

Model 3000-A308

80 Channel Driver

90401230



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Regulatory compliance information

This product complies with the essential requirements of the following applicable European Directives, and carries the CE mark accordingly.

89/336/EEC and 73/23/EEC

EN61010-1 (1993)

EN61326-1 (1997)

Manufacturer's Name:

Giga-tronics, Incorporated

EMC Directive and Low Voltage Directive

Electrical Safety

EMC – Emissions and Immunity

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Type of Equipment:

Switching Module

Model Series Number

3000-A308

Declaration of Conformity on file. Contact Giga-tronics at the following;

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Record of Changes to This Manual

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TPCI Number	TPCI Issue Date	Date Entered	Comments

Revision History			
Revision	Description of Change	Chg Order #	Approved By
	Initial Release		
A	Updated 2/02		
B	Updated		
C	Reformatted 3/12		RCW

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Chapter 1 Introduction

1.1 Safety and Manual Conventions

This manual contains conventions regarding safety and equipment usage as described below.

1.1.1 Product Reference

Throughout this manual, the term “Common Core Switching Platform, Series 8800” refers to all models of within the series, unless otherwise specified.

1.1.2 Personal Safety Alert



WARNING: Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

1.1.3 Equipment Safety Alert



CAUTION: Indicates a situation which can damage or adversely affect the product or associated equipment.

1.1.4 Notes

Notes are denoted and used as follows:

NOTE: Highlights or amplifies an essential operating or maintenance procedure, practice, condition or statement.

1.1.5 Electrical Safety Precautions

Any servicing instructions are for use by service-trained personnel only. To avoid personal injury, do not perform any service unless you are qualified to do so.

For continued protections against fire hazard, replace the AC line fuse only with a fuse of the same current rating and type. Do not use repaired fuses or short circuited fuse holders.

Chapter 2 Configuration Table

TOP ASSEMBLY

PL90401230

Assy90401230

Sub-Assembly

PL85003990

Assy85003990

SCH85003990

PL = PARTS LIST, ASM = ASSEMBLY DRAWING, SCH = SCHEMATIC.

Chapter 3 Functional Description

3.1 Introduction

The ASCOR VXI 3000-A308 consists of 80 open collector 300 ma relay drivers. This module can be used as a direct interchange for Tektronix VXI module 73A-308. The 80 programmable lines are organized as ten banks of eight relay drivers. Each of the ten banks can be independently configured under full program control.

3.2 General Description

Program controlled parameters include

- 1) Readback of current driver status, with or without drivers enabled.
- 2) Control on command basis, VXIbus TTL trigger lines, or IEEE-488 Group Execute Trigger, and
- 3) Full reporting of operating parameters at any time.

The outputs can be controlled as individual relay drivers and as banks of relay drivers. Output is controlled by commands, a VXIbus trigger line or an IEEE-488 Group Execute Trigger.

Relay driver lines can be set inactive (tri-state) or active low under program control. All lines are capable of up to 300 mA of sink current per output with a maximum voltage output of 500 mV across the output to common. The 80 drivers have built-in transient suppression diodes or clamp diodes to eliminate voltage spikes created when relays turn off.

There are two output connectors on the 3000-A308. Each connector has the outputs of 40 drivers. Two clamp diodes may be jumpered to any of the five blocks of eight outputs. The clamp lines are set at the factory but may be changed if necessary.

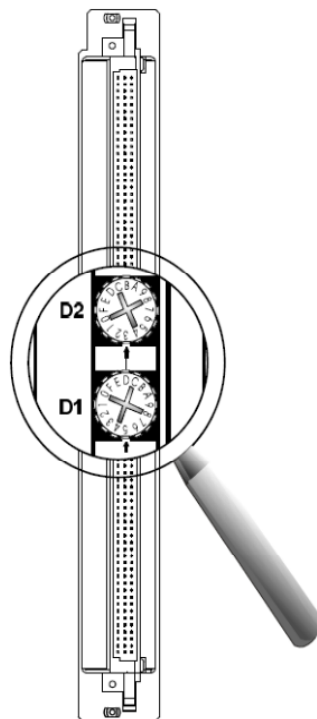
The 3000-A308 provides full access to system status information, which is especially helpful during system trouble-shooting, software de-bugging and operational system checks. At any time the system controller can read the state of the relay driver outputs and up-to-date error data.

Chapter 4 Controls and Indicators

The following controls and indicators are provided to select and display the functions of the ASCOR 3000-A308 Module's operating environment.

4.1 VXI Logical Address

The Logical Address Switch is dual circular switches, D1 and D2 which are located at the rear of the module. The address can be set to any value between 1 and 255 (decimal) or 1 and FF (hexadecimal), (address 0 is reserved for the resource manager). However, the Module fully supports Dynamic Configuration as defined in **Section F of the VXI specification**, address 255 (FF) should be selected only if the Resource Manager also supports Dynamic Configuration.



4.2 LEDs

The following LEDs are visible at the Module's front panel to indicate the status of the module's operation:

4.2.1 "BUS" LED

This green color LED is normally off and will flash on when the module is addressed by the system.

4.2.2 "PWR" LED

This red color LED is normally on when the Module is Powered up.

Chapter 5 Internal Settings

The following items are inside the module and can be reached by removing the side cover.

5.1 Fuse

The ASCOR VXI 3000-4357 uses a single 2 Amp fuse at the +5 Volt line. If the +5 Volt fuse opens remove the fault before replacing the fuse to avoid any other damage.

5.2 VXI_{bus} Interrupt Level Selection

The VXIbus interrupt level is set with three bits in the “3Eh” register.

See the section on “A16 ADDRESS SPACE REGISTER DESCRIPTION”.

The interrupt level is factory set to “no interrupt”.

Chapter 6 Specifications

Configuration :	80 Open Collector (OC) outputs
Collector-Emitter Saturation Voltage :	0.5V max at $I_c = 300 \text{ mA}$
Collector Current :	300 mA (Max)
Switching Voltage :	50V resistive, 35V inductive (Max)
Total switching Current :	20 Amp (All devices)
Output Driver :	Sprague UDN-2596A
OUTPUT Driver Control :	May be controlled individually, in banks of eight, or all 80 at once. C or O commands, CB or OB commands, or L command
Command-to-Output Delays :	C and O commands : 400us (Typical) CB and OB commands: 250us (Typ) L command : 180us (Typical)
VXIbus TTL Trigger to Output Delay :	1 us (Typical)
Command to VXIbus TTL Trigger Output :	T command : 100 us (Typical)
VXIbus TTL Trigger Pulse Width :	3 us (Typical)
Output Control :	On program command, A VXIbus TTL trigger line, or an IEEE Group Execute Trigger.
Output Enable Control :	On program command, all outputs may be enabled or disabled (tri-stated).
Interrupt Modes :	Program selectable, on programming error, and/or external trigger VXIbus TTL trigger line input, or an IEEE Group Execute Trigger.
VXI Compatibility :	Fully compatible with the VXIbus Specification Rev. 1.0
VXI Device Type :	VXI register based with ASCOR driver.
VXI Module Size :	C size, one VXI slot wide.

Module-Specific Commands :	All module-specific commands and data are sent via the VXIbus Byte Available command. All module-specific commands are made up of ASCII characters. Module-specific data maybe either ASCII or Binary format.
Interrupt Level :	Jumper selectable, levels 1 (highest priority) through 7 (lowest).
Interrupt Acknowledge :	D16, lower 8 bits returned are the logical address of the module.
VXIbus ACFAIL :	Disables all outputs when activated.
VXI Data Rate :	Write ; 20 Kbytes/sec maximum. Read : 400 Kbytes/sec maximum.
VXIbus commands Supported:	All VXIbus commands are accepted (e.g. DTACK will be returned). The following commands have effect on this module; all other commands will cause an Unrecognized Command Event : - BYTE AVAILABLE - BYTE REQUEST - BEGIN NORMAL OPERATION - READ PROTOCOL - READ STATUS - CLEAR - TRIGGER * GRANT DEVICE * SET LOCK * CLEAR LOCK * IDENTIFY COMMANDER * These commands are accepted, but have no effect on the module.
VXIbus Registers :	ID Device type Status Control Protocol Response Data Low
Device Type Register Contents :	D30

Power Requirements :	Voltage : +5V Current : 1.0A
Power-up Defaults :	All output drivers disables VXIbus external triggers disables. Non-buffered mode Request True interrupts disabled Wait hold off disabled.
Temperature :	0°C to +50°C, operating -40°C to +85°C, storage
Humidity	< 95% R.H., non-condensing, 0°C to +30°C. < 75% R.H., non-condensing, +31°C to +40°C < 45% R.H., non-condensing, +41°C to +50°C
VXI Bus Radiated Emissions :	Complies with VXIbus Specification
VXI Bus Conducted Emissions :	Complies with VXIbus Specification.
Dimensions :	VXI C size ; 10.3in x 13.8in x 1.2in
Weight :	3 lbs.
Front Panel Connectors :	160 Position PC Mount ERNI COMPONENTS # 004778

Chapter 7 Register Map

A16 Address Space Register Description

Offset	Value
00h	CFB5 hex C = Register based, A16/A24 FB5 = ASCOR Manufacturer ID
02h	7F2C hex 7 = 10,000 hex space in the A24 Address space F2C = HV Discrete Driver/Receiver VXI Module number
04h	FFFC hex (typical after running Resource Manager) In order to reset the module: read this address, set bit 0 high, then set bit 0 low without altering the other bits.

Control	Bit
3Eh	0 Low true output enable to the coil driver ICs.
	1 When low enables read back of the coil state. When high enables read back of the data registers.
	2 Leave set to 0, reserved by Ascor.
	3 Interrupt bit 0 (LSB) Used to set the Module IRQ Level:
	4 Interrupt bit 1 0 = No Interrupts
	5 Interrupt bit 2 (MSB) 1-7 = IRQ1-IRQ7
	6-7 Don't Care.
	8-15 Mask Off.

REGISTER 8000

BIT	FUNCTION	CONNECTOR PIN
15	U2-O1	P4-22
14	U2-O2	P4-38
13	U2-O3	P4-6
12	U2-O4	P4-39
11	U2-O5	P4-23
10	U2-O6	P4-7
9	U2-O7	P4-24
8	U2-O8	P4-40
7	U1-O1	P4-18
6	U1-O2	P4-34
5	U1-O3	P4-1
4	U1-O4	P4-35
3	U1-O5	P4-2
2	U1-O6	P4-19
1	U1-O7	P4-6
0	U1-O8	P4-36

REGISTER 8002

BIT	FUNCTION	CONNECTOR PIN
15	U4-O1	P4-28
14	U4-O2	P4-44
13	U4-O3	P4-12
12	U4-O4	P4-45
11	U4-O5	P4-29
10	U4-O6	P4-13
9	U4-O7	P4-30
8	U4-O8	P4-48
7	U3-O1	P4-25
6	U3-O2	P4-41
5	U3-O3	P4-9
4	U3-O4	P4-42
3	U3-O5	P4-26
2	U3-O6	P4-10
1	U3-O7	P4-27
0	U3-O8	P4-43

REGISTER 8004

BIT	FUNCTION	CONNECTOR PIN
15	U6-O1	P5-18
14	U6-O2	P5-34
13	U6-O3	P5-1
12	U6-O4	P5-35
11	U6-O5	P5-2
10	U6-O6	P5-19
9	U6-O7	P5-3
8	U6-O8	P5-36
7	U5-O1	P4-31
6	U5-O2	P4-47
5	U5-O3	P4-15
4	U5-O4	P4-48
3	U5-O5	P4-32
2	U5-O6	P4-16
1	U5-O7	P4-33
0	U5-O8	P4-49

REGISTER 8006

BIT	FUNCTION	CONNECTOR PIN
15	U8-O1	P5-25
14	U8-O2	P5-41
13	U8-O3	P5-9
12	U8-O4	P5-42
11	U8-O5	P5-26
10	U8-O6	P5-10
9	U8-O7	P5-27
8	U8-O8	P5-43
7	U7-O1	P5-22
6	U7-O2	P5-38
5	U7-O3	P5-6
4	U7-O4	P5-39
3	U7-O5	P5-23
2	U7-O6	P5-7
1	U7-O7	P5-24
0	U7-O8	P5-40

REGISTER 8008

BIT	FUNCTION	CONNECTOR PIN
15	U10-O1	P5-31
14	U10-O2	P5-47
13	U10-O3	P5-15
12	U10-O4	P5-48
11	U10-O5	P5-32
10	U10-O6	P5-16
9	U10-O7	P5-33
8	U10-O8	P5-49
7	U9-O1	P5-28
6	U9-O2	P5-44
5	U9-O3	P5-12
4	U9-O4	P5-45
3	U9-O5	P5-29
2	U9-O6	P5-13
1	U9-O7	P5-30
0	U9-O8	P5-46

Chapter 8 Front Panel Pin List

P4

PIN	FUNCTION
1	U1-O3
2	U1-O5
3	U1-O7
4	DGND
5	DGND
6	U2-O3
7	U2-O6
8	DGND
9	U3-O3
10	U3-O6
11	DGND
12	U4-O3
13	U4-O6
14	DGND
15	U5-O3
16	U5-O6
17	VK
18	U1-O1
19	U1-O6
20	DGND
21	DGND
22	U2-O1
23	U2-O5
24	U2-O7
25	U3-O1

PIN	FUNCTION
26	U3-O5
27	U3-O7
28	U4-O1
29	U4-O5
30	U4-O7
31	U5-O1
32	U5-O5
33	U5-O7
34	U1-O2
35	U1-O4
36	U1-O8
37	DGND
38	U2-O2
39	U2-O4
40	U2-O8
41	U3-O2
42	U3-O4
43	U3-O8
44	U4-O2
45	U4-O4
46	U4-O8
47	U5-O2
48	U5-O4
49	U5-O8
50	VK

P5

PIN	FUNCTION
1	U6-O3
2	U6-O5
3	U6-O7
4	DGND
5	DGND
6	U7-O3
7	U7-O6
8	DGND
9	U8-O3
10	U8-O6
11	DGND
12	U9-O3
13	U9-O6
14	DGND
15	U5-O3
16	U5-O6
17	VK
18	U6-O1
19	U6-O6
20	DGND
21	DGND
22	U7-O1
23	U7-O5
24	U7-O7
25	U8-O1

PIN	FUNCTION
26	U8-O5
27	U8-O7
28	U9-O1
29	U9-O5
30	U9-O7
31	U5-O1
32	U5-O5
33	U5-O7
34	U6-O2
35	U6-O4
36	U6-O8
37	DGND
38	U7-O2
39	U7-O4
40	U7-O8
41	U8-O2
42	U8-O4
43	U8-O8
44	U9-O2
45	U9-O4
46	U9-O8
47	U5-O2
48	U5-O4
49	U5-O8
50	VK