



SANBlaze SBExpress-RM5 Dual Port NVMe Drive Test System

Overview

The SANBlaze SBExpress-RM5 is a complete turnkey PCIe® Gen 5 NVMe SSD validation test system. The SBExpress-RM5 feature set provides unique functions applicable to all aspects of a product lifecycle - from engineering development, through validation and QA, to manufacturing test environments.

The ability to drive NVMe SSDs with a wide range of configurable attributes provides engineers with a flexible, multi-controller supported validation test platform.

Development, qualification, and certification test cycles can be highly automated, thus reducing overall test time, and rapidly surfacing errors and non-conformance.

The SANBlaze SBExpress-RM5 hardware provides a rackmount chassis with sixteen dual or single port front-accessible drives. The hardware provides excellent air flow for thermal chamber testing.

Dimensions

Height: 3.5" Depth w/out handles: 21 3/4"
Width w/out Ears: 17 1/8" Depth with handles: 22 3/4"
Width w/ Ears: 19"

Thermal Characteristics

Temperature Rating	-5C to 70C
Humidity	95% RH Non-condensing

Power

AC input 100-127 Vac/200-240 Vac
Max 14A at 100V

System Features

- PCIe® Gen 5
- Multiple clocking architecture support (SRIS/SRNS)
- VDM
- Gen5 PCIe NVMe testing on a Gen4 or Gen5 host
- Sixteen drives, all front accessible
- Hot plug, slot power, and drive presence under software control
- U.2 single/dual port risers (switchable)
- U.3 single/dual port risers (switchable)
- EDSFF
- M.2 Adapter support
- Field-installable riser cards support both single or dual port drives
- Measure voltage and power at each drive
- Optimal thermal design with unobstructed air flow
- Six fans speed-controlled through temperature sensing on each fan (user controllable through config file)
- LFM for 15mm drive is 1,373
- 38 temperature monitoring points
- 25W per slot at 70C
- Voltage margining +/- 15%

Software Features

- Test coverage for all aspects of the NVMe specification
- UNH Conformance Testing supported
- NVMe-MI (Management Interface) testing over SMBus supported
- SGL, SR-IOV, full namespace control and reservations
- Drive multiple ports of traffic simultaneously
- Send specific or custom op codes in an easy to use scriptable format
- Read / write / compare testing
- Error injection
- Vendor-unique commands supported
- Drive and test single or multiple NVMe target devices
- SBCert (Certified by SANBlaze) test suite
- ZNS



SANBlaze VLF Gen5 Server and SBExpress-RM5

The screenshot displays the SANBlaze SBExpress Manager interface. At the top, it shows 'SANBlaze' and 'SBExpress-RM5 PCIe Gen5 NVMe'. The main area is divided into several sections:

- System Overview:** A table listing 15 NVMe drives with columns for Voltage, VMin, VMax, VSet, Enclosure Status, and Fan speeds (Temp1 to Fan6).
- Configuration:** A grid of buttons for each drive, including 'Replace', 'Remove', and 'Pwr'.
- System Index Table:** A table with columns for System Index, NVMe Initiator, Controller, Namespace, and Test Action.
- Operations Per Second (IOPS) Graph:** A line graph showing IOPS over time, with markers for Read, Write, and Power.
- Certified by SANBlaze Tests:** A list of available and selected tests, including 'Section 01 - NVMe Generic I/O Commands' and 'Level 01 - NVMe Basic Operation'.

SANBlaze SBExpress Manager with Certified by SANBlaze tests

Certified by SANBlaze

- Over 900 out-of-the-box tests
- Enables IOL testing in the customer's lab, before undergoing official testing
- Widely recognized industry benchmark
- SR-IOV, ZNS, VDM, and TCG Opal verification is included

All information in this document is subject to change. Configurations rely on host system BIOS support and may be restricted by the host. Contact SANBlaze for additional information.