



12G SAS/SATA Drive Modules

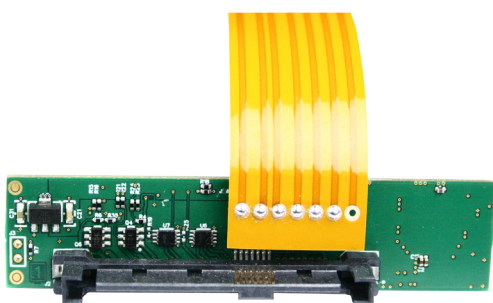
Automate hot-plug, dual redundancy and fault injection testing for 12G SAS and SATA drives.

Quarch
Data Sheet



12G SAS/SATA Drive Modules

Automate hot-plug, dual redundancy and fault injection testing for 12G SAS and SATA drives



Highlights

- Supports SAS and SATA: SSDs and HDDs
- 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
RAID Testing	Force drive rebuilds, single/double RAID faults
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. Precise timing ensures that every test can be exactly re-created.

Single modules allow for simple bench testing, while larger test systems can scale to 100+ drive modules with a single point of control. Serial, LAN and USB control options ensure that our products can work seamlessly with existing automated tests.

Module Range

Modules come in 3 main ranges:

Lite modules switch only the power pins and mated signals. These are for ideal for basic on/off hot-swap.

HS Lite modules switch all signals, including the high speed SAS data lines.

HS modules switch all signals and can also perform pin-bounce and high speed glitch.

These modules support data rates up to 12Gb/s. They are fully compatible with our 6G drive modules. This ensures a seamless transition to the latest SAS specification.

A thin, flexible cable allows the module to fit inside almost any enclosure.

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.

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

Supplied Parts

Drive Module - The main unit, includes a fixed 40cm Interface Cable

Also Required

Controller - You will require one slot on a Torridon Controller for each Drive 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.

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

North America

SerialCables LLC
Colorado, California



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

China, Hong Kong, Taiwan

Saniffer
Hong Kong



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

India

ESA Group
Bangalore



Email quarchsales@esaindia.com
Web www.esaindia.com
Phone +91-80-67648888

Europe and ROW

Quarch Technology
Scotland, UK



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





Products Versions

Product Code	Product Options
QTLXXXX	Product code, made up from options below
QTL1753	12G SAS LITE Drive Module
QTL1623	12G SAS HS LITE Drive Module
QTL1689	12G SAS HS Drive Module



Drive Module - Attached to a drive carrier



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 the fixed cable on the drive module
QTL1382	200cm Torridon Extension Cable (Male to Female) Extends the fixed cable on the drive module
QTL1581	300cm Torridon Extension Cable (Male to Female) Extends the fixed cable on the drive module





Technical Information

Connections	QTL1753	QTL1623	QTL1689
Host Side Connector	SFF-8680		
Drive Side Connector	SFF-8680		
Max Speed	12Gb/s		
Protocols	SAS/SATA		
Signals Switched	Power,Mated ¹	All ²	

¹ Mated controls a set of vendor specific drive present circuits that work with all major storage systems

² All power,high speed data, mated and side band pins are switched. GND pins are directly routed through the module.

External Connections	QTL1753	QTL1623	QTL1689
Power Supply	Via Torridon Controller		
Control Ports	Torridon Connector		

Physical Dimensions	QTL1753	QTL1623	QTL1689
Offsets Drive By	14mm		
Width	69.1mm		
Height	15.4mm		
Compatible Drives	2.5", 3.5" SSDs and HDDs		

Features	QTL1753	QTL1623	QTL1689
Basic (power only) hot/swap	√	√	√
Full hot-swap	X	√	√
Pin Bounce Simulation	X	Simple/Custom. 10uS minimum period	
Signal Glitch	X	Single/Cycle/PRBS. 50nS minimum length	
Voltage Monitoring	3v3/5v/12v on Host and Device		

Controllers	QTL1753	QTL1623	QTL1689
Serial Control	Supported on all Controllers		
USB Control	√ ¹	Supported on all Controllers	
REST Control	Supported on QTL1079 and QTL1461		
Telnet Control	Supported on QTL1079 and QTL1461		

¹ No 'Direct' USB control. QTL1260 provides USB virtual COM port option, and QTL1079/QTL1461 allow USB control of the full system.



