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SCB 9202

Analogue Signal Conditioning Board

USERS MANUAL

PCB Issue 2

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Revision History

The following table shows the revision history for this document.

Date	Version	Change Notes
20/09/2018	2.0	PCB Issue 2
30/12/2019	2.1	Change from Hytec to Newwood Solutions for contact details

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1. INTRODUCTION

The SCB 9202 is a small analogue signal conditioning board used to route signals from Industry Pack I/O to front panel SCSI connectors in the IOC 9010 and VME64X VTB 8307 Mixed Signal Transition Board. Sixteen pairs of circuits are signal conditioned by resistor-capacitor filter networks. These can be enabled or by-passed by selection jumpers. A power connector accepts isolated +/-12V power from the main board and routes it to particular pins on the SCSI and IP-I/O connectors

2. PRODUCT SPECIFICATIONS

2.1 Power Requirements

+/-12V is accepted from main-board mounted DC-DC converters for routing to the main unit SCSI and IP I/O connectors.

2.2 Operating Temperature Range

0 to +45 deg Celsius ambient.

2.3 Mechanical

Printed circuit board with two 50-way sockets PL1, PL2 and 6 way power plug PL3 (+/-12V and AGND)
Board Dimensions: 2.55 x 1.80 inches

2.4 Signal Specifications

PL2/1 to PL2/32 are arranged in pairs which are filtered and routed to PL1/1 to PL1/32

PL2/1 to PL1/1 has 1k resistance in series

PL2/2 to PL1/2 has 1k resistance in series

PL1/1 to PL1/2 has capacitance C1 between the pins see details below

Hence PL2/1 and PL2/2 look into 2k resistance with C1 capacitance filter network.

PL1/1 and PL1/2 accept the filtered output.

Jumpers J1 and J2 allow the filter to be included or by-passed.

PL2/1 has 1M resistance to AGND

PL2/2 has 1M resistance to AGND

This circuit is repeated 16 times for compatibility with the following ADCs and DACs.

ADC8401, DAC8402, ADC8414, DAC8415, ADC8417 and ADC8424

Pins PL2/33 to PL2/50 are routed straight through to PL1/33 to PL1/50.

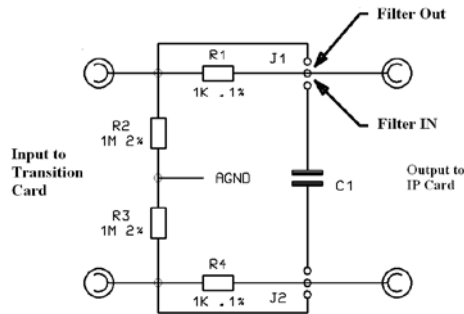
2.5 Low Pass Filter

The 9202 signal conditioning card ties the inputs/outputs of the ADC/DAC to AGND via 1Mohm resistors. It also has a low pass filter which can be switched in by jumpers (denoted by affixed label) on the card. The filter value as set by C1 (see diagram below) should be determined before delivery. The outer jumpers are coloured to signify the value of C1 fitted.

8401	2n7F	Outside jumper	Yellow
8413	1nF	Outside jumper	Red
8414	1nF	Outside jumper	Red
8417	2n7F	Outside jumper	Blue
8424	300pF to 330pF	Outside jumper	Green

The default value fitted is 1nF outside jumper Red.

The 9202 can also be setup to be a straight through card by setting the jumpers to link the filter out.



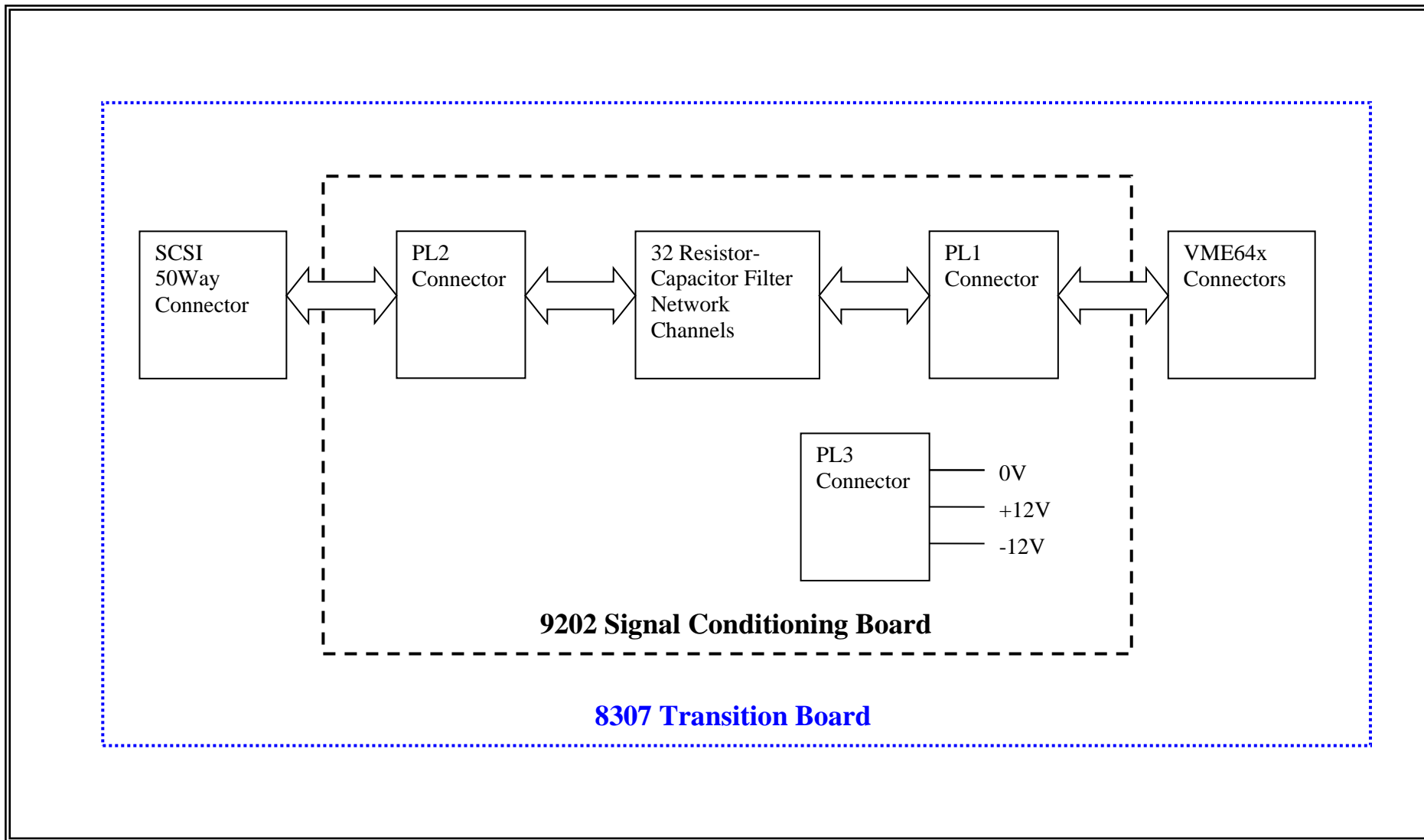
9202 signal conditioning card

Card 8308 and 8307

The 8308 allows for plug in signal card to be plugged in to a single-width VME64X Transition Board.

The 8308 has four sites equating to IP positions A, B, C and D.

The 8307 has straight-through connections for 8002/4 carrier board sites A and B. Signal conditioning in-line with connections to sites C and D by means of plug-in signal conditioning board (SCBs).



Block Diagram Example of connections between the 8307 transition card and 9202 SCB module

APPENDIX A
Table1 of Signal Allocation PL1 on 9202 SCB

Pin	Signal	Pin	Signal
1	VME I/O 1 +ve	26	VME I/O 13 -ve
2	VME I/O 1 -ve	27	VME I/O 14 +ve
3	VME I/O 2 +ve	28	VME I/O 14 -ve
4	VME I/O 2 -ve	29	VME I/O 15 +ve
5	VME I/O 3 +ve	30	VME I/O 15 -ve
6	VME I/O 3 -ve	31	VME I/O 16 +ve
7	VME I/O 4 +ve	32	VME I/O 16 -ve
8	VME I/O 4 -ve	33	GO IN
9	VME I/O 5 +ve	34	/GO IN
10	VME I/O 5 -ve	35	XTrigger
11	VME I/O 6 +ve	36	/XTrigger
12	VME I/O 6 -ve	37	GO OUT
13	VME I/O 7 +ve	38	/GO OUT
14	VME I/O 7 -ve	39	XCik
15	VME I/O 8 +ve	40	/XCik
16	VME I/O 8 -ve	41	+12VX
17	VME I/O 9 +ve	42	AGND
18	VME I/O 9 -ve	43	+12VX
19	VME I/O 10 +ve	44	AGND
20	VME I/O 10 -ve	45	-12VX
21	VME I/O 11 +ve	46	AGND
22	VME I/O 11 -ve	47	-12VX
23	VME I/O 12 +ve	48	AGND
24	VME I/O 12 -ve	49	
25	VME I/O 13 +ve	50	AGND

APPENDIX B
Table2 of Signal Allocation PL2 on 9202 SCB

Pin	Signal	Pin	Signal
1	SCSI I/O 1 +ve	26	SCSI I/O 13 -ve
2	SCSI I/O 1 -ve	27	SCSI I/O 14 +ve
3	SCSI I/O 2 +ve	28	SCSI I/O 14 -ve
4	SCSI I/O 2 -ve	29	SCSI I/O 15 +ve
5	SCSI I/O 3 +ve	30	SCSI I/O 15 -ve
6	SCSI I/O 3 -ve	31	SCSI I/O 16 +ve
7	SCSI I/O 4 +ve	32	SCSI I/O 16 -ve
8	SCSI I/O 4 -ve	33	GO IN
9	SCSI I/O 5 +ve	34	/GO IN
10	SCSI I/O 5 -ve	35	XTrigger
11	SCSI I/O 6 +ve	36	/XTrigger
12	SCSI I/O 6 -ve	37	GO OUT
13	SCSI I/O 7 +ve	38	/GO OUT
14	SCSI I/O 7 -ve	39	XClk
15	SCSI I/O 8 +ve	40	/XClk
16	SCSI I/O 8 -ve	41	+12VX
17	SCSI I/O 9 +ve	42	AGND
18	SCSI I/O 9 -ve	43	+12VX
19	SCSI I/O 10 +ve	44	AGND
20	SCSI I/O 10 -ve	45	-12VX
21	SCSI I/O 11 +ve	46	AGND
22	SCSI I/O 11 -ve	47	-12VX
23	SCSI I/O 12 +ve	48	AGND
24	SCSI I/O 12 -ve	49	
25	SCSI I/O 13 +ve	50	AGND

PL3 Connections

Pins 1&2 N/C
 Pins 3 N/C
 Pin 4 AGND
 Pin 5 +12V
 Pin 6 -12V

APPENDIX C
Table3 of 9010 or 8307 SCSI Pin Allocation

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