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# **TB8308 4-GROUP MIXED SIGNAL VME64X TRANSITION BOARD**

## **Product Specification**

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## 1. INTRODUCTION

The Hytec TB8308 is a single-width VME64X Transition Board which accepts four 9000 series SBCs. When used for digital applications it allows:-

- 4 groups of 32 digital I/Os
- 4 SCSI connectors 1-4 routed to 8005 Digital I/O Board groups A-D
- Plant side (SCSI connectors) may be isolated from VME if opto coupler SCBs are used.
- External isolated power supply connected via SCSI pins.
- SCBs mount on pairs of 50-way connectors
- Power connector supplies +5V to SCB from VME
- 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 from VME bus (5A fuse fitted) for SCBs  
Number of channels: 200 line connection possible  
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 accommodate four 9000 series SCBs (normally 9307 and 9308 isolated digital I/O types). The full capability is then 128 isolated digital I/O connections. Ground discharge resistors are fitted at the base of the board.



## APPENDIX A

**Connection tables for TB8308 I/O Transition Board Used with 9307/9308 SCB**

Connector: 1		SCB Site: A							
SCSI Pin	VME Pin	I/O	Signal Name	SCB_A PL2	SCSI Pin	VME Pin	I/O	Signal Name	SCB_A PL2
1	P2-C6	2	A_2	2	26	P2-A6	1	A_1	1
2	P2-C7	4	A_4	4	27	P2-A7	3	A_3	3
3	P2-C8	6	A_6	6	28	P2-A8	5	A_5	5
4	P2-C9	8	A_8	8	29	P2-A9	7	A_7	7
5	P2-C10	10	A_10	10	30	P2-A10	9	A_9	9
6	P2-C11	12	A_12	12	31	P2-A11	11	A_11	11
7	P2-C12	14	A_14	14	32	P2-A12	13	A_13	13
8	P2-C13	16	A_16	16	33	P2-A13	15	A_15	15
9	P2-C14	18	A_18	18	34	P2-A14	17	A_17	17
10	P2-C15	20	A_20	20	35	P2-A15	19	A_19	19
11	P2-C16	22	A_22	22	36	P2-A16	21	A_21	21
12	P2-C17	24	A_24	24	37	P2-A17	23	A_23	23
13	P2-C18	26	A_26	26	38	P2-A18	25	A_25	25
14	P2-C19	28	A_28	28	39	P2-A19	27	A_27	27
15	P2-C20	30	A_30	30	40	P2-A20	29	A_29	29
16	P2-C21	32	A_32	32	41	P2-A21	31	A_31	31
17			IsoGnd	34	42			IsoGnd	33
18	P2-C23		IsoGnd	36	43	P2-A23		IsoGnd	35
19			IsoGnd	38	44			IsoGnd	37
20	P2-C25		IsoGnd	40	45	P2-A25		IsoGnd	39
21			IsoGnd	42	46			IsoGnd	41
22			IsoGnd	44	47			IsoGnd	43
23			IsoGnd	46	48			IsoGnd	45
24	P2-C29		+24VX	48	49	P2-C27		IsoGnd	47
25	P2-C30		+24VX	50	50	P2-C28		IsoGnd	49



Connector: 2		SCB Site: B							
SCSI Pin	VME Pin	I/O	Signal Name	SCB_B PL2	SCSI Pin	VME Pin	I/O	Signal Name	SCB_B PL2
1	P2-Z5	2	B_2	2	26	P2-D4	1	B_1	1
2	P2-D6	4	B_4	4	27	P2-D5	3	B_3	3
3	P2-D7	6	B_6	6	28	P2-Z7	5	B_5	5
4	P2-Z9	8	B_8	8	29	P2-D8	7	B_7	7
5	P2-D10	10	B_10	10	30	P2-D9	9	B_9	9
6	P2-D11	12	B_12	12	31	P2-Z11	11	B_11	11
7	P2-Z13	14	B_14	14	32	P2-D12	13	B_13	13
8	P2-D14	16	B_16	16	33	P2-D13	15	B_15	15
9	P2-D15	18	B_18	18	34	P2-Z15	17	B_17	17
10	P2-Z17	20	B_20	20	35	P2-D16	19	B_19	19
11	P2-D18	22	B_22	22	36	P2-D17	21	B_21	21
12	P2-D19	24	B_24	24	37	P2-Z19	23	B_23	23
13	P2-Z21	26	B_26	26	38	P2-D20	25	B_25	25
14	P2-D22	28	B_28	28	39	P2-D21	27	B_27	27
15	P2-D23	30	B_30	30	40	P2-Z23	29	B_29	29
16	P2-Z25	32	B_32	32	41	P2-D24	31	B_31	31
17			IsoGnd	34	42			IsoGnd	33
18	P2-D27		IsoGnd	36	43	P2-Z27		IsoGnd	35
19			IsoGnd	38	44			IsoGnd	37
20	P2-D30		IsoGnd	40	45	P2-D29		IsoGnd	39
21			IsoGnd	42	46			IsoGnd	41
22			IsoGnd	44	47			IsoGnd	43
23			IsoGnd	46	48			IsoGnd	45
24	P2-C4		+24VX	48	49	P2-C2		IsoGnd	47
25	P2-C5		+24VX	50	50	P2-C3		IsoGnd	49



Connector: 3		SCB Site: C							
SCSI Pin	VME Pin	I/O	Signal Name	SCB_C PL2	SCSI Pin	VME Pin	I/O	Signal Name	SCB_C PL2
1	P0-B11	2	C_2	2	26	P0-A11	1	C_1	1
2	P0-D11	4	C_4	4	27	P0-C11	3	C_3	3
3	P0-A12	6	C_6	6	28	P0-E11	5	C_5	5
4	P0-C12	8	C_8	8	29	P0-B12	7	C_7	7
5	P0-E12	10	C_10	10	30	P0-D12	9	C_9	9
6	P0-B13	12	C_12	12	31	P0-A13	11	C_11	11
7	P0-D13	14	C_14	14	32	P0-C13	13	C_13	13
8	P0-A14	16	C_16	16	33	P0-E13	15	C_15	15
9	P0-C14	18	C_18	18	34	P0-B14	17	C_17	17
10	P0-E14	20	C_20	20	35	P0-D14	19	C_19	19
11	P0-B15	22	C_22	22	36	P0-A15	21	C_21	21
12	P0-D15	24	C_24	24	37	P0-C15	23	C_23	23
13	P0-A16	26	C_26	26	38	P0-E15	25	C_25	25
14	P0-C16	28	C_28	28	39	P0-B16	27	C_27	27
15	P0-E16	30	C_30	30	40	P0-D16	29	C_29	29
16	P0-B17	32	C_32	32	41	P0-A17	31	C_31	31
17			IsoGnd	34	42			IsoGnd	33
18	P0-A18		IsoGnd	36	43	P0-E17		IsoGnd	35
19			IsoGnd	38	44			IsoGnd	37
20	P0-E18		IsoGnd	40	45	P0-D18		IsoGnd	39
21			IsoGnd	42	46			IsoGnd	41
22			IsoGnd	44	47			IsoGnd	43
23			IsoGnd	46	48			IsoGnd	45
24	P0-D2		+24VX	48	49	P0-D19		IsoGnd	47
25	P0-D3		+24VX	50	50	P2-Z1		IsoGnd	49



Connector: 4		SCB Site: D							
SCSI Pin	VME Pin	I/O	Signal Name	SCB_D PL2	SCSI Pin	VME Pin	I/O	Signal Name	SCB_D PL2
1	P0-B1	2	D_2	2	26	P0-A1	1	D_1	1
2	P0-D1	4	D_4	4	27	P0-C1	3	D_3	3
3	P0-A2	6	D_6	6	28	P0-E1	5	D_5	5
4	P0-C2	8	D_8	8	29	P0-B2	7	D_7	7
5	P0-E2	10	D_10	10	30	P0-D2	9	D_9	9
6	P0-B3	12	D_12	12	31	P0-A3	11	D_11	11
7	P0-D3	14	D_14	14	32	P0-C3	13	D_13	13
8	P0-A4	16	D_16	16	33	P0-E3	15	D_15	15
9	P0-C4	18	D_18	18	34	P0-B4	17	D_17	17
10	P0-E4	20	D_20	20	35	P0-D4	19	D_19	19
11	P0-B5	22	D_22	22	36	P0-A5	21	D_21	21
12	P0-D5	24	D_24	24	37	P0-C5	23	D_23	23
13	P0-A6	26	D_26	26	38	P0-E5	25	D_25	25
14	P0-C6	28	D_28	28	39	P0-B6	27	D_27	27
15	P0-E6	30	D_30	30	40	P0-D6	29	D_29	29
16	P0-B7	32	D_32	32	41	P0-A7	31	D_31	31
17			IsoGnd	34	42			IsoGnd	33
18	P0-A8		IsoGnd	36	43	P0-E7		IsoGnd	35
19			IsoGnd	38	44			IsoGnd	37
20	P0-E8		IsoGnd	40	45	P0-D8		IsoGnd	39
21			IsoGnd	42	46			IsoGnd	41
22			IsoGnd	44	47			IsoGnd	43
23			IsoGnd	46	48			IsoGnd	45
24	P0-C10		+24VX	48	49	P0-D9		IsoGnd	47
25	P0-E10		+24VX	50	50	P0-A10		IsoGnd	49

**APPENDIX B****I/O Connector – Internal 50 way on 8308 Board**

<b>Pin</b>	<b>Signal</b>	<b>Pin</b>	<b>Signal</b>
1	I/O1	26	I/O26
2	I/O2	27	I/O27
3	I/O3	28	I/O28
4	I/O4	29	I/O29
5	I/O5	30	I/O30
6	I/O6	31	I/O31
7	I/O7	32	I/O32
8	I/O8	33	I/O33
9	I/O9	34	I/O34
10	I/O10	35	I/O35
11	I/O11	36	I/O36
12	I/O12	37	I/O37
13	I/O13	38	I/O38
14	I/O14	39	I/O39
15	I/O15	40	I/O40
16	I/O16	41	I/O41
17	I/O17	42	I/O42
18	I/O18	43	I/O43
19	I/O19	44	I/O44
20	I/O20	45	I/O45
21	I/O21	46	I/O46
22	I/O22	47	I/O47
23	I/O23	48	I/O48
24	I/O24	49	I/O49
25	I/O25	50	I/O50



## APPENDIX C

### VME64X PIN ASSIGNMENT ON HYTEC 8005 IP CARRIER BOARD

#### P0 pin assignment

ROW A	SIG	ROW B	SIG	ROW C	SIG	ROW D	SIG	ROW E	SIG	ROW F	SIG
P0.A01	SCD_0	P0.B01	SCD_1	P0.C01	SCD_2	P0.D01	SCD_3	P0.E01	SCD_4	P0.F01	GND
P0.A02	SCD_5	P0.B02	SCD_6	P0.C02	SCD_7	P0.D02	SCD_8	P0.E02	SCD_9	P0.F02	GND
P0.A03	SCD_10	P0.B03	SCD_11	P0.C03	SCD_12	P0.D03	SCD_13	P0.E03	SCD_14	P0.F03	GND
P0.A04	SCD_15	P0.B04	SCD_16	P0.C04	SCD_17	P0.D04	SCD_18	P0.E04	SCD_19	P0.F04	GND
P0.A05	SCD_20	P0.B05	SCD_21	P0.C05	SCD_22	P0.D05	SCD_23	P0.E05	SCD_24	P0.F05	GND
P0.A06	SCD_25	P0.B06	SCD_26	P0.C06	SCD_27	P0.D06	SCD_28	P0.E06	SCD_29	P0.F06	GND
P0.A07	SCD_30	P0.B07	SCD_31	P0.C07	SCD_ST0	P0.D07	SCD_ST1	P0.E07	GND	P0.F07	GND
P0.A08	GND	P0.B08	GND	P0.C08	GND	P0.D08	GND	P0.E08	GND	P0.F08	GND
P0.A09	GND	P0.B09	GND	P0.C09	GND	P0.D09	GND	P0.E09	GND	P0.F09	GND
P0.A10	GND	P0.B10	GND	P0.C10	GND	P0.D10	GND	P0.E10	GND	P0.F10	GND
P0.A11	SCC_0	P0.B11	SCC_1	P0.C11	SCC_2	P0.D11	SCC_3	P0.E11	SCC_4	P0.F11	GND
P0.A12	SCC_5	P0.B12	SCC_6	P0.C12	SCC_7	P0.D12	SCC_8	P0.E12	SCC_9	P0.F12	GND
P0.A13	SCC_10	P0.B13	SCC_11	P0.C13	SCC_12	P0.D13	SCC_13	P0.E13	SCC_14	P0.F13	GND
P0.A14	SCC_15	P0.B14	SCC_16	P0.C14	SCC_17	P0.D14	SCC_18	P0.E14	SCC_19	P0.F14	GND
P0.A15	SCC_20	P0.B15	SCC_21	P0.C15	SCC_22	P0.D15	SCC_23	P0.E15	SCC_24	P0.F15	GND
P0.A16	SCC_25	P0.B16	SCC_26	P0.C16	SCC_27	P0.D16	SCC_28	P0.E16	SCC_29	P0.F16	GND
P0.A17	SCC_30	P0.B17	SCC_31	P0.C17	SCC_ST0	P0.D17	SCC_ST1	P0.E17	GND	P0.F17	GND
P0.A18	GND	P0.B18	GND	P0.C18	GND	P0.D18	GND	P0.E18	GND	P0.F18	GND
P0.A19	GND	P0.B19	GND	P0.C19	GND	P0.D19	GND	P0.E19	GND	P0.F19	GND

#### P1 Pin Assignment

PI ROW A	SIGNAL	PI ROW B	SIGNAL	PI ROW C	SIGNAL	PI ROW D	SIGNAL	PI 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	A01	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



**P2 pin assignment**

ROWA	SIG	ROWB	SIG	ROWC	SIG	ROWD	SIG	ROWZ	SIG
P2.A01	GND	P2.B01	+5V	P2.C01	GND	P2.D01	C -12V	P2.Z01	C AGND
P2.A02	GND	P2.B02	GND	P2.C02	GND	P2.D02	C AGND	P2.Z02	GND
P2.A03	GND	P2.B03	N/C	P2.C03	GND	P2.D03	C AGND	P2.Z03	N/C
P2.A04	GND	P2.B04	A24	P2.C04	GND	P2.D04	SCB_0	P2.Z04	GND
P2.A05	GND	P2.B05	A25	P2.C05	GND	P2.D05	SCB_2	P2.Z05	SCB_1
P2.A06	SCA_0	P2.B06	A26	P2.C06	SCA_1	P2.D06	SCB_3	P2.Z06	GND
P2.A07	SCA_2	P2.B07	A27	P2.C07	SCA_3	P2.D07	SCB_5	P2.Z07	SCB_4
P2.A08	SCA_4	P2.B08	A28	P2.C08	SCA_5	P2.D08	SCB_6	P2.Z08	GND
P2.A09	SCA_6	P2.B09	A29	P2.C09	SCA_7	P2.D09	SCB_8	P2.Z09	SCB_7
P2.A10	SCA_8	P2.B10	A30	P2.C10	SCA_9	P2.D10	SCB_9	P2.Z10	GND
P2.A11	SCA_10	P2.B11	A31	P2.C11	SCA_11	P2.D11	SCB_11	P2.Z11	SCB_10
P2.A12	SCA_12	P2.B12	GND	P2.C12	SCA_13	P2.D12	SCB_12	P2.Z12	GND
P2.A13	SCA_14	P2.B13	+5V	P2.C13	SCA_15	P2.D13	SCB_14	P2.Z13	SCB_13
P2.A14	SCA_16	P2.B14	N/C	P2.C14	SCA_17	P2.D14	SCB_15	P2.Z14	GND
P2.A15	SCA_18	P2.B15	N/C	P2.C15	SCA_19	P2.D15	SCB_17	P2.Z15	SCB_16
P2.A16	SCA_20	P2.B16	N/C	P2.C16	SCA_21	P2.D16	SCB_18	P2.Z16	GND
P2.A17	SCA_22	P2.B17	N/C	P2.C17	SCA_23	P2.D17	SCB_20	P2.Z17	SCB_19
P2.A18	SCA_24	P2.B18	N/C	P2.C18	SCA_25	P2.D18	SCB_21	P2.Z18	GND
P2.A19	SCA_26	P2.B19	N/C	P2.C19	SCA_27	P2.D19	SCB_23	P2.Z19	SCB_22
P2.A20	SCA_28	P2.B20	N/C	P2.C20	SCA_29	P2.D20	SCB_24	P2.Z20	GND
P2.A21	SCA_30	P2.B21	N/C	P2.C21	SCA_31	P2.D21	SCB_26	P2.Z21	SCB_25
P2.A22	SCA_ST0	P2.B22	GND	P2.C22	SCA_ST1	P2.D22	SCB_27	P2.Z22	GND
P2.A23	GND	P2.B23	N/C	P2.C23	GND	P2.D23	SCB_29	P2.Z23	SCB_28
P2.A24	GND	P2.B24	N/C	P2.C24	GND	P2.D24	SCB_30	P2.Z24	GND
P2.A25	GND	P2.B25	N/C	P2.C25	GND	P2.D25	SCB_ST0	P2.Z25	SCB_31
P2.A26	GND	P2.B26	N/C	P2.C26	GND	P2.D26	SCB_ST1	P2.Z26	GND
P2.A27	GND	P2.B27	N/C	P2.C27	GND	P2.D27	GND	P2.Z27	GND
P2.A28	GND	P2.B28	N/C	P2.C28	GND	P2.D28	GND	P2.Z28	GND
P2.A29	GND	P2.B29	N/C	P2.C29	GND	P2.D29	GND	P2.Z29	GND
P2.A30	GND	P2.B30	N/C	P2.C30	GND	P2.D30	GND	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