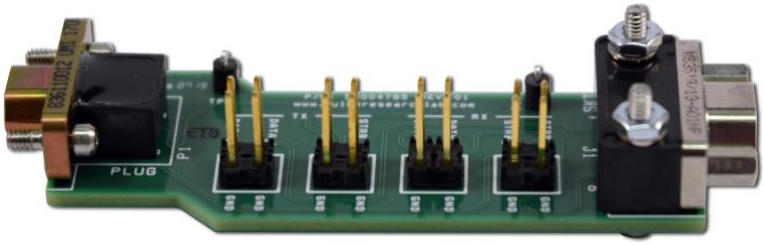
PRL-SWBOB, MICRO D9/SPACEWIRE BREAKOUT BOARD



PRL-SWBOB-Z-CS



Plug



Receptacle

APPLICATIONS

- Differential Probing of Spacewire Signals
- Single-ended Probing of Spacewire Signals
- Spacewire System Verification
- Signal Injection for Test

FEATURES

- Micro-D9 Plug and Micro-D9 Receptacle Connectors, Nickel-plated
- Probe points on 0.1" Centers
- Jackscrews (1/16" hex head) for securing to panel

DESCRIPTION:

The PRL-SWBOB is a passive, pass-through, signal breakout board for 4 differential 100 Ω signal pairs on Micro-D9 cabling, the configuration typically used in Spacewire applications. Each PCB assembly consists of a Micro-D9 receptacle and a Micro-D9 plug, connected via a printed circuit board with matched-length, controlled impedance traces, and probe points available between differential signal pins and between signal pins and ground.

The PCB traces have controlled impedance of 50 Ω, designed for carrying LVDS (or other differential signaling) to/from 100 Ω twisted pairs. Traces on the PCBs are routed with inter-pair lengths matched to within 3 mm. Clock/Data pairs are matched to within 5 mm. The PRL-SWBOB is passive, and no power is required. There are several configuration options available for the PRL-SWBOB series:

1. Straight or Staggered PCB:
    a. The Straight PCB (-S) is suitable for standard Spacewire probing applications
        i. The -S versions have 453 Ohm resistors from each signal trace to the corresponding probe pin, thus creating a ~10:1 resistive pickoff to a 50 Ohm scope, which helps to preserve signal integrity on the signal trace.
    b. The Staggered PCB (-Z) is designed for use with the PRL-4530 Spacewire Signal Adapter assembly, where the tight spacing and "up" and "down" orientation of the Micro-D9 Spacewire receptacles requires the breakouts boards to have a horizontal offset in order to probe two adjacent connectors.
        i. The -Z versions do NOT have the 453 Ohm resistors, and the probe pins are connected directly to the signal traces, and these are designed for use with a high-impedance differential probe connected to the probe pins.
2. Probe pin configuration:
    a. Probe pins installed on the component (connector) side (-CS).
    b. Probe pins installed on the solder side (-SS).
    c. No probe pins installed (-NP).

ORDERING INFORMATION:

Construct a part number by appending the desired PCB and Pin configurations, e.g. PRL-SWBOB-Z-CS defines a module with a staggered PCB and pins on the Component Side.

Part number suffix "-C00x" indicates a PRL-SWBOB assembly with a customer-specific silkscreen. Part numbers without a suffix are marked with generic Spacewire signal names.

Additional PCB shapes may be available by special order. Contact sales@pulseresearchlab.com for additional details.

A previous revision, P/Ns 56004785-CS and -SS, equivalent to PRL-SWBOB-Z-CS-C001 and –SS-C001 respectively, were assembled with cadmium-plated parts. They are functionally identical in all respects, but is no longer available. All future shipments will use nickel-plated parts.

22301 S. Western Ave. #107, Torrance, CA 90501
Tel: +1-310-515-5330
Email: sales@pulseresearchlab.com
www.pulseresearchlab.com

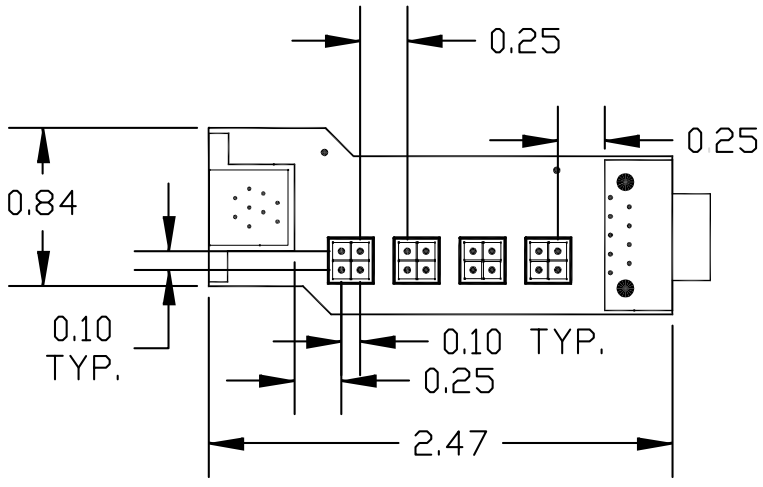
*SPECIFICATIONS (0° C ≤ T_A ≤ 35° C)

Unless otherwise specified, dynamic measurements are made with all outputs terminated into 50 Ω.

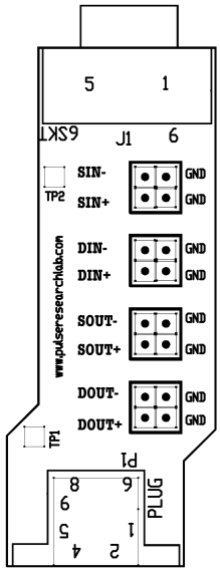
SYMBOL	PARAMETER	Min	Typ	Max	UNIT	Comments
Z_0	Characteristic Impedance	47	50	53	Ω	
	Micro-D Receptacle		MBR-1-009-1B1			Or M83513/13A01NP
	Micro-D Plug		SD-836110012			Ulti-Mate
	Probe Pin Spacing		0.1		in.	
T_{PROP}	Propagation Delay		1		ns	
T_{SKEW1}	Intra-pair skew			3	mm	
T_{SKEW2}	Inter-pair skew, CLK/DATA			5	mm	
t_r/t_f	Rise/Fall Times (10%-90%)		1		ns	
L	Length		2.82		in.	Including connectors
W_S	Width, straight PCB		0.84		in.	
W_Z	Width, staggered PCB		0.99		in.	
H	Height		0.64		in.	Including hardware
	Weight		0.5		Oz.	

PIN ASSIGNMENTS:

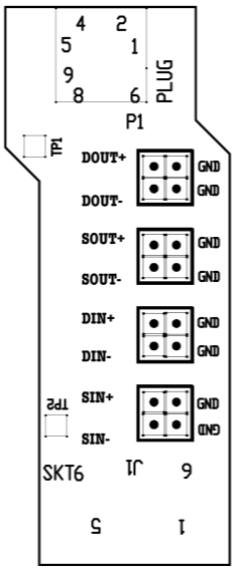
Input Conn.	Input Pin	Spacewire Signal Name	Output Pin	Output Conn.
J1	2	SIN+	2	P1
J1	7	SIN-	7	P1
J1	3	GND	3	P1
J1	1	DIN+	1	P1
J1	6	DIN-	6	P1
J1	8	SOUT+	8	P1
J1	4	SOUT-	4	P1
J1	9	DOUT+	9	P1
J1	5	DOUT-	5	P1



PRL-SWBOB-Z-xx Dimensions



Component-side Silkscreen



Solder-side Silkscreen

22301 S. Western Ave. #107, Torrance, CA 90501
Tel: +1-310-515-5330
Email: sales@pulseresearchlab.com
www.pulseresearchlab.com