USB
Physical Layer Switches

Automatically and remotely configure paths between multiple USB devices

Quarch
Data Sheet

Quarch
Technology

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Automatically and remotely configure paths between multiple USB devices

Highlights

- Supports USB connections at USB 1.x, 2.x and 3.0 speeds
- Physical layer switching, very low latency
- Switch between multiple hosts/devices
- Completely transparent at the protocol layer
- Simulate full hot-swap, including pin bounce
- Performs basic fault injection and glitching
- Simple control via LAN, USB or Serial

Use Cases

Device Testing	Automatically switch multiple devices into a host
System Configuration	Re-route test kit without physically re-cabling
Fault testing	Test conditions such as broken cables and intermittent faults

Switching

USB data is routed using passive switches. A USB compliant re-driver is used to ensure that the signalling levels are maintained.

Host/Device connections will appear as if they are directly cabled. This will allow you to remove the vast majority of manual cable changes, allowing longer and more complex automated tests to run, without human intervention. This allows 24/7 testing and more predictable test timings.

Removal of manual intervention also removes the chance of a test being inconsistantly or incorrectly performed.

Hot-Plug and Fault Injection

In addition to the basic switching function, this product also contains the full functionality of our 'USB Cable Modules', for full hot-swap control.

This is based on the same feature set as our other 'HS' Hot-Swap modules. In addition to hot-swap, the modules can perform fault injection by controlling the connection state of individual signals.

Individual control over each pin allows us to create almost any possible hot-swap scenario. This includes fast and slow plugs,
corner cases and pin-bounce during connection. Precise timing ensures that every test scenario can be exactly re-created.

A glitch feature allows signals to be disconnected for as little at 50nS. The Modules switch all signals in the cable and can also perform pin-bounce.

You can also simulate damaged cables, intermittent faults and more.

Supplied Parts

Switch Module - The main unit
Torridon Cable - 40cm Torridon Double Ended Interface Cable. Connects the module to an optional controller
Power Supply - External Power supply with multi-region plug
USB Cable - 2 meter USB cable

Also Required

Downloads - Our website contains many useful downloads to help you get started: www.quarch.com

USB Drivers
Technical Manuals
Quick Start Guides
Example Scripts
TestMonkey GUI

Support

Quarch provides direct support to all customers, regardless of the sales channel you use to purchase our equipment. We are available over email, or by phone during UK office hours. Our regional partners are also trained to handle many of the most common questions you might have.

Our support is normally free, though there may be charges if you require on-site training or significant development work. Please contact us if there is anything we can do to help.

Pleas see our website for access to drivers, technical manuals, quick-start guides, example scripts and more

Email	**Phone**	**Web**
support@quarch.com	+44 1343 508 140	www.quarch.com/support

Ordering

Quarch have a network of specialist partners around the world. Please contact our partner in your region if you require a quote.

We recommend evaluating our products before purchase, so our partners will be happy to arrange a free evaluation unit.

Regional Contact Details

North America
SerialCables LLC
Colorado, California

Email sales@serialcables.com
Web www.serialcables.com
Phone +1 303-495-2320

China, Hong Kong, Taiwan
Saniffer
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Products Versions

Product Code	Product Options	
QTLXXXX/KIT_YY	Product code, made up from options below	
QTLXXXX	**QTL1309**	40 Port 6GB/s HD SAS Physical Layer Switch

USB Switch - Main Unit

Additional Controllers - Adds serial control option

Product Code	Description	
QTL1260	Torridon Interface Kit Simple USB and Serial control options for bench testing	
QTL1461	4 Port Torridon Controller Control up to 4 modules via Serial/LAN/ USB connection	
QTL1079	28 Port Torridon Controller Control up to 28 modules via Serial, LAN or USB connection	

Accessories

Product Code	Description
QTL1558	40cm Torridon Double Ended Interface Cable (Female to Female) Replacement cable, connects Cable Module to Controller
QTL1381	100cm Torridon Extension Cable (Male to Female) Extends an existing Double Ended Torridon cable

Technical Information

Switch Ports	QTL1309
Port Count	1 Host, 8 Device
Port Connector	USB 3.0
Max Speed Supported	SuperSpeed
Protocols Supported	USB
Supports Optical Cables	X
Visible Connection Indicators	RGB LEDs

External Connections	QTL1309
Power Supply	Supplied external PSU
Control Ports	USB-B, LAN, Torridon

Physical Dimensions	QTL1309
Length	164.5mm
Width	165.9mm
Height	43.65mm
1U Compatible	√

Features	QTL1309
Hot swap Cable	√
LED Status Indicators	√
Pin Bounce Simulation	Simple/Custom. 10uS minimum period
Signal Glitch	Single/Cycle/PRBS. 50nS minimum length

Controllers	QTL1309
Serial Control	Supported on all Controllers
USB Control	√
REST Control	√
Telnet Control	√

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