USB Cable Modules

Automate hot-plug, and fault injection testing on USB interfaces

Quarch
Data Sheet

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Technology

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Automate hot-plug, and fault injection testing for USB interfaces

Highlights

- Supports USB 1.1/2.0/3.0/3.1 connections
- 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

Product Qualification	Run repeated test cycles with bounds testing of all possible hot-swap scenarios
Regression Testing	Automated regression tests spot issues earlier during development
Fault Injection	Simulate faulty cables, damaged connectors and power glitches

Hot Swap

USB 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.

Features

USB 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.

The Modules switch all signals in the cable and can also perform pin-bounce and high speed glitch.

The Modules can be rack mounted (4 units in 1U) and have indicator LEDs to show the connection status of each Power, USB 2 and USB 3 signals.

The modules can be used as single units for easy bench testing, or installed within a rack, as part of an automated test solution (4 units in 1U) with the separate rack kit.

TYPE-C Modules
Type-C modules support USB 3.1 Gen2 signalling, alternate mode and Power Delivery.

VBUS and CC Measurements can be requested in real time, recorded to onboard RAM or streamed to a PC for later analysis.

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.

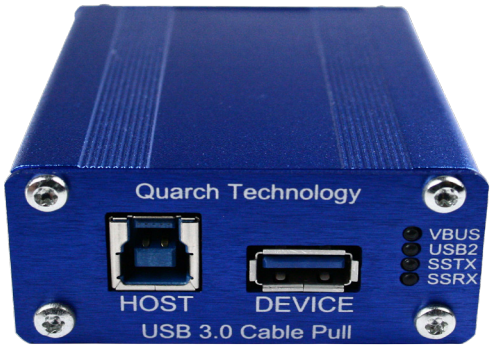
We recommend evaluating our products before purchase, so our partners will be happy to arrange a free evaluation unit.

China, Hong Kong
Saniffer
Hong Kong

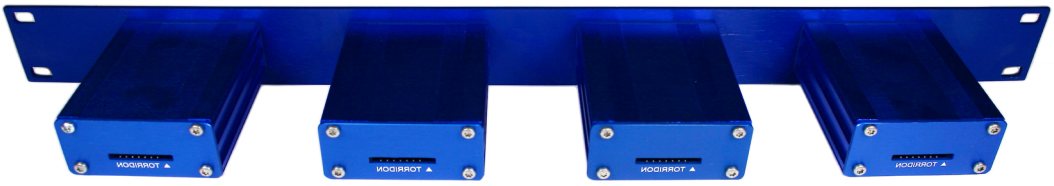
Email sales@saniffer.com
Web www.saniffer.com
Phone +86 21-58480285

Products Versions

Product Code	Product Options
QTLXXXX	Product code, made up from options below
	QTL1309 USB 3.0 Cable Module
	QTL1971 USB 3.1 Type C Cable Module



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	QTL1309	QTL1971
Host Side Connector	USB-B	USB Type-C
Device Side Connector	USB-A	USB Type-C
Max Speed	Super Speed	USB 3.1 Gen2
Protocols	USB	USB, Alternate Mode, Power Delivery (PD 2.0)
Signals Switched	All	
Power Switching	5V VBUS	Power Delivery (PD 2.0)

External Connections	QTL1309	QTL1971
Power Supply	Via Torridon Controller	
Control Ports	Torridon Connector	

Physical Dimensions	QTL1309	QTL1971
Length	84mm	
Width	63.5mm	
Height	30mm	

Features	QTL1309	QTL1971
Hot swap cable	√	√
LED Status Indicators	√	√
Pin Bounce Simulation	Simple/Custom. 10uS minimum period	Simple/Custom. 10uS minimum period
Signal Glitch	Single/Cycle/PRBS. 50nS minimum length	Single/Cycle/PRBS. 50nS minimum length
Triggering	X	X
Supports Active Cables	X	X
Measurement	X	VBUS, CC1, CC2[*1]

[*1] VBUS Meaures Voltage, Current and Power. CCx measures voltage only

Controllers	QTL1309	QTL1971
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	

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 | Unit 3A, Myrtlefield Inductrial Estate, Aviemore, Inverness-shire, UK PH22 1SB | quarch.com | +44 (0)1343 508 140 | enquiries@quarch.com