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TB8202
64-CHANNEL ANALOGUE I/O
VME64X TRANSITION BOARD

USERS MANUAL

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1. INTRODUCTION

The Hytec TB8202 is a single-width VME64X Transition Board which routes 64 channels of analogue I/O with the following characteristics:-

- 4 groups of 16 analogue channel pairs
- 4 SCSI connectors 1-4 routed to 8002 Carrier Board sites A-D respectively
- 8 channels of differential filters condition 8401 inputs
- Filter circuits enabled by jumper selection
- Common mode bias resistors for differential inputs
- 4 DC-DC Converter socketed sites allow 5V to +/-12V isolated power for each group
- 4 signal pairs for External Trigger
- 4 signal pairs for External Clock
- Analogue Ground connections
- Ground discharge limited on insertion

2. PRODUCT SPECIFICATIONS

Size:	Single width Transition Board 6U x 80mm
Operating temp:	0 to 45 deg C ambient
Power Requirements:	+5V @ 2A from VME bus (4A fuse fitted) for DC-DC converters
Number of channels:	64 signal pairs
Number of strobes:	8 signal pairs
Connectors:	4 SCSI 50-way sockets mounted on the rear panel 160 way DIN mates with P2 pins 5x19 way 2mm socket mates with P0

3. BOARD DESCRIPTION

The board is primarily intended to route 4 groups of 16 analogue outputs from IP-8402-DAC boards to rear panel connectors. However, it may also be used for IP-8401-ADCs and has provision to fit R-C filters across the differential inputs of the ADCs.
Viewing the component side of the board there are four similar groups each with two 5-pin sockets. These allow Hytec DC-DC Converter boards to be fitted which supply +/-12V to their respective sites via the P0/P2 VME connectors. Each converter's output is smoothed by two 100uF tantalum bead capacitors.
The P2 mating connector is the 160 way DIN connector at the base of the board. The P0 mating connector is situated above it. The four analogue groups are designated A-D from the base upwards.
Front panel SCSI connectors 1-4 feed sites A-D and are numbered upwards from the lowest connector.
Provision is made to fit noise filters in the first 8 channels of each group.
The capacitors for these are situated to the left of the jumpers (C1-C8 for the first group). Values of up to 22uF can be fitted. A typical value is 3900pF.
The filters usually incorporate 1K in series with each analogue signal (high and low). The first channel uses R1 and R3, the second R5 and R7 and so on.
Common mode biasing resistors may also be fitted for the ADC inputs. These usually have the values 1Mohms. These are R2/R4 for channel 1, R6/R8 for channel 2 and so on.

The jumpers can be used to select straight through connection (positions 2-3) or filtered (positions 1-2).
Ground discharge resistors are fitted at the base of the board.

4. OPERATION

Select straight-through or filtered mode according to whether an 8402 DAC or 8401 ADC is used by setting the jumpers 2-3 (right position) for straight-through or 1-2 (left) for filtered mode.
If isolated power is required plug-in the DC-DC Converter boards and if necessary secure them with appropriate screws through the holes provided. Ensure that a 4A fuse is fitted at the base of the board.
LK1-LK4 connect isolated analogue grounds to VME ground for each group 1-4.
These should only be inserted if isolation is not required.
Connect signals according to the table of connections shown in appendix A.

APPENDIX A

Connection tables for TB8202 Analogue I/O Transition Board

Connector: 1		IP Site: A					
SCSI Pin	VME	IP	Signal	SCSI Pin	VME	IP	Signal
1	P2-C6	2	Sig_Lo1	26	P2-A6	1	Sig_Hi1
2	P2-C7	4	Sig_Lo2	27	P2-A7	3	Sig_Hi2
3	P2-C8	6	Sig_Lo3	28	P2-A8	5	Sig_Hi3
4	P2-C9	8	Sig_Lo4	29	P2-A9	7	Sig_Hi4
5	P2-C10	10	Sig_Lo5	30	P2-A10	9	Sig_Hi5
6	P2-C11	12	Sig_Lo6	31	P2-A11	11	Sig_Hi6
7	P2-C12	14	Sig_Lo7	32	P2-A12	13	Sig_Hi7
8	P2-C13	16	Sig_Lo8	33	P2-A13	15	Sig_Hi8
9	P2-C14	18	Sig_Lo9	34	P2-A14	17	Sig_Hi9
10	P2-C15	20	Sig_Lo10	35	P2-A15	19	Sig_Hi10
11	P2-C16	22	Sig_Lo11	36	P2-A16	21	Sig_Hi11
12	P2-C17	24	Sig_Lo12	37	P2-A17	23	Sig_Hi12
13	P2-C18	26	Sig_Lo13	38	P2-A18	25	Sig_Hi13
14	P2-C19	28	Sig_Lo14	39	P2-A19	27	Sig_Hi14
15	P2-C20	30	Sig_Lo15	40	P2-A20	29	Sig_Hi15
16	P2-C21	32	Sig_Lo16	41	P2-A21	31	Sig_Hi16
18	P2-C23	36	XTrig N1	43	P2-A23	35	XTrig P1
20	P2-C25	40	XClk N1	45	P2-A25	39	XClk P1
24	P2-C29	48	AGnd	49	P2-C27	44	AGnd
25	P2-C30	50	AGnd	50	P2-C28	46	AGnd

Connector: 2 IP Site: B							
SCSI Pin	VME	IP	Signal	SCSI Pin	VME	IP	Signal
1	P2-Z5	2	Sig_Lo17	26	P2-D4	1	Sig_Hi17
2	P2-D6	4	Sig_Lo18	27	P2-D5	3	Sig_Hi18
3	P2-D7	6	Sig_Lo19	28	P2-Z7	5	Sig_Hi19
4	P2-Z9	8	Sig_Lo20	29	P2-D8	7	Sig_Hi20
5	P2-D10	10	Sig_Lo21	30	P2-D9	9	Sig_Hi21
6	P2-D11	12	Sig_Lo22	31	P2-Z11	11	Sig_Hi22
7	P2-Z13	14	Sig_Lo23	32	P2-D12	13	Sig_Hi23
8	P2-D14	16	Sig_Lo24	33	P2-D13	15	Sig_Hi24
9	P2-D15	18	Sig_Lo25	34	P2-Z15	17	Sig_Hi25
10	P2-Z17	20	Sig_Lo26	35	P2-D16	19	Sig_Hi26
11	P2-D18	22	Sig_Lo27	36	P2-D17	21	Sig_Hi27
12	P2-D19	24	Sig_Lo28	37	P2-Z19	23	Sig_Hi28
13	P2-Z21	26	Sig_Lo29	38	P2-D20	25	Sig_Hi29
14	P2-D22	28	Sig_Lo30	39	P2-D21	27	Sig_Hi30
15	P2-D23	30	Sig_Lo31	40	P2-Z23	29	Sig_Hi31
16	P2-Z25	32	Sig_Lo32	41	P2-D24	31	Sig_Hi32
18	P2-D27	36	XTrig N2	43	P2-Z27	35	XTrig P2
20	P2-D30	40	XClk N2	45	P2-D29	39	XClk P2
24	P2-C4	48	AGnd	49	P2-C2	44	AGnd
25	P2-C5	50	AGnd	50	P2-C3	46	AGnd

Connector: 3 IP Site: C							
SCSI Pin	VME	IP	Signal	SCSI Pin	VME	IP	Signal
1	P0-B11	2	Sig_Lo33	26	P0-A11	1	Sig_Hi33
2	P0-D11	4	Sig_Lo34	27	P0-C11	3	Sig_Hi34
3	P0-A12	6	Sig_Lo35	28	P0-E11	5	Sig_Hi35
4	P0-C12	8	Sig_Lo36	29	P0-B12	7	Sig_Hi36
5	P0-E12	10	Sig_Lo37	30	P0-D12	9	Sig_Hi37
6	P0-B13	12	Sig_Lo38	31	P0-A13	11	Sig_Hi38
7	P0-D13	14	Sig_Lo39	32	P0-C13	13	Sig_Hi39
8	P0-A14	16	Sig_Lo40	33	P0-E13	15	Sig_Hi40
9	P0-C14	18	Sig_Lo41	34	P0-B14	17	Sig_Hi41
10	P0-E14	20	Sig_Lo42	35	P0-D14	19	Sig_Hi42
11	P0-B15	22	Sig_Lo43	36	P0-A15	21	Sig_Hi43
12	P0-D15	24	Sig_Lo44	37	P0-C15	23	Sig_Hi44
13	P0-A16	26	Sig_Lo45	38	P0-E15	25	Sig_Hi45
14	P0-C16	28	Sig_Lo46	39	P0-B16	27	Sig_Hi46
15	P0-E16	30	Sig_Lo47	40	P0-D16	29	Sig_Hi47
16	P0-B17	32	Sig_Lo48	41	P0-A17	31	Sig_Hi48
18	P0-A18	36	XTrig N3	43	P0-E17	35	XTrig P3
20	P0-E18	40	XClk N3	45	P0-D18	39	XClk P3
24	P0-D2	48	AGnd	49	P0-D19	44	AGnd
25	P0-D3	50	AGnd	50	P2-Z1	46	AGnd

Connector: 4		IP Site: D					
SCSI Pin	VME	IP	Signal	SCSI Pin	VME	IP	Signal
1	P0-B1	2	Sig_Lo49	26	P0-A1	1	Sig_Hi49
2	P0-D1	4	Sig_Lo50	27	P0-C1	3	Sig_Hi50
3	P0-A2	6	Sig_Lo51	28	P0-E1	5	Sig_Hi51
4	P0-C2	8	Sig_Lo52	29	P0-B2	7	Sig_Hi52
5	P0-E2	10	Sig_Lo53	30	P0-D2	9	Sig_Hi53
6	P0-B3	12	Sig_Lo54	31	P0-A3	11	Sig_Hi54
7	P0-D3	14	Sig_Lo55	32	P0-C3	13	Sig_Hi55
8	P0-A4	16	Sig_Lo56	33	P0-E3	15	Sig_Hi56
9	P0-C4	18	Sig_Lo57	34	P0-B4	17	Sig_Hi57
10	P0-E4	20	Sig_Lo58	35	P0-D4	19	Sig_Hi58
11	P0-B5	22	Sig_Lo59	36	P0-A5	21	Sig_Hi59
12	P0-D5	24	Sig_Lo60	37	P0-C5	23	Sig_Hi60
13	P0-A6	26	Sig_Lo61	38	P0-E5	25	Sig_Hi61
14	P0-C6	28	Sig_Lo62	39	P0-B6	27	Sig_Hi62
15	P0-E6	30	Sig_Lo63	40	P0-D6	29	Sig_Hi63
16	P0-B7	32	Sig_Lo64	41	P0-A7	31	Sig_Hi64
18	P0-A8	36	XTrig N4	43	P0-E7	35	XTrig P4
20	P0-E8	40	XClk N4	45	P0-D8	39	XClk P4
24	P0-C10	48	AGnd	49	P0-D9	44	AGnd
25	P0-E10	50	AGnd	50	P0-A10	46	AGnd

APPENDIX B

I/O Connector – 50 way on 8402 DAC Board

Pin	Signal	Pin	Signal
1	Output 1	26	AGND
2	AGND	27	Output14
3	Output 2	28	AGND
4	AGND	29	Output15
5	Output 3	30	AGND
6	AGND	31	Output16
7	Output 4	32	AGND
8	AGND	33	N.C.
9	Output 5	34	N.C.
10	AGND	35	XTrigger
11	Output 6	36	/XTrigger
12	AGND	37	N.C.
13	Output 7	38	N.C.
14	AGND	39	XClk
15	Output 8	40	/XClk
16	AGND	41	+12VX
17	Output9	42	AGND
18	AGND	43	+12VX
19	Output10	44	AGND
20	AGND	45	-12VX
21	Output11	46	AGND
22	AGND	47	-12VX
23	Output12	48	AGND
24	AGND	49	N.C.
25	Output13	50	AGND

APPENDIX C

HYTEC TRANSITION CARD 8202 CONNECTIONS FOR 8402 DAC

I/O Connector – 50 way on transition panel

Pin	Signal	Pin	Signal
1	AGND	26	Output1
2	AGND	27	Output 2
3	AGND	28	Output 3
4	AGND	29	Output 4
5	AGND	30	Output 5
6	AGND	31	Output 6
7	AGND	32	Output 7
8	AGND	33	Output 8
9	AGND	34	Output 9
10	AGND	35	Output 10
11	AGND	36	Output 11
12	AGND	37	Output 12
13	AGND	38	Output 13
14	AGND	39	Output 14
15	AGND	40	Output 15
16	AGND	41	Output 16
17		42	
18	XTRIG N	43	XTRIG P
19		44	
20	XCLK N	45	XCLK P
21		46	
22		47	
23		48	
24	AGND	49	AGND
25	AGND	50	AGND

APPENDIX D

VME64X PIN ASSIGNMENT ON HYTEC 8002 IP CARRIER BOARD FOR DAC8402

ROW A	SIG	ROW B	SIG	ROW C	SIG	ROW D	SIG	ROW E	SIG	ROW F	SIG
P0.A01	D Chan 1+	P0.B01	D Chan 1-	P0.C01	D Chan 2+	P0.DO1	D Chan 2 -	P0.E01	D Chan 3+	P0.F01	GND
P0.A02	D Chan 3 -	P0.B02	D Chan 4+	P0.C02	D Chan 4 -	P0.D02	D Chan 5+	P0.E02	D Chan 5 -	P0.F02	GND
P0.A03	D Chan 6+	P0.B03	D Chan 6 -	P0.C03	D Chan 7+	P0.D03	D Chan 7 -	P0.E03	D Chan 8+	P0.F03	GND
P0.A04	D Chan 8 -	P0.B04	N/C	P0.C04	N/C	P0.D04	N/C	P0.E04	N/C	P0.F04	GND
P0.A05	N/C	P0.B05	N/C	P0.C05	N/C	P0.D05	N/C	P0.E05	N/C	P0.F05	GND
P0.A06	N/C	P0.B06	N/C	P0.C06	N/C	P0.D06	N/C	P0.E06	N/C	P0.F06	GND
P0.A07	N/C	P0.B07	N/C	P0.C07	N/C	P0.D07	N/C	P0.E07	D XTrigger	P0.F07	GND
P0.A08	D/XTrigger	P0.B08	N/C	P0.C08	N/C	P0.D08	D XCLK	P0.E08	D /XCLK	P0.F08	GND
P0.A09	D +12V	P0.B09	D AGND	P0.C09	D +12V	P0.D09	D AGND	P0.E09	D -12V	P0.F09	GND
P0.A10	D AGND	P0.B10	D -12V	P0.C10	D AGND	P0.D10	N/C	P0.E10	D AGND	P0.F10	GND
P0.A11	C Chan 1+	P0 B11	C Chan 1 -	P0.C11	C Chan 2+	P0.D11	C Chan 2 -	P0 E11	C Chan 3+	P0.F11	GND
P0.A12	C Chan 3 -	P0.B12	C Chan 4+	P0.C12	C Chan 4 -	P0.D12	C Chan 5+	P0.E12	C Chan 5 -	P0.F12	GND
P0.A13	C Chan 6+	P0.B13	C Chan 6-	P0.C13	C Chan 7+	P0.D13	C Chan 7 -	P0.E13	C Chan 8+	P0.F13	GND
P0.A14	C Chan 8+	P0.B14	N/C	P0.C14	N/C	P0.D14	N/C	P0.E14	N/C	P0.F14	GND
P0.A15	N/C	P0.B15	N/C	P0.C15	N/C	P0.D15	N/C	P0.E15	N/C	P0.F15	GND
P0.A16	N/C	P0.B16	N/C	P0.C16	N/C	P0.D16	N/C	P0.E16	N/C	P0.F16	GND
P0.A17	N/C	P0.B17	N/C	P0.C17	N/C	P0.D17	N/C	P0.E17	C XTrigger	P0.F17	GND
P0.A18	C/XTrigger	P0.B18	N/C	P0.C18	N/C	P0.D18	C XCLK	P0.E18	C /XCLK	P0.F18	GND
P0.A19	C +12V	P0.B19	C AGND	P0.C19	C +12V	P0.D19	C AGND	P0.E19	C -12V	P0.F19	GND

P0 pin assignment

P1 ROW A	SIGNAL	P1 ROW B	SIGNAL	P1 ROW C	SIGNAL	P1 ROW D	SIGNAL	P1 ROW Z	SIGNAL
P1.A01	D00	P1.B01	N/C	P1.C01	D08	P1.D01	N/C	P1.Z01	N/C
P1.A02	D01	P1.B02	N/C	P1.C02	D09	P1.D02	N/C	P1.Z02	GND
P1.A03	D02	P1.B03	N/C	P1.C03	D10	P1.D03	N/C	P1.Z03	N/C
P1.A04	D03	P1.B04	BG0IN*	P1.C04	D11	P1.D04	N/C	P1.Z04	GND
P1.A05	D04	P1.B05	BG0OUT*	P1.C05	D12	P1.D05	N/C	P1.Z05	N/C
P1.A06	D05	P1.B06	BG1IN*	P1.C06	D13	P1.D06	N/C	P1.Z06	GND
P1.A07	D06	P1.B07	BG1OUT*	P1.C07	D14	P1.D07	N/C	P1.Z07	N/C
P1.A08	D07	P1.B08	BG2IN*	P1.C08	D15	P1.D08	N/C	P1.Z08	GND
P1.A09	GND	P1.B09	BG2OUT*	P1.C09	GND	P1.D09	N/C	P1.Z09	N/C
P1.A10	N/C	P1.B10	BG3IN*	P1.C10	N/C	P1.D10	N/C	P1.Z10	GND
P1.A11	GND	P1.B11	BG3OUT*	P1.C11	BERR*	P1.D11	N/C	P1.Z11	N/C
P1.A12	DS1*	P1.B12	N/C	P1.C12	RESET	P1.D12	+3.3V	P1.Z12	GND
P1.A13	DS0*	P1.B13	N/C	P1.C13	LWORD*	P1.D13	N/C	P1.Z13	N/C
P1.A14	WRITE	P1.B14	N/C	P1.C14	AM5	P1.D14	+3.3V	P1.Z14	GND
P1.A15	GND	P1.B15	N/C	P1.C15	A23	P1.D15	N/C	P1.Z15	N/C
P1.A16	DTACK*	P1.B16	AM0	P1.C16	A22	P1.D16	+3.3V	P1.Z16	GND
P1.A17	GND	P1.B17	AM1	P1.C17	A21	P1.D17	N/C	P1.Z17	N/C
P1.A18	AS	P1.B18	AM2	P1.C18	A20	P1.D18	+3.3V	P1.Z18	GND
P1.A19	GND	P1.B19	AM3	P1.C19	A19	P1.D19	N/C	P1.Z19	N/C
P1.A20	IACK	P1.B20	GND	P1.C20	A18	P1.D20	+3.3V	P1.Z20	GND
P1.A21	IACKIN*	P1.B21	N/C	P1.C21	A17	P1.D21	N/C	P1.Z21	N/C
P1.A22	IACKOUT	P1.B22	N/C	P1.C22	A16	P1.D22	+3.3V	P1.Z22	GND
P1.A23	AM4	P1.B23	GND	P1.C23	A15	P1.D23	N/C	P1.Z23	N/C
P1.A24	A07	P1.B24	IRQ7*	P1.C24	A14	P1.D24	+3.3V	P1.Z24	GND
P1.A25	A06	P1.B25	IRQ6*	P1.C25	A13	P1.D25	N/C	P1.Z25	N/C
P1.A26	A05	P1.B26	IRQ5*	P1.C26	A12	P1.D26	+3.3V	P1.Z26	GND
P1.A27	A04	P1.B27	IRQ4*	P1.C27	A11	P1.D27	N/C	P1.Z27	N/C
P1.A28	A03	P1.B28	IRQ3*	P1.C28	A10	P1.D28	+3.3V	P1.Z28	GND
P1.A29	A02	P1.B29	IRQ2*	P1.C29	A09	P1.D29	N/C	P1.Z29	N/C
P1.A30	A0l	P1.B30	IRQ1*	P1.C30	A08	P1.D30	+3.3V	P1.Z30	GND
P1.A31	-12V	P1.B31	N/C	P1.C31	+12V	P1.D31	N/C	P1.Z31	N/C

P1.A32	+5V	P1.B32	+5V	P1.C32	+5V	P1.D32	+5V	P1.Z32	GND

P1 Pin Assignment

ROWA	SIG	ROWB	SIG	ROWC	SIG	ROWD	SIG	ROWZ	SIG
P2.A01	B +12V	P2.B01	+5V	P2.C01	B AGND	P2.D01	C -12V	P2.Z01	C AGND
P2.A02	B +12V	P2.B02	GND	P2.C02	B AGND	P2.D02	C AGND	P2.Z02	GND
P2.A03	B -12V	P2.B03	N/C	P2.C03	B AGND	P2.D03	C AGND	P2.Z03	N/C
P2.A04	B -12V	P2.B04	A24	P2.C04	B AGND	P2.D04	B Chan 1 +	P2.Z04	GND
P2.A05	N/C	P2.B05	A25	P2.C05	B AGND	P2.D05	B Chan 2 +	P2.Z05	B Chan 1 -
P2.A06	A Chan 1 +	P2.B06	A26	P2.C06	A Chan 1 -	P2.D06	B Chan 2 -	P2.Z06	GND
P2.A07	A Chan 2 +	P2.B07	A27	P2.C07	A Chan 2 -	P2.D07	B Chan 3 -	P2.Z07	B Chan 3 +
P2.A08	A Chan 3 +	P2.B08	A28	P2.C08	A Chan 3 -	P2.D08	B Chan 4 +	P2.Z08	GND
P2.A09	A Chan 4 +	P2.B09	A29	P2.C09	A Chan 4 -	P2.D09	B Chan 5 +	P2.Z09	B Chan 4 -
P2.A10	A Chan 5 +	P2.B10	A30	P2.C10	A Chan 5 -	P2.D10	B Chan 5 -	P2.Z10	GND
P2.A11	A Chan 6 +	P2.B11	A31	P2.C11	A Chan 6 -	P2.D11	B Chan 6 -	P2.Z11	B Chan 6 +
P2.A12	A Chan 7 +	P2.B12	GND	P2.C12	A Chan 7 -	P2.D12	B Chan 7 +	P2.Z12	GND
P2.A13	A Chan 8 +	P2.B13	+5V	P2.C13	A Chan 8 -	P2.D13	B Chan 8 +	P2.Z13	B Chan 7 -
P2.A14	N/C	P2.B14	N/C	P2.C14	N/C	P2.D14	B Chan 8 -	P2.Z14	GND
P2.A15	N/C	P2.B15	N/C	P2.C15	N/C	P2.D15	N/C	P2.Z15	N/C
P2.A16	N/C	P2.B16	N/C	P2.C16	N/C	P2.D16	N/C	P2.Z16	GND
P2.A17	N/C	P2.B17	N/C	P2.C17	N/C	P2.D17	N/C	P2.Z17	N/C
P2.A18	N/C	P2.B18	N/C	P2.C18	N/C	P2.D18	N/C	P2.Z18	GND
P2.A19	N/C	P2.B19	N/C	P2.C19	N/C	P2.D19	N/C	P2.Z19	N/C
P2.A20	N/C	P2.B20	N/C	P2.C20	N/C	P2.D20	N/C	P2.Z20	GND
P2.A21	N/C	P2.B21	N/C	P2.C21	N/C	P2.D21	N/C	P2.Z21	N/C
P2.A22	N/C	P2.B22	GND	P2.C22	N/C	P2.D22	N/C	P2.Z22	GND
P2.A23	A X Trigger	P2.B23	N/C	P2.C23	A /XTrigger	P2.D23	N/C	P2.Z23	N/C
P2.A24	N/C	P2.B24	N/C	P2.C24	N/C	P2.D24	N/C	P2.Z24	GND
P2.A25	A XCLK	P2.B25	N/C	P2.C25	A /XCLK	P2.D25	N/C	P2.Z25	N/C
P2.A26	A +12V	P2.B26	N/C	P2.C26	A AGND	P2.D26	N/C	P2.Z26	GND
P2.A27	A +12V	P2.B27	N/C	P2.C27	A AGND	P2.D27	B /XTrigger	P2.Z27	B X Trigger
P2.A28	A -12V	P2.B28	N/C	P2.C28	A AGND	P2.D28	N/C	P2.Z28	GND
P2.A29	A -12V	P2.B29	N/C	P2.C29	A AGND	P2.D29	B XCLK	P2.Z29	N/C
P2.A30	N/C	P2.B30	N/C	P2.C30	A AGND	P2.D30	B /XCLK	P2.Z30	GND
P2.A31	+3.3V	P2.B31	GND	P2.C31	+3.3V	P2.D31	GND	P2.Z31	+3.3V
P2.A32	+5V	P2.B32	Out+5V	P2.C32	Out+5V	P2.D32	+5V	P2.Z32	GND

P2 pin assignment

Denotes pins with thickened tracks which can be used for power inputs

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