SFP Cable Modules

Automate hot-plug, dual redundancy and fault injection testing for SFP and QSPF cables

Quarch
Data Sheet

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Technology

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Automate hot-plug, dual redundancy and fault injection testing for SFP and QSFP Cables

Highlights

- Supports QSPF+ and SPF+ cables, including active copper and optical
- SFP28 and QSFP28 module supports the latest interface speeds
- 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

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.

These Cable Modules break all signals (except grounds) in the cable. This includes side-band signals/power to active cables as this module fits directly into the cable receptacle.

SQFP/SFP Modules can intercept and modify EEPROM read operation to active cables, allowing you to inject faults or test different configurations.

Single Modules are slightly wider than a standard cable connector, so cannot be used side-by-side in ganged connectors.

The QSPF 'Quad' module fills all four slots of a Quad ganged connector, for multi-cable testing. A single controller port is required for this module.

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, includes a built in 40cm Interface Cable to connect 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
Colorado, California

Email sales@serialcables.com
Web www.serialcables.com
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Products Versions

Product Code	Product Options
QTLXXXX	Product code, made up from options below
	QTL1366 QSFP+ Cable Module
	QTL1663 Quad QSFP+ Cable Module
	QTL1292 SPF+ Cable Module
	QTL1917 Dual SPF+ Cable Module
	QTL2138 SPF28 Cable Module
	QTL2171 QSFP28 Cable Module

Cable Module - Single Unit

Cable Module - Quad Unit

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
QTL1381	100cm Torridon Extension Cable (Male to Female) Extends an existing Double Ended Torridon cable
QTL1382	200cm Torridon Extension Cable (Male to Female) Extends an existing Double Ended Torridon cable
QTL1581	300cm Torridon Extension Cable (Male to Female) Extends an existing Double Ended Torridon cable

Technical Information

Connections	QTL1366	QTL1663	QTL1292	QTL1917	QTL2138	QTL2171
Host Side Connector	QSFP+		SFP+		SFP28	QSFP28
Device Side Connector	QSFP+		SFP+		SFP28	QSFP28
Max Speed	6Gb/s*1		12Gb/s*1		32Gb/s*1	
Protocols	All standard protocols*2					
Signals Switched	All					

*1 Speed achievable depends on your system. Modules should be evaluated before purchase.
*2 Module is protocol agnostic and should work with any standard meeting the QSFP+/SFP+/SFP28 signalling specification

External Connections	QTL1366	QTL1663	QTL1292	QTL1917	QTL2138	QTL2171
Power Supply	Via Torridon Controller					
Control Ports	Torridon Connector					

Physical Dimensions	QTL1366	QTL1663	QTL1292	QTL1917	QTL2138	QTL2171
Offset Length	60.0mm		47.5mm			60.0mm
Width	23.0mm	80.0mm	16.65mm	30mm	16.65mm	23.0mm
Height	13.95mm		14mm			13.95mm

Features	QTL1366	QTL1663	QTL1292	QTL1917	QTL2138	QTL2171
Hot swap cable	√	√	√	√	√	√
LED Status Indicators	X	X	X	X	X	X
Pin Bounce Simulation	Simple/Custom. 10uS minimum period					100nS min
Signal Glitch	Single/Cycle/PRBS. 50nS minimum length					
Triggering	X	X	X	X	X	X
Supports Active Cables	√	√	√	√	√	√

Controllers	QTL1366	QTL1663	QTL1292	QTL1917	QTL2138	QTL2171
Serial Control	Requires Controller					
USB Control	Requires Controller					
REST Control	Requires QTL1079/QTL1461					
Telnet Control	Requires QTL1079/QTL1461					

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