

**March 2020**

**Test Results for Hardware Write Block Device:**

Coolgear SS-127ASD USB 3.0 to SATA/IDE Adapter with Write-Protection  
(Windows 10)

Federated Testing: CRU WriteBlocking Validation Utility

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## Introduction

The Computer Forensics Tool Testing (CFTT) program is a joint project of the Department of Homeland Security (DHS) Science and Technology Directorate (S&T), the National Institute of Justice (NIJ), and the National Institute of Standards and Technology (NIST) Special Programs Office and Information Technology Laboratory (ITL). CFTT is supported by other organizations, including the Federal Bureau of Investigation, the U.S. Department of Defense Cyber Crime Center, and U.S. Internal Revenue Service Criminal Investigation Division Electronic Crimes Program, as well as the DHS Bureau of Immigration and Customs Enforcement, U.S. Customs and Border Protection, and U.S. Secret Service. The objective of the CFTT program is to provide measurable assurance to practitioners, researchers, and other applicable users that the tools used in computer forensics investigations provide accurate results. Accomplishing this requires the development of specifications and test methods for computer forensics tools and subsequent testing of specific tools against those specifications.

Test results provide the information necessary for developers to improve tools, users to make informed choices, and the legal community and others to understand the tools' capabilities. The CFTT approach to testing computer forensics tools is based on well-recognized methodologies for conformance and quality testing. Interested parties in the computer forensics community can review and comment on the specifications and test methods posted on the CFTT website (<https://www.cftt.nist.gov/>).

This document reports the results from testing the hardware write blocking function of the Coolgear SS-127ASD USB 3.0 to SATA/IDE Adapter with Write-Protection using the CRU WriteBlocking Validation Utility, Version 2.0.2.1. The CRU WriteBlocking Validation Utility uses the same test method as the CFTT Federated Testing Test Suite for Hardware Write Blocking.

Federated Testing is an expansion of the CFTT program to provide forensic investigators and labs with test materials for tool testing and to support shared test reports. The goal of Federated Testing is to help forensic investigators to test the tools that they use in their labs and to enable sharing of tool test results. CFTT's Federated Testing Forensic Tool Testing Environment and included test suites can be downloaded from <https://www.cftt.nist.gov/federated-testing.html> and used to test forensic tools. The results can be optionally shared with CFTT, reviewed by CFTT staff, and then shared with the community.

Test results from this and other tools can be found on DHS's computer forensics web page, <https://www.dhs.gov/science-and-technology/nist-cftt-reports>.

# Federated Testing Test Results for Hardware Write Block Device: Coolgear SS-127ASD USB 3.0 to SATA/IDE Adapter

## 1. Test Information

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Operating System	Windows 10 Pro (6.2.9200.2)
CRU WriteBlocking Validation Utility	2.0.2.1
Notes	Initial Test

## 2. Write Blocker Information

Name	SS-127ASD USB 3.0 to SATA/IDE Adapter with Write-Protection
Manufacturer	Coolgear
Serial Number	N/A
Firmware	N/A

## 3. Drive Information

Name	Disk 1 (931.51 GB)
Manufacturer	WDC
Model	WD10EZEX-00WN4A0
Serial Number	WD-WMC6Y0L9K0A1
Firmware Revision	01.01A01
Interface	USB
Drive Type	SATA

## 4. Summary

<b>FAIL</b>	Sectors on the drive were modified during the test.
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## 4.1. Results

Unmodified Sectors	29
Modified Sectors	10
Commands Not Supported	16
Commands Not Enabled	0
Incomplete Commands	0
Errors	0
Skipped	0

## 4.2. Options

Force commands	True
Test sectors above 2.2 TB (+)	True
Pause after each command	False
Prepare for NIST Federated Testing	True

## 5. Log

2020-02-22 12:13:50 AM | Starting test...

WRITE DMA EXT*	<b>SECTOR MODIFIED</b>	Changes to sector detected.
WRITE DMA EXT*+	<b>NOT SUPPORTED</b>	Drive is too small. A drive larger than 2.2 TB is required.
WRITE DMA FUA EXT*	<b>SECTOR UNMODIFIED</b>	No changes to sector detected (write unsuccessful (0x79)).
WRITE DMA FUA EXT*+	<b>NOT SUPPORTED</b>	Drive is too small. A drive larger than 2.2 TB is required.
WRITE FPDMA QUEUED	<b>SECTOR UNMODIFIED</b>	No changes to sector detected (write unsuccessful (0x79)). NOTE: Read retried 2 times.
WRITE DMA QUEUED FUA EXT*	<b>SECTOR UNMODIFIED</b>	No changes to sector detected (write unsuccessful (0x79)).
WRITE DMA QUEUED FUA EXT*+	<b>NOT SUPPORTED</b>	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE (10)*	<b>SECTOR UNMODIFIED</b>	No changes to sector detected (write unsuccessful).
WRITE DMA*	<b>SECTOR MODIFIED</b>	Changes to sector detected.
WRITE DMA QUEUED*	<b>SECTOR UNMODIFIED</b>	No changes to sector detected (write unsuccessful (0x79)).
WRITE DMA QUEUED EXT*	<b>SECTOR UNMODIFIED</b>	No changes to sector detected (write unsuccessful (0x79)).
WRITE DMA QUEUED EXT*+	<b>NOT SUPPORTED</b>	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE (16)*	<b>SECTOR UNMODIFIED</b>	No changes to sector detected (write unsuccessful).

[SCSI] WRITE (16)*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE SECTOR(S)*	SECTOR MODIFIED	Changes to sector detected.
WRITE SECTOR(S) EXT*	SECTOR MODIFIED	Changes to sector detected.
WRITE SECTOR(S) EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE MULTIPLE*	SECTOR MODIFIED	Changes to sector detected.
WRITE MULTIPLE EXT*	SECTOR MODIFIED	Changes to sector detected.
WRITE MULTIPLE EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE VERIFY*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
WRITE SECTOR(S) w/o retries*	SECTOR MODIFIED	Changes to sector detected.
WRITE MULTIPLE FUA EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
WRITE MULTIPLE FUA EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE DMA w/o retries*	SECTOR MODIFIED	Changes to sector detected.
WRITE LOG EXT	SECTOR MODIFIED	Changes to sector detected.
WRITE LOG DMA EXT	SECTOR MODIFIED	Changes to sector detected.
CFA WRITE MULTIPLE WITHOUT ERASE*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
CFA WRITE SECTORS WITHOUT ERASE*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
CFA ERASE SECTORS	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
WRITE STREAM DMA EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
WRITE STREAM DMA EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE STREAM EXT	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
WRITE STREAM EXT+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE (6)*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE (12)*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE (32)*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x32)).
[SCSI] WRITE (32)*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE AND VERIFY (10)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE AND VERIFY (12)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE AND VERIFY (16)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE AND VERIFY (16)+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE AND VERIFY (32)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x32)).

[SCSI] WRITE AND VERIFY (32)+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE LONG (10)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE LONG (16)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE LONG (16)+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE SAME (10)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE SAME (16)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
[SCSI] WRITE SAME (16)+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE SAME (32)	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x32)).
[SCSI] WRITE SAME (32)+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE LONG w/ retries*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
WRITE LONG w/o retries*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).
WRITE UNCORRECTABLE EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful (0x79)).

2020-02-22 12:15:25 AM | Test complete.

Test Result - **FAIL**. Sectors on the drive were modified during the test. Results saved to the following location:

"C:\Program Files (x86)\CRU\WriteBlocking Validation Utility\Test Results\WriteBlockTest\_2020\_02\_22\_00\_13\_49.html".

#### Error Code Key

- **0x32**, The request is not supported.
- **0x79**, The semaphore timeout period has expired.