# Write/Read Tests

1. Using ***dd*** with a block size of 1 and a count of 1, seek to, and write all valid addresses (offsets) of the SSD. Using ***dd***, with a block size of 1 and a count of 1, read all valid data addresses (offsets) and compare data to what was written.
2. Using ***dd*** with a block size equal to the SSD disk size and a count of 1 and seek = 0, write a single “block” of data, and read it back with compare.
3. Using ***dd*** with a block size equal to the SSD sector size and a count of 1, write to and read from all valid sector offset addresses, with data compare.
4. Using ***dd*** with a block size equal to the SSD sector size and a count of 1, perform a write of data that spans a pair of sectors. Read data back and compare. Do this for all sectors, i.e. write/read a block of sector size data that spans all sectors *n* and *n+1*, where *n < m*, and *m* is the last sector in the SSD.
5. Using ***dd***, attempt to seek past the end of the SSD during a write operation. Should fail.
6. Using ***dd***, attempt to skip past the end of the SSD during a read operation. Should fail.

# Tests of SSD With Power Cycles

Perform tests 1, 2, 3, & 4 above, except power down the DUT between writes and reads.

# Test Multiple Process Accesses to SSD

Using ***dd*** and a pair of BASH terminal windows, perform simultaneous access tests of the SSD. Testing would not entail testing SSD offsets in use by alternate BASH shell. The idea here is to test the driver’s ability to correctly process requests from multiple threads/processes.

# Measure Device Throughput

Using ***dd*** with a block size equal to the SSD size, and a count of 1, read from */dev/zero* and write to */dev/ssd*. The ***dd*** command will report write throughput when the write completes.

Using ***dd*** with a block size equal to the SSD size, and a count of 1, read from */dev/ssd* and write to */dev/null*. The ***dd*** command will report read throughput when the read completes.

# Test of Lock Capability

Using the provided ***lock*** program, write protect the device. Use ***dd*** to attempt to write to the device. It should fail. Using the provided ***lock*** program, write enable the device. Use ***dd*** to attempt to write to the device. It should pass.

# Test of Linux Module Driver

Test loading and unloading of device driver. Load and unload of device driver module should not upset the kernel in any way.