

GX5731 SERIES

6U PXI MODULAR DIGITAL I/O CARD

- Four 32-bit ports at TTL levels for a total of 128 TTL input or output channels
- Three 32-bit ports accepting 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), LVDS, and more
- Some I/O modules include on-board memory for vector I/O
- I/O modules can be used for obsolete Summation Digital I/O products (DIL, DOL, and DPO) as well as additional digital functions



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 have TTL levels, and the direction of each group of eight channels can be programmed as input or output. The other 96 channels can be used for customized I/O using Geotest's GX57xx series I/O modules.

FEATURES

The GX5731's 224 digital inputs or outputs are arranged in 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 expand the I/O capability of the GX5731 to 224 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.

GX5701 - Digital Input Latch (DIL)

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

GX5702 - Digital Output Latch (DOL)

This module provides 32 TTL output channels, handshaking for synchronization, and 4 K vector memory. The GX5702 is compatible with the obsolete Summation DOL card.

GX5703 - LVDS Input Latch

This module provides 32 LVDS input channels, handshaking for synchronization, and 4 K vector memory.

GX5704 - Digital Power Output Latch (DPO)

This module provides 32 optically isolated Open-Collector Outputs capable of driving signals up to 50 V with 500 mA current sink, handshaking for synchronization, and 4 K vector memory. The GX5704 is compatible with the obsolete Summation DPO card.

GX5705 - RS-232 to TTL (RTT)

This module provides 32 RS-232 levels inputs that are converted by the module to TTL.

GX5709 - RS-422 Differential Digital I/O

This module provides 32 RS-422 differential I/O channels. Direction is programmable in groups of eight.

GX5710 - LVDS Differential Digital I/O

This module provides 32 LVDS differential I/O channels. Direction is programmable in groups of eight.

GX5711 - LVDS to TTL Converter

This 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

This bi-directional I/O module converts 16 differential RS-422 inputs to TTL outputs or 16 TTL inputs to 16 differential RS-422 outputs.

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SOFTWARE

The GX5731 is supplied with a virtual instrument panel, which includes the 32-bit DLL driver libraries and documentation. The virtual panel can be used to interactively adjust and control the instrument from a window that displays the current instrument settings and measurements.

In addition, various interface files provide access to the library for programming tools and languages such as ATEasy, Microsoft® and Borland® C/C++, Microsoft Visual Basic®, Borland Delphi, LabVIEW, and more.

APPLICATIONS

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

SPECIFICATIONS

TTL I/O LEVELS:	MIN	MAX
LOW	0 V	0.8 V
HIGH	2.0 V	5.0 V
NUMBER OF CHANNELS:	224	
POWER		
3.3 VDC	1.2 A	
5 VDC	1.5 A	
ENVIRONMENTAL		
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C	
SIZE	6U PXI	
WEIGHT	18 oz	
GX5701		
INPUT RANGE THRESHOLD (PROGRAMMABLE)	-50 V (Min.) 50 V (Max.)	
PROGRAMMING RESOLUTION	1 mv	
ACCURACY	±0.05 V Typical	
SETUP TIME	100 nSec Typical	
NUMBER OF CHANNELS	32 (all input)	
MEMORY	4,096 vectors	
MAX. INPUT RATE	>1 KHz	
POWER	Taken from GX5731	
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C	
SIZE	5" x 2.1"	
WEIGHT	6 oz.	

GX5702	
OUTPUT LEVELS	TTL (5 V)
SINK CURRENT	40 mA Max
SOURCE CURRENT	1.8 mA Max
SKEW (BETWEEN CHANNELS)	10 nSec Typical
NUMBER OF CHANNELS	32 (all output)
MEMORY	4,096 vectors
MAX. OUTPUT RATE	>1 KHz
POWER	Taken from GX5731
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C
SIZE	5" x 2.1"
WEIGHT	6 oz.
GX5703	
INPUT LEVELS	LVDS (differential)
SETUP TIME	100 nSec Typical
NUMBER OF CHANNELS	32 (all input)
MEMORY	4,096 vectors
MAX. INPUT RATE	>1 KHz
POWER	Taken from GX5731
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C
SIZE	5" x 2.1"
WEIGHT	6 oz.
GX5704	
OUTPUT LEVELS	Open Collector (50 V Max)
SINK CURRENT (ALL CHANNELS)	125 mA Max (simultaneous)
SINK CURRENT (ONE CHANNEL)	500 mA Max
SKEW (BETWEEN CHANNELS)	10 nSec Typical
NUMBER OF CHANNELS	32 (all output) isolated
MEMORY	4,096 vectors
MAX. INPUT RATE	>1 KHz
POWER	Taken from GX5731
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C
SIZE	5" x 2.1"
WEIGHT	6 oz.

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SPECIFICATIONS (CONT'D)

GX5705	
INPUT LEVELS	RS-232
NUMBER OF CHANNELS	32 (all input)
POWER	Taken from GX5731
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C
SIZE	5" x 2.1"
WEIGHT	6 oz.
GX5709	
OUTPUT LEVELS	RS-422 (differential)
INPUT LEVELS	RS-422 (differential)
NUMBER OF CHANNELS	32 (input or output, programmable in groups of eight)
POWER	Taken from GX5731
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C
SIZE	5" x 2.1"
WEIGHT	6 oz.
GX5710	
OUTPUT LEVELS	LVDS (differential)
INPUT LEVELS	LVDS (differential)
NUMBER OF CHANNELS	32 (input or output, programmable in groups of eight)
POWER	Taken from GX5731
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C
SIZE	5" x 2.1"
WEIGHT	6 oz.
GX5711	
OUTPUT LEVELS	TTL or LVDS (differential)
INPUT LEVELS	LVDS (differential) or TTL
NUMBER OF CHANNELS	16 (all input or output)
POWER	Taken from GX5731
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C
SIZE	5" x 2.1"
WEIGHT	6 oz.

GX5712	
OUTPUT LEVELS	TTL or RS-422 (differential)
INPUT LEVELS	RS-422 (differential) or TTL
NUMBER OF CHANNELS	16 (all input or all output)
POWER	Taken from GX5731
TEMPERATURE OPERATING STORAGE	0° to 55° C -20° C to 85° C
SIZE	5" x 2.1"
WEIGHT	6 oz.

Note: Specifications are subject to change without notice.

ORDERING INFORMATION

GX5731	Advanced static I/O Board
GX5701	Digital input latch module for GX5731
GX5702	Digital output latch module for GX5731
GX5703	LVDS input latch module for GX5731
GX5704	Digital power output latch module for GX5731
GX5705	RS-232 to TTL module for GX5731
GX5709	RS-422 differential digital I/O module for GX5731
GX5710	LVDS differential digital I/O module for GX5731
GX5711	16 Ch. LVDS to TTL bi-directional converter for GX5731
GX5712	16 Ch. RS-422 to TTL bi-directional converter for GX5731
GT95014	Connector interface for GX5xxx/GX5732, SCSI to 100 Mil Grid, Single Ended
GT95015	Connector interface for GX515x, SCSI to 100 Mil Grid, Differential
GT95020	Connector I/F for GX515x, SCSI to 100 Mil Grid, single ended (both 64 & 14 pin)
GT95021	2' shielded cable for GX5732 (68-pin)
GT95022	3' Shielded cable for GX5732 (68-pin)
GT95028	10' Shielded cable for GX5732 (68-pin)
GT95031	6' Shielded cable for GX5732 (68-pin)

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PIN ASSIGNMENT

EXTERNAL STROBE, EXTERNAL CLOCK, INTERNAL CLOCK OUT AND PXI TRIGGER CONNECTOR (16)			
IC0	1	35	GND
IC1	2	36	GND
NU	3	37	GND
NU	4	38	GND
ASTrg	5	39	GND
BSTrg	6	40	GND
CSTrg	7	41	GND
NU	8	42	GND
PXTrg0	9	43	GND
PXTrg1	10	44	GND
PXTTrg2	11	45	GND
PXTrg3	12	46	GND
PXTrg4	13	47	GND
PXTTrg5	14	48	GND
PXTrg6	15	49	GND
PXTrg7	16	50	GND
ClkIn0	17	51	GND
ClkIn1	18	52	GND
ClkIn2	19	53	GND
ClkIn3	20	54	GND
ClkIn4	21	55	GND
ClkIn5	22	56	GND
NU	23	57	GND
NU	24	58	GND
NC	25	59	GND
NC	26	60	GND
NC	27	61	GND
NC	28	62	GND
NC	29	63	GND
NC	30	64	GND
NC	31	65	GND
NC	32	66	GND
VCC	33	67	VCC
GND	34	68	GND

GX5731 WITH GX5701 MODULE CONNECTORS (17-19)			
IN(n)0+	1	35	GND
IN(n)1+	2	36	GND
IN(n)2+	3	37	GND
IN(n)3+	4	38	GND
IN(n)4+	5	39	GND
IN(n)5+	6	40	GND
IN(n)6+	7	41	GND
IN(n)7+	8	42	GND
IN(n)8+	9	43	GND
IN(n)9+	10	44	GND
IN(n)10+	11	45	GND
IN(n)11+	12	46	GND
IN(n)12+	13	47	GND
IN(n)13+	14	48	GND
IN(n)14+	15	49	GND
IN(n)15+	16	50	GND
IN(n)16+	17	51	GND
IN(n)17+	18	52	GND
IN(n)18+	19	53	GND
IN(n)19+	20	54	GND
IN(n)20+	21	55	GND
IN(n)21+	22	56	GND
IN(n)22+	23	57	GND
IN(n)23+	24	58	GND
IN(n)24+	25	59	GND
IN(n)25+	26	60	GND
IN(n)26+	27	61	GND
IN(n)27+	28	62	GND
IN(n)28+	29	63	GND
IN(n)29+	30	64	GND
IN(n)30+	31	65	GND
IN(n)31+	32	66	GND
BufRdy	33	67	XStrb
OutStrb	34	68	XStrbEn

GX5731 WITH GX5702 OR GX5704 MODULE CONNECTORS (17-19)			
OUT(n)0+	1	35	GND
OUT(n)1+	2	36	GND
OUT(n)2+	3	37	GND
OUT(n)3+	4	38	GND
OUT(2)4+	5	39	GND
OUT(n)5+	6	40	GND
OUT(n)6+	7	41	GND
OUT(n)7+	8	42	GND
OUT(n)8+	9	43	GND
OUT(2)9+	10	44	GND
OUT(n)10+	11	45	GND
OUT(n)11+	12	46	GND
OUT(n)12+	13	47	GND
OUT(n)13+	14	48	GND
OUT(2)14+	15	49	GND
OUT(n)15+	16	50	GND
OUT(n)16+	17	51	GND
OUT(n)17+	18	52	GND
OUT(n)18+	19	53	GND
OUT(2)19+	20	54	GND
OUT(n)20+	21	55	GND
OUT(n)21+	22	56	GND
OUT(n)22+	23	57	GND
OUT(n)23+	24	58	GND
OUT(2)24+	25	59	GND
OUT(n)25+	26	60	GND
OUT(n)26+	27	61	GND
OUT(n)27+	28	62	GND
OUT(n)28+	29	63	GND
OUT(2)29+	30	64	GND
OUT(n)30+	31	65	GND
OUT(2)31+	32	66	GND
BufRdy	33	67	XStrb
OutStrb	34	68	XStrbEn

PORTS 3-6 DIGITAL I/O CONNECTORS			
I/On0	1	35	GND
I/On1	2	36	GND
I/On2	3	37	GND
I/On3	4	38	GND
I/On4	5	39	GND
I/On5	6	40	GND
I/On6	7	41	GND
I/On7	8	42	GND
I/On8	9	43	GND
I/On9	10	44	GND
I/On10	11	45	GND
I/On11	12	46	GND
I/On12	13	47	GND
I/On13	14	48	GND
I/On14	15	49	GND
I/On15	16	50	GND
I/On16	17	51	GND
I/On17	18	52	GND
I/On18	19	53	GND
I/On19	20	54	GND
I/On20	21	55	GND
I/On21	22	56	GND
I/On22	23	57	GND
I/On23	24	58	GND
I/On24	25	59	GND
I/On25	26	60	GND
I/On26	27	61	GND
I/On27	28	62	GND
I/On28	29	63	GND
I/On29	30	64	GND
I/On30	31	65	GND
I/On31	32	66	GND
VCC	33	67	VCC
GND	34	68	GND