

| GX5704 DIGITAL POWER OUTPUT LATCH | |
|---|---|
| Output Characteristics | Optically Coupled, Open Collector Outputs (50 V max) |
| Sink Current (per byte) | 125 mA per channel, max (simultaneous) |
| Sink Current (One Channel) | 400 mA (max) |
| Skew Between Channels | 10 ns (typ) |
| Number of Channels | 32 (all output) isolated |
| Memory | 4,096 vectors |
| Maximum Output Rate | >1 kHz |
| Power | Supplied by GX5733 |
| **Environmental** | |
| 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 GX5733 |
| **Environmental** | |
| Operating Temperature | 0 °C to +55 °C |
| Storage Temperature | -20 °C to +85 °C |
| Size | 5" x 2.1" |
| Weight | 6 oz |

| GX5711 BI-DIRECTONAL LVDS - TTL CONVERTER MODULE | |
|---|---|
| Output Levels | TTL or LVDS (differential) |
| Input Levels | TTL or LVDS (differential) |
| Number of Channels | 16 (all input or output) |
| Power | Supplied by GX5733 |
| **Environmental** | |
| 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 | TTL or RS-422 (differential) |
| Number of Channels | 16 (all input or all output) |
| Power | Supplied by GX5733 |
| **Environmental** | |
| 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

## ORDERING INFORMATION

| | |
|---|---|
| **GX5733** | 96 Channel Digital I/O with 32 Channel User Configurable I/O PXI Card |
| **GX5733-GX5709** | 96 Channel Digital I/O with GX5709 I/O Interface Module, PXI Card |
| **OPTION** | |
| **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 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 |
| **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". |
| **GX98303** | 3U "Wireless" Scout Adapter for GX528x/GX529x/GX564x/GX5733 (200-Pin Connector) |