Model 3000-08

8(1x30) Multiplexers

90400490-100, -102, -105, -106

Model 3000-09

16(1x30) Multiplexers

90400230

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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	EMC Directive and Low Voltage Directive
EN61010-1 (1993)	Electrical Safety
EN61326-1 (1997)	EMC – Emissions and Immunity
Manufacturer's Name:	**Manufacturer's Address**
Giga-tronics, Incorporated	4650 Norris Canyon Road San Ramon, California 94583 U.S.A.
Type of Equipment:	**Model Series Number**
Switching Module	3000-08

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

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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 12/05		
B	Updated 9/11		
C	Reformatted 2/12		RCW

Contents

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**

DOCUMENTATION	DESCRIPTION
904000490-100 - TOP ASM PL 90400490-100 - TOP ASM PL 85004200 - MB ASM PL 85004200 - MB PL LIST SCH 85004200 - MB SCHEMATIC 85004210 - DB ASM PL 85004210 - DB PL LIST SCH 85004210 - DB SCHEMATIC	PROGRAMMABLE MATRIX TWO 120X1 MATRIXES or FOUR 60X1 MATRIXES
904000490-102 - TOP ASM PL 90400490-102 - TOP ASM PL 85004200-002 - MB ASM PL 85004200-002 - MB PL LIST SCH 85004200 - MB SCHEMATIC 85004210-002 - DB ASM PL 85004210-002 - DB PL LIST SCH 85004210 - DB SCHEMATIC	MATRIXES FIXED BY JUMPERS TWO 60X1 & FOUR 30X1 MATRIXES
904000490-105 - TOP ASM PL 90400490-105 - TOP ASM PL 85004200-005 - MB ASM PL 85004200-005 - MB PL LIST SCH 85004200 - MB SCHEMATIC 85004210-005 - DB ASM PL 85004210-005 - DB PL LIST SCH 85004210 - DB SCHEMATIC	PROGRAMMABLE TWO 60X1 AND FIXED FOUR 30X1
904000490-106 - TOP ASM PL 90400490-106 - TOP ASM PL 85004200 - MB ASM PL 85004200-006 - MB PL LIST SCH 85004200 - MB SCHEMATIC 85004210-006 - DB ASM PL 85004210-006 - DB PL LIST SCH 85004210 - DB SCHEMATIC	MATRIXES FIXED BY JUMPERS TWO 120X1 MATRIXES

Chapter 3 **Functional Description**

The model 3000-08 basically consists of eight 30x1 matrixes, which can be connected together either by jumpers or relay contacts to form the various options.

1. The 30x1 matrix designations (M1, M2, etc.) that are referenced on the Front Panel Connector Pins tables are arbitrary and do not appear in the schematics.
2. The GUARD signals are connected to the relay shields of the relays associated with each front panel connectors. The GUARD signals are separate for each front panel connector.
3. Look at the register maps. Relay designations may be repeated on the Mother board (85004200) and the Daughter board (85004210) but the register address is different. The Mother board relays are associated with front panel connectors J1 and J2. Daughter board relays are associated with front panel connectors J3 and J4.
4. On the Mother board schematic (85004200), in this manual, note the following:

   Output connector J1 = Front Panel connector J1.

   Output connector J2 = Front Panel connector J2

   Block connectors J3 (schematic page 14) and J4 (schematic page 15) are INTERNAL connectors not related to the Front Panel.

1. On the Daughter board schematic (85004210), in this manual, note the following:

   Output connector J1 = Front Panel connector J3

   Output connector J2 = Front Panel connector J4

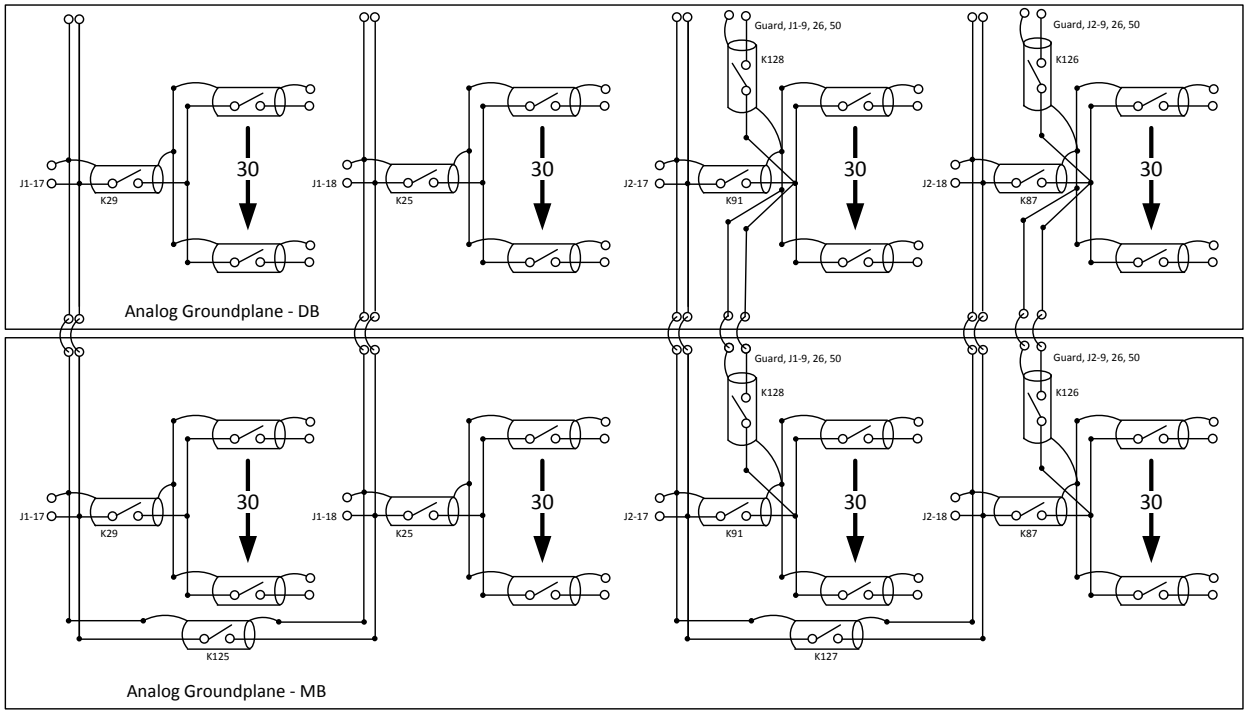
   Block connectors J3 (schematic page 11) and J4 (schematic page 12) are INTERNAL connectors not related to the Front Panel.

The following relays perform the described circuit functions when ACTIVATED. Reference the block diagram or register map as needed.

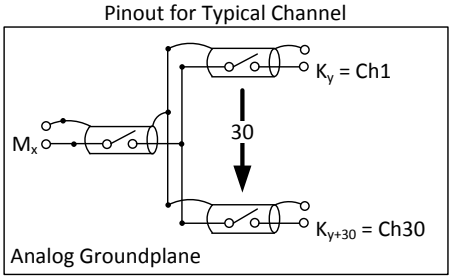
RELAY	CIRCUIT FUNCTION
K25 (mother board)	Connects M1 OUTPUT to J1-18
K29 (mother board)	Connects M2 OUTPUT to J1-17
K87 (mother board)	Connects M3 OUTPUT to J2-18
K91 (mother board)	Connects M4 OUTPUT to J2-17
K125 (mother board)	Connects the outputs of M1 & M2 together to create a 60x1
K127 (mother board)	Connects the outputs of M3 & M4 together to create a 60x1
K126 (mother board)	Connects M3 OUTPUT to GUARD
K128 (motherboard)	Connects M4 OUTPUT to GUARD
K25 (daughter board)	Connects M5 OUTPUT to J3-18
K29 (daughter board)	Connects M6 OUTPUT to J3-17
K87 (daughter board)	Connects M7 OUTPUT to J4-18
K91 (daughter board)	Connects M8 OUTPUT to J4-17

Chapter 4 **Block Diagram**

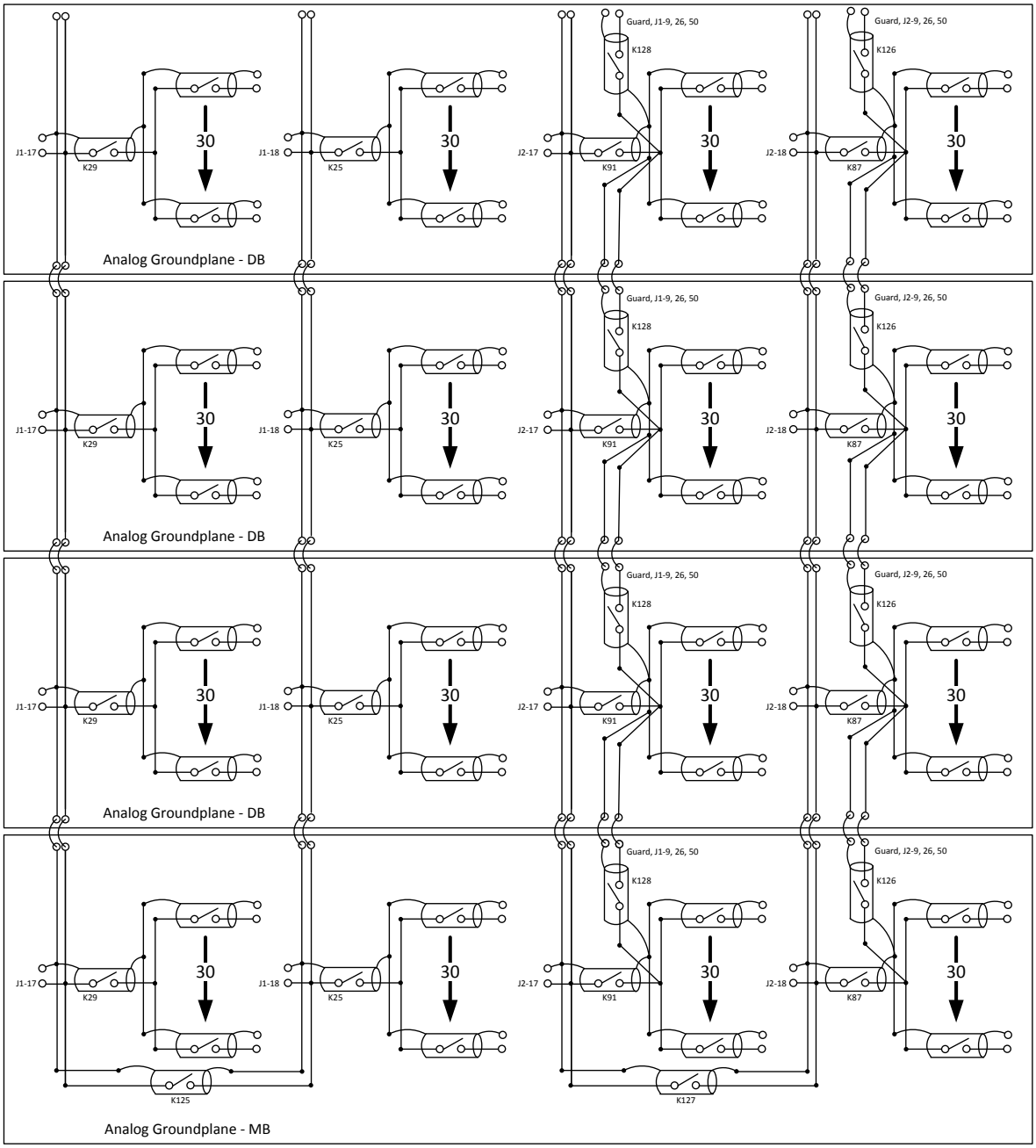
4.1 3000-08 Configuration



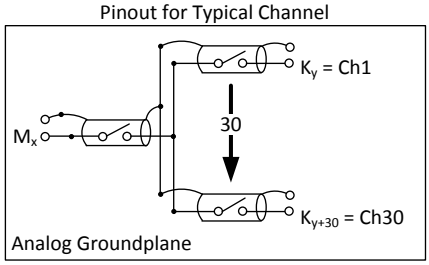
Pinout for Typical Channel



4.2 3000-09 Configuration



Pinout for Typical Channel



Chapter 5 Controls and Indicators

The following controls and indicators are provided to select and display the functions of the ASCOR 3000-08 Module's operating environment.

5.1 VXI LOGICAL ADDRESS

See the Logical Address Switch setting in the Installation and Maintenance section

located in Section 2 .

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 3000-08

module is addressed by the system.

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 3000-08 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**

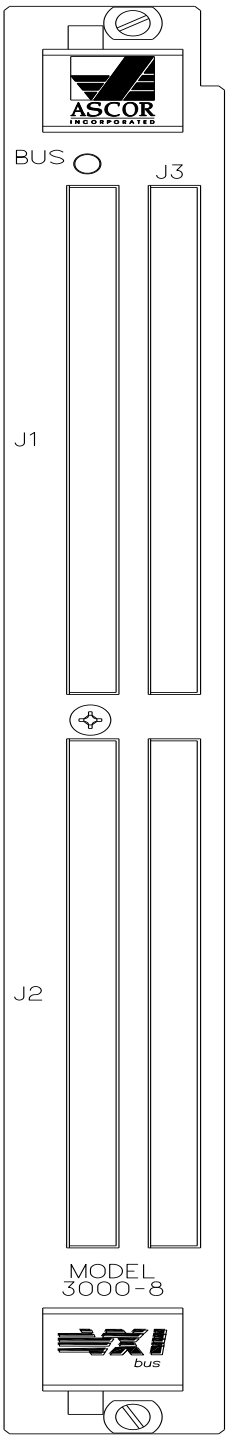
Relay Type :	COTO : 9002-05 (ASCOR p/n 50100060)
Contact Ratings :	Switching Current (MAX) = 0.5 A Carrying Current (MAX) = 1.0 A
(DC / PEAK AC, RESISTIVE)	Switching Voltage (MAX) = 200 VDC, 200VACpk Switching Power (MAX) = 10 W
Initial Resistance :	< 0.20 Ohms
Operational Life :	500,000,000 Cycles
Pick Time :	< 1.0 ms
Release time :	< 0.5 ms
VXI Compatibility :	Fully compatible with VXI Spec REV. 1.0
VXI Device Type :	VXI register based with ASCOR driver.
VXI Card Size :	C size, one slot wide.
Power Requirements :	+5 V @ 3.87 A (MAX)
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 :	Airborn #WTB66PRJ342 (ASCOR p/n 56101510)

REF: Mating Parts Kit (NOT included with 3000-08 Module) ASCOR p/n 89800050-001

Contains four connectors and hardware to mate with front panel connectors.

Chapter 8 **Front Panel Connectors**



8.1 J1 - Front Panel Connector Pins

30 X 1 MATRIX - M1				
PIN	**SIGNAL**		**PIN**	**SIGNAL**
66	K4		33	K3
65	K2		32	K1
64	K8		31	K7
63	K6		30	K5
62	K12		29	K11
61	K10		28	K9
60	K16		27	K15
59	K14		26	GUARD
58	K20		25	K19
57	K18		24	K13
56	K24		23	K23
55	K22		22	K17
54	K28		21	K27
53	K26		20	K21
52	K32		19	K31
51	K30		18	M1 OUTPUT

30 X 1 MATRIX - M2				
PIN	**SIGNAL**		**PIN**	**SIGNAL**
50	GUARD		17	M2 OUTPUT
49	K33		16	K34
48	K35		15	K36
47	K37		14	K38
46	K39		13	K40
45	K41		12	K42
44	K43		11	K44
43	K45		10	K46
42	K47		9	GUARD
41	K48		8	K49
40	K50		7	K51
39	K52		6	K53
38	K54		5	K55
37	K56		4	K57
36	K58		3	K59
35	K60		2	K61
34	K62		1	CHASSIS

8.2 J2 - Front Panel Connector Pins

30 X 1 MATRIX - M3				
PIN	**SIGNAL**		**PIN**	**SIGNAL**
66	K66		33	K65
65	K64		32	K63
64	K70		31	K69
63	K68		30	K67
62	K74		29	K73
61	K72		28	K71
60	K78		27	K77
59	K76		26	GUARD
58	K82		25	K81
57	K80		24	K75
56	K86		23	K85
55	K84		22	K79
54	K90		21	K89
53	K88		20	K83
52	K94		19	K93
51	K92		18	M3 OUTPUT

30 X 1 MATRIX - M4				
PIN	**SIGNAL**		**PIN**	**SIGNAL**
50	GUARD		17	M4 OUTPUT
49	K95		16	K96
48	K97		15	K98
47	K99		14	K100
46	K101		13	K102
45	K103		12	K104
44	K105		11	K106
43	K107		10	K108
42	K109		9	GUARD
41	K110		8	K111
40	K112		7	K113
39	K114		6	K115
38	K116		5	K117
37	K118		4	K119
36	K120		3	K121
35	K122		2	K123
34	K124		1	CHASSIS

8.3 J3 - Front Panel Connector Pins

30 X 1 MATRIX - M5				
PIN	**SIGNAL**		**PIN**	**SIGNAL**
66	K4		33	K3
65	K2		32	K1
64	K8		31	K7
63	K6		30	K5
62	K12		29	K11
61	K10		28	K9
60	K16		27	K15
59	K14		26	GUARD
58	K20		25	K19
57	K18		24	K13
56	K24		23	K23
55	K22		22	K17
54	K28		21	K27
53	K26		20	K21
52	K32		19	K31
51	K30		18	M5 OUTPUT

30 X 1 MATRIX - M6				
PIN	**SIGNAL**		**PIN**	**SIGNAL**
50	GUARD		17	M6 OUTPUT
49	K33		16	K34
48	K35		15	K36
47	K37		14	K38
46	K39		13	K40
45	K41		12	K42
44	K43		11	K44
43	K45		10	K46
42	K47		9	GUARD
41	K48		8	K49
40	K50		7	K51
39	K52		6	K53
38	K54		5	K55
37	K56		4	K57
36	K58		3	K59
35	K60		2	K61
34	K62		1	CHASSIS

8.4 J4 - Front Panel Connector Pins

30 X 1 MATRIX - M7				
PIN	**SIGNAL**		**PIN**	**SIGNAL**
66	K66		33	K65
65	K64		32	K63
64	K70		31	K69
63	K68		30	K67
62	K74		29	K73
61	K72		28	K71
60	K78		27	K77
59	K76		26	GUARD
58	K82		25	K81
57	K80		24	K75
56	K86		23	K85
55	K84		22	K79
54	K90		21	K89
53	K88		20	K83
52	K94		19	K93
51	K92		18	M7 OUTPUT

30 X 1 MATRIX - M8				
PIN	**SIGNAL**		**PIN**	**SIGNAL**
50	GUARD		17	M8 OUTPUT
49	K95		16	K96
48	K97		15	K98
47	K99		14	K100
46	K101		13	K102
45	K103		12	K104
44	K105		11	K106
43	K107		10	K108
42	K109		9	GUARD
41	K110		8	K111
40	K112		7	K113
39	K114		6	K115
38	K116		5	K117
37	K118		4	K119
36	K120		3	K121
35	K122		2	K123
34	K124		1	CHASSIS

Chapter 9 **Register Map**

Motherboard Schematic # 85004200

OFFSET	16 BIT	32 BIT	RELAY
40h (16 & 32 bit)	0	0	K4
	1	1	K3
	2	2	K2
	3	3	K1
	4	4	K8
	5	5	K7
	6	6	K6
	7	7	K5
	8	8	K12
	9	9	K11
	10	10	K10
	11	11	K9
	12	12	K16
	13	13	K15
	14	14	K14
	15	15	K25
42h (16 bit only)	0	16	K20
	1	17	K19
	2	18	K18
	3	19	K13
	4	20	K24
	5	21	K23
	6	22	K22
	7	23	K17
	8	24	K28
	9	25	K27
	10	26	K26
	11	27	K21
	12	28	K32
	13	29	K31
	14	30	K30
	15	31	K87

Motherboard Schematic # 85004200

OFFSET	16 BIT REGISTER	32 BIT REGISTER	RELAY
44h (16 & 32 bit)	0	0	K33
	1	1	K34
	2	2	K35
	3	3	K36
	4	4	K37
	5	5	K38
	6	6	K39
	7	7	K40
	8	8	K41
	9	9	K42
	10	10	K43
	11	11	K44
	12	12	K45
	13	13	K46
	14	14	K47
	15	15	K29
46h (16 bit only)	0	16	K48
	1	17	K49
	2	18	K50
	3	19	K51
	4	20	K52
	5	21	K53
	6	22	K54
	7	23	K55
	8	24	K56
	9	25	K57
	10	26	K58
	11	27	K59
	12	28	K60
	13	29	K61
	14	30	K62
	15	31	K125

Motherboard Schematic # 85004200

OFFSET	16 BIT REGISTER	32 BIT REGISTER	RELAY
48h (16 & 32 bit)	0	0	K66
	1	1	K65
	2	2	K64
	3	3	K63
	4	4	K70
	5	5	K69
	6	6	K68
	7	7	K67
	8	8	K74
	9	9	K73
	10	10	K72
	11	11	K71
	12	12	K78
	13	13	K77
	14	14	K76
	15	15	K126
4Ah (16 bit only)	0	16	K82
	1	17	K81
	2	18	K80
	3	19	K75
	4	20	K86
	5	21	K85
	6	22	K84
	7	23	K79
	8	24	K90
	9	25	K89
	10	26	K88
	11	27	K83
	12	28	K94
	13	29	K93
	14	30	K92
	15	31	K91

Motherboard Schematic # 85004200

OFFSET	16 BIT REGISTER	32 BIT REGISTER	RELAY
4Ch (16 & 32 bit)	0	0	K95
	1	1	K96
	2	2	K97
	3	3	K98
	4	4	K99
	5	5	K100
	6	6	K101
	7	7	K102
	8	8	K103
	9	9	K104
	10	10	K105
	11	11	K106
	12	12	K107
	13	13	K108
	14	14	K109
	15	15	K128
4Eh (16 bit only)	0	16	K110
	1	17	K111
	2	18	K112
	3	19	K113
	4	20	K114
	5	21	K115
	6	22	K116
	7	23	K117
	8	24	K118
	9	25	K119
	10	26	K120
	11	27	K121
	12	28	K122
	13	29	K123
	14	30	K124
	15	31	K127

Daughterboard Schematic # 85004210

OFFSET	16 BIT REGISTER	32 BIT REGISTER	RELAY
50h (16 & 32 bit)	0	0	K4
	1	1	K3
	2	2	K2
	3	3	K1
	4	4	K8
	5	5	K7
	6	6	K6
	7	7	K5
	8	8	K12
	9	9	K11
	10	10	K10
	11	11	K9
	12	12	K16
	13	13	K15
	14	14	K14
	15	15	K25
52h (16 bit only)	0	16	K20
	1	17	K19
	2	18	K18
	3	19	K13
	4	20	K24
	5	21	K23
	6	22	K22
	7	23	K17
	8	24	K28
	9	25	K27
	10	26	K26
	11	27	K21
	12	28	K32
	13	29	K31
	14	30	K30
	15	31	K87

Daughterboard Schematic # 85004210

OFFSET	16 BIT REGISTER	32 BIT REGISTER	RELAY
54h (16 & 32 bit)	0	0	K33
	1	1	K34
	2	2	K35
	3	3	K36
	4	4	K37
	5	5	K38
	6	6	K39
	7	7	K40
	8	8	K41
	9	9	K42
	10	10	K43
	11	11	K44
	12	12	K45
	13	13	K46
	14	14	K47
	15	15	K29
56h (16 bit only)	0	16	K48
	1	17	K49
	2	18	K50
	3	19	K51
	4	20	K52
	5	21	K53
	6	22	K54
	7	23	K55
	8	24	K56
	9	25	K57
	10	26	K58
	11	27	K59
	12	28	K60
	13	29	K61
	14	30	K62
	15	31	-----

Daughterboard Schematic # 85004210

OFFSET	16 BIT REGISTER	32 BIT REGISTER	RELAY
58h (16 & 32 bit)	0	0	K66
	1	1	K65
	2	2	K64
	3	3	K63
	4	4	K70
	5	5	K69
	6	6	K68
	7	7	K67
	8	8	K74
	9	9	K73
	10	10	K72
	11	11	K71
	12	12	K78
	13	13	K77
	14	14	K76
	15	15	-----
5Ah (16 bit only)	0	16	K82
	1	17	K81
	2	18	K80
	3	19	K75
	4	20	K86
	5	21	K85
	6	22	K84
	7	23	K79
	8	24	K90
	9	25	K89
	10	26	K88
	11	27	K83
	12	28	K94
	13	29	K93
	14	30	K92
	15	31	K91

Daughterboard Schematic # 85004210

OFFSET	16 BIT REGISTER	32 BIT REGISTER	RELAY
5Ch (16 & 32 bit)	0	0	K95
	1	1	K96
	2	2	K97
	3	3	K98
	4	4	K99
	5	5	K100
	6	6	K101
	7	7	K102
	8	8	K103
	9	9	K104
	10	10	K105
	11	11	K106
	12	12	K107
	13	13	K108
	14	14	K109
	15	15	-----
5Eh (16 bit only)	0	16	K110
	1	17	K111
	2	18	K112
	3	19	K113
	4	20	K114
	5	21	K115
	6	22	K116
	7	23	K117
	8	24	K118
	9	25	K119
	10	26	K120
	11	27	K121
	12	28	K122
	13	29	K123
	14	30	K124
	15	31	-----