



**Test Results for Hardware Write Block Device:
CRU Forensic UltraDock FUDv5.5 Firmware Version
f3.01.0011**

Federated Testing: CRU WriteBlocking Validation Utility

March 2020



**Homeland
Security**

Science and Technology

This report was prepared for the Department of Homeland Security (DHS) Science and Technology Directorate (S&T) by the Office of Law Enforcement Standards of the National Institute of Standards and Technology.

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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, U.S. Internal Revenue Service Criminal Investigation Division Electronic Crimes Program, and 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 Web site (<https://www.cftt.nist.gov/>).

This document reports the results from testing the hardware write blocking function of the CRU Forensic UltraDock FUDv5.5 device firmware version f3.01.0011 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: CRU Forensic UltraDock FUDv5.5

1. Test Information

Organization/Tester Name	Det. Michael Bavosa/NJ Transit Police Department
Operating System	Windows 10 Pro (6.2.9200.2)
CRU WriteBlocking Validation Utility	2.0.2.1
Notes	---

2. Write Blocker Information

Name	Forensic UltraDock v5.5
Manufacturer	CRU
Serial Number	03-021319-A
Firmware	f3.01.0011

3. Drive Information

Name	Disk 1 (232.83 GB)
Manufacturer	Seagate
Model	ST3250318AS
Serial Number	6VYAGRCB
Firmware Revision	CC46
Interface	USB
Drive Type	SATA

4. Summary

PASS	No sectors on the drive were modified during the test.
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4.1. Results

Unmodified Sectors	25
Modified Sectors	0
Commands Not Supported	28
Commands Not Enabled	0
Incomplete Commands	2
Errors	0
Skipped	0

4.2. Options

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

5. Log

2019-05-31 11:58:39 AM | Starting test...

WRITE DMA EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE DMA EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE DMA FUA EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE DMA FUA EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE FPDMA QUEUED	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE DMA QUEUED FUA EXT*	NOT SUPPORTED	Command not supported on the drive.
WRITE DMA QUEUED FUA EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE (10)*	SECTOR UNMODIFIED	No changes to sector detected.
WRITE DMA*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE DMA QUEUED*	NOT SUPPORTED	Command not supported on the drive.
WRITE DMA QUEUED EXT*	NOT SUPPORTED	Command not supported on the drive.
WRITE DMA QUEUED EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
[SCSI] WRITE (16)*	SECTOR UNMODIFIED	No changes to sector detected.
[SCSI] WRITE (16)*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.

WRITE SECTOR(S)*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE SECTOR(S) EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE SECTOR(S) EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE MULTIPLE*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE MULTIPLE EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE MULTIPLE EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE VERIFY*	NOT SUPPORTED	Command not supported on the drive.
WRITE SECTOR(S) w/o retries*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE MULTIPLE FUA EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
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 UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE LOG EXT	INCOMPLETE	Pre-read failed, command may not be supported.
WRITE LOG DMA EXT	INCOMPLETE	Pre-read failed, command may not be supported.
CFA WRITE MULTIPLE WITHOUT ERASE*	NOT SUPPORTED	Command not supported on the drive.
CFA WRITE SECTORS WITHOUT ERASE*	NOT SUPPORTED	Command not supported on the drive.
CFA ERASE SECTORS	NOT SUPPORTED	Command not supported on the drive.
WRITE STREAM DMA EXT*	NOT SUPPORTED	Command not supported on the drive.
WRITE STREAM DMA EXT*+	NOT SUPPORTED	Drive is too small. A drive larger than 2.2 TB is required.
WRITE STREAM EXT	NOT SUPPORTED	Command not supported on the drive.
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)*	NOT SUPPORTED	Drive does not support extended SCSI request blocks.
[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)	NOT SUPPORTED	Drive does not support extended SCSI request blocks.

[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)	NOT SUPPORTED	Drive does not support extended SCSI request blocks.
[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).
WRITE LONG w/o retries*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).
WRITE UNCORRECTABLE EXT*	SECTOR UNMODIFIED	No changes to sector detected (write unsuccessful).

2019-05-31 11:58:43 AM | Test complete.

Test Result - **PASS**. No 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_2019_05_31_11_58_28.html".

Error Code Key

No errors detected.