USER MANUAL

Accessory 35B

JTHW Local Buffer / Remote Buffer (remote)

3Ax-602345-xUxx

October 16, 2003

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INTRODUCTION

PMAC's Accessory 35A and Accessory 35B are two complementary printed circuit boards. These boards are designed to provide differential signal transmission capability between PMAC and most of its accessories that communicate via its JTHW connector. Currently this accessory pair enables the following PMAC accessories to communicate with PMAC via long distance cables:

- ACC-18 (the Thumbwheel Mutliplexer Board)
- ACC-34 (the Opto 64 Bit input/output Board)
- ACC-34A (the Opto 32-Bit Input/32-Bit Output board)

ACC-35A is the local JTHW buffer board. This board should be attached to PMAC's JTHW connector via the supplied 26-pin flat cable. ACC-35B is the remote JTHW buffer board. One ACC-35B is required per each cluster of the remotely positioned I/O accessory boards. Note that the recommended cable length for the direct connection of PMAC to any of the above accessories is less than 3 meters (10 feet). However by buffering the signals through the ACC-35 pair, and by using twisted pair wires with proper shielding, cable lengths in excess on 100 meters may be used.

ACC-35A and ACC-35B are supplied with the following options:

Option 1- A DB37 connector for communication between the local and the remote buffers.

Option 2- A 38-pin terminal block connector for communication between the local and the remote buffers (this is the default option).

Option 3- A 6 ft daisy chain JTHW cable with four headers. This provides for the connection of up to four I/O accessory boards to a single ACC-35.

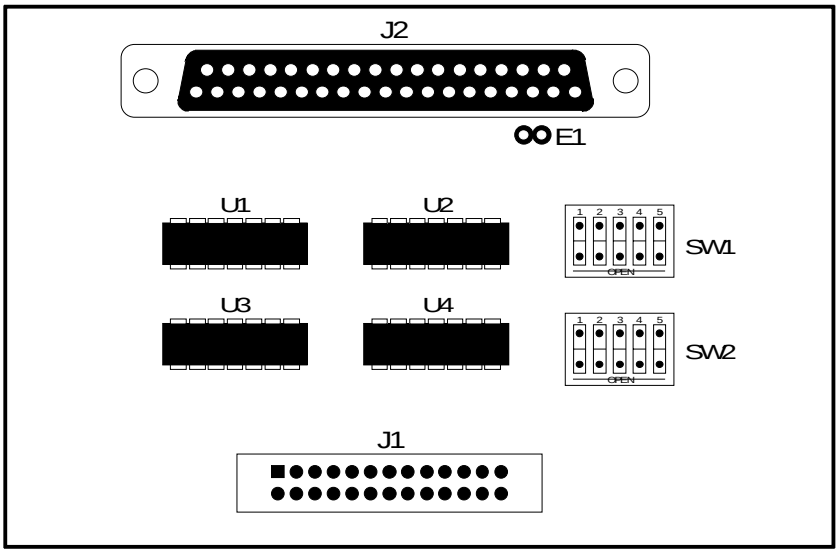
CONNECTORS FOR ACC-35A

Refer to the layout diagram of ACC-35A for the location of the connectors on the board. A pin definition listing for each connector is provided at the end of this Manual.

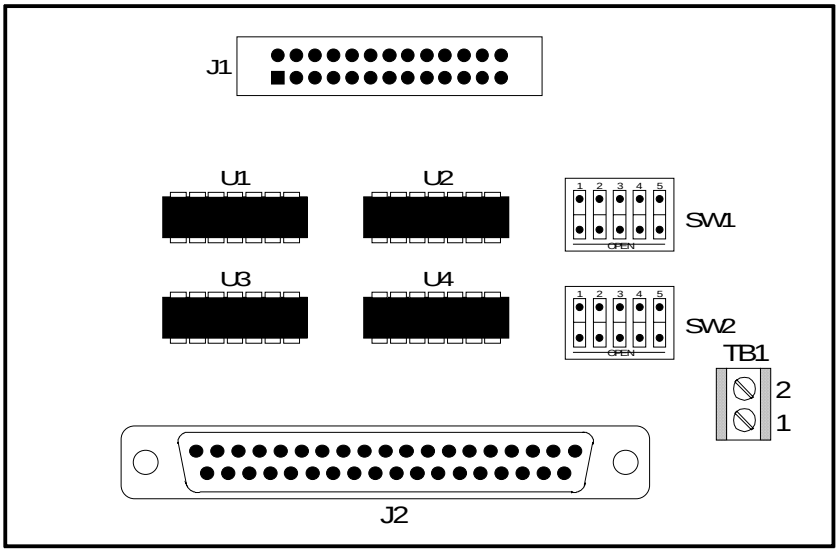
J1 (JTHW)

This 26-pin header provides the link between PMAC's J3 (JTHW) and ACC-35A. Using the supplied flat cable PMAC's J3 should be connected to J1. The multiplex address lines are brought in from PMAC through this connector. They are buffered and made differential prior to the long distance transmission via TB1 or P1. Also the bi-directional differential data lines brought in from the remote accessories via ACC-35B are converted to single-ended signals prior to transmission to PMAC. In addition to the above signals, the +5V power supply for this board is brought in through this connector.

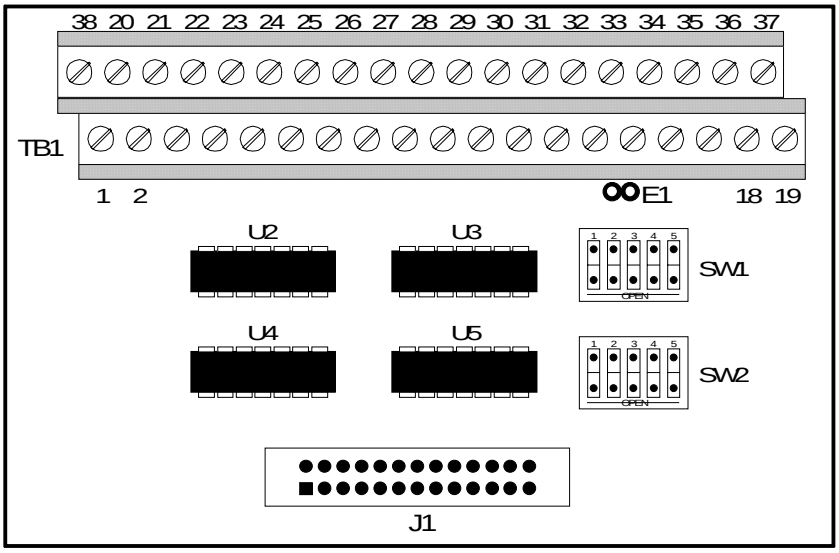
ACC-35A Option 1
The DB37S Connector Option



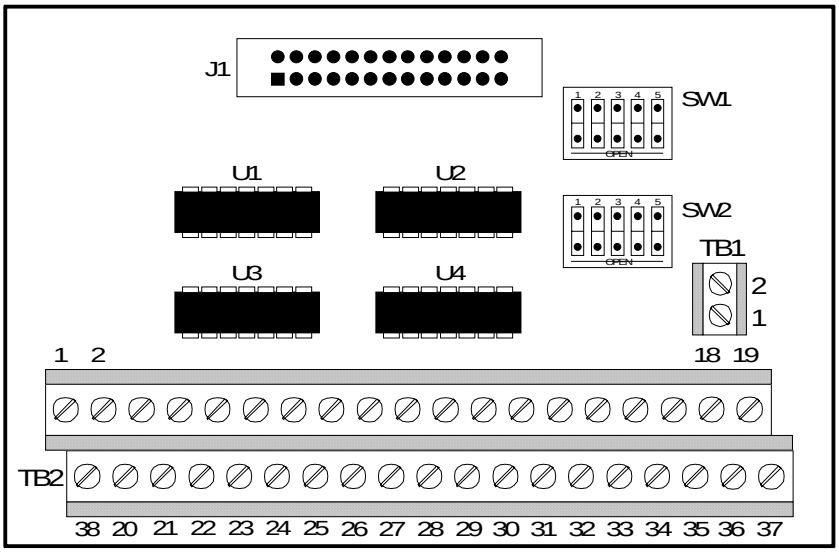
ACC-35B Option 1
The DB37S Connector Option



ACC-35A Option 2
The Terminal Block Option



ACC-35B Option 2
The Terminal Block Option



TB1 (Option 2)

This is a 38-pin terminal block through which ACC-35A is connected to the remote buffer accessory, ACC-35B. Long cables may be used for this connection. However, to minimize the effects of electrical noise, the differential address and data lines should run as twisted pair and the cable should be shielded. Also, with the jumper E1 installed, the +5V power supply for ACC-35B may be brought out through this connector.

P1 (Option 1)

This is a 37-pin DB female header which replaces TB1 on ACC-35A when ordered with its Option 2.

Connectors for ACC-35B

Refer to the layout diagram of ACC-35B for the location of the connectors on the board. A pin definition listing for each connector is provided at the end of this Manual.

J1 (JTHW)

This 26-pin header provides the link between the remote accessory (e.g. ACC-34A) and ACC-35B. Using the supplied flat cable, the JTHW connector for the remote accessory should be connected to ACC-35B's J1. The bi-directional data lines brought in from the remote accessory through this connector are buffered and made differential prior to the long distance transmission via TB2 or P1. Also the differential address lines brought in from PMAC via ACC-35A are converted to single-ended signals prior to transmission to the remote accessory. In addition to the above signals, the +5V power supply for this board may be brought out through this connector for use by the remote accessory(s).

TB2 (Option 2)

This is a 38-pin terminal block through which ACC-35B is connected to the local buffer accessory, ACC-35A. Long cables may be used for this connection. However, to minimize the effects of electrical noise, the differential address and data lines should run as twisted pair and the cable should be shielded. Also, with the jumper E1 installed on ACC-35A, the +5V power supply for this accessory may be brought in through this connector.

P1 (Option 1)

This is a 37-pin DB male header which replaces TB2 on ACC-35B when ordered with its Option 2.

TB1

This is a 2-pin terminal block which may be used to bring in the +5V supply for the logic circuits on ACC-35B. With the E1 jumper removed from ACC-35A, the +5V supply will not be brought in through J1 to ACC-35B. In this case TB1 should be used to bring in the required supply. Note that whenever the distance between an ACC-35A and its complementary ACC-35B is long, it is recommended to use TB1 to supply the power to ACC-35B. In this case the jumper E1 on the ACC-35A board must be removed.

MULTIPLEX ADDRESS MAP SELECTION

Each ACC-35 (A or B) has two sets of DIP switches SW1 and SW2. The 5-bit DIP switch SW1 selects the address space on the PMAC's JTHW multiplex memory space. On each ACC-35 (A or B), the DIP switch SW1 should be set to correspond to the *highest* addressed remote I/O card connected through that particular accessory. The 5-bit DIP switch SW2 selects the number of remote I/O cards connected to PMAC via a particular ACC-35 (A or B). This is done by matching the data on the address lines with setting of the SW1 switch. The tables on the following pages show the possible combinations of SW1 and SW2 settings.

SW1 (address Select) Dip Switch Setting

Highest Byte Address of I/O	Switch 5 (address decode for Bit 7 of JTHW address space)	Switch 4 (address decode for Bit 6 of JTHW address space)	Switch 3 (address decode for Bit 5 of JTHW address space)	Switch 2 (address decode for Bit 4 of JTHW address space)	Switch 1 (address decode for Bit 3 of JTHW address space)
0-7	ON	ON	ON	ON	ON
8-15	ON	ON	ON	ON	OFF
16-23	ON	ON	ON	OFF	ON
24-31	ON	ON	ON	OFF	OFF
32 -39	ON	ON	OFF	ON	ON
40-47	ON	ON	OFF	ON	OFF
48-55	ON	ON	OFF	OFF	ON
56-63	ON	ON	OFF	OFF	OFF
64-71	ON	OFF	ON	ON	ON
72-79	ON	OFF	ON	ON	OFF
80-87	ON	OFF	ON	OFF	ON
88-95	ON	OFF	ON	OFF	OFF
96-103	ON	OFF	OFF	ON	ON
104-111	ON	OFF	OFF	ON	OFF
112-119	ON	OFF	OFF	OFF	ON
120-127	ON	OFF	OFF	OFF	OFF
128-135	OFF	ON	ON	ON	ON
136-147	OFF	ON	ON	ON	OFF
144-151	OFF	ON	ON	OFF	ON
152-159	OFF	ON	ON	OFF	OFF
160-167	OFF	ON	OFF	ON	ON
168-175	OFF	ON	OFF	ON	OFF
176-183	OFF	ON	OFF	OFF	ON
184-191	OFF	ON	OFF	OFF	OFF
192-199	OFF	OFF	ON	ON	ON
200- 207	OFF	OFF	ON	ON	OFF
208- 215	OFF	OFF	ON	OFF	ON
216- 223	OFF	OFF	ON	OFF	OFF
224- 231	OFF	OFF	OFF	ON	ON
232- 239	OFF	OFF	OFF	ON	OFF
240- 247	OFF	OFF	OFF	OFF	ON
248-255	OFF	OFF	OFF	OFF	OFF
Note: ON=CLOSED, OFF=OPEN. To turn "off" a switch, push down on the "open" side. To turn "on" a switch, push down on the "numbered" side.					

SW2 (Address Matching) Dip Switch Setting

DIP Switch	Result
Switch 5 ON	Match bit 7 of JTHW address line with setting on SW1
Switch 5 OFF	Do not match (let through) bit 7 address line
Switch 4 ON	Match bit 6 of JTHW address line with setting on SW1
Switch 4 OFF	Do not match (let through) bit 6 address line
Switch 3 ON	Match bit 5 of JTHW address line with setting on SW1
Switch 3 OFF	Do not match (let through) bit 5 address line
Switch 2 ON	Match bit 4 of JTHW address line with setting on SW1
Switch 2 OFF	Do not match (let through) bit 4 address line
Switch 1 ON	Match bit 3 of JTHW address line with setting on SW1
Switch 1 OFF	Do not match (let through) bit 3 address line
Note: ON=CLOSED, OFF=OPEN. To turn "off" a switch, push down on the "open" side. To turn "on" a switch, push down on the "numbered" side.	

ACC-35A/B Addressing with Multiple Boards

PMAC ACC-35A and 35B boards, plus boards that have ACC-35B functionality built in (currently ACC-34C and ACC-8DR Rack I/O, and NC control panel, both when connected thru DB-37 cable only) have pairs of DIP switch banks SW1 and SW2 that together specify a range of addresses on the JTHW "thumbwheel" multiplexer port for which they are active.

On an ACC-35A board, the active range must include all boards connected to PMAC through this ACC-35A. The active range must not include any other board connected directly to the JTHW port, whether another ACC-35A (and its active range), an ACC-34x, or an NC control panel.

On an ACC-35B or board with built-in ACC-35B functionality, the active range must include all boards connected to PMAC through this ACC-35B and its matching ACC-35A. The active range must not overlap with the active range of any other ACC-35B or board with ACC-35B functionality connected to the same ACC-35A.

The numeric range in the table entry specifies the JTHW "thumbwheel" multiplexer port address range for which the card is enabled for the specified SW1 and SW2 settings. The 5-digit binary numbers for the SW1 and SW2 settings, represent from left to right, SWn-5 to SWn-1 (most significant to least significant). A '0' means CLOSED, and a '1' means OPEN, on the DIP switch.

The SW1 setting specifies the highest address that can be enabled on this card; multiply the SW1 number by 8 and add 7. The SW2 setting specifies the number of cards that are to be enabled minus 1 (if the SW2 number is 2^n - 1, as for all settings in this table). The table below summarizes the SW1 and SW2 settings for ACC-35A/B.

SW1 Setting	00000 (1 board)	00001 (2 boards)	00011 (4 boards)	00111 (8 boards)	01111 (16 boards)	11111 (32 boards)
00000	0-7	xxx	xxx	xxx	xxx	xxx
00001	8-15	0-15	xxx	xxx	xxx	xxx
00010	16-23	xxx	xxx	xxx	xxx	xxx
00011	24-31	16-31	0-31	xxx	xxx	xxx
00100	32-39	xxx	xxx	xxx	xxx	xxx
00101	40-47	32-47	xxx	xxx	xxx	xxx
00110	48-55	xxx	xxx	xxx	xxx	xxx
00111	56-63	48-63	32-63	0-63	xxx	xxx
01000	64-71	xxx	xxx	xxx	xxx	xxx
01001	72-79	64-79	xxx	xxx	xxx	xxx
01010	80-87	xxx	xxx	xxx	xxx	xxx
01011	88-95	80-95	64-95	xxx	xxx	xxx
01100	96-103	xxx	xxx	xxx	xxx	xxx
01101	104-111	96-111	xxx	xxx	xxx	xxx
01110	112-119	xxx	xxx	xxx	xxx	xxx
01111	120-127	112-127	96-127	64-127	0-127	xxx
...						
01111	248-255	240-255	224-255	192-255	128-255	0-255
An 'xxx' entry in the table signifies that there is no multiplexer port address for which the card will be enabled.						

Example:

Suppose we have two local ACC-34As and four remote ACC-34As. Furthermore, of the four remote ACC-34As, one pair is to be physically located a long distance away from the other pair. In this example we need one ACC-35A and two ACC-35Bs (see schematic diagram). With reference to the User's Manual for ACC-34A, the SW1 switches on ACC-34As must be set such that each responds to a distinct JTHW memory space. Also, all of the SW1 and SW2 switches on the ACC-35A and the ACC-35Bs must be set such that the correct decoding of the address lines is accomplished.

In order to do so, the user must decide on the address allocation for each local and each remote ACC-34A. It is more convenient to cluster the addresses of the I/O cards which are local or connected to a particular ACC-35B. In this example (referring to the User's Manual for ACC-34A) it may be decided that the two local ACC-34As will occupy the first and the second 8 bytes on the PMAC's JTHW multiplex memory space. This means that their respective SW1 switches will be set as follows:

Local ACC-34A board #1 SW1 switch setting:

ACC-34A	Port A/B Address	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #1	Bytes 0 - 7	ON	ON	ON	ON	ON

Local ACC-34A board #2 SW1 switch setting:

ACC-34A	Port A/B Address	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #2	Bytes 8 - 15	ON	ON	ON	ON	OFF

For the remote ACC-34As we intentionally leave the address space for bytes 16 to 31 empty. This is done in order to allow us to select a contiguous set of OFF positions for the set of least significant SW1 switches needed for decoding four remote ACC-34As. Now the four remote ACC-34As may be set to be occupy bytes 32 to 63 of the JTHW multiplex address as follows:

Remote ACC-34A board #3 SW1 switch setting:

ACC-34A	Port A/B Address	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #3	32-39	ON	ON	OFF	ON	ON

Remote ACC-34A board #4 SW1 switch setting:

ACC-34A	Port A/B Address	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #4	40-47	ON	ON	OFF	ON	OFF

Remote ACC-34A board #5 SW1 switch setting:

ACC-34A	Port A/B Address	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #5	48-55	ON	ON	OFF	OFF	ON

Remote ACC-34A board #6 SW1 switch setting:

ACC-34A	Port A/B Address	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #6	56-63	ON	ON	OFF	OFF	OFF

ACC-34A Base Address Selection for this Example

Board #	Bytes		SW1 Dip Switch Setting				
	Port A	Port B	1	2	3	4	5
#1	0-3	4-7	ON	ON	ON	ON	ON
#2	8-11	12-15	ON	ON	ON	ON	OFF
	16-19	20-23	ON	ON	ON	OFF	ON
	24-27	28-31	ON	ON	ON	OFF	OFF
#3	32-35	36-39	ON	ON	OFF	ON	ON
#4	40-43	44-47	ON	ON	OFF	ON	OFF
#5	48-51	52-55	ON	ON	OFF	OFF	ON
#6	56-59	60-63	ON	ON	OFF	OFF	OFF

Again, note that we intentionally did not use bytes 16 to 31 such that the state of SW1 switch 3 remains always OFF. This, as seen below, will simplify the setting of the SW2 DIP switch on ACC-35A and ACC-35B.

Now, with reference to tables 3, the setting on ACC-35A would be as follows:

ACC-35A local buffer board SW1 switch setting:

ACC-35A	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #1	ON	ON	OFF	OFF	OFF

ACC-35A local buffer board SW2 switch setting:

ACC-35A	SW2 #5	SW2 #4	SW2 #3	SW2 #2	SW2 #1
Board #1	ON	ON	ON	OFF	OFF

Note that the SW1 setting on ACC-35A corresponds to the highest addressed remote ACC-34A (board #6). But on SW2 the switches 5, 4 and 3 are ON which provides for automatic matching of the 3 most significant address lines. Also, switches 1 and 2 are OFF which provides for the decoding of 4 remote ACC-34As connected to the two ACC-35B remote buffers.

Finally, in this example, the setting for the SW1 and SW2 switches on the two remotely stationed ACC-35Bs should be as follows:

ACC-35B remote buffer board #1 SW1 switch setting:

ACC-35B	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #1	ON	ON	OFF	ON	OFF

This means that the highest address decoded for boards connected through this remote buffer is 47.

ACC-35B remote buffer board #1 SW2 switch setting:

ACC-35B	SW2 #5	SW2 #4	SW2 #3	SW2 #2	SW2 #1
Board #1	ON	ON	ON	ON	OFF

With only SW2 switch 1 OFF, this provides for the decoding of two ACC-34As through this particular ACC-35B (at addresses 23-39 and 40-47).

ACC-35B remote buffer board #2 SW1 switch setting:

ACC-35B	SW1 #5	SW1 #4	SW1 #3	SW1 #2	SW1 #1
Board #2	ON	ON	OFF	OFF	OFF

This means that the highest address decoded for boards connected through this remote buffer is 63.

ACC-35B remote buffer board #2 SW2 switch setting:

ACC-35B	SW2 #5	SW2 #4	SW2 #3	SW2 #2	SW2 #1
Board #2	ON	ON	ON	ON	OFF

With only SW2 switch 1 OFF, this provides for the decoding of two ACC-34As through this particular ACC-35B (at addresses 48-55 and 56-63).

POWER SUPPLY REQUIREMENTS AND RECOMMENDED WIRING

Power Supply Requirements

The +5V power supply for ACC-35A is brought in from PMAC via the J1 (JTHW) header. ACC-35A's maximum current requirement at 5 volts is approximately 100 mA. The +5 volt power supply for ACC-35B may be brought in either from ACC-35A or directly through TB1. If the power is to be brought into ACC-35B from ACC-35A then the jumper E1 on ACC-35A must be installed. For situations in which the cable distance between the two accessories is long it is recommended to use TB1 for direct supply of power to ACC-35B. ACC-35B's maximum current requirement at 5 volts is approximately 100 mA.

Recommended Wiring Between ACC-35A and ACC-35B

It is recommended that the long cable between ACC-35A and ACC-35B be shielded with the shield grounded at the ACC-35A end. Also the differential signal lines should be connected using twisted pair wires (see the enclosed schematic).

CONNECTORS

J1 (JTHW) on Acc-35A & Acc-35B

Pin #	Symbol	Function	Description	Notes
1	GND	Common	PMAC Common	
2	GND	Common	PMAC Common	
3	DAT0	Output	Data Bit 0	
4	SEL0	Input	Address Line 0	
5	DAT1	Output	Data Bit 1	
6	SEL 1	Input	Address Line1	
7	DAT2	Output	Data Bit 2	
8	SEL2	Input	Address Line 2	
9	DAT3	Output	Data Bit 3	
10	SEL3	Input	Address Line 3	
11	DAT4	Output	Data Bit 4	
12	SEL 4	Input	Address Line 4	
13	DAT5	Output	Data Bit 5	
14	SEL5	Input	Address Line 5	
15	DAT6	Output	Data Bit 5	
16	SEL6	Input	Address Line 6	
17	DAT7	Output	Data Bit 6	
18	SEL7	Input	Data Bit 7	
19	N.C.			Not connected
20	GND	Common	PMAC Common	
21	N.C.			Not connected
22	GND	Common	PMAC Common	
23	N.C.			Not connected
24	GND	Common	PMAC Common	
25	+5V	Input	+5Vdc Supply	
26	N.C.			Not connected
On ACC-35A this header should be connected to PMAC's J3 (JTHW) via the supplied 26-pin flat cable. On ACC-35B this header should be connected to the remote I/O board(s).				

TB1 on ACC-35A Option 2 & TB2 on ACC-35B Option 2

(38-pin Terminal Block)

Pin #	Symbol	Function	Description	Notes
1	BSEL0	Input	Diff. Address Line 0	
2	BDAT0	I/O	Diff. Data Line 0	
3	BSEL1	Input	Diff. Address Line 1	
4	BDAT1	I/O	Diff. Data Line 1	
5	BSEL2	Input	Diff. Address Line 2	
6	BDAT2	I/O	Diff. Data Line 2	
7	BSEL3	Input	Diff. Address Line 3	
8	BDAT3	I/O	Diff. Data Line 3	
9	BSEL4	Input	Diff. Address Line 4	
10	BDAT4	I/O	Diff. Data Line 4	
11	BSEL5	Input	Diff. Address Line 5	
12	BDAT5	I/O	Diff. Data Line 5	
13	BSEL6	Input	Diff. Address Line 6	
14	BDAT6	I/O	Diff. Data Line 6	
15	BSEL7	Input	Diff. Address Line 7	
16	BDAT7	I/O	Diff. Data Line 7	
17	GND	Common	PMAC Common	1
18	+5V	Input	+5Vdc Supply	2
19	GND	Common	PMAC Common	
20	BSEL0/	Input	Diff. Address Line 0/	
21	BDAT0/	I/O	Diff. Data Line 0/	
22	BSEL1/	Input	Diff. Address Line 1/	
23	BDAT1/	I/O	Diff. Data Line 1/	
24	BSEL2/	Input	Diff. Address Line 2/	
25	BDAT2/	I/O	Diff. Data Line 2/	
26	BSEL3/	Input	Diff. Address Line 3/	
27	BDAT3/	I/O	Diff. Data Line 3/	
28	BSEL4/	Input	Diff. Address Line 4/	
29	BDAT4/	I/O	Diff. Data Line 4/	
30	BSEL5/	Input	Diff. Address Line 5/	
31	BDAT5/	I/O	Diff. Data Line 5/	
32	BSEL6/	Input	Diff. Address Line 6/	
33	BDAT6/	I/O	Diff. Data Line 6/	
34	BSEL7/	Input	Diff. Address Line 7/	
35	BDAT7/	I/O	Diff. Data Line 7/	
36	GND	Common	PMAC Common	1
37	+5 V	Input	+5Vdc Supply	2
38	N.C.			Not Connected

1 On ACC-35A this signal directly connects to PMAC's digital ground. On ACC-35B, if power is supplied through TB1, this pin connects the digital ground of PMAC to the digital ground of the power supply input through TB1 of ACC-35B.

2 On ACC-35A this supply is directly brought in from PMAC. With the jumper E1 installed, the +5V supply is also brought out through this connector for ACC-35B. With the jumper E1 removed the +5V supply is not brought out to ACC-35B. In this case, ACC-35B's TB1 should be used for the +5V supply input.

P1 on ACC-35A Option 1 & P1 on ACC-35B Option 1

(DB37 Connector)

Pin #	Symbol	Function	Description	Notes
1	BSEL0	Input	Diff. Address Line 0	
2	BDAT0	I/O	Diff. Data Line 0	
3	BSEL1	Input	Diff. Address Line 1	
4	BDAT1	I/O	Diff. Data Line 1	
5	BSEL2	Input	Diff. Address Line 2	
6	BDAT2	I/O	Diff. Data Line 2	
7	BSEL3	Input	Diff. Address Line 3	
8	BDAT3	I/O	Diff. Data Line 3	
9	BSEL4	Input	Diff. Address Line 4	
10	BDAT4	I/O	Diff. Data Line 4	
11	BSEL5	Input	Diff. Address Line 5	
12	BDAT5	I/O	Diff. Data Line 5	
13	BSEL6	Input	Diff. Address Line 6	
14	BDAT6	I/O	Diff. Data Line 6	
15	BSEL7	Input	Diff. Address Line 7	
16	BDAT7	I/O	Diff. Data Line 7	
17	GND	Common	PMAC Common	1
18	+5V	Input	+5Vdc Supply	2
19	GND	Common	PMAC Common	
20	BSEL0/	Input	Diff. Address Line 0/	
21	BDAT0/	I/O	Diff. Data Line 0/	
22	BSEL1/	Input	Diff. Address Line 1/	
23	BDAT1/	I/O	Diff. Data Line 1/	
24	BSEL2/	Input	Diff. Address Line 2/	
25	BDAT2/	I/O	Diff. Data Line 2/	
26	BSEL3/	Input	Diff. Address Line 3/	
27	BDAT3/	I/O	Diff. Data Line 3/	
28	BSEL4/	Input	Diff. Address Line 4/	
29	BDAT4/	I/O	Diff. Data Line 4/	
30	BSEL5/	Input	Diff. Address Line 5/	
31	BDAT5/	I/O	Diff. Data Line 5/	
32	BSEL6/	Input	Diff. Address Line 6/	
33	BDAT6/	I/O	Diff. Data Line 6/	
34	BSEL7/	Input	Diff. Address Line 7/	
35	BDAT7/	I/O	Diff. Data Line 7/	
36	GND	Common	PMAC Common	1
37	+5 V	Input	+5Vdc Supply	2

1 On ACC-35A this signal directly connects to PMAC's digital ground. On ACC-35B, if power is supplied through TB1, this pin connects the digital ground of PMAC to the digital ground of the power supply input through TB1 of ACC-35B.

2 On ACC-35A this supply is directly brought in from PMAC. With the jumper E1 installed, the +5V supply is also brought out through this connector for ACC-35B. With the jumper E1 removed the +5V supply is not brought out to ACC-35B. In this case, ACC-35B's TB1 should be used for the +5V supply input.

TB1 on ACC-35B only

(2-pin Terminal Block)

Pin #	Symbol	Function	Description	Notes
1	GND	Common	PMAC Common	
2	+5V	Power Supply	External Supply	1
1 This terminal block should be used to supply power to ACC-35 B whenever the distance between ACC-35A and ACC-35B is longer than a few meters.				