General Description

Reed Tracks provides a flexible interface layer that can be used between test equipment and a Device Under Test (DUT). It allows the connection of any line to any other line through a large 32-relay multiplexer.

Relay status and control is available on a self-hosted website, accessible via mobile or desktop browsers. Reed Tracks can be used exclusively using a web browser with no software installation, or can be controlled entirely by Python from a host computer via Ethernet.

Reed Tracks is a matrix of SPST reed relays each with independent control. Both terminals of each SPST relay are accessible to allow for flexible setups (multi-pole). Relays are rated for 200V and 1A, and are galvanically isolated.

Reed Tracks is enclosed in a black anodized aluminum shell with LED indication of relay status on the top. Tracks mounts via 0.1” pitch pins as a component on a PCB, or alternately attaches to a breakout board.

Applications

- Automated Test Systems
- Design Verification
- Multiplexing Networks

Features

- 32 Channel SPST Reed Relays
- USB or Ethernet Control, LXI-Compatible
- 200V Galvanic Isolation
- 0.5A Switch / 1.0A Hold Current
- Low Channel Switch Capacitance
- Low Channel Switch Leakage
- Rugged Aluminum Enclosure

Block Diagram

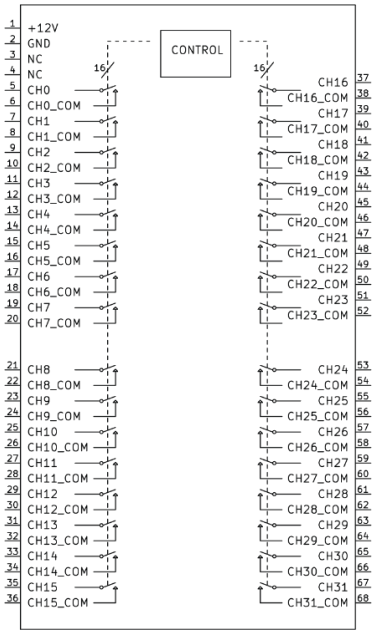

Figure 1: Block Diagram

Pin Functionality Table

Please refer to Figure 1.
Reed Tracks Accessory pin-out detail:

Pin #	Function Name	Functionality
1	+12V	+12V input power. Power may be supplied to this pin or via the barrel jack.
2	GND	Ground for input power.
5-67, Odds	Relay NO	Normally open terminal of associated relay.
6-68, Evens	Relay Common	Common terminal of associated relay.
3, 4	NC	These are not connected inside the device to allow for sufficient voltage standoff clearance between adjacent common pins.

Electrical Specifications

Absolute Maximum Ratings(1)

T_A = 25C, unless otherwise specified.

+12V to GND .....-0.3V to 18V
Channel to Channel ..... 250VDC/peak AC
Relay NO to Common ..... 250VDC/peak AC
Channel to GND ..... 250VDC/peak AC
Storage Temp Range .....0ºC to +70ºC
Operation Temp Range.....0ºC to +50ºC

(1) Stresses beyond those listed may cause permanent device damage. Functional operation range of the device is defined in Recommended Operating Ratings or Electrical Characteristics. Exposure to absolute max ratings for extended periods may reduce device reliability.

Recommended Operating Ratings

T_A = 25C, unless otherwise specified.

Parameter	Conditions	Min	Typ	Max	Unit
+12V Voltage	Continuous	10	-	16	V
+12V Current	Continuous	-	-	500	mA
Channel to Channel Voltage(1)	Continuous	-200	-	200	V_{DC}/AC_{PEAK}
Channel to GND	Continuous	-200	-	200	V_{DC}/AC_{PEAK}

(1) Any combination of channel to channel or common within the same bank of 4 relays

Electrical Characteristics(1)

T_A = 25C, V_{SUPPLY} = 5V, unless otherwise specified.

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
CHANNEL OUTPUTS						
Switch Voltage	V_{SW}	Max DC/peak AC resistive	-	-	200	V
Switching Current	I_{SW}	Max DC/peak AC resistive	-	-	0.5	A
Carry Current	I_{HOLD}	Current applied only when the switch is closed	-	-	1.0	A
Switch Resistance	R_{SW}	I = 10mA	-	0.2	-	Ω
Channel to Channel Insulation Resistance	IR	100V	-	10^{10}	-	Ω

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Channel to Channel Capacitance	$C_{(OFF)}$		-	0.7	-	pF
Switch Time	T_{SW}	Once the switch command is received by the device	-	1	-	ms
Switch Contact Seebeck Voltage		25°C	-	±25	-	uV
Switch Life Expectancy			-	10^8	-	Ops.

(1) As designed and characterized, not fully tested in production unless otherwise specified.