SAS/SATA
Cable Modules
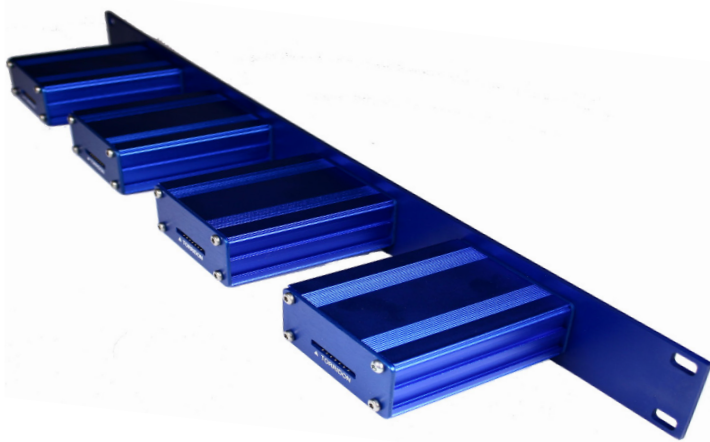
Automate hot-plug, dual redundancy and fault injection
testing for SAS and SATA cables

Quarch
Data Sheet

Quarch
Technology

SAS/SATA Cable Modules

Automate hot-plug, dual redundancy and fault injection testing for SAS and SATA cables

Highlights

- Supports SAS and SATA cables, including active copper and optical
- Removes manual intervention, for fully automated testing
- Precise and consistent timing control over hot-swap scenarios
- Completely transparent at the protocol layer
- Create and test many different fault conditions
- Simple to control with your existing test automation system

Use Cases

System Qualification	Run repeated test cycles with bounds testing of all possible hot-swap scenarios
Regression Testing	Automated regression tests spot issues earlier during development
Failover Testing	Test dual redundancy, fault monitoring and performance during a failure

Hot Swap

SAS/SATA data is switched with high speed RF switches, ensuring that our modules are almost totally transparent to the storage system. Host/Device connections will appear as if they are directly cabled.

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.

The modules can be manually controlled for bench testing, or easily integrated into your existing test automation system as part of a fully automated test solution.

Module Range

Cable Modules are based on the same feature set as our other 'HS' Hot-Swap modules and are compatible with all existing Torridon controllers.

In addition to hot-swap, the modules can perform fault injection by controlling the connection state of individual signals. A glitch feature allows signals to be disconnected for as little at 50nS.

LEDs indicators are provided to show the current connection status of each data lane.

Cable Modules break all signals (except grounds) in the cable. This excludes side-band signals/power to active cables as these are not routed through to the end of the cable.

miniSAS HD modules also have a trigger IN/OUT option, allowing connection to an external analyser or similar. They also support active copper and optical cables.

All modules can be rack mounted (4 units in 1U) with the separate rack kit.

Interface options depend on the controller you chose, but include simple Serial, USB and LAN options. These can be accessed from almost any scripting language. You will need to purchase a separate controller to use this module.

Cable Modules can be combined with other Torridon modules, to further automate your test process.

Supplied Parts

Cable Module   - The main unit
Torridon Cable   - 40cm Torridon Double Ended Interface Cable. Connects the module to a controller

Also Required

Controller   - You will require one slot on a Torridon Controller for each Cable Module

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
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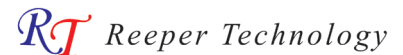
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Products Versions

Product Code	Product Options
QTLXXXX	Product code, made up from options below

QTL1253	6Gb/s SAS Cable Module
QTL1383	6Gb/s eSATA Cable Module
QTL1521	12Gb/s HD SAS Cable Module
QTL1675	12Gb/s HD SAS Cable Module + Triggering
QTL2162	24Gb/s HD SAS Cable Module
QTL1794	4x 6G SAS Cable Module in Rack Mount Panel
QTL1793	4x 12G HD SAS Cable Module in Rack Mount Panel

Cable Module - Main Unit

Quad Mounting - 4x Cable Modules in 1U Rack Mount. Different modules can be combined within the same panel

Required Controllers - One port on a controller is required for each module

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
QTL1284	Cable Module Rack Mount Panel - Front Mounts 4 Cable modules (of any type) in a 1U rack panel
QTL1558	40cm Torridon Double Ended Interface Cable (Female to Female) Replacement cable, connects Cable Module to Controller
QTL1870	100cm 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

Connections	QTL1253	QTL1521	QTL1675	QTL1383	QTL2162
Host Side Connector	SFF-8088	SFF-8644		eSATAp	SFF-8674
Device Side Connector	SFF-8088	SFF-8644		eSATAp	SFF-8674
Max Speed	6Gb/s	12Gb/s		6Gb/s	24Gb/s
Protocols	SAS/SATA				
Signals Switched	All *1				

[*1] All signals that are routed end-to-end through a standard cable

External Connections	QTL1253	QTL1521	QTL1675	QTL1383	QTL2162
Power Supply	Via Torridon Controller				
Control Ports	Torridon Connector				

Physical Dimensions	QTL1253	QTL1521	QTL1675	QTL1383	QTL2162
Length	84.0mm				
Width	63.5mm				
Height	30.0mm				

Features	QTL1253	QTL1521	QTL1675	QTL1383	QTL2162
Hot swap cable	√	√	√	√	√
LED Status Indicators	√	√	√	√	√
Pin Bounce Simulation	Simple/Custom. 10uS minimum period				
Signal Glitch	Single/Cycle/PRBS. 50nS minimum length				
Triggering	X	X	SMA IN/OUT	X	X
Supports Active Cables	X	√	√	X	√

Controllers	QTL1253	QTL1521	QTL1675	QTL1383	QTL2162
Serial Control	Supported on all Controllers				
USB Control	Supported on all Controllers				
REST Control	Supported on QTL1079 and QTL1461				
Telnet Control	Supported on QTL1079 and QTL1461				