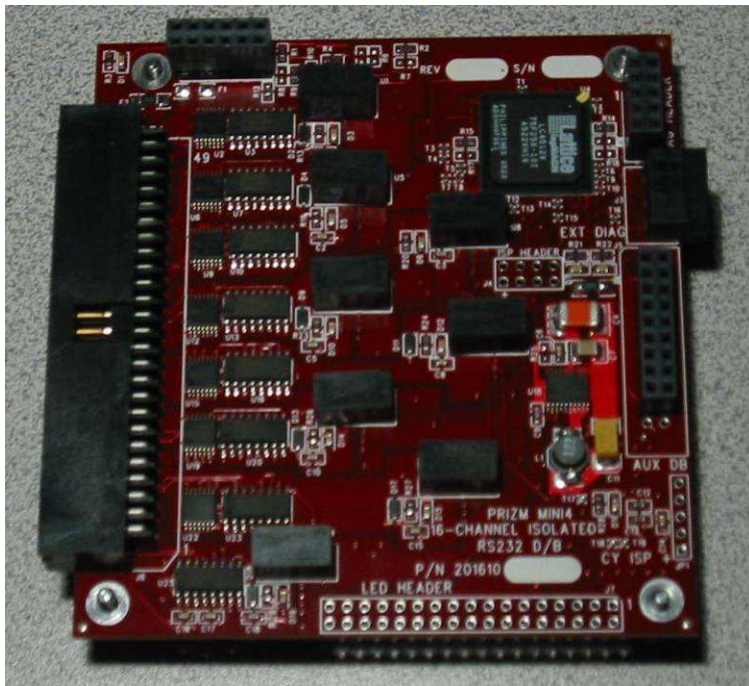


PRIZM™

16-Port RS-232 Daughterboard (P/N 201610-xxx)

User's Manual And Troubleshooting Guide



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1 16-Port RS-232 Daughterboard, Part Number 201610-XXX.

The Prizm 16-Port RS-232 Daughterboard provides sixteen (16) RS-232 channels that are multiplexed onto a single Prizm high-speed serial data channel. Daughterboard channel selection of RS-232 can be simply done by selecting a few jumper resistors and can be accomplished on a channel-by-channel basis for mixed data applications. With an additional pluggable daughter board, a total of 20 independent serial channels can be carried on a single Daughterboard. The combinations of types of channels (RS-232, RS-422, and/or RS-485) will vary depending on the type and configuration of daughtercards. Multiple daughterboard's can be used on a system depending on configuration of other channels within the system.

Each RS-232 data channel is electrically isolated and independently powered. Each RS-232 can support up to 115.4 Kilo baud.

1.1 16-Port RS-232 Daughterboard/ Revision History:

The RS-232 Daughterboard has gone through the following printed circuit board (PCB) and Assembly revisions:

PCB Revision A/Assembly Revision A Original design

1.2 16-Port RS-232 Daughterboard/ Dash (-) Number Definitions

The RS-232 Daughterboard has a Dash Number appended to the part number. This Dash Number identifies the specific board configurations:

-001 original configuration.

1.3 Manual Revision History:

The manual has gone through the following revisions:

Revision A Original

1.4 16-Port RS-232 Daughterboard Operation:

On VIDEO 3 systems, the Submux3 motherboard is connected to the PRIZM fiber optic modem via the backplane.

There is 50-pin dual-row rectangular Amp connector on the on the front of the motherboard. A pin out is given below

Signal Name	Pin	Pin	Signal Name
R1	1	2	T1
GND_ISO_A	3	4	GND_ISO_A
R2	5	6	T2
R3	7	8	T3
GND_ISO_B	9	10	GND_ISO_B
R4	11	12	T4
R5	13	14	T5
GND_ISO_C	15	16	GND_ISO_C
R6	17	18	T6
R7	19	20	T7
GND_ISO_D	21	22	GND_ISO_D
R8	23	24	T8
R9	25	26	T9
GND_ISO_E	27	28	GND_ISO_E
R10	29	30	T10
R11	31	32	T11
GND_ISO_F	33	34	GND_ISO_F
R12	35	36	T12
R13	37	38	T13
GND_ISO_G	39	40	GND_ISO_G
R14	41	42	T14
R15*	43	44	T15*
GND_ISO_H	45	46	GND_ISO_H
R16*	47	48	T16*
N/C	49	50	N/C

1.4.1 Test Data Channels

If an appropriate serial data test generator is available (or a PC with Communications software, or even a square wave generator) the individual channels can be tested on a channel-by-channel basis. This test can be done for all channels on the motherboard and all daughterboards. The user must be sure that the test signal levels are compatible with the interface/channel being tested.

2 16-Channel RS-232 Daughterboard, Part Number 201610-xxx

The Prizm 16-channel RS-232 Daughter board supports 8 independent (or 16 pair wise), isolated RS-232 serial data channels, when plugged onto a Mini4 motherboard. Up to a total of 2 daughter boards may be stacked on one motherboard. The maximum data rate that this board supports is 115Kbaud. This board can be intermixed with the 4-channel RS-485/ 2 channel RS-422 Daughter board.

2.1 RS-232 Daughterboard Troubleshooting

(MUST BE USED WITH MINI4 MOTHERBOARD)

In normal operation the following LED status should be observed:

DC power LED – Lit green

These are surface mount green LEDs

Ch1 & 2: D19
 Ch3 & 4 D14
 Ch5 & 6 D10
 Ch7 & 8 D5
 Ch9 &10 D15
 Ch11&12 D12
 Ch13&14 D6
 Ch15&16 D3

RS-232 Data Activity LEDs (dual LED on each channel:

- TXD LED - LED lit RED if data going out of channel
- RXD LED - LED lit GREEN if data going into channel

Ch1	D27	GREEN=RX, RED =TX
Ch2	D28	GREEN=RX, RED =TX
Ch3	D35	GREEN=RX, RED =TX
Ch4	D36	GREEN=RX, RED =TX
Ch5	D33	GREEN=RX, RED =TX
Ch6	D34	GREEN=RX, RED =TX
Ch7	D31	GREEN=RX, RED =TX
Ch8	D32	GREEN=RX, RED =TX
Ch9	D29	GREEN=RX, RED =TX
Ch10	D30	GREEN=RX, RED =TX
Ch11	D26	GREEN=RX, RED =TX
Ch12	D27	GREEN=RX, RED =TX
Ch13	D24	GREEN=RX, RED =TX
Ch14	D25	GREEN=RX, RED =TX
Ch15	D20	GREEN=RX, RED =TX
Ch16	D21	GREEN=RX, RED =TX

If one or more data channels are out:

- Run the data loop back test described below, checking each channel and its LEDs.
- If RXD LED does not light, check surface mount fuse (F2, F3, F4, or F5) for that channel with an ohmmeter, replace fuse if blown
- Replace board with spare

If no spare is available:

- Move data connector to a spare working channel, if available

2.1.1 RS-232 Daughterboard Data Loop-back Test

With a RS232 daughterboard in both the ROV and surface units, run RS-232 data into pins 1 and 3 of the connector of the channel being tested. The RS-232 data can be input into either the ROV. On the other end of the link, short pins 1 and 3 of the channel being tested. This will allow the two boards to talk to each other in loopback. Both RX and TX LEDs on both boards should be lit and/or flickering. If any of the LEDs are not operating check one of the other channels. If the LEDs operate on that channel, replace with a spare board or use the working channels only.