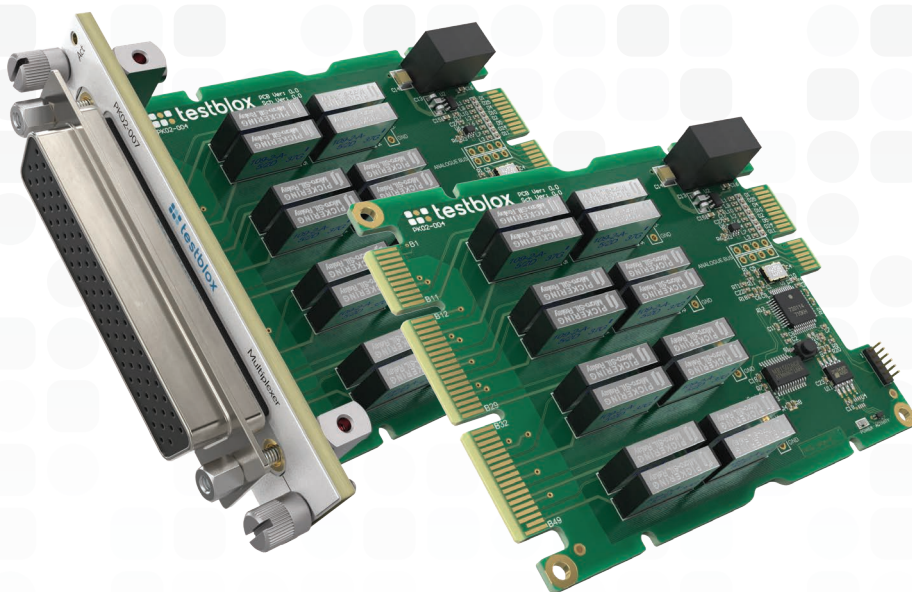




Testblox PK02-007

Quad 2-Channel USB Multiplexer



The PK02-007 is a low cost, multiplexer capable of switching voltages up to 60V and current up to 1 A. It is fitted with high quality instrument grade ruthenium reed relays manufactured by Pickering Electronics.

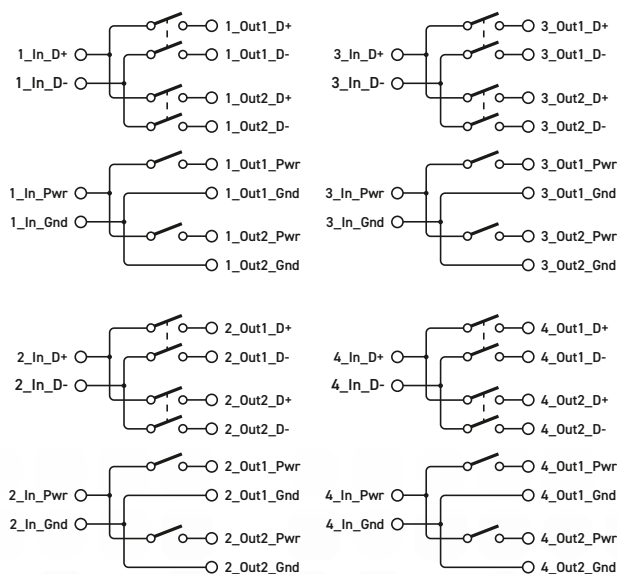
The module is available in quad 2-channel configuration and is specifically designed for routing USB. The data signal paths are 2-pole differential pairs as defined by the USB standard. The signal pair has a controlled differential impedance and the multiplexer has been designed for minimum insertion loss.

Functionality

- Quad 2-Channel Multiplexer
- Controlled Differential Impedance
- Suitable for Switching USB Data & Power
- Instrument Grade Ruthenium Reed Relays
- Max Current 1 A Hot or Cold Switching
- Switch up to 60V
- Operating Speed 250µs
- Drivers Supplied for Windows & Linux
- 3 Year Warranty

The USB power paths are arranged as a common negative and a switched positive and are designed to ensure minimum loss.

The PK02-007 is available with a front panel allowing access to the switch paths via a 78-pin D-type connector. Alternatively it can be supplied without a front panel so user connections can be made directly to the module's edge connector.



PK02-007 Switching Architecture



Specifications

Switching Specification	
Switch Type	Reed
Contact Type	Ruthenium
Differential Transmission Line Impedance:	90 Ω $\pm$ 10 Ω (data path)
Max Switch Voltage	60 VDC/50 VAC
Max Switch Current	1 A
Max Continuous Carry Current	1 A
Max Power	20 W
Initial On Path Resistance	<500 m Ω
Off Path Resistance	>10 ⁹ Ω
Thermal Offset	<10 μ V
Operate Time	<0.5 ms, 0.25 ms typical
Expected Life (operations):	
Low power load	>1x10 ⁹
High power load	>1x10 ⁶

RF Specification		
Bandwidth (-3 dB)	(TBD)	
Crosstalk (typical)	10 kHz	-65 dB (TBD)
	100 kHz	-60 dB (TBD)
	1 MHz	-50 dB (TBD)
	10 MHz	-30 dB (TBD)
Isolation (typical)	10 kHz	60 dB (TBD)
	100 kHz	60 dB (TBD)
	1 MHz	60 dB (TBD)
	10 MHz	40 dB (TBD)

Power Requirements	
Input Voltage Range	TBD
Current	TBD



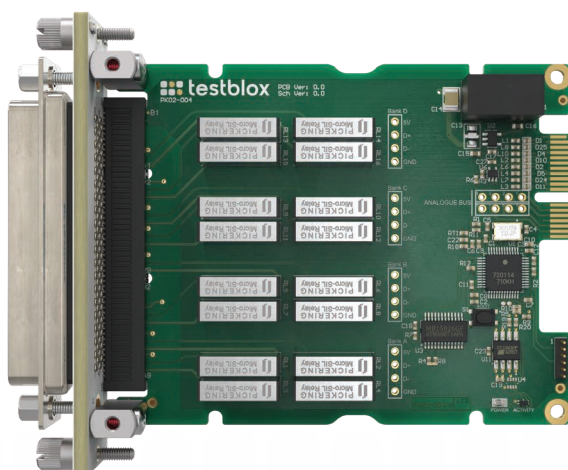
Specifications

Mechanical/Environmental	
Module Dimensions	90 mm x 69 mm (without front panel)
Module Weight	<100 g
Connector Durability (mating life): Backplane Connector Front-edge Connector Front-panel Connector Module insertion and removal	>100 cycles >100 cycles >100 cycles Modules are not hot swappable
Environmental: Operating Temperature Storage Temperature Relative Humidity Maximum altitude	0 °C to +55 °C -20 °C to +75 °C Up to 90 % non-condensing 5000 m

Safety & CE Compliance	
Modules are fully CE compliant and meet applicable EU directives	
Low-voltage safety	EN61010-1:2010
EMC Immunity	EN61326-1:2013
Emissions	EN55011:2009+A1:2010

Product Order Codes

Testblox Quad 2-Channel USB MUX with I/O edge connector	PK02-007-000
Testblox Quad 2-Channel USB MUX with 78-pin Female D-type front panel connector	PK02-007-203
Single-Module USB Type-C Backplane	TB92-001
Three-Module USB Type-C Horizontal Backplane	TB93-003-001
Four-Module USB-Type-C Vertical Backplane	TB94-004-001

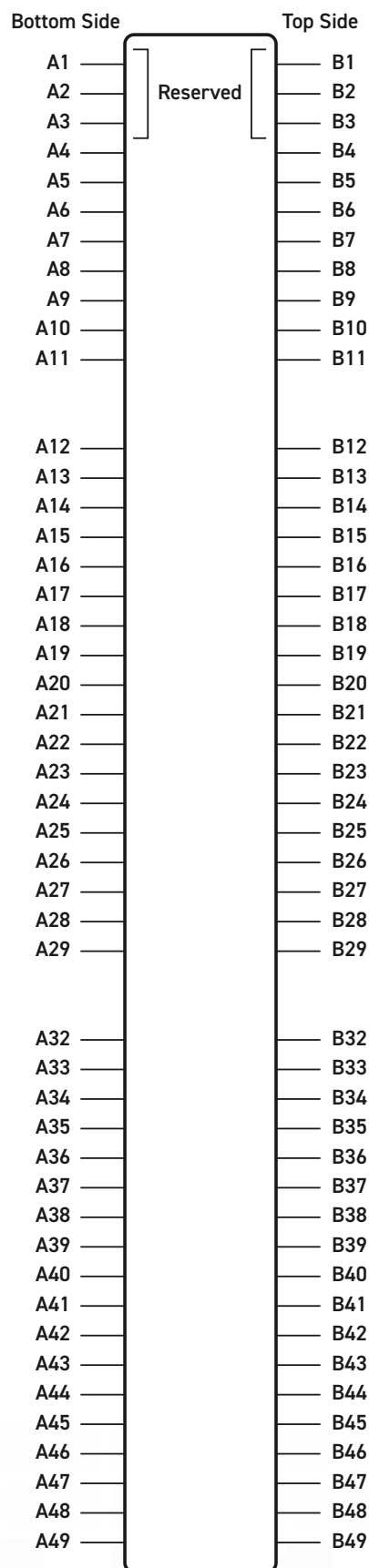




Pinout - Front Edge Connector

Pinout for Front Connector - PK01-007-000

Pin A1 - Reserved	Pin B1 - Reserved
Pin A2 - Reserved	Pin B2 - Reserved
Pin A3 - Reserved	Pin B3 - Reserved
Pin A4 -	Pin B4 -
Pin A5 -	Pin B5 -
Pin A6 -	Pin B6 -
Pin A7 -	Pin B7 -
Pin A8 -	Pin B8 -
Pin A9 -	Pin B9 -
Pin A10 -	Pin B10 -
Pin A11 -	Pin B11 -
Pin A12 -	Pin B12 -
Pin A13 -	Pin B13 -
Pin A14 -	Pin B14 -
Pin A15 -	Pin B15 -
Pin A16 -	Pin B16 -
Pin A17 -	Pin B17 -
Pin A18 -	Pin B18 -
Pin A19 -	Pin B19 -
Pin A20 -	Pin B20 -
Pin A21 -	Pin B21 -
Pin A22 -	Pin B22 -
Pin A23 -	Pin B23 -
Pin A24 -	Pin B24 -
Pin A25 -	Pin B25 -
Pin A26 -	Pin B26 -
Pin A27 -	Pin B27 -
Pin A28 -	Pin B28 -
Pin A29 -	Pin B29 -
Pin A32 -	Pin B32 -
Pin A33 -	Pin B33 -
Pin A34 -	Pin B34 -
Pin A35 -	Pin B35 -
Pin A36 -	Pin B36 -
Pin A37 -	Pin B37 -
Pin A38 -	Pin B38 -
Pin A39 -	Pin B39 -
Pin A40 -	Pin B40 -
Pin A41 -	Pin B41 -
Pin A42 -	Pin B42 -
Pin A43 -	Pin B43 -
Pin A44 -	Pin B44 -
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Pin A47 -	Pin B47 -
Pin A48 -	Pin B48 -
Pin A49 -	Pin B49 -

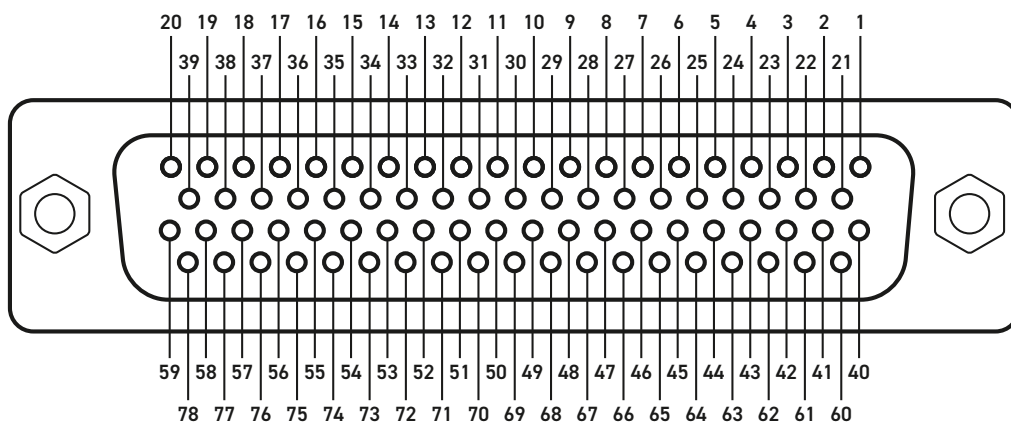


Pinout Diagram for Front Edge Connector



Pinout - Using 78-pin D-type Interface Board

Pinout for 78-pin D-type Interface Connector - PK02-007-203			
Pin 1 -	Pin 21 -	Pin 40 -	Pin 60 -
Pin 2 -	Pin 22 -	Pin 41 -	Pin 61 -
Pin 3 -	Pin 23 -	Pin 42 -	Pin 62 -
Pin 4 -	Pin 24 -	Pin 43 -	Pin 63 -
Pin 5 -	Pin 25 -	Pin 44 -	Pin 64 -
Pin 6 -	Pin 26 -	Pin 45 -	Pin 65 -
Pin 7 -	Pin 27 -	Pin 46 -	Pin 66 -
Pin 8 -	Pin 28 -	Pin 47 -	Pin 67 -
Pin 9 -	Pin 29 -	Pin 48 -	Pin 68 -
Pin 10 -	Pin 30 -	Pin 49 -	Pin 69 -
Pin 11 -	Pin 31 -	Pin 50 -	Pin 70 -
Pin 12 -	Pin 32 -	Pin 51 -	Pin 71 -
Pin 13 -	Pin 33 -	Pin 52 -	Pin 72 -
Pin 14 -	Pin 34 -	Pin 53 -	Pin 73 -
Pin 15 -	Pin 35 -	Pin 54 -	Pin 74 -
Pin 16 -	Pin 36 -	Pin 55 -	Pin 75 -
Pin 17 -	Pin 37 -	Pin 56 -	Pin 76 -
Pin 18 -	Pin 38 -	Pin 57 -	Pin 77 -
Pin 19 -	Pin 39 -	Pin 58 -	Pin 78 -
Pin 20 -		Pin 59 -	

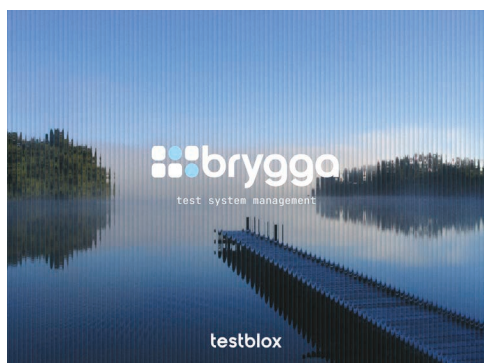


78-pin Female D-type Connector
as viewed from front of module



About Testblox

Testblox is an integrated, modular instrumentation platform designed specifically for automated functional test. Its playing-card-sized modules can be embedded inside standard test fixtures, bringing measurement, switching, power, and I/O closer to the device under test. This reduces rack space, cabling, and overall system complexity while providing the reliability and support expected in production ATE.



The Testblox portfolio includes analog and digital I/O, digital multimeters, power supplies, DUT communication, and a broad selection of switching modules, including multiplexers, matrices and general-purpose relays. Electrically isolated modules help prevent ground loops and simplify integration. Engineers can control Testblox systems using Brygga Test Management Software, Python, LabVIEW or C#, with a consistent software model across the platform.

Modules can be used individually with a single-module backplane or combined together with three- or four-module backplanes to create a test system tailored to the application. DUT signals are available directly from each module's front-edge connector or through standard D-sub cabling.

Testblox is a multi-vendor platform developed through complementary expertise. Testblox AB provides the core architecture, backplanes, system software and selected I/O; Wireflow contributes multifunction I/O and power-supply technology; and Pickering Interfaces contributes switching and measurement expertise. Together, they deliver specialist instrumentation through a common form factor, electrical interface and software workflow.

Designed and manufactured in Europe, Testblox modules are backed by a three-year warranty and a commitment to more than 20 years of hardware availability—providing a compact, cost-effective platform built for long-term automated test.

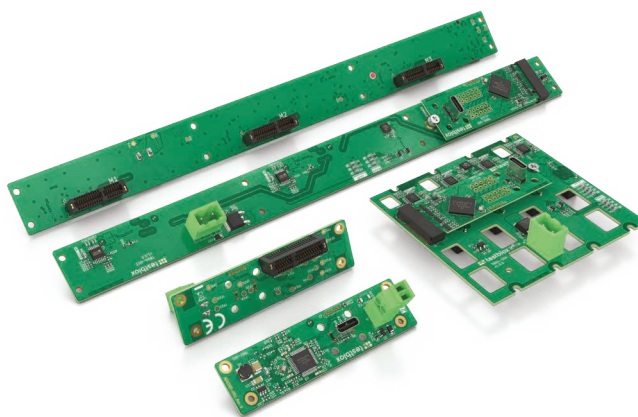
For more information, visit: www.testblox.com





Testblox Backplanes

Every Testblox system requires a backplane. Choose a one-, three- or four-module backplane to bring compact measurement, switching, power and I/O into your test fixture, with a USB-C connection to the host computer.



Backplane	Part Number	Typical Use
Single-Module USB-C Backplane	TB92-001	A single instrument in a compact fixture
Three-Module Horizontal USB-C Backplane	TB94-003-001	A low-profile arrangement of instruments
Four-Module Vertical USB-C Backplane	TB94-004-001	More instruments within a small footprint

USB communication and system power

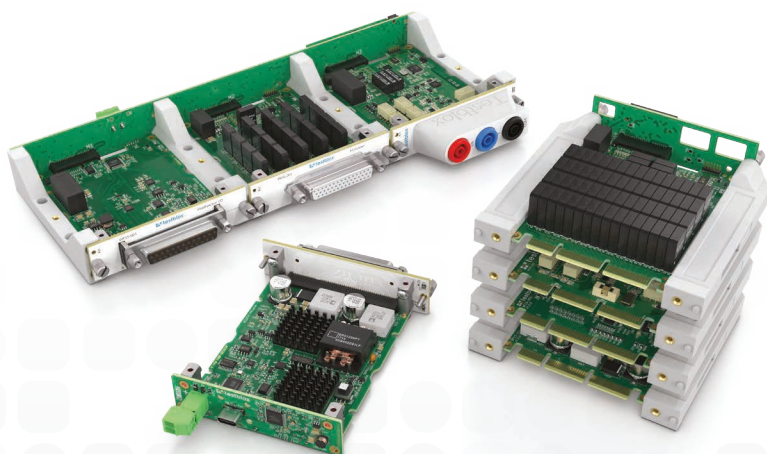
Control the system using USB Full Speed at 12 Mbit/s through a USB Type-C connector.

All backplanes use an external 24 V supply through a pluggable screw terminal. Check the selected backplane datasheet for power requirements; the system is not powered by the USB-C connection.

Mounting inside the fixture

Testblox mounting accessories support and retain modules while allowing individual modules to be removed for maintenance. Choose the mounting accessory to suit the backplane and the fixture connection method. You are also free to print your own with the files available on testblox.com. DUT signals connect through each module's front-edge connector or an available D-sub front panel.

Accessory	Application
TB82-003	Module guides for the Three-Module Horizontal Backplane
TB82-001	Module guides for one module in the Four-Module Vertical Backplane
TB82-002	Module guides for four modules in the Four-Module Vertical Backplane



Before ordering, check module count, fixture clearance, DUT connectors, power budget and required mounting accessories. Refer to the individual module specifications for module-to-backplane isolation ratings.

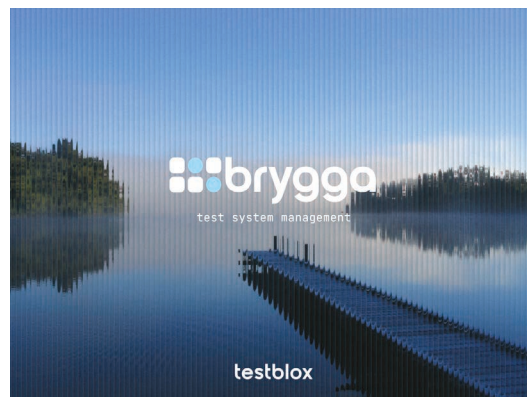


Testblox Software

Use Brygga Test Management Software to discover, configure and interactively test your Testblox system, then use the APIs and module simulation to develop your automated test application.

Brygga system setup and interactive control

Bring up hardware without writing code. Brygga Test Management Software combines system discovery, configuration, module test panels and firmware management in one test system management interface, helping you check connections and exercise instruments before automating a test.



Task	What you can do with Brygga
Discover and locate	Automatically discover connected backplanes and modules. Activate module front panel LEDs to match software entries to physical hardware.
View the system	See backplanes, installed modules, slot positions and connection status together.
Name and configure	Assign hardware and channel aliases shared with the API. Set module ranges, channels, limits and start-up states where supported.
Measure and control	Use module-specific test panels to take measurements, control outputs and operate switches without writing software.
Update firmware	Identify available firmware updates and install them on selected systems or modules.

APIs for automated test development

Integrate Testblox into your own test software using drivers, APIs and example programs. Windows and Linux support, together with Python, NI LabVIEW and C# integration, lets you use familiar development tools. Hardware and channel aliases assigned in Brygga carry through to the API, helping you use recognizable names in your test code. Refer to the software documentation for supported operating-system versions and module-specific functionality.

Module simulation

Configure simulated modules offline and develop your application before the hardware arrives. Simulation is intended to provide representative signal data, so you can exercise configuration, API calls and application logic while fixture development continues.

Software downloads and documentation: testblox.com/software



Testblox Support & Services

Testblox combines a three-year warranty, long-term hardware availability and technical support to help you build and maintain production test systems throughout their working life.

Three year warranty and long term availability

Testblox modules are backed by a three-year warranty and a commitment to more than 20 years of hardware availability. This helps protect your test system investment and reduces the disruption associated with premature product obsolescence.

Contact Testblox to discuss lifecycle requirements, product availability and support for your application. Refer to the published warranty terms for coverage and the process for arranging service.



Technical help from setup to troubleshooting

Use the Testblox technical support forums to ask questions, share solutions and discuss hardware, software and system integration. For an issue that needs direct assistance, or includes confidential application information, contact the support team by email.

Contact or resource	Where to go
Technical support forums	https://forum.testblox.com/
Technical support and service enquiries	support@testblox.com
Product information	https://testblox.com/ or call:

Help us resolve your issue

Include the module and backplane order codes, serial numbers, software and firmware versions, host operating system, and a short description of the problem. Attach relevant error messages, logs and a simple example that reproduces the issue. Keep confidential data out of public forum posts.

