



USB Physical Layer Switches

Automatically and remotely configure paths between
multiple USB devices

Quarch
Data Sheet



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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 inconsistently 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 as 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
- Torrison Cable** - 40cm Torrison 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.

Please 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

China, Hong Kong, Taiwan
Saniffer
Hong Kong



Email sales@saniffer.com
Web www.saniffer.com





Products Versions

Product Code	Product Options
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QTLXXXX/KIT_YY

Product code, made up from options below



USB Switch - Main Unit





Additional Controllers - Adds serial control option

Product Code	Description	Image
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

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

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

Length	164.5mm
Width	165.9mm
Height	43.65mm
1U Compatible	√

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

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



