

Model 3000-4380
256-Crosspoint Matrix
90401270



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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

Manufacturer's Address

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Type of Equipment:

Switching Module

Model Series Number

3000-4380

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.
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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
	Initial Release		
A	Updated 6/02		
B	Updated 4/04		
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

PL 90401270 TOP ASSEMBLY
ASM 90401270

PL 85004240 MOTHERBOARD
ASM 85004240
SCH 85004240

PL 85004690 DAUGHTERBOARD
ASM 85004690
SCH 85004690

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

Chapter 3 Functional Description

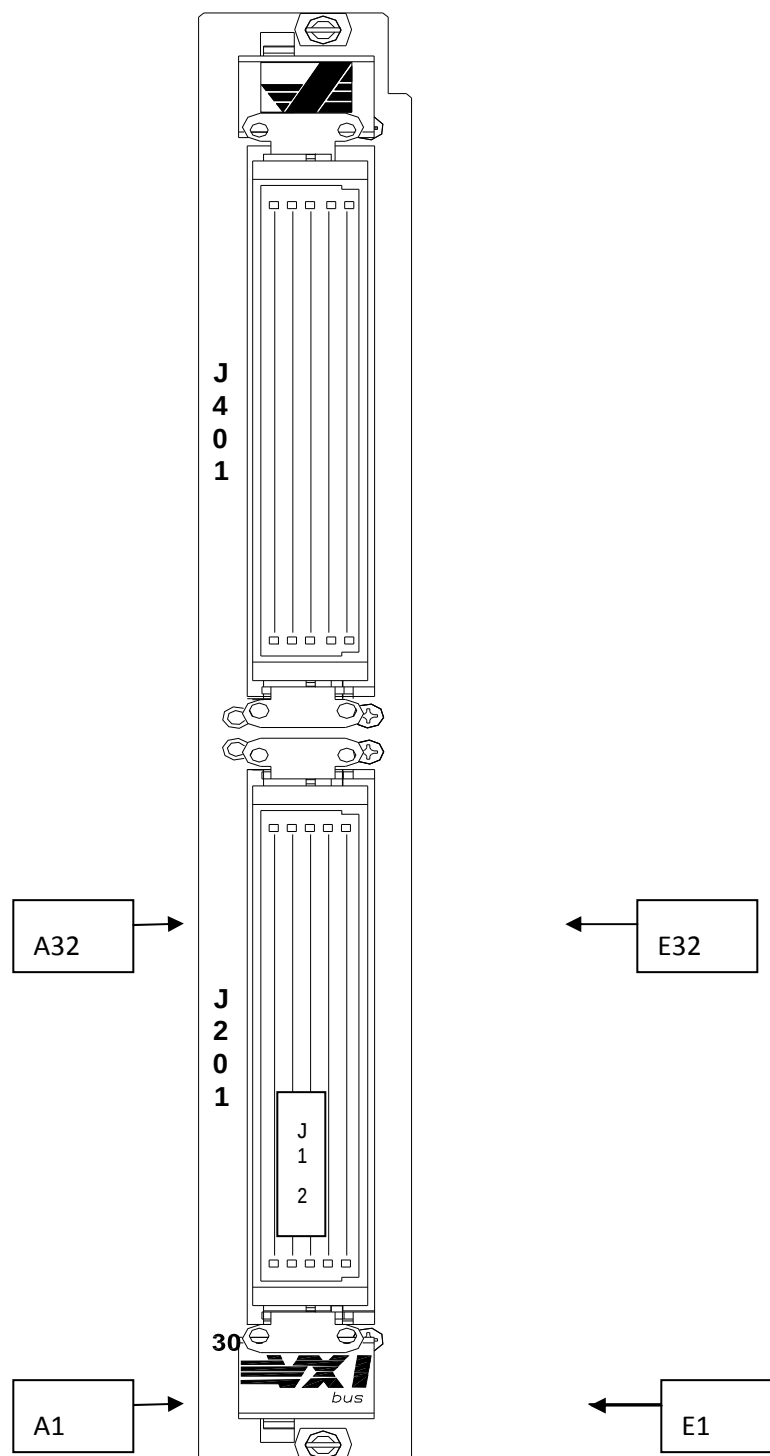
3.1 Introduction

The ASCOR VXI 3000-4380 256-Crosspoint relay matrix is a "C" size, One-Wide VXI module conforming to the VXIbus Specification. This module can be used as a direct replacement for the Tektronix Model VX4380 when using ASCOR's VXI Plug&Play software driver. The same front panel connectors are used and the same signals go to the same pins as the original Tektronix module. No special cables or adapters are required. The ASCOR software driver will run both the VX4380 and the 3000-4380 at the same time in the same chassis.

3.2 General Description

The 3000-4380 provides four 4x16, two-wire matrix sections. Each section can be configured to connect either the four rows or the sixteen columns to the other sections to produce up to a 16x16 two-wire matrix or a 4x64 two-wire matrix. This module is a register based device.

Chapter 4 Front Panel

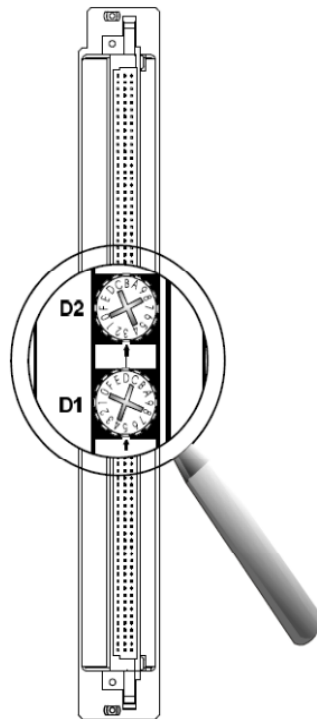


Chapter 5 Controls and Indicators

The following controls and indicators are provided to select and display the functions of the ASCOR 3000-4380 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 3000-4353 uses a 10 Amp fuse in the +5 Volt line. If any fuse opens, remove the fault before replacing the fuse to avoid any other damage.

6.2 Jumpers

(Motherboard)

J507

Determines whether the module is in the A24 address mode or the A32 address mode. Normal factory setting is NO jumper indicating the A24 address mode.

J505

Used during the development phase. Normal factory setting is a jumper from J505-1 to J505-2

J106

Various timing delays used during development. Normal factory setting is J106-1 to J106-2

P4 to P19

P20 TO P35

Can be used to ground one side of the differential pair for single ended operation.

(Daughterboard)

FUSE

NO fuse is installed on the daughterboard. All power is drawn through connector P3.

SWITCH S1

Switch SW1 (a 5 position dip switch) controls the address offset for the daughterboard.

Normal factory setting is SW1-1 = OFF, and SW1-2 to SW1-5 = ON. This results in a logic high from SW1-1 and a logic low from SW1-2 through SW1-5.

P4 to P19, P20 TO P35

Can be used to ground one side of the differential pair for single ended operation.

6.3 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 :	AROMAT TW2E-5V
Contact Ratings (Resistive) :	Switching Current (MAX) = 2A Switching Voltage (MAX) = 220VDC, 250VAC Switching Power (MAX) = 60 W, 62.5 VA
Operational Life :	Mechanical = 1x10e8 At Rated Load = 1x10e5
Signal Path Specifications:	Signal path resistance Initial : < 0.77 ohms
Band Width (-3dB) :	> 19.8 MHz
Power up Condition :	At power up all relays are reset (Open)
VXI Compatibility ;	Fully compatible with VXI Specification REV. 1.0 .
VXI Device Type :	VXI register based with ASCOR driver.
Power Requirements :	Idle = +5 volts @ 1.1A Full Load = +5 volts @ 4.3 A
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 8 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.

MOTHERBOARD REGISTER MAP (SCHEMATIC 85004240)

REGISTER = 8000h

RELAY	BIT
K1	0
K2	1
K3	2
K4	3
K5	4
K6	5
K7	6
K8	7
K9	8
K10	9
K11	10
K12	11
K13	12
K14	13
K15	14
K16	15

REGISTER = 8002h

RELAY	BIT
K17	0
K18	1
K19	2
K20	3
K21	4
K22	5
K23	6
K24	7
K25	8
K26	9
K27	10
K28	11
K29	12
K30	13
K31	14
K32	15

REGISTER = 8004h

RELAY	BIT
K33	0
K34	1
K35	2
K36	3
K37	4
K38	5
K39	6
K40	7
K41	8
K42	9
K43	10
K44	11
K45	12
K46	13
K47	14
K48	15

REGISTER = 8006h

RELAY	BIT
K49	0
K50	1
K51	2
K52	3
K53	4
K54	5
K55	6
K56	7
K57	8
K58	9
K59	10
K60	11
K61	12
K62	13
K63	14
K64	15

MOTHERBOARD REGISTER MAP (SCHEMATIC 85004240)

REGISTER = 8008h

RELAY	BIT
K65	0
K66	1
K67	2
K68	3
K69	4
K70	5
K71	6
K72	7
K73	8
K74	9
K75	10
K76	11
K77	12
K78	13
K79	14
K80	15

REGISTER = 800Ah

RELAY	BIT
K81	0
K82	1
K83	2
K84	3
K85	4
K86	5
K87	6
K88	7
K89	8
K90	9
K91	10
K92	11
K93	12
K94	13
K95	14
K96	15

REGISTER = 800Ch

RELAY	BIT
K97	0
K98	1
K99	2
K100	3
K101	4
K102	5
K103	6
K104	7
K105	8
K106	9
K107	10
K108	11
K109	12
K110	13
K111	14
K112	15

REGISTER = 800Eh

RELAY	BIT
K113	0
K114	1
K115	2
K116	3
K117	4
K118	5
K119	6
K120	7
K121	8
K122	9
K123	10
K124	11
K125	12
K126	13
K127	14
K128	15

MOTHERBOARD REGISTER MAP (SCHEMATIC 85004240)

REGISTER = 8010h

RELAY	BIT
K129	0
K130	1
K131	2
K132	3
K133	4
K134	5
K135	6
K136	7
K137	8
K138	9
K139	10
K140	11
K141	12
K142	13
K143	14
K144	15

REGISTER = 8012h

RELAY	BIT
K145	0
K146	1
K147	2
K148	3
K149	4
K150	5
K151	6
K152	7
-----	8
-----	9
-----	10
-----	11
-----	12
-----	13
-----	14
-----	15

REGISTER = 8014h

RELAY	BIT
K153	0
K154	1
K155	2
K156	3
K157	4
K158	5
K159	6
K160	7
K161	8
K162	9
K163	10
K164	11
K165	12
K166	13
K167	14
K168	15

DAUGHTER REGISTER MAP (SCHEMATIC 85004690)

REGISTER = 8020h

RELAY	BIT
K1	0
K2	1
K3	2
K4	3
K5	4
K6	5
K7	6
K8	7
K9	8
K10	9
K11	10
K12	11
K13	12
K14	13
K15	14
K16	15

REGISTER = 8022h

RELAY	BIT
K17	0
K18	1
K19	2
K20	3
K21	4
K22	5
K23	6
K24	7
K25	8
K26	9
K27	10
K28	11
K29	12
K30	13
K31	14
K32	15

REGISTER = 8024h

RELAY	BIT
K33	0
K34	1
K35	2
K36	3
K37	4
K38	5
K39	6
K40	7
K41	8
K42	9
K43	10
K44	11
K45	12
K46	13
K47	14
K48	15

REGISTER = 8026h

RELAY	BIT
K49	0
K50	1
K51	2
K52	3
K53	4
K54	5
K55	6
K56	7
K57	8
K58	9
K59	10
K60	11
K61	12
K62	13
K63	14
K64	15

DAUGHTER REGISTER MAP (SCHEMATIC 85004690)

REGISTER = 8028h

RELAY	BIT
K65	0
K66	1
K67	2
K68	3
K69	4
K70	5
K71	6
K72	7
K73	8
K74	9
K75	10
K76	11
K77	12
K78	13
K79	14
K80	15

REGISTER = 802Ah

RELAY	BIT
K81	0
K82	1
K83	2
K84	3
K85	4
K86	5
K87	6
K88	7
K89	8
K90	9
K91	10
K92	11
K93	12
K94	13
K95	14
K96	15

REGISTER = 802Ch

RELAY	BIT
K97	0
K98	1
K99	2
K100	3
K101	4
K102	5
K103	6
K104	7
K105	8
K106	9
K107	10
K108	11
K109	12
K110	13
K111	14
K112	15

REGISTER = 802Eh

RELAY	BIT
K113	0
K114	1
K115	2
K116	3
K117	4
K118	5
K119	6
K120	7
K121	8
K122	9
K123	10
K124	11
K125	12
K126	13
K127	14
K128	15

DAUGHTER REGISTER MAP (SCHEMATIC 85004690)

REGISTER = 8030h

RELAY	BIT
K129	0
K130	1
K131	2
K132	3
K133	4
K134	5
K135	6
K136	7
K137	8
K138	9
K139	10
K140	11
K141	12
K142	13
K143	14
K144	15

REGISTER = 8032h

RELAY	BIT
K145	0
K146	1
K147	2
K148	3
K149	4
K150	5
K151	6
K152	7
-----	8
-----	9
-----	10
-----	11
-----	12
-----	13
-----	14
-----	15

REGISTER = 8034h

RELAY	BIT
K153	0
K154	1
K155	2
K156	3
K157	4
K158	5
K159	6
K160	7
K161	8
K162	9
K163	10
K164	11
K165	12
K166	13
K167	14
K168	15

Chapter 9 Front Panel Pin List

UPPER CONNECTOR PINOUT J401

PIN No.						SECTION
32	COL 16 Lo	COL 16 Hi	ROW 1 Lo	COL 16 Hi	COL 16 Lo	4
31	COL 15 Lo	COL 15 Hi	ROW 1 Hi	COL 15 Hi	COL 15 Lo	4
30	COL 14 Lo	COL 14 Hi	ROW 2 Lo	COL 14 Hi	COL 14 Lo	4
29	COL 13 Lo	COL 13 Hi	ROW 2 Hi	COL 13 Hi	COL 13 Lo	4
28	COL 12 Lo	COL 12 Hi	ROW 3 Lo	COL 12 Hi	COL 12 Lo	4
27	COL 11 Lo	COL 11 Hi	ROW 3 Hi	COL 11 Hi	COL 11 Lo	4
26	COL 10 Lo	COL 10 Hi	ROW 4 Lo	COL 10 Hi	COL 10 Lo	4
25	COL 09 Lo	COL 09 Hi	ROW 4 Hi	COL 09 Hi	COL 09 Lo	4
24	COL 08 Lo	COL 08 Hi	ROW 4 Hi	COL 08 Hi	COL 08 Lo	4
23	COL 07 Lo	COL 07 Hi	ROW 4 Lo	COL 07 Hi	COL 07 Lo	4
22	COL 06 Lo	COL 06 Hi	ROW 3 Hi	COL 06 Hi	COL 06 Lo	4
21	COL 05 Lo	COL 05 Hi	ROW 3 Lo	COL 05 Hi	COL 05 Lo	4
20	COL 04 Lo	COL 04 Hi	ROW 2 Hi	COL 04 Hi	COL 04 Lo	4
19	COL 03 Lo	COL 03 Hi	ROW 2 Lo	COL 03 Hi	COL 03 Lo	4
18	COL 02 Lo	COL 02 Hi	ROW 1 Hi	COL 02 Hi	COL 02 Lo	4
17	COL 01 Lo	COL 01 Hi	ROW 1 Lo	COL 01 Hi	COL 01 Lo	4

16	COL 16 Lo	COL 16 Hi	ROW 1 Lo	COL 16 Hi	COL 16 Lo	3
15	COL 15 Lo	COL 15 Hi	ROW 1 Hi	COL 15 Hi	COL 15 Lo	3
14	COL 14 Lo	COL 14 Hi	ROW 2 Lo	COL 14 Hi	COL 14 Lo	3
13	COL 13 Lo	COL 13 Hi	ROW 2 Hi	COL 13 Hi	COL 13 Lo	3
12	COL 12 Lo	COL 12 Hi	ROW 3 Lo	COL 12 Hi	COL 12 Lo	3
11	COL 11 Lo	COL 11 Hi	ROW 3 Hi	COL 11 Hi	COL 11 Lo	3
10	COL 10 Lo	COL 10 Hi	ROW 4 Lo	COL 10 Hi	COL 10 Lo	3
9	COL 09 Lo	COL 09 Hi	ROW 4 Hi	COL 09 Hi	COL 09 Lo	3
8	COL 08 Lo	COL 08 Hi	ROW 4 Hi	COL 08 Hi	COL 08 Lo	3
7	COL 07 Lo	COL 07 Hi	ROW 4 Lo	COL 07 Hi	COL 07 Lo	3
6	COL 06 Lo	COL 06 Hi	ROW 3 Hi	COL 06 Hi	COL 06 Lo	3
5	COL 05 Lo	COL 05 Hi	ROW 3 Lo	COL 05 Hi	COL 05 Lo	3
4	COL 04 Lo	COL 04 Hi	ROW 2 Hi	COL 04 Hi	COL 04 Lo	3
3	COL 03 Lo	COL 03 Hi	ROW 2 Lo	COL 03 Hi	COL 03 Lo	3
2	COL 02 Lo	COL 02 Hi	ROW 1 Hi	COL 02 Hi	COL 02 Lo	3
1	COL 01 Lo	COL 01 Hi	ROW 1 Lo	COL 01 Hi	COL 01 Lo	3
COLUMN →	a	b	c	d	e	

LOWER CONNECTOR PINOUT

J1201

PIN No.						SECTION
32	COL 16 Lo	COL 16 Hi	ROW 1 Lo	COL 16 Hi	COL 16 Lo	2
31	COL 15 Lo	COL 15 Hi	ROW 1 Hi	COL 15 Hi	COL 15 Lo	2
30	COL 14 Lo	COL 14 Hi	ROW 2 Lo	COL 14 Hi	COL 14 Lo	2
29	COL 13 Lo	COL 13 Hi	ROW 2 Hi	COL 13 Hi	COL 13 Lo	2
28	COL 12 Lo	COL 12 Hi	ROW 3 Lo	COL 12 Hi	COL 12 Lo	2
27	COL 11 Lo	COL 11 Hi	ROW 3 Hi	COL 11 Hi	COL 11 Lo	2
26	COL 10 Lo	COL 10 Hi	ROW 4 Lo	COL 10 Hi	COL 10 Lo	2
25	COL 09 Lo	COL 09 Hi	ROW 4 Hi	COL 09 Hi	COL 09 Lo	2
24	COL 08 Lo	COL 08 Hi	ROW 4 Hi	COL 08 Hi	COL 08 Lo	2
23	COL 07 Lo	COL 07 Hi	ROW 4 Lo	COL 07 Hi	COL 07 Lo	2
22	COL 06 Lo	COL 06 Hi	ROW 3 Hi	COL 06 Hi	COL 06 Lo	2
21	COL 05 Lo	COL 05 Hi	ROW 3 Lo	COL 05 Hi	COL 05 Lo	2
20	COL 04 Lo	COL 04 Hi	ROW 2 Hi	COL 04 Hi	COL 04 Lo	2
19	COL 03 Lo	COL 03 Hi	ROW 2 Lo	COL 03 Hi	COL 03 Lo	2
18	COL 02 Lo	COL 02 Hi	ROW 1 Hi	COL 02 Hi	COL 02 Lo	2
17	COL 01 Lo	COL 01 Hi	ROW 1 Lo	COL 01 Hi	COL 01 Lo	2
16	COL 16 Lo	COL 16 Hi	ROW 1 Lo	COL 16 Hi	COL 16 Lo	1
15	COL 15 Lo	COL 15 Hi	ROW 1 Hi	COL 15 Hi	COL 15 Lo	1
14	COL 14 Lo	COL 14 Hi	ROW 2 Lo	COL 14 Hi	COL 14 Lo	1
13	COL 13 Lo	COL 13 Hi	ROW 2 Hi	COL 13 Hi	COL 13 Lo	1
12	COL 12 Lo	COL 12 Hi	ROW 3 Lo	COL 12 Hi	COL 12 Lo	1
11	COL 11 Lo	COL 11 Hi	ROW 3 Hi	COL 11 Hi	COL 11 Lo	1
10	COL 10 Lo	COL 10 Hi	ROW 4 Lo	COL 10 Hi	COL 10 Lo	1
9	COL 09 Lo	COL 09 Hi	ROW 4 Hi	COL 09 Hi	COL 09 Lo	1
8	COL 08 Lo	COL 08 Hi	ROW 4 Hi	COL 08 Hi	COL 08 Lo	1
7	COL 07 Lo	COL 07 Hi	ROW 4 Lo	COL 07 Hi	COL 07 Lo	1
6	COL 06 Lo	COL 06 Hi	ROW 3 Hi	COL 06 Hi	COL 06 Lo	1
5	COL 05 Lo	COL 05 Hi	ROW 3 Lo	COL 05 Hi	COL 05 Lo	1
4	COL 04 Lo	COL 04 Hi	ROW 2 Hi	COL 04 Hi	COL 04 Lo	1
3	COL 03 Lo	COL 03 Hi	ROW 2 Lo	COL 03 Hi	COL 03 Lo	1
2	COL 02 Lo	COL 02 Hi	ROW 1 Hi	COL 02 Hi	COL 02 Lo	1
1	COL 01 Lo	COL 01 Hi	ROW 1 Lo	COL 01 Hi	COL 01 Lo	1
COLUMN →	a	b	c	d	e	