

4-BAY U.2 PLUG-IN MODULE

Power-Managed, 4-Bay Module for NVMe, SAS, and SATA SSDs Using a U.2/SFF-8639 Connector

MU401/MU402

The M-Series 4-bay U.2 plug-in module is designed to be installed in OakGate's expandable desktop and 3U rack-mount appliances to allow up to four mixed-protocol devices under test (DUTs) to be tested within the module. The DUTs are 2.5 inch NVMe, SAS, or SATA SSDs that use a U.2/SFF-8639 connector. The OakGate's SVF software can exercise each SSD individually, as well as provide built-in power cycling and power measurement capabilities.



DRIVEN BY THE SVF ENGINE

Driven by the OakGate's Storage Validation Framework (SVF) engine, the industry's most advanced storage-testing software, the appliance offers a comprehensive set of features and capabilities.

PROTOCOL READY

Designed expressly for flash-based storage and SSDs, OakGate's SVF engine supports all popular storage interfaces including PCIe/NVMe, SAS, SATA, and Fibre Channel.

HARDENED OVER TIME

Now in its third generation, OakGate's SVF engine has been hardened over several years in intense test environments at major storage customer sites worldwide.

POWER AND EXPANSION

OakGate's SVF engine is designed to provide a seamless path to in-chassis power cycling and measurement, high-density lab infrastructure through external enclosures, as well as production testing.

CUSTOMER FOCUSED

OakGate's SVF engine incorporates features that are based on OakGate's unique experience in working closely with a broad range of customers and understanding their requirements.

FEATURES and OPERATION DETAILS

FEATURES

- Ability to run unique tests on each device concurrently.
- Individual power cycling and power measurement under software control:
 - Configurable to support 3.3V, 5V, and 12V
 - Ability to turn power on/off to each port/drive
 - Ability to measure voltage and current for each port/drive
 - Power measurement under various low power states
- Supported protocols include:
 - NVMe
 - SAS
 - SATA
 - AHCI
- Simple, tool-less drive replacement
- LED indicators for power, activity, CPU heartbeat, and dual-port PCIe
- Easy access to the drive diagnostic port
- Available as an add-on for the OakGate expanded desktop or appliance.

NVMe SSDs

When testing NVMe SSDs in the 4-bay U.2 plug-in module, the appliance uses the OakGate NVMe module interface card (MIC), and the following features are supported:

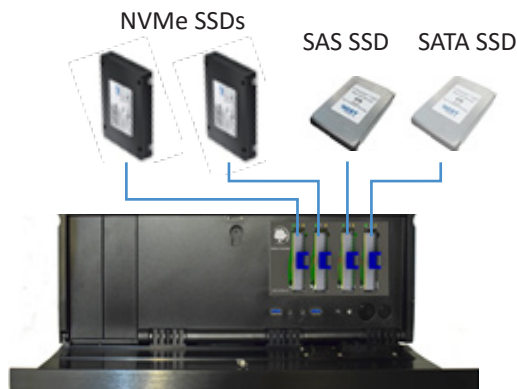
- Up to four single-port PCIe x4 connections
- Up to four dual-port PCIe x2 connections
- Ability to control the single-port PCIe or dual-port PCIe connection through the software
- Ability to manually force a dual-port PCIe connection through a 4-position dual in-line package (DIP) switch on the module

SAS/SATA SSDs

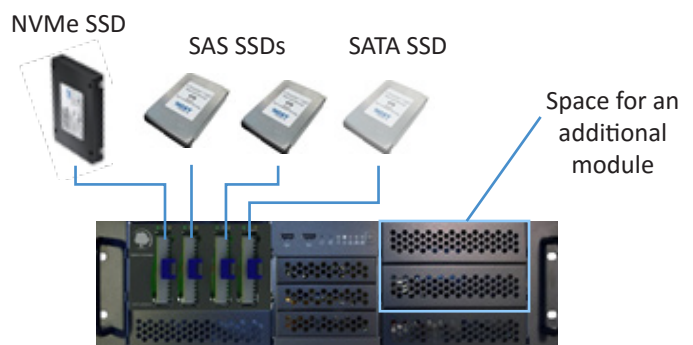
When testing SAS/SATA SSDs in the 4-bay U.2 plug-in module, the appliance uses the OakGate 12G SAS/6G SATA host bus adapter (HBA), and the following features are supported:

- Up to four single-port SAS/SATA connections
- Up to four dual-port SAS/SATA connections

4-BAY U.2 PLUG-IN MODULE in OAKGATE APPLIANCES





Example of a 4-Bay U.2 Plug-In Module with Four SSDs in an Expandable Desktop Appliance



Example of a 4-Bay U.2 Plug-In Module with Four SSDs in a 3U Rack-mount Appliance

CONFIGURATIONS with OAKGATE APPLIANCES

Appliance	# of 4-Bay U.2 Plug-In Modules	Supported 2.5" SSDs with a U.2/SFF-8630 Connector		Required Add-Ons
 EXPANDABLE DESKTOP APPLIANCE	1	4 Total	NVMe	NVMe Module Interface Card
			SAS/SATA	12G SAS/6G SATA HBA
 3U RACK-MOUNT APPLIANCE	1 or 2	4 or 8 Total	NVMe	1 or 2 NVMe Module Interface Cards
			SAS/SATA	1 or 2 12G SAS/6G SATA HBAs

ORDERING INFORMATION

DESCRIPTION	MODEL NUMBER
M-SERIES MODULES	
4-Bay U.2 Module for Single-Port NVMe and SAS/SATA SSDs using a U.2/SFF-8639 Connector	OGT-MU401
4-Bay U.2 Module for Dual-Port NVMe and SAS/SATA SSDs using a U.2/SFF-8639 Connector	OGT-MU402
COMPATIBLE D-SERIES and R-SERIES APPLIANCES	
Expandable Desktop Appliance	OGT-DE100
3U Rack-mount Appliance	OGT-R300
A-SERIES ADD-ONS/ACCESSORIES	
NVMe Module Interface Card	OGT-AI103
12G SAS/6G SATA Host Bus Adapter with Eight Ports	OGT-AH101
PCIe Power Interposer Card for OakGate Enclosures	OGT-AI100

Copyright © August 2016 OakGate Technology. All rights reserved worldwide. This document may refer to various companies and products by their trade names. In most, if not all cases, their respective companies claim these designations as trademarks or registered trademarks. This information is provided for reference only. Although this information is believed to be accurate and reliable at the time of publication, OakGate Technology assumes no responsibility for errors or omissions. OakGate Technology reserves the right to make changes or corrections without notice. This document is the property of OakGate Technology and may not be duplicated without permission from the OakGate Technology.