

PXI/PXIe USB 2.0 Hub with Connect/Disconnect 40-738/42-738A

- Available as a PXI or PXIe Peripheral Module
- Adds USB 2.0 Instruments & DUT Directly to Host Chassis
- 8 Port USB 2.0 Hub
- Data Streams Directly From Controller's Bus
- USB Power On All Outputs
- Programmatic Disconnect of USB Power and Data Using Pickering Interfaces Switch Driver
- USB Data Connection Via Vendor USB Driver
- 3 Year Warranty



The 40-738 (PXI) and 42-738A (PXIe) are USB hubs that allow data to be streamed to and from USB devices by the system controller via the backplane of the host chassis.

The output ports can be connected or disconnected programmatically to simulate the connection of a USB device. Additionally, each port can connect and disconnect the power and data paths separately, simulating various faults. Our standard switch drivers provide a simple method of controlling the module. Each port supports up to 0.5A at 5V in accordance with the USB specification through a protected power switch.

The module can be used to connect USB devices under test or USB test equipment to the test system without reliance on the controller's USB ports. By providing power on each port, the module allows the expansion of USB capacity without the need for a separate hub. Also, the host controller is protected from the connection of faulty devices under test.

The module provides a simple way of expanding the range of test equipment supported by PXI based systems to include USB power meters, USB data acquisition systems and USB scopes.

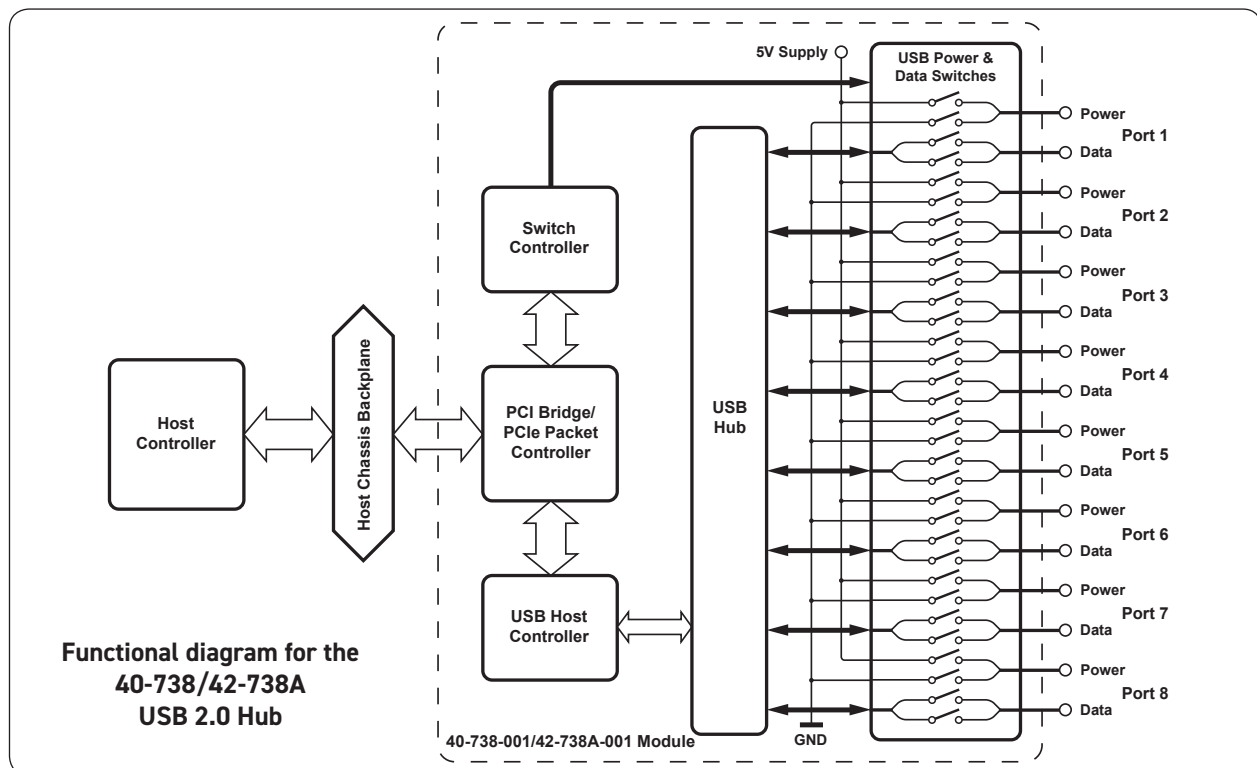
PXI Chassis Compatibility - 40-738

Compatible with all chassis conforming to the PXI and cPCI specification. Compatible with Legacy and Hybrid peripheral slots in a 3U PXI Express chassis.

PXIe Chassis Compatibility - 42-738A

Compatible with all chassis conforming to the PXIe specification. Compatible with PXIe and Hybrid peripheral slots in a 3U PXIe Express chassis.

The 40-738 and 42-738A are not compatible with Pickering Interfaces LXI Modular Chassis.



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USB Test Devices



Smart Phone



Tablet



Disk Drive

Controller PC



USB Test Equipment



Oscilloscope



Power Sensor



Data Acquisition

Specification

USB Hub:	8 port USB hub, data & power to USB 2.0
USB Common:	Direct connection from host controller to interface via host chassis backplane.
USB Data:	USB device appears on the host controller's bus enabling the use of standard Windows drivers for data flow.
USB Ports:	USB Type A connectors on front panel
USB Power	Up to 0.5A at 5V, includes USB power protection switch
Connection Function:	Allows any USB port to be connected or disconnected from the USB hub, independent control of power (switches V+ and V-) and data (switches D+ and D-) for each port. Connections controlled by Pickering Interfaces PXI drivers.

Power Requirements - 40-738

+3.3V	+5V	+12V	-12V
1A	Up to 4.1A (0.5A on every Channel)	0	0

Power Requirements - 42-738A

+3.3V	+12V (Full Load)
1.1A	1.7A

Mechanical Characteristics

40-738 - Single slot 3U PXI (CompactPCI card).

42-738A - Single slot 3U PXIe, compatible with PXIe hybrid slot.

3D models for all versions in a variety of popular file formats are available on request.

Connectors

40-738 - PXI bus via 32-bit P1/J1 backplane connector.

42-738A - PXIe bus via XJ3 and XJ4 backplane connectors.

Signals via front panel USB type A connectors.

Operating/Storage Conditions

Operating Conditions

Operating Temperature:	0°C to +55°C
Humidity:	Up to 90% non-condensing
Altitude:	5000m

Storage and Transport Conditions

Storage Temperature:	-20°C to +75°C
Humidity:	Up to 90% non-condensing
Altitude:	15000m

PXI & CompactPCI Compliance - 40-738

The module is compliant with the PXI Specification 2.2. Local Bus, Trigger Bus and Star Trigger are not implemented.

Uses a 33MHz 32-bit backplane interface.

PXIe Compliance - 42-738A

The module is compliant with the PXIe Specification 1.0. Local Bus, Trigger Bus and Star Trigger are not implemented.

Safety & CE Compliance

All modules are fully CE compliant and meet applicable EU directives: Low-voltage safety EN61010-1:2001, EMC Immunity EN61000-6-1:2001, Emissions EN55011:1998.

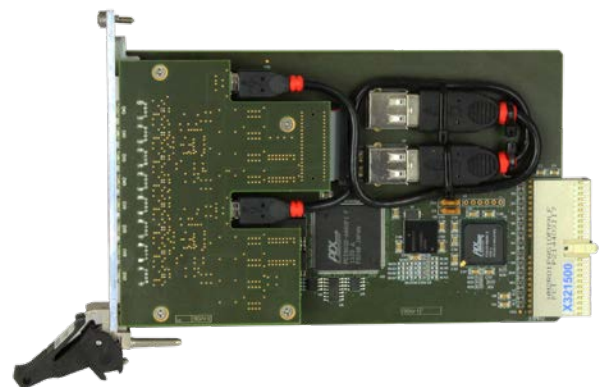
Product Order Codes

PXI USB 2.0 HUB With Programmable Connect/Disconnect	40-738-001
PXIe USB 2.0 HUB With Programmable Connect/Disconnect	42-738A-001

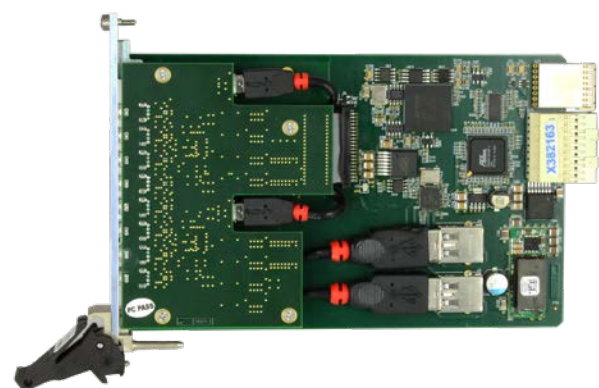
Product Customization

Pickering modules are designed and manufactured on our own flexible manufacturing lines, giving complete product control and enabling simple customization to meet very specific requirements.

All customized products are given a unique part number, fully documented and may be ordered at any time in the future. Please contact your local sales office to discuss.



40-738-001 PXI USB 2.0 Hub Side View



42-738A-001 PXIe USB 2.0 Hub Side View

PXI Chassis Compatibility - 40-738

This 40-738 module can be used in the following chassis types:

- All chassis conforming to the 3U PXI and 3U Compact PCI (cPCI) specification
- Legacy and Hybrid Peripheral slots in a 3U PXI Express (PXIe) chassis

PXIe Chassis Compatibility - 42-738A

This 42-738A module can be used in the following chassis types:

- All chassis conforming to the 3U PXIe specification
- PXIe and Hybrid Peripheral slots in a 3U PXI Express (PXIe) chassis

Note: The 40-738 & 42-738A are not compatible with Pickering Interfaces LXI or LXI/USB Modular Chassis

Windows Compatibility

40-738: Compatible up to Windows 7, but depends on restrictions in BIOS, which vary in every machine.

42-738A: Compatible with all Windows versions, but Windows 7 or earlier needs an additional driver, Windows 8 onwards works automatically.

Chassis Selection Guide

Standard PXI or hybrid PXIe Chassis from any Vendor:

- Mix our 1000+ PXI switching & simulation modules with any vendor's PXI instrumentation
- Embedded or remote Windows PC control
- Real-time Operating System Support
- High data bandwidths, especially with PXI Express
- Integrated module timing and synchronization



Connectivity Solutions

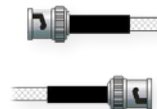
We provide a full range of supporting cable and connector solutions for all our switching products—20 connector families with 1200+ products. We offer everything from simple mating connectors to complex cables assemblies and terminal blocks. All assemblies are manufactured by Pickering and are guaranteed to mechanically and electrically mate to our modules.



Connectors & Backshells



Multiwire Cable Assemblies



RF Cable Assemblies



Connector Blocks

We also offer customized cabling and have a free online Cable Design Tool that can be used to create custom cable solutions for many applications.

Visit: pickeringtest.com/cdt to start your design.

Mass Interconnect

We recommend the use of a mass interconnect solution when an Interchangeable Test Adapter (ITA) is required for a PXI or LXI based test system. Our modules are fully supported by both Virginia Panel and MacPanel.

Pickering Reed Relays

We are the only switch provider with in-house reed relay manufacturing capability via our sister company, Pickering Electronics. These instrument grade reed relays feature **SoftCenter®** technology, ensuring long service life and repeatable contact performance

To learn more, please go to: pickeringrelay.com



Programming

Pickering provide kernel, IVI and VISA (NI & Keysight) drivers which are compatible with all Microsoft supported versions of Windows and popular older versions. For a list of all supporting operating systems, please see: pickeringtest.com/os

The VISA driver is also compatible with Real-Time Operating Systems such as LabVIEW RT. For other RTOS support contact Pickering. These drivers may be used with a variety of programming environments and applications including:

- **Pickering Interfaces Switch Path Manager**
- **National Instruments** products (LabVIEW, LabWindows/CVI, Switch Executive, MAX, TestStand, VeriStand, etc.)
- **Microsoft Visual Studio** products (Visual Basic, Visual C+)
- **Keysight** VEE
- **Mathworks** Matlab
- **Marvin** ATEasy
- **MTQ Testsolutions** Tecap Test & Measurement Suite

Drivers for popular Linux distributions are available, other environments are also supported, please contact Pickering with specific enquiries.

We provide Soft Front Panels (SFPs) for our products for familiarity and manual control, as well as comprehensive documentation and example programs to help you develop test routines with ease.

To learn more about software drivers and development environments, please go to: pickeringtest.com/software

Signal Routing Software

Our signal routing software, Switch Path Manager, automatically selects and energizes switch paths through Pickering switching systems. Signal routing is performed by simply defining test system endpoints to be connected together, greatly accelerating Test System software development.

To learn more, please go to: pickeringtest.com/spm



Diagnostic Relay Test Tools

eBIRST Switching System Test Tools are designed specifically for our PXI, PCI or LXI products, these tools simplify switching system fault-finding by quickly testing the system and graphically identifying the faulty relay.

To learn more, please go to: pickeringtest.com/ebirst

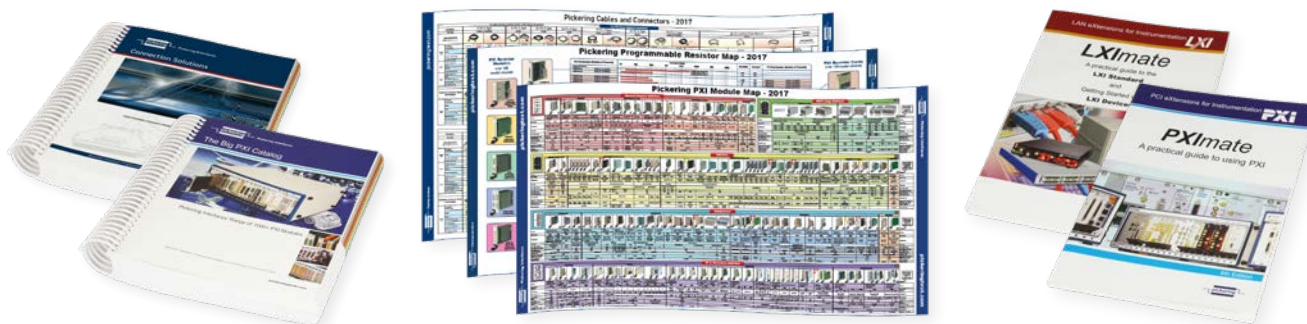


Three Year Warranty & Guaranteed Long-Term Support

All standard products manufactured by Pickering Interfaces are warranted against defective materials and workmanship for a period of three years from the date of delivery to the original purchaser. Extended warranty and service agreements are available for all our modules and systems with various levels to suit your requirements. Although we offer a 3-year warranty as standard, we also include guaranteed long-term support—with a history of supporting our products for typically 15-20 years. To learn more, please go to: pickeringtest.com/support

Available Product Resources

We have a large library of product resources including success stories, product and support videos, articles, as well as complete product catalogs and product reference maps to assist when looking for the switching, simulation and cable and connector solutions you need. We have also published handy reference books for the PXI and LXI standards.



To view, download or request any of our product resources, please visit: pickeringtest.com/resources

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