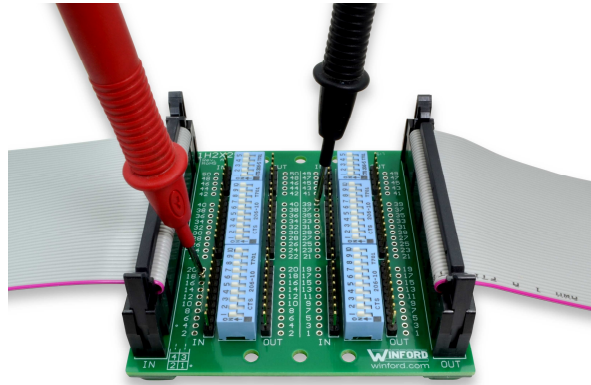


Breakout Board Test Interface with Switches

Functional Overview

Use this Breakout Board Test Interface to conveniently access any cable signal for testing, signal re-routing, or signal injection. This compact design is meant to be inserted into the cabling of a functioning system. Normal system operation can continue while signal probing and manipulation is conducted. This can be useful for re-routing signals within a cable or for fault tolerance analysis.



Application

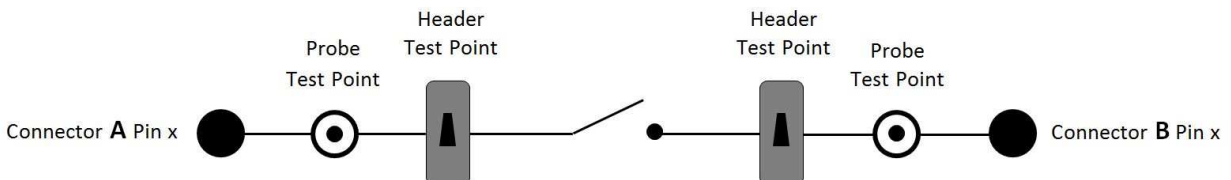
- In-circuit testing
- Debugging / troubleshooting
- Signal injection
- Fault testing and analysis (open circuits, shorts, cross-wiring, etc.)
- Rewiring selected connector signals

Product Features

- Flexible test point layout supports both probes and header connections
- Panel mountable or DIN rail mountable
- Available with various connector types
- Every connector signal accessible for testing and manipulation
- Clearly labeled with connector pin numbers for easy access

Board Layout

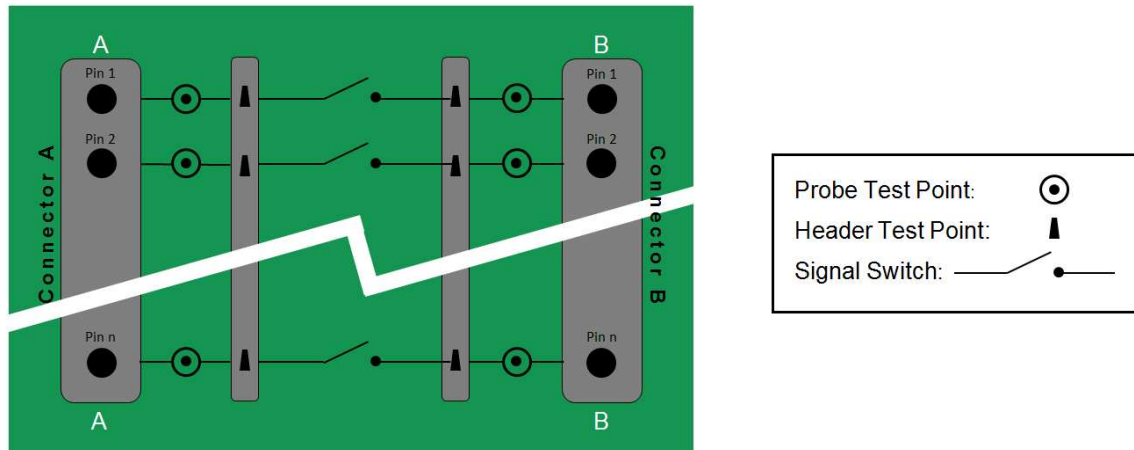
The diagram below illustrates the functional layout for each and every connector signal.* Test points are available for both connectors, which allows probing or signal injection on either side of the switch. Note that the header test points are standard 0.1" spaced single-row headers. Mating connectors are readily available.



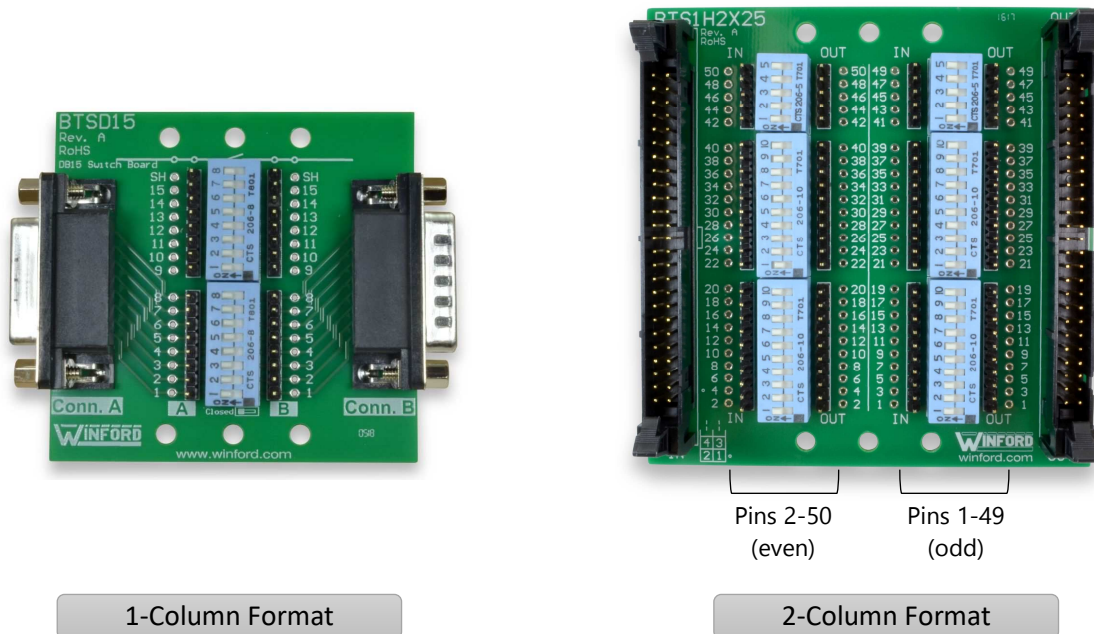
Note: On the BTS1H2X25, Conn. A is labeled as 'IN', and Conn. B as 'OUT'.

**On USB board BTSUBFAF, the ground signal is not switched. 5V is switched using a jumper.*

The test point layout is repeated for each connector signal, as shown in the diagram below. The 'A' and 'B' labels are used to distinguish between the two connectors and their associated test points. Note that the electrical signals may flow in either direction through the board.

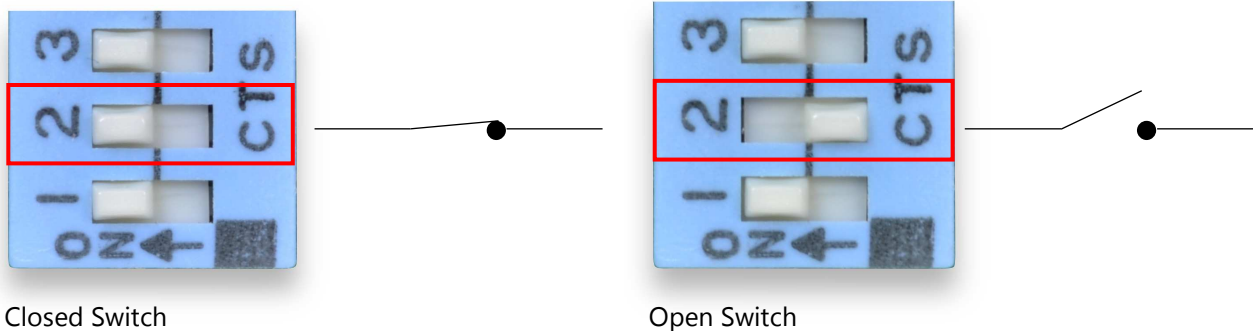


The breakout board is laid out in either a 1-column or 2-column format, depending on the pin count involved. See illustrations below.



Operation

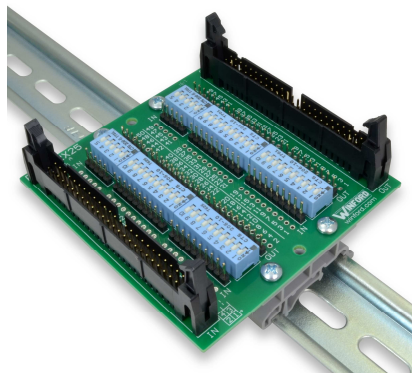
Each switch is a closed circuit when in the 'ON' position. With the switches closed, all connector signals simply pass through the board to the other connector. If desired, any switch can be opened to interrupt a signal, and another signal can then be injected into the system using the probe or header test points.



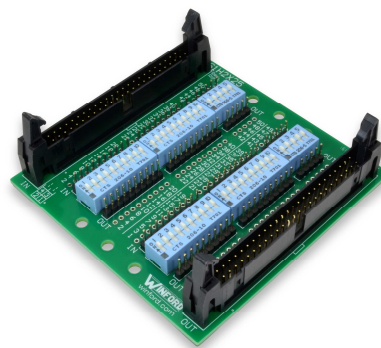
Note that the numbers printed on the switch cases are irrelevant to the rest of the board. The numbers printed on the circuit board correctly correspond to the connector pins.

Mounting Options

These products are available in two different mounting options. Product numbers ending with 'DIN' come with DIN clips already installed and ready to snap onto 35mm or 32mm DIN rail. Product numbers ending with -FT have stick-on rubber feet installed on the bottom side, allowing for benchtop use or panel mounting. For panel mounting, we suggest 1/4" nylon standoffs under the mounting holes, and #6 screws.



DIN Rail Mount
(BTS1H2X25-DIN shown)



Panel Mount/Benchtop Use
(BTS1H2X25-FT shown)

Available Connectors

Breakout Switch Boards are available with a variety of connector types. The following types are stocked:

Connector Type	Part #	
	With DIN Clips	With Rubber Feet
2X17 Header	BTS1H2X17-DIN	BTS1H2X17-FT
2X25 Header	BTS1H2X25-DIN	BTS1H2X25-FT
DB9	BTSD9-R-DIN	BTSD9-R-FT
DB15	BTSD15-R-DIN	BTSD15-R-FT
DB15HD	BTSD15HD-R-DIN	BTSD15HD-R-FT
DB25	BTSD25-R-DIN	BTSD25-R-FT
DB37	BTSD37-R-DIN	BTSD37-R-FT
DB50	BTSD50-R-DIN	BTSD50-R-FT
RJ45 (8P8C)	BTS8P8CSJ-R-DIN	BTS8P8CSJ-R-FT
RJ50 (10P10C)	BTS10P10CSJ-R-DIN	BTS10P10CSJ-R-FT
USB (A and B)	BTSUBFAF-R-DIN	BTSUBFAF-R-FT
VHDCI 68 (SCSI-5)	BTSVH68-DIN	BTSVH68-FT

Notices

1. Drawings and specifications are subject to change without notice.
2. Winford Engineering, LLC does not authorize any of its products for use in military, medical or other life-critical systems and/or devices. Life-critical devices/systems include devices or systems which, a) are intended for surgical implantation into the body, or b) support or sustain life and whose failure to perform can be reasonably expected to result in injury. Winford Engineering, LLC products are not designed with the components required, and are not subject to the testing required to ensure a level of reliability suitable for the treatment and diagnosis of people. Winford Engineering, LLC shall not be held responsible or liable for damages or injury that occur as a result of the use of this product.