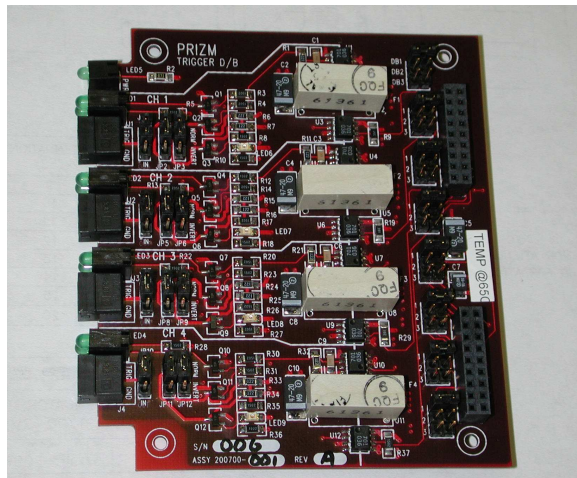




## Trigger Interface Daughterboard (P/N 200700-xxx)

### User's Manual And Troubleshooting Guide



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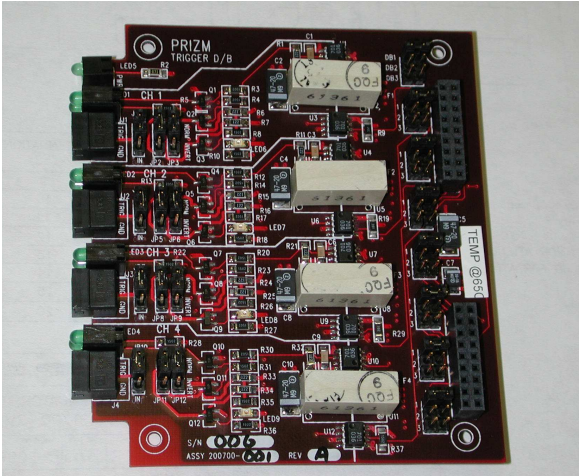
## MANUAL REVISION HISTORY

REVISION NUMBER	DATE	BY	REASON FOR REVISION
A	4/10/01	GK	ORIGINAL
B	4/16/01	---	UPDATE MANUAL
C	11/04/03	GSG	1. REMOVE RS-422/485 SECTIONS 2. REVISE/CORRECT SECTIONS
D	11/19/2004	BGH	ADDED DOCUMENTATION OF -003 CONFIGURATION
E	2/24/2009	IB	UPDATED CONTACT INFORMATION TO REFLECT MOOG COMPONENTS GROUP

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## 1 Trigger Interface Daughterboard, P/N: 200700-xxx



The Prizm Trigger Interface Daughterboard provides four channels of electrically-isolated digital Input or Output for use with most Acoustic Responder channels. This board is meant for use as a daughterboard on the standard PRIZM Submux or Submux2 motherboard. Refer to the Submux or Submux2 manual for a description of those particular boards and the standard data daughterboards.

Each trigger channel is electrically isolated and independently powered. The board contains jumper selections for Input/Output as well as Normal/Invert for both Input and Output signals.

### 1.1 Trigger Interface Daughterboard Revision History:

The Trigger Interface Daughterboard has gone through the following printed circuit board (PCB) and Assembly revisions:

PCB Revision A/Assembly Revision A Original design on is fully compatible with the original.

### 1.2 Trigger Interface Daughterboard Dash (-) Number Definitions

The Trigger Interface Daughterboard has a Dash Number appended to the part number. This Dash Number identifies the specific board configurations:

-001 original configuration. Intended for use with SIMRAD-compatible responders, provides for 15volt levels on the output. The SIMRAD system requires a positive going pulse for triggering of the responder.

-002 Intended for use with Accusonic/ORE-comptible responders, provides TTL (5VDC) levels on the output. The ORE system requires a negative going pulse for triggering of the responder.

-003 Provides TTL compatible levels on the output.

### 1.3 Trigger Interface Daughter board Operation:

Each channel circuit has it's own DC-DC converter and opto-couplers to provide isolation from of the I/O signals from the other channels and multiplexer system.

Jumper posts JP13 through JP20 handle the selection of the daughterboard identity. A single jumper shunt should be placed on each of the jumper posts to select daughterboard #1 with “DB1”, daughterboard #2 with “DB2” or daughterboard #3 with “DB3”.

**Note:** *Each daughterboard set (one surface and one sub-sea) should have a different board identity (i.e. DB1, DB2 or DB3) or damage to the daughterboards or motherboard may result.*

There are 4 black two pin Phoenix connectors on the front of the board. Pin 1 is the trigger input/output signal, while pin 2 is the corresponding ground/shield.

The board contains jumpers to allow the user to configure each channel for input or output (JP1 4, 7 & 10). Typically the vehicle channels will be selected as Output and the Surface channels will be selected as Input.

Each channel's input and output is also jumper selectable for Normal or Inverted operation (JP2, 5, 8 & 11 for the Output and JP3, 6, 9 & 12 for the Input). Responder systems that utilize a positive going pulse should be configured for Normal Input and Output, while responder systems that require a negative going pulse should be configured for Inverted operation on the Input and Output.

### **1.3.1 Trigger Interface Daughterboard Indicators:**

There is a single green LED indicator (LED5) at the top of the board to indicate +5VDC power status; LED5 will be lit if +5VDC is available on the daughterboard.

There are 4 surface mount LEDs (LEDs 6–9) on the board top layer to indicate isolated power to each of the channels.

The dual green LEDs (LED1, 2, 3 and 4) associated with each channel will flash to indicate Input and Output traffic on a per channel basis. The left LED (or bottom if board is laid flat) indicates an input signal is present while the right LED (or top if board is laid flat) indicates an output signal is present.

### **1.3.2 Trigger Interface Daughterboard Specifications:**

Number of data Channels:	4 per daughterboard
Data type supported:	Trigger Responder Pulse
Data rates supported:	N/A
Per channel sample rate:	3.125 Msps typically for each of the channels, determined by motherboard

### **1.3.3 Trigger interface Daughterboard Dimensions:**

Custom format - 100 mm wide x 86 mm long x 13 mm thick  
(3.937 in x 3.40 in x 0.50 in )

VME 3-U PCB and faceplate in rack: None

### 1.3.4 Trigger Interface Daughterboard Power Requirements:

The Trigger Interface utilizes approximately 500mA @ 5VDC.

## 1.4 Trigger Interface Daughterboard Troubleshooting

NOTE: THIS DAUGHTERBOARD MUST BE USED WITH A SUBMUX MOTHERBOARD.

In normal operation the following LED status should be observed:

DC power LED (LED5) – Lit green

Trigger I/O Data Activity LEDs (dual LED on each channel, LED1 thru LED4):

- Input LED - Left LED lit green if data going into of channel
- Output LED - Right LED lit green if data going out of channel

### 1.4.1 Trigger Interface Daughterboard Board Level Testing

#### POWER RELATED

If DC power LED is out to both the Motherboard and Daughterboard:

- Make sure 5VDC is available at the backplane connector.
- Check 2Amp fuse (F1) on Motherboard with ohmmeter, replace with another PICO fuse if blown.

If the Motherboard has power but the Daughterboard DC Power LED is not lit:

- Verify +5VDC at the motherboard to daughter-board transmit and receive headers (J4 and J5) on the motherboard
- Check Power LED on the daughterboard.

If the Daughterboard Power LED (LED5) is on, but channels do not seem to be working:

- Verify that the individual channel Power LEDs (LED6-9) are lit
  - If they are not, check the fuse for each channel (F1-F4)
- Verify the actual power to each channel by measuring the isolated power for each channel at C2, 4, 8 & 10 (Power should be in +15VDC+/-10%)

#### SIGNAL RELATED (assumes all Power Related Items checked out OK)

If either the local Input or remote Output LED are not lighting when input signal is applied:

- Verify the input signal is present with a scope.
- Check daughterboards on each end of the link to verify that the same board number (1, 2 or 3) positions have been selected at JP13 – JP20.
- Verify that no other daughterboard on the motherboard stack is addressed as the same daughterboard.
- Check that Submux board at other end of link is plugged in

- Run Submux motherboard data loop back test (see Submux data loopback test in Submux section of manual), checking each channel and its LEDs to verify the Submux motherboard is working
- If still not operational, replace with spare board

If no spare is available:

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