

Model 3000-46

64 DPDT & 16(1x8) Multiplexer

90400750



All technical data and specifications in this publication are subject to change without prior notice and do not represent a commitment on the part of Giga-tronics, Incorporated.

© 2011 Giga-tronics Incorporated. All rights reserved. Printed in the U.S.A.

Warranty

Giga-tronics Series 3000 Switching Modules are warranted against defective materials and workmanship for three years from date of shipment, or as detailed in the warranty section of this manual. Giga-tronics will, at its option, repair or replace products that are proven defective during the warranty period. This warranty DOES NOT cover damage resulting from improper use, nor workmanship other than Giga-tronics service. There is no implied warranty of fitness for a particular purpose, nor is Giga-tronics liable for any consequential damages. Specification and price change privileges are reserved by Giga-tronics.

CONTACT INFORMATION

Giga-tronics, Incorporated

4650 Norris Canyon Road

San Ramon, California 94583

Telephone: 800.726.4442 (only within the United States)

925.328.4650

Fax: 925.328.4700

On the Internet: www.gigatronics.com

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

Manufacturer's Address

4650 Norris Canyon Road
San Ramon, California 94583
U.S.A.

Type of Equipment:

Switching Module

Model Series Number

3000-46

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

Giga-tronics, Incorporated

4650 Norris Canyon Road

San Ramon, California 94583

Telephone: 800.726.4442 (only within the United States)

925.328.4650

Fax: 925.328.4700

Record of Changes to This Manual

Use the table below to maintain a permanent record of changes to this document. Corrected replacement pages are issued as Technical Publication Change Instructions (TPCI). When you are issued a TPCI, do the following:

1. Insert the TPCI at the front of the manual binder.
2. Remove the pages from the manual binder that are noted in the TPCI.
3. Replace the page(s) removed in the previous step with the corrected page(s).
4. Record the changes in the table below.

TPCI Number	TPCI Issue Date	Date Entered	Comments

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

Contents

Contents	6
Chapter 1 Introduction	7
1.1 Safety and Manual Conventions.....	7
1.1.1 Product Reference.....	7
1.1.2 Personal Safety Alert	7
1.1.3 Equipment Safety Alert	7
1.1.4 Notes	7
1.1.5 Electrical Safety Precautions	7
Chapter 2 Configuration Table.....	8
Chapter 3 Functional Description	9
3.1 Introduction.....	9
3.2 General Description.....	9
Chapter 4 Block Diagram	11
Chapter 5 Controls and Indicators	12
5.1 VXI Logical Address.....	12
5.2 LEDs.....	12
5.2.1 “BUS” LED	12
5.2.2 “PWR” LED.....	12
Chapter 6 Internal Settings	13
6.1 Fuse.....	13
6.2 VXI _{bus} Interrupt Level Selection.....	13
Chapter 7 Specifications	14
Chapter 9 Register Map	16
Chapter 10 Connector Configuration.....	17
Chapter 11 Memory Map	23

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

Module

PL90400750

Assy 90400750

Schematics

MB PL85002160

Assy 85002160

SCH85002160

DB PL85002170
Assy 85002170
SCH85002170

Chapter 3 Functional Description

3.1 Introduction

This User Guide provides a basic description of the Model 3000-46, Flex Switch module. Also included are installation and input connection procedures, programming information, service and maintenance information.

3.2 General Description

The Model 3000-46 is a versatile switch array for those who need mix signal capability. The module has sixty four (64) DPST coaxially shielded relays for dual wire isolation. These relays can be used to switch signal paths to a digital subsystem. Bandwidth of these paths is greater than 100 MHz. At the input of these isolation relays are sixteen (16) 8x1 trees which are arranged as eight (8) pairs of 8x1 trees with individual control of the + and - side of the differential lines in the trees. Additionally, the 8x1 trees can be combined to form four (4) pairs of 16x1 trees, or two pairs of (2) 32x1 trees, or a single pair of 64x1 tree. All of the combinations of trees allow independent control of the + and - side of the tree for true differential measurement across any path. This capability allows 64 channels of signals to be switch to either a digital subsystem or they can be individually switched to analog test equipment. Because all of these options can be accomplished through software control, this switch module provides maximum Flexibility regardless of the switch tree selected.

All of the relays are coaxially shielded to provide superior performance. The isolation relays are dual coaxially shielded reed relays with a common control coil (DPST). These isolation relays provide support for high speed digital performance, 100 MHz minimum bandwidth (150 MHz typical). The switch trees are coaxially shielded SPST for maximum analog versatility at >>80 MHz bandwidth. Each of the sixteen 8x1 trees connect to a switch array to allow for combinations as 8x1, 16x1, 32x1, or 64x1 to the output connectors, J2 and J5. There are sixteen 8x1 outputs, eight 16x1 outputs, four 32x1 outputs, and two 64x1 outputs. They can be all use together or switched out to provide superior performance by isolating signal paths to improve the transmission line.

With this flexible combination of utilizing the switch trees, up to 30 instruments can be connected to the Model 3000-46, Flex-switch in addition to the 64 pairs of digital signals. Additionally, two external references are provided as well as analog and chassis ground for measurements of the + or - side of the inputs to be measured against the 4 references. Two additional reference inputs are provided on the daughter board (J5) which are assign to the - side of the measurement trees.

In a typical application without the 3000-46, the system designer would be required to use several modules and wire them together to get mix signal capability. This inter-module wiring carries with it the inherent loss of bandwidth due to spliced wires and other wiring requirements associated with inter-module wiring. The ASCOR 3000-46 Flex-switch offers the customer the ability to combine all of the different modules within a single module with exceptional low noise and high bandwidth performance.

The connectors are Robinson Nugent type P50E series ribbon cable connector. This connector accepts dual ribbon cables with 0.050" centers. This series of connector has a high density 0.050" pitch contacts which accepts standard 0.050" pitch ribbon on each side of the connector. The signal pins are located

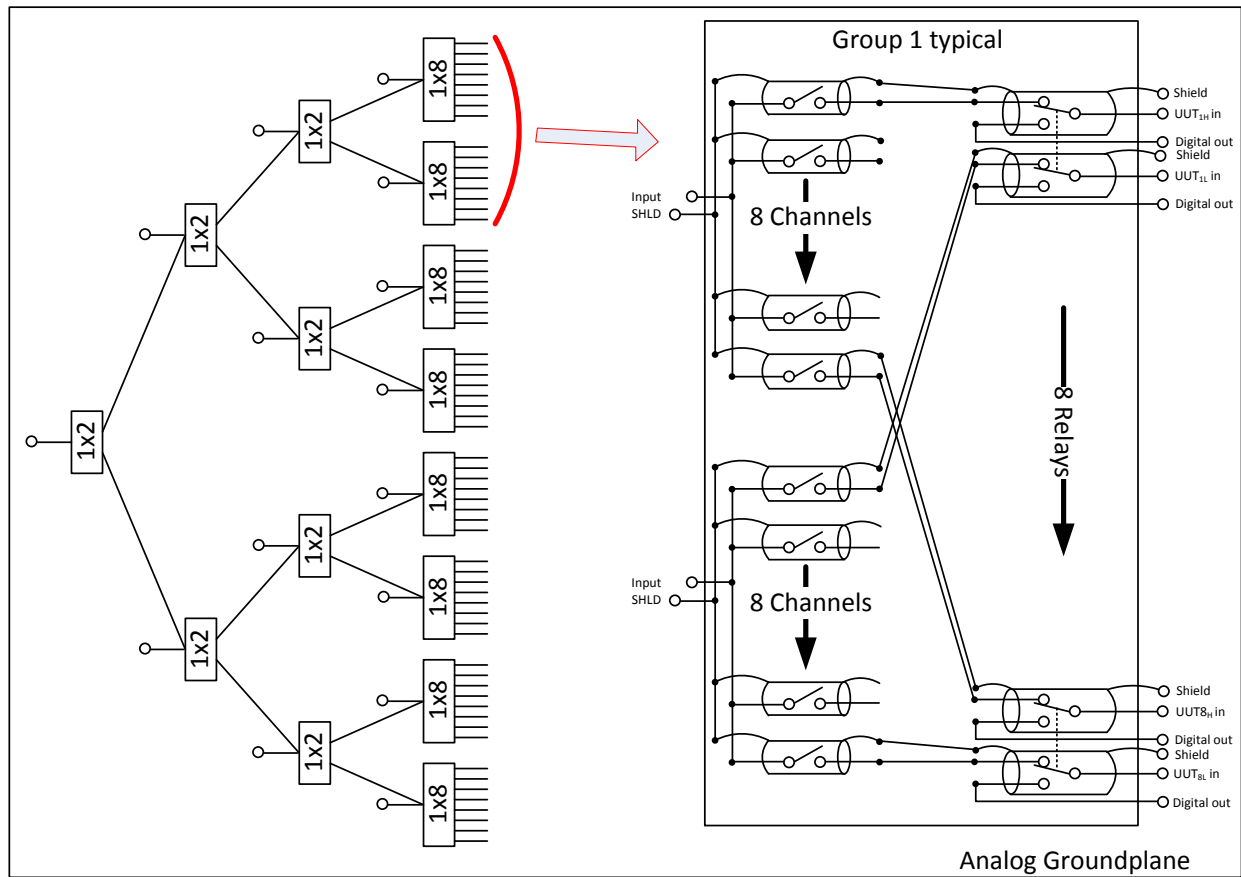
on J1, J3, J4, and J6. The Output channel ports are located on J2 and J5. Isolated Pins (digital) 1-16 are located on J1, even number pins (a ribbon cable). The mixed signal pins, Pins 1-16 are located on J1, odd number pins (other ribbon cable). This organization allows convenient cabling schemes using standard ribbon cable. The digital signals are kept on one ribbon cable while the mix signal pin is on another ribbon cable. Pins 17-32 are organized in the same manner on J3. Pins 33-48 are organized in the same manner on J4. Pins 49-64 are organized in the same manner on J6. The outputs of the switch trees and the reference inputs are located on J2 and J5. Refer to connector diagram for exact location of the signals. Associated with each signal pin is the shield. Optimum performance is achieved if shielded wiring is used with the 3000-46. The adjacent shield provides a short ground path. If ribbon cable is used, then the shield pins will provide a ground-signal-ground wiring scheme. The analog ground should be tied to the associated grounds of the signal source. This avoids ground loops and minimized noise pickup through the analog ground.

ASCOR Model 3000-46

Features

- True Mix Signal Switch.
- 64 Coaxially Shielded DPST Isolation Relays.
- 16 8x1 Shielded Trees or 8-8x1 Dual Wire.
- 8 16x1 Shielded Trees or 4-16x1 Dual Wire.
- 4 32x1 Shield Trees or 2-32x1 Dual or
- 2 64x1 Shielded Trees or 1- 64x1 Dual Wire.
- Measure to 4 External Inputs, Analog Ground or Earth Ground.
- 100MHz Bandwidth Through Isolation Paths (Digital Path).
- 50MHz Bandwidth, worst case Through Switch Tree (in to 50 ohm).

Chapter 4 Block Diagram

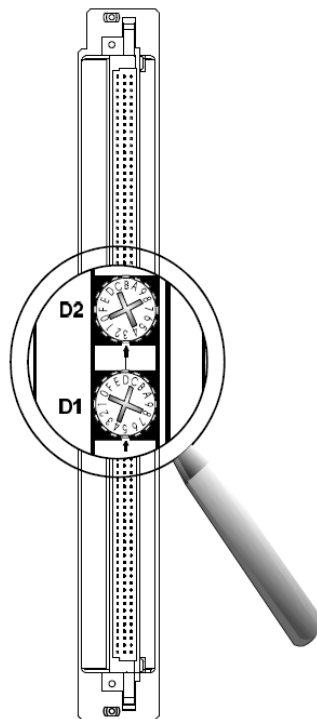


Chapter 5 Controls and Indicators

The following controls and indicators are provided to select and display the functions of the ASCOR 3000-46 Module's operating environment.

5.1 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.



5.2 LEDs

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

5.2.1 "BUS" LED

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

5.2.2 "PWR" LED

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

Chapter 6 Internal Settings

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

6.1 Fuse

The ASCOR VXI 3000-46 uses a 10 Amp fuse in the +5 Volt line and is located on the Mother Board (MB) assembly.

6.2 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 7 Specifications

Electrical:

Voltage:	200VDC max.
Current:	1.5A Carry, 0.5 A Switched
Power:	10 Watts
Bandwidth:	
Isolation relays (to digital):	
>100 MHz:	single ended into 50 ohms, 150 MHz typical
>150 MHz:	differential across inputs (+/-)
8x1 Tree:	
>75 MHz :	single ended into 50 ohms
>90 MHz:	differential
16x1 Tree:	
>60 MHz :	single ended into 50 ohms
>90 MHz:	differential
32x1 Tree:	
>55 MHz :	single ended into 50 ohms
>85 MHz:	differential
64x1 Tree:	
>55 MHz :	single ended into 50 ohms
>85 MHz:	differential
Characteristic Impedance:	50Ω

Connectors:

PCB:	(J1,J4,J3 and J6) Robinson Nugent P50E-100P1-SR1-TG (J2 and J5) Robinson Nugent P50E-26P1-SR1-TG
Mate:	Robinson Nugent, IDC Connector, P50E series, 100 position, socket P50E-100S-TG Robinson Nugent, IDC Connector, P50E series, 26 position, socket P50E-26S-TG

Installation Kit:	Installation Kit, 89800360, Available on request (Optional). Includes a full complement of mating connectors.
-------------------	---

Mechanical:

Thickness:	1.200 inches
Width:	10.317 inches

Length: 13.78 inches

Weight: 4 lbs. 10 oz.

Environmental Specifications

Temperature:

Operating: 0° to 55°C

Storage: - 40° to 75°C

Relative Humidity:

Operating: 0 to 90% non-condensing

Storage: 0 to 95% non-condensing

Chapter 9 Register Map

The Model 3000-46 is a register based VXL module. Each register is 16 bits. They are organized in the following manner:

Register	Description
8000	Group 1: 8x1 trees (high/low) to I/O 1-8 (+/-)
8002	Group 2: 8x1 trees (high/low) to I/O 9-16 (+/-)
8004	Isolation pins 1-16 (digital +/-) to I/O 1-16 (+/-)
8006	Group 3: 8x1 trees (high/low)) to I/O 17-24 (+/-)
8008	Group 4: 8x1 trees (high/low)) to I/O 25-32 (+/-)
800A	Isolation pins 17-32 (digital +/-) to I/O 17-32 (+/-)
800C	Output Control for Group 1-4 (8x1, 16x1)
800E	Output Control for Group 1-4 (32x1, 64x1, external references)
8020	Group 5: 8x1 trees (high/low) to I/O 33-40 (+/-)
8022	Group 6: 8x1 trees (high/low) to I/O 41-48 (+/-)
8024	Isolation pins 33-48 (digital +/-) to I/O 33-48 (+/-)
8026	Group 7: 8x1 trees (high/low)) to I/O 49-56 (+/-)
8028	Group 8: 8x1 trees (high/low)) to I/O 57-64 (+/-)
802A	Isolation pins 49-64 (digital +/-) to I/O 49-64 (+/-)
802C	Output Control for Group 5-8 (8x1, 16x1)
802E	Output Control for Group 5-8 (32x1, 64x1, external references)

See register maps (on page 16 thru page 23) for description and relay number

Chapter 10 Connector Configuration

J1

CONNECTOR DESCRIPTION

DESCRIPTION	PIN	PIN	DESCRIPTION
ANALOG SHIELD	100	99	ANALOG SHIELD
PIN 1 IN +	98	97	PIN 1 OUT +
PIN 1 IN -	96	95	PIN 1 OUT -
ANALOG SHIELD	94	93	ANALOG SHIELD
PIN 2 IN +	92	91	PIN 2 OUT +
PIN 2 IN -	90	89	PIN 2 OUT -
ANALOG SHIELD	88	87	ANALOG SHIELD
PIN 3 IN +	86	85	PIN 3 OUT +
PIN 3 IN -	84	83	PIN 3 OUT -
ANALOG SHIELD	82	81	ANALOG SHIELD
PIN 4 IN +	80	79	PIN 4 OUT +
PIN 4 IN -	78	77	PIN 4 OUT -
ANALOG SHIELD	76	75	ANALOG SHIELD
PIN 5 IN +	74	73	PIN 5 OUT +
PIN 5 IN -	72	71	PIN 5 OUT -
ANALOG SHIELD	70	69	ANALOG SHIELD
PIN 6 IN +	68	67	PIN 6 OUT +
PIN 6 IN -	66	65	PIN 6 OUT -
ANALOG SHIELD	64	63	ANALOG SHIELD
PIN 7 IN +	62	61	PIN 7 OUT +
PIN 7 IN -	60	59	PIN 7 OUT -
ANALOG SHIELD	58	57	ANALOG SHIELD
PIN 8 IN +	56	55	PIN 8 OUT +
PIN 8 IN -	54	53	PIN 8 OUT -
ANALOG SHIELD	52	51	ANALOG SHIELD
PIN 9 IN +	50	49	PIN 9 OUT +
PIN 9 IN -	48	47	PIN 9 OUT -
ANALOG SHIELD	46	45	ANALOG SHIELD
PIN 10 IN +	44	43	PIN 10 OUT +
PIN 10 IN -	42	41	PIN 10 OUT -
ANALOG SHIELD	40	39	ANALOG SHIELD
PIN 11 IN +	38	37	PIN 11 OUT +
PIN 11 IN -	36	35	PIN 11 OUT -
ANALOG SHIELD	34	33	ANALOG SHIELD
PIN 12 IN +	32	31	PIN 12 OUT +
PIN 12 IN -	30	29	PIN 12 OUT -
ANALOG SHIELD	28	27	ANALOG SHIELD
PIN 13 IN +	26	25	PIN 13 OUT +
PIN 13 IN -	24	23	PIN 13 OUT -
ANALOG SHIELD	22	21	ANALOG SHIELD
PIN 14 IN +	20	19	PIN 14 OUT +
PIN 14 IN -	18	17	PIN 14 OUT -
ANALOG SHIELD	16	15	ANALOG SHIELD
PIN 15 IN +	14	13	PIN 15 OUT +
PIN 15 IN -	12	11	PIN 15 OUT -
ANALOG SHIELD	10	9	ANALOG SHIELD
PIN 16 IN +	8	7	PIN 16 OUT +
PIN 16 IN -	6	5	PIN 16 OUT -
ANALOG SHIELD	4	3	ANALOG SHIELD
CHASSIS GND	2	1	CHASSIS GND

J2**CONNECTOR DESCRIPTION**

DESCRIPTION	PIN	PIN	DESCRIPTION
ANALOG SHIELD	26	25	ANALOG SHIELD
GP1, 8x1 OUT +	24	23	GP2, 8x1 OUT +
GP1, 8x1 OUT -	22	21	GP2, 8x1 OUT -
ANALOG SHIELD	20	19	ANALOG SHIELD
GP1-2, 16x1 OUT +	18	17	GP3-4, 16x1 OUT +
GP1-2, 16x1 OUT -	16	15	GP3-4, 16x1 OUT -
ANALOG SHIELD	14	13	ANALOG SHIELD
GP3, 8x1 OUT +	12	11	GP4, 8x1 OUT +
GP3, 8x1 OUT -	10	9	GP4, 8x1 OUT -
ANALOG SHIELD	8	7	ANALOG SHIELD
GP1-4, 32x1 OUT +	6	5	EXT REF 1+
GP1-4, 32x1 OUT -	4	3	EXT REF 2+
ANALOG SHIELD	2	1	ANALOG SHIELD

J3**CONNECTOR DESCRIPTION**

DESCRIPTION	PIN	PIN	DESCRIPTION
ANALOG SHIELD	100	99	ANALOG SHIELD
PIN 17 IN +	98	97	PIN 17 OUT +
PIN 17 IN -	96	95	PIN 17 OUT -
ANALOG SHIELD	94	93	ANALOG SHIELD
PIN 18 IN +	92	91	PIN 18 OUT +
PIN 18 IN -	90	89	PIN 18 OUT -
ANALOG SHIELD	88	87	ANALOG SHIELD
PIN 19 IN +	86	85	PIN 19 OUT +
PIN 19 IN -	84	83	PIN 19 OUT -
ANALOG SHIELD	82	81	ANALOG SHIELD
PIN 20 IN +	80	79	PIN 20 OUT +
PIN 20 IN -	78	77	PIN 20 OUT -
ANALOG SHIELD	76	75	ANALOG SHIELD
PIN 21 IN +	74	73	PIN 21 OUT +
PIN 21 IN -	72	71	PIN 21 OUT -
ANALOG SHIELD	70	69	ANALOG SHIELD
PIN 22 IN +	68	67	PIN 22 OUT +
PIN 22 IN -	66	65	PIN 22 OUT -
ANALOG SHIELD	64	63	ANALOG SHIELD
PIN 23 IN +	62	61	PIN 23 OUT +
PIN 23 IN -	60	59	PIN 23 OUT -
ANALOG SHIELD	58	57	ANALOG SHIELD
PIN 24 IN +	56	55	PIN 24 OUT +
PIN 24 IN -	54	53	PIN 24 OUT -
ANALOG SHIELD	52	51	ANALOG SHIELD
PIN 25 IN +	50	49	PIN 25 OUT +
PIN 25 IN -	48	47	PIN 25 OUT -
ANALOG SHIELD	46	45	ANALOG SHIELD
PIN 26 IN +	44	43	PIN 26 OUT +
PIN 26 IN -	42	41	PIN 26 OUT -
ANALOG SHIELD	40	39	ANALOG SHIELD
PIN 27 IN +	38	37	PIN 27 OUT +
PIN 27 IN -	36	35	PIN 27 OUT -
ANALOG SHIELD	34	33	ANALOG SHIELD
PIN 28 IN +	32	31	PIN 28 OUT +
PIN 28 IN -	30	29	PIN 28 OUT -
ANALOG SHIELD	28	27	ANALOG SHIELD
PIN 29 IN +	26	25	PIN 29 OUT +
PIN 29 IN -	24	23	PIN 29 OUT -
ANALOG SHIELD	22	21	ANALOG SHIELD
PIN 30 IN +	20	19	PIN 30 OUT +
PIN 30 IN -	18	17	PIN 30 OUT -
ANALOG SHIELD	16	15	ANALOG SHIELD
PIN 31 IN +	14	13	PIN 31 OUT +
PIN 31 IN -	12	11	PIN 31 OUT -
ANALOG SHIELD	10	9	ANALOG SHIELD
PIN 32 IN +	8	7	PIN 32 OUT +
PIN 32 IN -	6	5	PIN 32 OUT -
ANALOG SHIELD	4	3	ANALOG SHIELD
CHASSIS GND	2	1	CHASSIS GND

J4**CONNECTOR DESCRIPTION**

DESCRIPTION	PIN	PIN	DESCRIPTION
ANALOG SHIELD	100	99	ANALOG SHIELD
PIN 33 IN +	98	97	PIN 33 OUT +
PIN 33 IN -	96	95	PIN 33 OUT -
ANALOG SHIELD	94	93	ANALOG SHIELD
PIN 34 IN +	92	91	PIN 34 OUT +
PIN 34 IN -	90	89	PIN 34 OUT -
ANALOG SHIELD	88	87	ANALOG SHIELD
PIN 35 IN +	86	85	PIN 35 OUT +
PIN 35 IN -	84	83	PIN 35 OUT -
ANALOG SHIELD	82	81	ANALOG SHIELD
PIN 36 IN +	80	79	PIN 36 OUT +
PIN 36 IN -	78	77	PIN 36 OUT -
ANALOG SHIELD	76	75	ANALOG SHIELD
PIN 37 IN +	74	73	PIN 37 OUT +
PIN 37 IN -	72	71	PIN 37 OUT -
ANALOG SHIELD	70	69	ANALOG SHIELD
PIN 38 IN +	68	67	PIN 38 OUT +
PIN 38 IN -	66	65	PIN 38 OUT -
ANALOG SHIELD	64	63	ANALOG SHIELD
PIN 39 IN +	62	61	PIN 39 OUT +
PIN 39 IN -	60	59	PIN 39 OUT -
ANALOG SHIELD	58	57	ANALOG SHIELD
PIN 40 IN +	56	55	PIN 40 OUT +
PIN 40 IN -	54	53	PIN 40 OUT -
ANALOG SHIELD	52	51	ANALOG SHIELD
PIN 41 IN +	50	49	PIN 41 OUT +
PIN 41 IN -	48	47	PIN 41 OUT -
ANALOG SHIELD	46	45	ANALOG SHIELD
PIN 42 IN +	44	43	PIN 42 OUT +
PIN 42 IN -	42	41	PIN 42 OUT -
ANALOG SHIELD	40	39	ANALOG SHIELD
PIN 43 IN +	38	37	PIN 43 OUT +
PIN 43 IN -	36	35	PIN 43 OUT -
ANALOG SHIELD	34	33	ANALOG SHIELD
PIN 44 IN +	32	31	PIN 44 OUT +
PIN 44 IN -	30	29	PIN 44 OUT -
ANALOG SHIELD	28	27	ANALOG SHIELD
PIN 45 IN +	26	25	PIN 45 OUT +
PIN 45 IN -	24	23	PIN 45 OUT -
ANALOG SHIELD	22	21	ANALOG SHIELD
PIN 46 IN +	20	19	PIN 46 OUT +
PIN 46 IN -	18	17	PIN 46 OUT -
ANALOG SHIELD	16	15	ANALOG SHIELD
PIN 47 IN +	14	13	PIN 47 OUT +
PIN 47 IN -	12	11	PIN 47 OUT -
ANALOG SHIELD	10	9	ANALOG SHIELD
PIN 48 IN +	8	7	PIN 48 OUT +
PIN 48 IN -	6	5	PIN 48 OUT -
ANALOG SHIELD	4	3	ANALOG SHIELD
CHASSIS GND	2	1	CHASSIS GND

J5**CONNECTOR DESCRIPTION**

DESCRIPTION	PIN	PIN	DESCRIPTION
ANALOG SHIELD	26	25	ANALOG SHIELD
GP5, 8x1 OUT +	24	23	GP6, 8x1 OUT +
GP5, 8x1 OUT -	22	21	GP6, 8x1 OUT -
ANALOG SHIELD	20	19	ANALOG SHIELD
GP5-6, 16x1 OUT +	18	17	GP7-8, 16x1 OUT +
GP5-6, 16x1 OUT -	16	15	GP7-8, 16x1 OUT -
ANALOG SHIELD	14	13	ANALOG SHIELD
GP7, 8x1 OUT +	12	11	GP8, 8x1 OUT +
GP7, 8x1 OUT -	10	9	GP8, 8x1 OUT -
ANALOG SHIELD	8	7	ANALOG SHIELD
GP5-8, 32x1 OUT +	6	5	EXT REF 3+
GP5-8, 32x1 OUT -	4	3	EXT REF 4+
ANALOG SHIELD	2	1	ANALOG SHIELD

J6**CONNECTOR DESCRIPTION**

DESCRIPTION	PIN	PIN	DESCRIPTION
ANALOG SHIELD	100	99	ANALOG SHIELD
PIN 49 IN +	98	97	PIN 49 OUT +
PIN 49 IN -	96	95	PIN 49 OUT -
ANALOG SHIELD	94	93	ANALOG SHIELD
PIN 50 IN +	92	91	PIN 50 OUT +
PIN 50 IN -	90	89	PIN 50 OUT -
ANALOG SHIELD	88	87	ANALOG SHIELD
PIN 51 IN +	86	85	PIN 51 OUT +
PIN 51 IN -	84	83	PIN 51 OUT -
ANALOG SHIELD	82	81	ANALOG SHIELD
PIN 52 IN +	80	79	PIN 52 OUT +
PIN 52 IN -	78	77	PIN 52 OUT -
ANALOG SHIELD	76	75	ANALOG SHIELD
PIN 53 IN +	74	73	PIN 53 OUT +
PIN 53 IN -	72	71	PIN 53 OUT -
ANALOG SHIELD	70	69	ANALOG SHIELD
PIN 54 IN +	68	67	PIN 54 OUT +
PIN 54 IN -	66	65	PIN 54 OUT -
ANALOG SHIELD	64	63	ANALOG SHIELD
PIN 55 IN +	62	61	PIN 55 OUT +
PIN 55 IN -	60	59	PIN 55 OUT -
ANALOG SHIELD	58	57	ANALOG SHIELD
PIN 56 IN +	56	55	PIN 56 OUT +
PIN 56 IN -	54	53	PIN 56 OUT -
ANALOG SHIELD	52	51	ANALOG SHIELD
PIN 57 IN +	50	49	PIN 57 OUT +
PIN 57 IN -	48	47	PIN 57 OUT -
ANALOG SHIELD	46	45	ANALOG SHIELD
PIN 58 IN +	44	43	PIN 58 OUT +
PIN 58 IN -	42	41	PIN 58 OUT -
ANALOG SHIELD	40	39	ANALOG SHIELD
PIN 59 IN +	38	37	PIN 59 OUT +
PIN 59 IN -	36	35	PIN 59 OUT -
ANALOG SHIELD	34	33	ANALOG SHIELD
PIN 60 IN +	32	31	PIN 60 OUT +
PIN 60 IN -	30	29	PIN 60 OUT -
ANALOG SHIELD	28	27	ANALOG SHIELD
PIN 61 IN +	26	25	PIN 61 OUT +
PIN 61 IN -	24	23	PIN 61 OUT -
ANALOG SHIELD	22	21	ANALOG SHIELD
PIN 62 IN +	20	19	PIN 62 OUT +
PIN 62 IN -	18	17	PIN 62 OUT -
ANALOG SHIELD	16	15	ANALOG SHIELD
PIN 63 IN +	14	13	PIN 63 OUT +
PIN 63 IN -	12	11	PIN 63 OUT -
ANALOG SHIELD	10	9	ANALOG SHIELD
PIN 64 IN +	8	7	PIN 64 OUT +
PIN 64 IN -	6	5	PIN 64 OUT -
ANALOG SHIELD	4	3	ANALOG SHIELD
CHASSIS GND	2	1	CHASSIS GND

Chapter 11 Memory Map

A16 Space

Offset (hex) This offset is added to the A16 Base Address of the module. The A16 Base Address for the Flex Switch is equal to the VXIbus logical address assigned to the Flex Switch shifted left six times and ORed with hex C000. These registers reside in the VXI Interface circuitry on the Motherboard (85002160).

- 00 VXIbus ID Register
- 02 Device Type Register
- 04 VXIbus Status/Control Register
- 06 Offset Register
- 3E ASCOR Relay Control Register

A24 Space The A24 Base Address of the 3000-46 can be derived from the value stored in the Offset Register (06h). To obtain the A24 base address, take the 8 most significant bits of the Offset register and map them to the 8 most significant bits of the A24 Base Address. All other bits in the A24 Base Address are set to zeroes.

A subset of the ASCOR 3000-46 Custom Registers are relay registers.

See connector assignments for pin and channels assignments with associated relays.

3000-46 Relay Registers

8000h	Relays K1-16, Pin 1 (Ch. 1-8), Pin 2 (Ch. 1-8)
8002h	Relays K17-32, Pin 3 (Ch. 1-8), Pin 4 (Ch. 1-8)
8004h	Relays K33-48, Pin 5 (Ch. 1-8), Pin 6 (Ch. 1-8)
8006h	Relays K49-64, Pin 7 (Ch. 1-8), Pin 8 (Ch. 1-8)
8008h	Relays K65-80, Pin 9 (Ch. 1-8), Pin 10 (Ch. 1-8)
800Ah	Relays K81-96, Pin 11 (Ch. 1-8), Pin 12 (Ch. 1-8)
800Ch	Relays K97-112, Pin 13 (Ch. 1-8), Pin 14 (Ch. 1-8)
800Eh	Relays K113-128, Pin 15 (Ch. 1-8), Pin 16 (Ch. 1-8)
8010h	Relays K129-144, isolation relays, group 1, 2
8020h	Relays K1-16, Pin 17 (Ch. 1-8), Pin 18 (Ch. 1-8)
8022h	Relays K17-32, Pin 19 (Ch. 1-8), Pin 20 (Ch. 1-8)
8024h	Relays K33-48, Pin 21 (Ch. 1-8), Pin 22 (Ch. 1-8)
8026h	Relays K49-64, Pin 23 (Ch. 1-8), Pin 24 (Ch. 1-8)
8028h	Relays K65-80, Pin 25 (Ch. 1-8), Pin 26 (Ch. 1-8)
802Ah	Relays K81-96, Pin 27 (Ch. 1-8), Pin 28 (Ch. 1-8)
802Ch	Relays K97-112, Pin 29 (Ch. 1-8), Pin 30 (Ch. 1-8)
802Eh	Relays K113-128, Pin 31 (Ch. 1-8), Pin 32 (Ch. 1-8)
8030h	Relays K129-144, isolation relays, group 3, 4

Model 3000-46 Motherboard SCH85002160

Register 8000h (mother board)

Function: Group 1 8X1

BIT	FUNCTION	COMMENTS
0	Group 1, Pin 1+	J1-98 , Shield: J1-94, K1
1	Group 1, Pin 1-	J1-96 , Shield: J1-94, K2
2	Group 1, Pin 2+	J1-92 , Shield: J1-88, K3
3	Group 1, Pin 2-	J1-90 , Shield: J1-88, K4
4	Group 1, Pin 3+	J1-86 , Shield: J1-82, K5
5	Group 1, Pin 3-	J1-84 , Shield: J1-82, K6
6	Group 1, Pin 4+	J1-80 , Shield: J1-76, K7
7	Group 1, Pin 4-	J1-78 , Shield: J1-76, K8
8	Group 1, Pin 5+	J1-74 , Shield: J1-70, K9
9	Group 1, Pin 5-	J1-72 , Shield: J1-70, K10
10	Group 1, Pin 6+	J1-68 , Shield: J1-64, K11
11	Group 1, Pin 6-	J1-66 , Shield: J1-64, K12
12	Group 1, Pin 7+	J1-62 , Shield: J1-58, K13
13	Group 1, Pin 7-	J1-60 , Shield: J1-58, K14
14	Group 1, Pin 8+	J1-56 , Shield: J1-52, K15
15	Group 1, Pin 8-	J1-54 , Shield: J1-52, K16

Register 8002h (mother board)

Function: Group 2 8X1

BIT, FUNCTION, COMMENTS

0	Group 2, Pin 9+	J1-50 , Shield: J1-46, K17
1	Group 2, Pin 9-	J1-48 , Shield: J1-46, K18
2	Group 2, Pin 10+	J1-44 , Shield: J1-40, K19
3	Group 2, Pin 10-	J1-42 , Shield: J1-40, K20
4	Group 2, Pin 11+	J1-38 , Shield: J1-34, K21
5	Group 2, Pin 11-	J1-36 , Shield: J1-34, K22
6	Group 2, Pin 12+	J1-32 , Shield: J1-28, K23
7	Group 2, Pin 12-	J1-30 , Shield: J1-28, K24
8	Group 2, Pin 13+	J1-26 , Shield: J1-22, K25
9	Group 2, Pin 13-	J1-24 , Shield: J1-22, K26
10	Group 2, Pin 14+	J1-20 , Shield: J1-16, K27
11	Group 2, Pin 14-	J1-18 , Shield: J1-16, K28
12	Group 2, Pin 15+	J1-14 , Shield: J1-10, K29
13	Group 2, Pin 15-	J1-12 , Shield: J1-10, K30
14	Group 2, Pin 16+	J1-8 , Shield: J1-4, K31
15	Group 2, Pin 16-	J1-6 , Shield: J1-4, K32

Model 3000-46 Motherboard SCH85002160

Register 8004h (mother board)

Function: ISO RELAYS PINS 1-16

BIT	FUNCTION	COMMENTS
0	ISO, Pin 1	J1-98, 96, Shield: J1-94, K33
1	ISO, Pin 2	J1-92, 90, Shield: J1-88, K34
2	ISO, Pin 3	J1-86, 84, Shield: J1-82, K35
3	ISO, Pin 4	J1-80, 78, Shield: J1-86, K36
4	ISO, Pin 5	J1-74, 72, Shield: J1-70, K37
5	ISO, Pin 6	J1-68, 66, Shield: J1-64, K38
6	ISO, Pin 7	J1-62, 60, Shield: J1-58, K39
7	ISO, Pin 8	J1-56, 54, Shield: J1-52, K40
8	ISO, Pin 9	J1-50, 48, Shield: J1-46, K41
9	ISO, Pin 10	J1-44, 42, Shield: J1-40, K42
10	ISO, Pin 11	J1-38, 36, Shield: J1-34, K43
11	ISO, Pin 12	J1-32, 30, Shield: J1-28, K44
12	ISO, Pin 13	J1-26, 24, Shield: J1-22, K45
13	ISO, Pin 14	J1-20, 18, Shield: J1-16, K46
14	ISO, Pin 15	J1-14, 12, Shield: J1-10, K47
15	ISO, Pin 16	J1-8, 6, Shield: J1-4, K48

Register 8006h (mother board)

Function: Group 3 8X1

BIT	FUNCTION	COMMENTS
0	Group 3, Pin 17+	J3-98 , Shield: J3-94, K49
1	Group 3, Pin 17-	J3-96 , Shield: J3-94, K50
2	Group 3, Pin 18+	J3-92 , Shield: J3-88, K51
3	Group 3, Pin 18-	J3-90 , Shield: J3-88, K52
4	Group 3, Pin 19+	J3-86 , Shield: J3-82, K53
5	Group 3, Pin 19-	J3-84 , Shield: J3-82, K54
6	Group 3, Pin 20+	J3-80 , Shield: J3-76, K55
7	Group 3, Pin 20-	J3-78 , Shield: J3-76, K56
8	Group 3, Pin 21+	J3-74 , Shield: J3-70, K57
9	Group 3, Pin 21-	J3-72 , Shield: J3-70, K58
10	Group 3, Pin 22+	J3-68 , Shield: J3-64, K59
11	Group 3, Pin 22-	J3-66 , Shield: J3-64, K60
12	Group 3, Pin 23+	J3-62 , Shield: J3-58, K61
13	Group 3, Pin 23-	J3-60 , Shield: J3-58, K62
14	Group 3, Pin 24+	J3-56 , Shield: J3-52, K63
15	Group 3, Pin 24-	J3-54 , Shield: J3-52, K64

Model 3000-46 Motherboard SCH85002160

Register 8008 (mother board)

Function: Group 4 8X1

BIT	FUNCTION	COMMENTS
0	Group 4, Pin 25+	J3-50, Shield: J3-46, K65
1	Group 4, Pin 25-	J3-48, Shield: J3-46, K66
2	Group 4, Pin 26+	J3-44, Shield: J3-40, K67
3	Group 4, Pin 26-	J3-42, Shield: J3-40, K68
4	Group 4, Pin 27+	J3-38, Shield: J3-34, K69
5	Group 4, Pin 27-	J3-36, Shield: J3-34, K70
6	Group 4, Pin 28+	J3-32, Shield: J3-28, K71
7	Group 4, Pin 28-	J3-30, Shield: J3-28, K72
8	Group 4, Pin 29+	J3-26, Shield: J3-22, K73
9	Group 4, Pin 29-	J3-24, Shield: J3-22, K74
10	Group 4, Pin 30+	J3-20, Shield: J3-16, K75
11	Group 4, Pin 30-	J3-18, Shield: J3-16, K76
12	Group 4, Pin 31+	J3-14, Shield: J3-10, K77
13	Group 4, Pin 31-	J3-12, Shield: J3-10, K78
14	Group 4, Pin 32+	J3-8, Shield: J3-4, K79
15	Group 4, Pin 32-	J3-6, Shield: J3-4, K80

Register 800Ah (mother board)

Function: ISO RELAYS PINS 17-32

BIT	FUNCTION	COMMENTS
0	ISO, Pin 17	J3-98, 96, Shield: J3-94, K81
1	ISO, Pin 18	J3-92, 90, Shield: J3-88, K82
2	ISO, Pin 19	J3-86, 84, Shield: J3-82, K83
3	ISO, Pin 20	J3-80, 78, Shield: J3-86, K84
4	ISO, Pin 21	J3-74, 72, Shield: J3-70, K85
5	ISO, Pin 22	J3-68, 66, Shield: J3-64, K86
6	ISO, Pin 23	J3-62, 60, Shield: J3-58, K87
7	ISO, Pin 24	J3-56, 54, Shield: J3-52, K88
8	ISO, Pin 25	J3-50, 48, Shield: J3-46, K89
9	ISO, Pin 26	J3-44, 42, Shield: J3-40, K90
10	ISO, Pin 27	J3-38, 36, Shield: J3-34, K91
11	ISO, Pin 28	J3-32, 30, Shield: J3-28, K92
12	ISO, Pin 29	J3-26, 24, Shield: J3-22, K93
13	ISO, Pin 30	J3-20, 18, Shield: J3-16, K94
14	ISO, Pin 31	J3-14, 12, Shield: J3-10, K95
15	ISO, Pin 32	J3-8, 6, Shield: J3-4, K96

Model 3000-46 Motherboard SCH85002160

Register 800Ch (mother board)

Function: OUTPUT CONTROL RELAYS

BIT	FUNCTION	COMMENTS
0	GP1, 1X8 +	J2-24 , Shield: J2-26, K97
1	GP1, 1X8 -	J2-22, Shield: J2-20, K98
2	GP1, 1X16 +	J2-18, Shield: J2-14, K99
3	GP1, 1X16 -	J2-16, Shield: J2-14, K100
4	GP2, 1X16 +	J2-18, Shield: J2-14, K101
5	GP2, 1X16 -	J2-16, Shield: J2-14, K102
6	GP2, 1X8 +	J2-23, Shield: J2-25, K103
7	GP2, 1X8 -	J2-21, Shield: J2-19, K104
8	GP3, 1X8 +	J2-12, Shield: J2-8, K105
9	GP3, 1X8 -	J2-10, Shield: J2-8, K106
10	GP3, 1X16 +	J2-17, Shield: J2-13, K107
11	GP3, 1X16 -	J2-15, Shield: J2-13, K108
12	GP4, 1X16 +	J2-17, Shield: J2-13, K109
13	GP4, 1X16 -	J2-15, Shield: J2-13, K110
14	GP4, 1X8 +	J2-11, Shield: J2-7, K111
15	GP4, 1X8 -	J2-9, Shield: J2-7, K112

Register 800Eh (mother board)

Function: OUTPUT CONTROL RELAYS

BIT	FUNCTION	COMMENTS
0	GP1, 1X32 +	J2-6, Shield: J2-2, K113
1	GP1, 1X32 -	J2-4, Shield: J2-2, K114
2	GP2, 1X32 +	J2-6, Shield: J2-2, K115
3	GP2, 1X32 -	J2-4, Shield: J2-2, K116
4	GP3, 1X32 +	J2-6, Shield: J2-2, K117
5	GP3, 1X32 -	J2-4, Shield: J2-2, K118
6	GP4, 1X32 +	J2-6, Shield: J2-2, K119
7	GP4, 1X32 -	J2-4, Shield: J2-2, K120
8	EXT REF 1 +	J2-5 to J2-6, Shield: J2-1, K121
9	EXT REF 2 +	J2-3 to J2-6, Shield: J2-1, K122
10	ANALOG GND REF +	- K123
11	CHASSIS GND REF +	- K124
12	ISO, 1X32/64 +	J2-6, Shield: J2-2, K125
13	ISO, 1X32/64 -	J2-4 , Shield: J2-2, K126
14	ISO, 1X64 +	J2-6, Shield: J2-2, K127
15	ISO, 1X64 -	J2-4, Shield: J2-2, K128

Note: K125/126 are use to isolate pins J2-6/4 to allow signal routing from the mother board or from the daughter board. J2-6 and J2-4 can be used as a 1x32 or as a 1x64. K127/128 are use to switch in the 1x32 output from the daughter board for a 1x64 capability.

Model 3000-46 Daughterboard SCH85002170

Register 8020h (daughter board)

Function: Group 1 8X1

BIT	FUNCTION	COMMENTS
0	Group 5, Pin 33+	J4-98, Shield: J4-94, K1
1	Group 5, Pin 33-	J4-96, Shield: J4-94, K2
2	Group 5, Pin 34+	J4-92, Shield: J4-88, K3
3	Group 5, Pin 34-	J4-90, Shield: J4-88, K4
4	Group 5, Pin 35+	J4-86, Shield: J4-82, K5
5	Group 5, Pin 35-	J4-84, Shield: J4-82, K6
6	Group 5, Pin 36+	J4-80, Shield: J4-76, K7
7	Group 5, Pin 36-	J4-78, Shield: J4-76, K8
8	Group 5, Pin 37+	J4-74, Shield: J4-70, K9
9	Group 5, Pin 37-	J4-72, Shield: J4-70, K10
10	Group 5, Pin 38+	J4-68, Shield: J4-64, K11
11	Group 5, Pin 38-	J4-66, Shield: J4-64, K12
12	Group 5, Pin 39+	J4-62, Shield: J4-58, K13
13	Group 5, Pin 39-	J4-60, Shield: J4-58, K14
14	Group 5, Pin 40+	J4-56, Shield: J4-52, K15
15	Group 5, Pin 40-	J4-54, Shield: J4-52, K16

Register 8022h (daughter board)

Function: Group 6 8X1

BIT	FUNCTION	COMMENTS
0	Group 6, Pin 41+	J4-50, Shield: J4-46, K17
1	Group 6, Pin 41-	J4-48, Shield: J4-46, K18
2	Group 6, Pin 42+	J4-44, Shield: J4-40, K19
3	Group 6, Pin 42-	J4-42, Shield: J4-40, K20
4	Group 6, Pin 43+	J4-38, Shield: J4-34, K21
5	Group 6, Pin 43-	J4-36, Shield: J4-34, K22
6	Group 6, Pin 44+	J4-32, Shield: J4-28, K23
7	Group 6, Pin 44-	J4-30, Shield: J4-28, K24
8	Group 6, Pin 45+	J4-26, Shield: J4-22, K25
9	Group 6, Pin 45-	J4-24, Shield: J4-22, K26
10	Group 6, Pin 46+	J4-20, Shield: J4-16, K27
11	Group 6, Pin 46-	J4-18, Shield: J4-16, K28
12	Group 6, Pin 47+	J4-14, Shield: J4-10, K29
13	Group 6, Pin 47-	J4-12, Shield: J4-10, K30
14	Group 6, Pin 48+	J4-8, Shield: J4-4, K31
15	Group 6, Pin 48-	J4-6, Shield: J4-4, K32

Model 3000-46 Daughterboard SCH85002170

Register 8024h (daughter board)

Function: ISO RELAYS PINS 33-48

BIT	FUNCTION	COMMENTS
0	ISO, Pin 33	J4-98, 96 , Shield: J4-94, K33
1	ISO, Pin 34	J4-92, 90, Shield: J4-88, K34
2	ISO, Pin 35	J4-86, 84, Shield: J4-82, K35
3	ISO, Pin 36	J4-80, 78, Shield: J4-86, K36
4	ISO, Pin 37	J4-74, 72, Shield: J4-70, K37
5	ISO, Pin 38	J4-68, 66, Shield: J4-64, K38
6	ISO, Pin 39	J4-62, 60, Shield: J4-58, K39
7	ISO, Pin 40	J4-56, 54, Shield: J4-52, K40
8	ISO, Pin 41	J4-50, 48, Shield: J4-46, K41
9	ISO, Pin 42	J4-44, 42, Shield: J4-40, K42
10	ISO, Pin 43	J4-38, 36, Shield: J4-34, K43
11	ISO, Pin 44	J4-32, 30, Shield: J4-28, K44
12	ISO, Pin 45	J4-26, 24, Shield: J4-22, K45
13	ISO, Pin 46	J4-20, 18, Shield: J4-16, K46
14	ISO, Pin 47	J4-14, 12, Shield: J4-10, K47
15	ISO, Pin 48	J4-8, 6 , Shield: J4-4, K48

Register 8026h (daughter board)

Function: Group 7 8X1

BIT	FUNCTION	COMMENTS
0	Group 7, Pin 49+	J6-98, Shield: J6-94, K49
1	Group 7, Pin 49-	J6-96, Shield: J6-94, K50
2	Group 7, Pin 50+	J6-92, Shield: J6-88, K51
3	Group 7, Pin 50-	J6-90, Shield: J6-88, K52
4	Group 7, Pin 51+	J6-86, Shield: J6-82, K53
5	Group 7, Pin 51-	J6-84, Shield: J6-82, K54
6	Group 7, Pin 52+	J6-80, Shield: J6-76, K55
7	Group 7, Pin 52-	J6-78, Shield: J6-76, K56
8	Group 7, Pin 53+	J6-74, Shield: J6-70, K57
9	Group 7, Pin 53-	J6-72, Shield: J6-70, K58
10	Group 7, Pin 54+	J6-68, Shield: J6-64, K59
11	Group 7, Pin 54-	J6-66, Shield: J6-64, K60
12	Group 7, Pin 55+	J6-62, Shield: J6-58, K61
13	Group 7, Pin 55-	J6-60, Shield: J6-58, K62
14	Group 7, Pin 56+	J6-56, Shield: J6-52, K63
15	Group 7, Pin 56-	J6-54, Shield: J6-52, K64

Model 3000-46 Daughterboard SCH85002170

Register 8028 (daughter board)

Function: Group 8 8X1

BIT	FUNCTION	COMMENTS
0	Group 8, Pin 57+	J6-50, Shield: J6-46, K65
1	Group 8, Pin 57-	J6-48, Shield: J6-46, K66
2	Group 8, Pin 58+	J6-44, Shield: J6-40, K67
3	Group 8, Pin 58-	J6-42, Shield: J6-40, K68
4	Group 8, Pin 59+	J6-38, Shield: J6-34, K69
5	Group 8, Pin 59-	J6-36, Shield: J6-34, K70
6	Group 8, Pin 60+	J6-32, Shield: J6-28, K71
7	Group 8, Pin 60-	J6-30, Shield: J6-28, K72
8	Group 8, Pin 61+	J6-26, Shield: J6-22, K73
9	Group 8, Pin 61-	J6-24, Shield: J6-22, K74
10	Group 8, Pin 62+	J6-20, Shield: J6-16, K75
11	Group 8, Pin 62-	J6-18, Shield: J6-16, K76
12	Group 8, Pin 63+	J6-14, Shield: J6-10, K77
13	Group 8, Pin 63-	J6-12, Shield: J6-10, K78
14	Group 8, Pin 64+	J6-8, Shield: J6-4, K79
15	Group 8, Pin 64-	J6-6, Shield: J6-4, K80

Register 802Ah (daughter board)

Function: ISO RELAYS PINS 49-64

BIT	FUNCTION	COMMENTS
0	ISO, Pin 49	J6-98, 96, Shield: J6-94, K81
1	ISO, Pin 50	J6-92, 90, Shield: J6-88, K82
2	ISO, Pin 51	J6-86, 84, Shield: J6-82, K83
3	ISO, Pin 52	J6-80, 78, Shield: J6-86, K84
4	ISO, Pin 53	J6-74, 72, Shield: J6-70, K85
5	ISO, Pin 54	J6-68, 66, Shield: J6-64, K86
6	ISO, Pin 55	J6-62, 60, Shield: J6-58, K87
7	ISO, Pin 56	J6-56, 54, Shield: J6-52, K88
8	ISO, Pin 57	J6-50, 48, Shield: J6-46, K89
9	ISO, Pin 58	J6-44, 42, Shield: J6-40, K90
10	ISO, Pin 59	J6-38, 36, Shield: J6-34, K91
11	ISO, Pin 60	J6-32, 30, Shield: J6-28, K92
12	ISO, Pin 61	J6-26, 24, Shield: J6-22, K93
13	ISO, Pin 62	J6-20, 18, Shield: J6-16, K94
14	ISO, Pin 63	J6-14, 12, Shield: J6-10, K95
15	ISO, Pin 64	J6-8, 6, Shield: J6-4, K96

Model 3000-46 Daughterboard SCH85002170

Register 802Ch (daughter board)

Function: OUTPUT CONTROL RELAYS

BIT	FUNCTION	COMMENTS
0	GP5, 1X8 +	J5-24, Shield: J5-26, K97
1	GP5, 1X8 -	J5-22, Shield: J5-20, K98
2	GP5, 1X16 +	J5-18, Shield: J5-14, K99
3	GP5, 1X16 -	J5-16, Shield: J5-14, K100
4	GP6, 1X16 +	J5-18, Shield: J5-14, K101
5	GP6, 1X16 -	J5-16, Shield: J5-14, K102
6	GP6, 1X8 +	J5-23, Shield: J5-25, K103
7	GP6, 1X8 -	J5-21, Shield: J5-19, K104
8	GP7, 1X8 +	J5-12, Shield: J5-8, K105
9	GP7, 1X8 -	J5-10, Shield: J5-8, K106
10	GP7, 1X16 +	J5-17, Shield: J5-13, K107
11	GP7, 1X16 -	J5-15, Shield: J5-13, K108
12	GP8, 1X16 +	J5-17, Shield: J5-13, K109
13	GP8, 1X16 -	J5-15, Shield: J5-13, K110
14	GP8, 1X8 +	J5-11, Shield: J5-7, K111
15	GP8, 1X8 -	J5-9, Shield: J5-7, K112

Register 802Eh (daughter board)

Function: OUTPUT CONTROL RELAYS

BIT	FUNCTION	COMMENTS
0	GP5, 1X32 +	J5-6, Shield: J5-2, K113
1	GP5, 1X32 -	J5-4, Shield: J5-2, K114
2	GP6, 1X32 +	J5-6, Shield: J5-2, K115
3	GP6, 1X32 -	J5-4, Shield: J5-2, K116
4	GP7, 1X32 +	J5-6, Shield: J5-2, K117
5	GP7, 1X32 -	J5-4, Shield: J5-2, K118
6	GP8, 1X32 +	J5-6, Shield: J5-2, K119
7	GP8, 1X32 -	J5-4, Shield: J5-2, K120
8	EXT REF 1 +	J5-5 to J5-6, Shield: J5-1, K121
9	EXT REF 2 +	J5-3 to J5-6, Shield: J5-1, K122
10	ANALOG GND REF +	- K123
11	CHASSIS GND REF +	- K124
12	ISO, 1X32/64 +	J5-6, Shield: J5-2, K125
13	ISO, 1X32/64 -	J5-4, Shield: J5-2, K126
14	ISO, 1X64 +	J5-6, Shield: J5-2, K127
15	ISO, 1X64 -	J5-4, Shield: J5-2, K128

Note: K125/126 are use to isolate pins J5-6/4 to allow signal routing from the mother board or from the daughter board. J5-6 and J5-4 can be used as a 1x32 or as a 1x64. K127/128 are use to switch in the 1x32 output from the daughter board for a 1x64 capability.