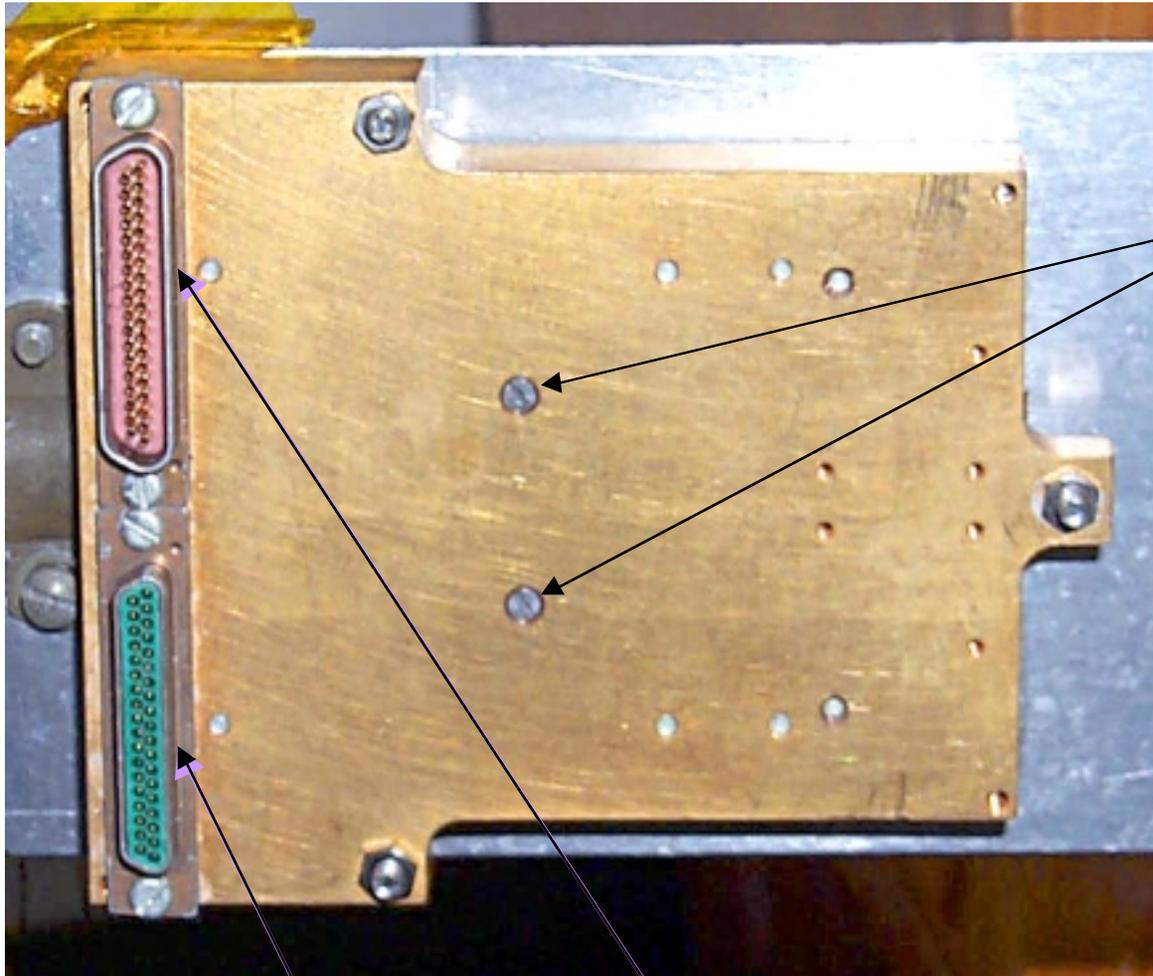


**Connectors used in FIBRE Detector Package:**

Detector package has  $\mu$ D37 PSB and LSB. Viewed from underneath, the package looks like this:



SQUIDS are behind these screws (Betty only)

"Fast" Connector: MDM-37PSB (male) "Slow" Connector: MDM-37SSB (female)

Overview:

Chas is being wired for  $T_c$  checks. It is assumed that the cryostat to be used is BACUS, although anything which can provide 2 pairs of low resistance (<100 Ohms total) current leads and 8 pairs of moderate resistance (<1kOhms total) sense leads should suffice.

Function	<100 $\Omega$	<1k $\Omega$
2x4 Sense; Left		8
2x4 Sense; Right		8
2 Source; Left	2	
2 Source; Right	2	
Totals	4	16

The principle: one cable assembly with two connectors on the Breakout Board side lead to one connector on the Detector Box. On the Breakout Board side, each connector (MDM-37PSB) will use the SA Out and the 8 Bolometer Bias lines to provide the Current Source and 4 Sense pairs. On the Detector Package side, the connector (MDM-37PSB) will use the "Slow" side of the Package.

Wiring the "Chas" FIBRE Detector Package:

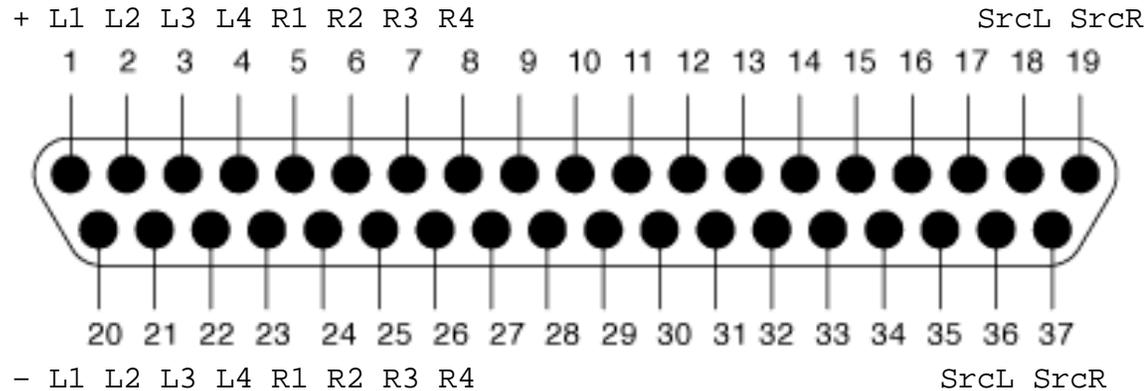
The FIBRE Detector Package must be wired up according to the functions laid out on each half of the board. For convention, when the FIBRE Squid Board is oriented so you can read the writing on it, the **Left side is C0** and the **Right side is C1**. This naming convention shall be used for Chas; the connectors should have "C0" and "C1" scribed on the Breakout Board ends to keep things straight. Refer to page 5 for a diagram of the cable.

The internal wiring is a bit unconventional. Only 20 wires are included in the package. The 16 "Sense" lines are short wires connected to the 16 Bias Source holes on the SQUID Board. The 4 "Source" lines are to be connected to 4 pads on the SQUID board which will be added by hand (see page 4 for location).

Inside the box, wires should be 0.005" or 0.003" NbTi wire with copper cladding. Outside the box, cables should be made of 0.005" or 0.003" NbTi wire with CuNi cladding. Twisted pairs should be used everywhere. After assembly, pot each end of cables in GE varnish for strain relief. Bundle cables every 2" with waxed dental floss to prevent wire separation and tangling.

### Chas T<sub>c</sub> Check Cable Definition

Function	Breakout (μD-37 SSB)	Cable, "Slow" (μD-37 PSB)	Detector Package (μD-37 SSB)	Board (use Cu clad!)
Sense L1	25 / 26 C0	1 / 20	1 / 20	Left; Position 3 / 2
Sense L2	27 / 28 C0	2 / 21	2 / 21	L; 1 / 0
Sense L3	29 / 30 C0	3 / 22	3 / 22	L; 7 / 6
Sense L4	31 / 32 C0	4 / 23	4 / 23	L; 5 / 4
Sense R1	25 / 26 C1	5 / 24	5 / 24	R ; 3 / 2
Sense R2	27 / 28 C1	6 / 25	6 / 25	R ; 1 / 0
Sense R3	29 / 30 C1	7 / 26	7 / 26	R ; 7 / 6
Sense R4	31 / 32 C1	8 / 27	8 / 27	R ; 5 / 4
Source L	19 / 37 C0	18 / 36	18 / 36	L ; + / - pads
Source R	19 / 37 C1	19 / 37	19 / 37	R ; + / - pads



Connector:

(seen facing pins on male; e.g., cable ends)

Wiring Diagram:

Note the numbers which denote which bias line is to be used (refer to table on previous page)

This sketch shows the Right hand side of the board; Left hand is identical.

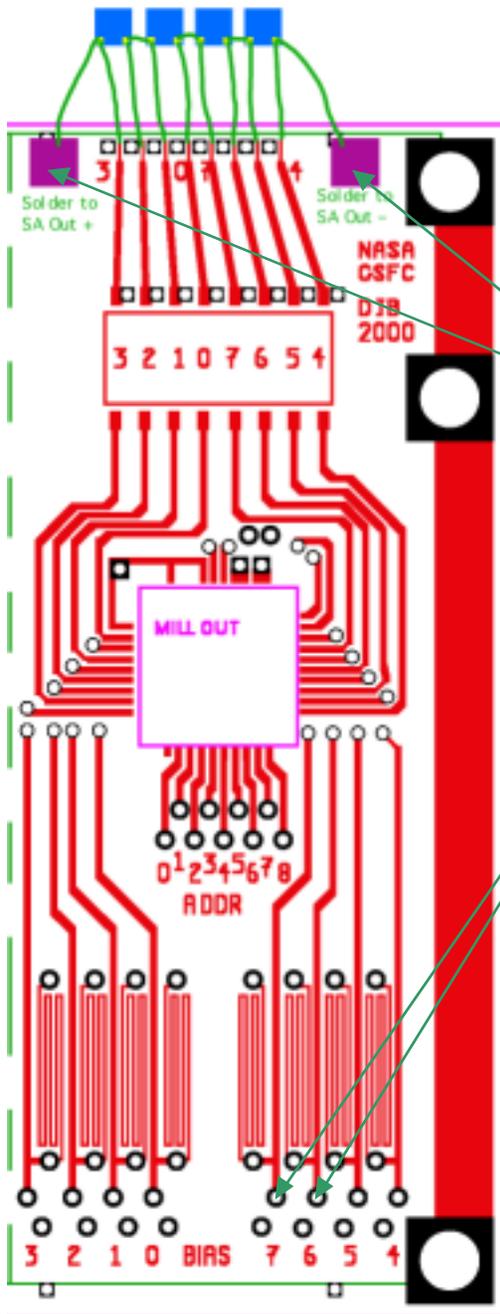
Example #1:

"Source R" is connected to the "R; + / - pads", which are the left and right purple pads in the upper portion of the board, respectively.

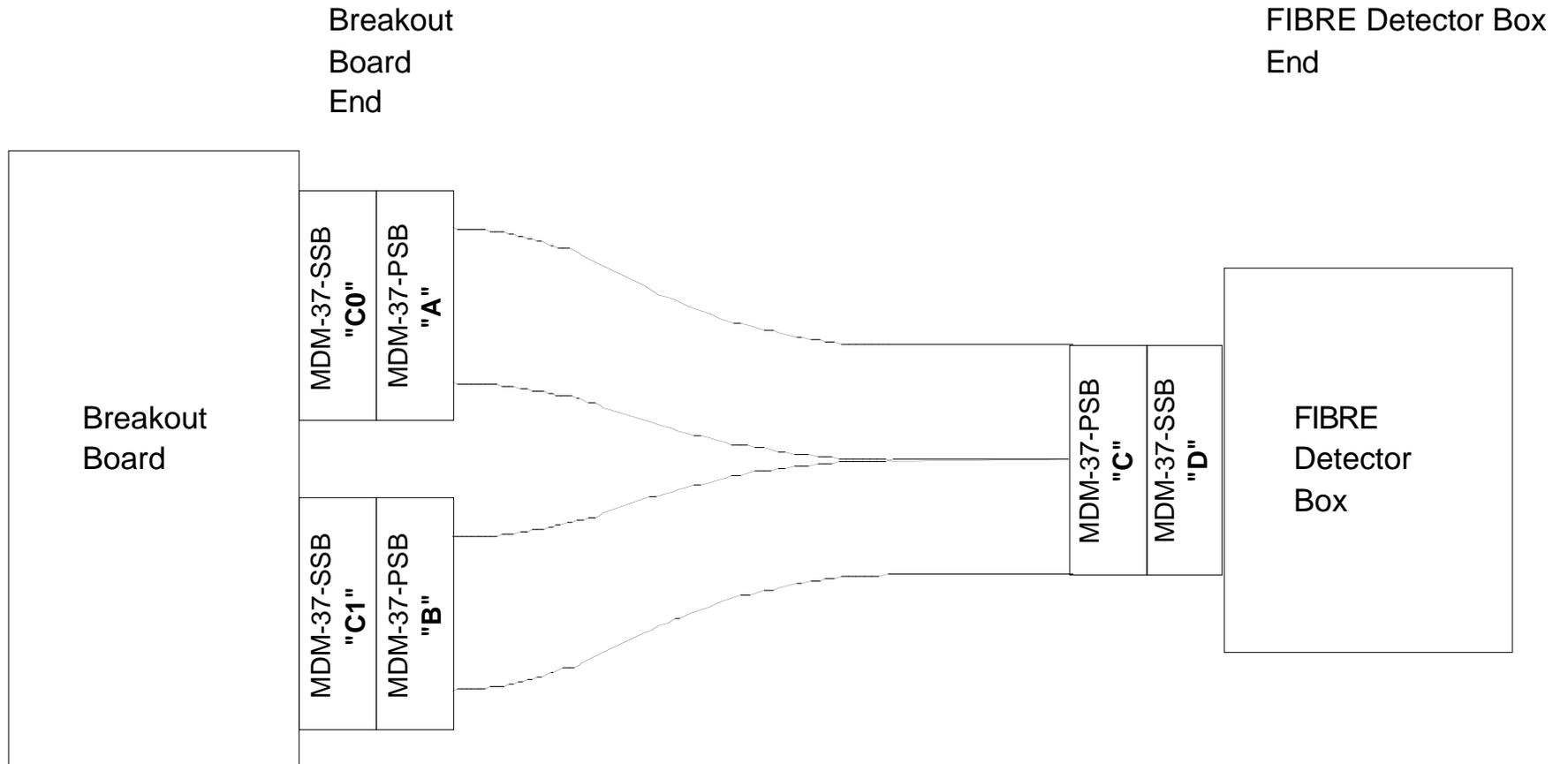
Example #2:

"Sense R3" is connected to "R; 7/6". This denotes the Right hand side of the board, soldered to the bias holes for #7 and #6 as indicated.

The purple pads are pieces of gold-plated copper which are glued to the circuit board with Stycast. There are 4 such pieces, and should be ~1/4" on a side. The wires for Current Sources are soldered to one corner of these pads; the remainder of the pad is available for wirebonds.



The Cable Assembly will look something like this:



Connector "A" should have "C0" scribed on it; Connector "B" should have "C1" scribed on it; Connector "C" need have no label.