SAS/SATA Physical Layer Switches

Automatically and remotely configure paths between multiple SAS/SATA devices

Quarch
Data Sheet

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Technology

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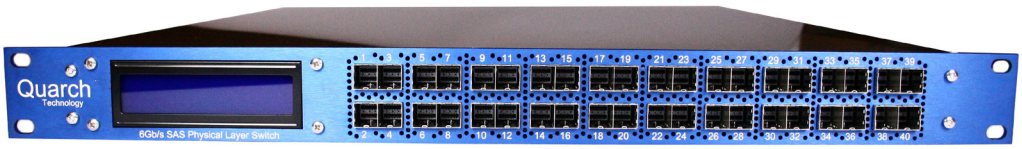

Highlights

- Supports SAS connections up to 6Gb/s (12Gb/s for QTL1564)
- Physical layer switching, very low latency
- Switch between multiple hosts/devices
- Completely transparent at the protocol layer
- Forward received data to multiple outputs
- Port-by-port and lane-by-lane and control
- Simple control via LAN, USB or Serial

Use Cases

Device Testing	Automatically switch multiple devices into a host
Rack Configuration	Re-route test racks without physically re-cabling
Data Forwarding	Forward data to a scope/analyser without modifying the signal path
Complex Routing	Split/combine/switch individual lanes within a SAS/SATA port
Illegal Topographies	Create invalid cable routing scenarios

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Switching

SAS/SATA data is routed using a specialist cross-point switch. This re-drives your signal, but does not perform any re-timing.

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

Better use can be made of expensive equipment such as analysers and scopes. One piece of test equipment can be switched in and out of the test configuration as needed.

Module Range

All of the switch modules are based on active cross-point switches, though the QTL1564 module is the only one that can support 12Gb/s data rates.

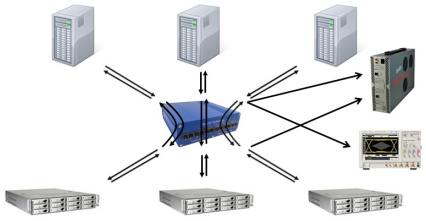
Both miniSAS HD switches can be rack mounted in 1U, and support active copper and optical cables.

Basic manual control of the module can be performed from a simple terminal interface, or our supplied TestMonkey GUI.

Modules support a range of USB, LAN and Serial connection options and can be easily automated from scripting languages such as Perl and Python.

A few simple commands can create any number of complex cable routings

In the example to the right, multiple hosts and devices are linked with a 12 Port SAS switch. Data from one of these links are being simultaneously forwarded to both a scope and analyser.



Supplied Parts

Switch Module - The main unit
Torridon Cable - 40cm Torridon Double Ended Interface Cable. Connects the module to an optional controller (not QTL1817)
Power Supply - External Power supply (IEC Cable for QTL1817) with country specific 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

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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
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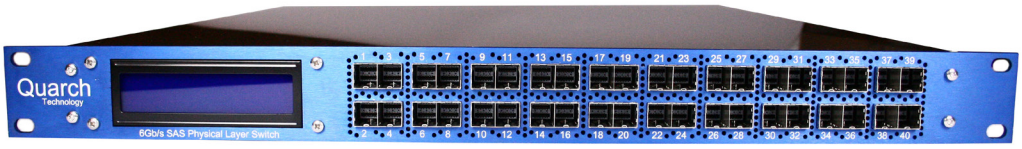
Products Versions

Product Code	Product Options	
QTLXXXX/KIT_YY	Product code, made up from options below	
QTLXXXX	**QTL1817**	40 Port 6GB/s HD SAS Physical Layer Switch
	QTL1564	12 Port 12GB/s HD SAS Physical Layer Switch
	QTL1390	4/8 6Gb/s SAS/SATA Physical Layer Switch
/KIT_YY	**/KIT_US**	US Power Cable Option
	/KIT_EU	EU Power Cable Option
	/KIT_UK	UK Power Cable Option

SATA Switch - Main Unit

12 Port SAS Switch - Main Unit



40 Port SAS Switch - Main Unit

Additional Controllers - Adds serial control NOT compatible with QTL1817

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
QTL1643	Dual face plate for 1U 12G Switch Mounts 2 Switch modules in a 1U rack panel
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

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Technical Information

Switch Ports	QTL1817	QTL1564	QTL1390
Port Count	40	12	4 Host, 8 Device
Port Connector	SFF-8644 *1	SFF-8644	SATA
Max Speed Supported	6Gb/s	12GB/s	6Gb/s
Protocols Supported	SAS	SAS	SAS/SATA
Supports Optical Cables	√	√	X
Visible Connection Indicators	LCD Screen	None	LEDs

*1 Some full height HD connectors cannot be plugged into adjacent vertical ports due to mechanical constraints 17.57mm limit

External Connections	QTL1817	QTL1564	QTL1390
Power Supply	IEC Mains	12V External PSU	12V External PSU
Control Ports	USB-B, LAN, Serial	USB-B, LAN, Torridon	

Physical Dimensions	QTL1817	QTL1564	QTL1390
Length	499mm	164.5mm	164.5mm
Width	428.91mm	165.9mm	169.8mm
Height	43.65mm	43.65mm	53.5mm
1U Compatible	√	√	X

Features	QTL1817	QTL1564	QTL1390
Multi-user Concurrent Access *1	√	X	X
Command logging	√	X	X
REST Control	√	√	√
Telnet Control	√	√	√
Serial Control	√	Requires additional Torridon Controller	
USB Control	√	√	√

*1 Concurrent access is only available over REST API

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