Certification Report

SecureSwitch® Fiber Optic Switch Revision A, B, C, D

Issued by:

Communications Security Establishment

Certification Body

Canadian Common Criteria Evaluation and Certification Scheme

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DISCLAIMER

The Information Technology (IT) product identified in this certification report, and its associated certificate, has been evaluated at an approved evaluation facility – established under the Canadian Common Criteria Evaluation and Certification Scheme (CCS) – using the *Common Methodology for Information Technology Security Evaluation, Version 3.1 Revision 4*, for conformance to the *Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 4*. This certification report, and its associated certificate, applies only to the identified version and release of the product in its evaluated configuration. The evaluation has been conducted in accordance with the provisions of the CCS, and the conclusions of the evaluation facility in the evaluation report are consistent with the evidence adduced. This report, and its associated certificate, are not an endorsement of the IT product by the Communications Security Establishment, or any other organization that recognizes or gives effect to this report, and its associated certificate, and no warranty for the IT product by the Communications Security Establishment, or any other organization that recognizes or gives effect to this report, and its associated certificate, is either expressed or implied.

FOREWORD

The Canadian Common Criteria Evaluation and Certification Scheme (CCS) provides a third-party evaluation service for determining the trustworthiness of Information Technology (IT) security products. Evaluations are performed by a commercial Common Criteria Evaluation Facility (CCEF) under the oversight of the CCS Certification Body, which is managed by the Communications Security Establishment.

A CCEF is a commercial facility that has been approved by the CCS Certification Body to perform Common Criteria evaluations; a significant requirement for such approval is accreditation to the requirements of *ISO/IEC 17025:2005, the General Requirements for the Competence of Testing and Calibration Laboratories*. Accreditation is performed under the Program for the Accreditation of Laboratories - Canada (PALCAN), administered by the Standards Council of Canada.

The CCEF that carried out this evaluation is CSC Security Testing/Certification Laboratories.

By awarding a Common Criteria certificate, the CCS Certification Body asserts that the product complies with the security requirements specified in the associated security target. A security target is a requirements specification document that defines the scope of the evaluation activities. The consumer of certified IT products should review the security target, in addition to this certification report, in order to gain an understanding of any assumptions made during the evaluation, the IT product's intended environment, the evaluated security functionality, and the testing and analysis conducted by the CCEF.

This certification report is associated with the certificate of product evaluation dated July 21, 2015, and the security target identified in Section 4 of this report.

The certification report, certificate of product evaluation and security target are posted on the CCS Certified Products list (CPL) and the Common Criteria portal (the official website of the Common Criteria Project).

This certification report makes reference to the following trademarks or registered trademarks:

- SecureSwitch® is a registered trademark of Market Central, Inc.

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Executive Summary

SecureSwitch® Fiber Optic Switch Revision A, B, C, D (hereafter referred to as Fiber Optic Switch), from Market Central, Inc., is the Target of Evaluation. The results of this evaluation demonstrate that Fiber Optic Switch meets the requirements of Evaluation Assurance Level (EAL) 2 for the evaluated security functionality.

Fiber Optic Switch is an optical switch that allows a single host to connect to multiple networks, one at a time, whilst maintaining separation between the networks. The TOE user manually switches between networks. The TOE uses a proprietary mirrored switching mechanism with specially designed mirrors to provide isolation of a minimum 75 dB between all unselected ports. The mirrors are positioned electronically to control the switching action.

CSC Security Testing/Certification Laboratories is the CCEF that conducted the evaluation. This evaluation was completed on July 21, 2015 and was carried out in accordance with the rules of the Canadian Common Criteria Evaluation and Certification Scheme (CCS).

The scope of the evaluation is defined by the security target, which identifies assumptions made during the evaluation, the intended environment for Fiber Optic Switch, and the security functional/assurance requirements. Consumers are advised to verify that their operating environment is consistent with that specified in the security target, and to give due consideration to the comments, observations and recommendations in this certification report.

Communications Security Establishment, as the CCS Certification Body, declares that the Fiber Optic Switch evaluation meets all the conditions of the *Arrangement on the Recognition of Common Criteria Certificates* and that the product will be listed on the CCS Certified Products list (CPL) and the Common Criteria portal (the official website of the Common Criteria Project).

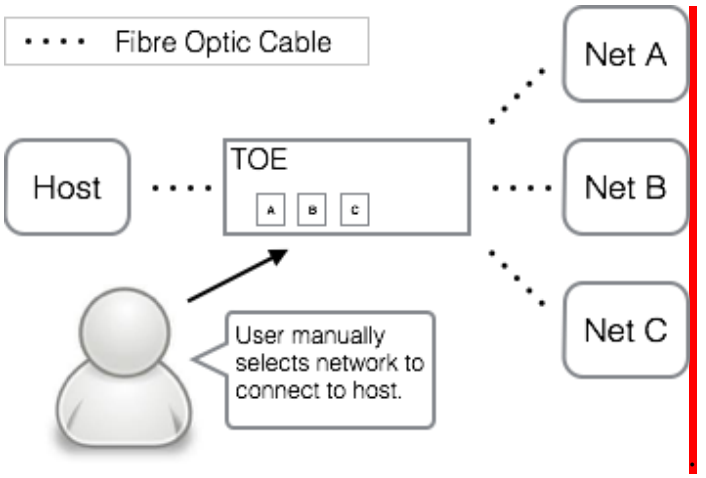
1 Identification of Target of Evaluation

The Target of Evaluation (TOE) for this EAL 2 evaluation is SecureSwitch® Fiber Optic Switch Revision A, B, C, D (hereafter referred to as Fiber Optic Switch), from Market Central, Inc..

2 TOE Description

Fiber Optic Switch is an optical switch that allows a single host to connect to multiple networks, one at a time, whilst maintaining separation between the networks. The TOE user manually switches between networks. The TOE uses a proprietary mirrored switching mechanism with specially designed mirrors to provide isolation of a minimum 75 dB between all unselected ports. The mirrors are positioned electronically to control the switching action.

A diagram of the Fiber Optic Switch architecture is as follows:



3 Security Policy

Fiber Optic Switch implements policies pertaining to the following security functional class:

- *User Data Protection.*

4 Security Target

The ST associated with this Certification Report is identified below:

SecureSwitch® Fiber Optic Switch Revision A, B, C, D Security Target, version 1.2, June 2015.

5 Common Criteria Conformance

The evaluation was conducted using the *Common Methodology for Information Technology Security Evaluation, Version 3.1 Revision 4*, for conformance to the *Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 4.*

Fiber Optic Switch is:

a. EAL 2 conformant, with all security assurance requirements listed for EAL 2.

b. *Common Criteria Part 2 extended; with functional requirements based upon functional components in Part 2, except for the following explicitly stated requirements defined in the ST:*
   - FDP_ISO Optical Isolation.

c. *Common Criteria Part 3 conformant*, with security assurance requirements based only upon assurance components in Part 3.

6 Assumptions and Clarification of Scope

Consumers of Fiber Optic Switch should consider assumptions about usage and environmental settings as requirements for the product's installation and its operating environment. This will ensure the proper and secure operation of the TOE.

6.1 Secure Usage Assumptions

The following Secure Usage Assumptions are listed in the ST:

- *The User is non-hostile and follows all user guidance when using the TOE;*
- *The User has properly connected up to three networks to the TOE Network Ports and has connected a GPC (General Purpose Computer) on the common Port of the TOE.*

6.2 Environmental Assumptions

The following Environmental Assumption is listed in the ST:

- *The TOE is located in a secure and controlled environment that provides physical security, uninterruptible power supply and temperature control.*

7 Evaluated Configuration

The evaluated configuration for Fiber Optic Switch comprises:

One of SecureSwitch® Fiber Optic Switch Revision A, B, C, D in either Tabletop, 1U Tabletop or Rack Mount enclosure.

All documents listed in section 8 below describe the procedures necessary to install and operate Fiber Optic Switch in its evaluated configuration.

8 Documentation

The Market Central, Inc. documents provided to the consumer are as follows:

- Market Central, Inc. Manual ver 1, SecureSwitch® Fiber Optic A/B/C Switch Revision A;
- Market Central, Inc. Manual ver 1, SecureSwitch® Fiber Optic A/B/C Switch Revision B with Switched AC Power Outlet;
- Market Central, Inc. Manual ver 1, SecureSwitch® Fiber Optic A/OFF/C Switch Revision C with Switched AC Power Outlet;
- Market Central, Inc. Manual ver 1, SecureSwitch® Fiber Optic A/B/C Switch Revision D with Switched AC Power Outlet.

9 Evaluation Analysis Activities

The evaluation analysis activities involved a structured evaluation of Fiber Optic Switch, including the following areas:

Development: The evaluators analyzed the Fiber Optic Switch functional specification and design documentation; they determined that the design completely and accurately describes the TOE security functionality (TSF) interfaces, the TSF subsystems and how the TSF implements the security functional requirements (SFRs). The evaluators analyzed the Fiber Optic Switch security architectural description and determined that the initialization process is secure, that the security functions are protected against tamper and bypass, and that security domains are maintained. The evaluators also independently verified that the correspondence mappings between the design documents are correct.

Guidance Documents: The evaluators examined the Fiber Optic Switch preparative user guidance and operational user guidance and determined that it sufficiently and unambiguously describes how to securely transform the TOE into its evaluated configuration and how to use and administer the product. The evaluators examined and tested the preparative and operational guidance, and determined that they are complete and sufficiently detailed to result in a secure configuration.

Life-cycle support: An analysis of the Fiber Optic Switch configuration management system and associated documentation was performed. The evaluators found that the Fiber Optic Switch configuration items were clearly marked.

The evaluators examined the delivery documentation and determined that it described all of the procedures required to maintain the integrity of Fiber Optic Switch during distribution to the consumer.

All these evaluation activities resulted in **PASS** verdicts.

10 ITS Product Testing

Testing consists of the following three steps: assessing developer tests, performing independent functional tests, and performing penetration tests.

10.1 Assessment of Developer Tests

The evaluators verified that the developer has met their testing responsibilities by examining their test evidence, and reviewing their test results, as documented in the ETR[1].

The evaluators analyzed the developer's test coverage analysis and found it to be complete and accurate. The correspondence between the tests identified in the developer's test documentation and the functional specification was complete.

10.2 Independent Functional Testing

During this evaluation, the evaluator developed independent functional tests by examining design and guidance documentation.

All testing was planned and documented to a sufficient level of detail to allow repeatability of the testing procedures and results. Resulting from this test coverage approach is the following list of test goals:

a. Repeat of Developer's Tests: The objective of this test goal is to repeat a subset of the developer's tests;

b. Verify Switching and Isolation: The objective of this test goal is to verify that the switching function properly connects the host port to the selected network port and verifies that the isolation function performs as stated;

c. Verify A/B isolation: The objective of this test goal is to verify that the isolation function provides the stated isolation between the A and B network ports;

d. Verify A/C isolation: The objective of this test goal is to verify that the isolation function provides the stated isolation between the A and C network ports;

e. Verify B/C isolation: The objective of this test goal is to verify that the isolation function provides the stated isolation between the B and C network ports.

10.3 Independent Penetration Testing

Subsequent to the independent review of public domain vulnerability databases and all evaluation deliverables, no penetration tests were created as any potential vulnerability is not exploitable.

The independent penetration review did not uncover any exploitable vulnerabilities in the intended operating environment.

[1] The ETR is a CCS document that contains information proprietary to the developer and/or the evaluator, and is not releasable for public review.

10.4 Conduct of Testing

Fiber Optic Switch was subjected to a comprehensive suite of formally documented, independent functional tests. The detailed testing activities, including configurations, procedures, test cases, expected results and observed results are documented in a separate Test Results document.

10.5 Testing Results

The developer's tests and the independent functional tests yielded the expected results, providing assurance that Fiber Optic Switch behaves as specified in its ST and functional specification.

11 Results of the Evaluation

This evaluation has provided the basis for a EAL 2 level of assurance. The overall verdict for the evaluation is **PASS**. These results are supported by evidence in the ETR.

12 Evaluator Comments, Observations and Recommendations

It is recommended that the users shall follow the user guidance documentation and the assumptions specified in the Security Target to install and operate the TOE.

13 Acronyms, Abbreviations and Initializations

Acronym/Abbreviation/ Initialization	Description
CCEF	Common Criteria Evaluation Facility
CCS	Canadian Common Criteria Evaluation and Certification Scheme
CPL	Certified Products list
EAL	Evaluation Assurance Level
ETR	Evaluation Technical Report
GPC	General Purpose Computer
IT	Information Technology
ITSET	Information Technology Security Evaluation and Testing
PALCAN	Program for the Accreditation of Laboratories - Canada
SFR	Security Functional Requirement
ST	Security Target
TOE	Target of Evaluation
TSF	TOE Security Function

14 References

This section lists all documentation used as source material for this report:

a. CCS Publication #4, Technical Oversight, Version 1.8, October 2010.

b. Common Criteria for Information Technology Security Evaluation, Version 3.1 Revision 4, September 2012.

c. Common Methodology for Information Technology Security Evaluation, CEM, Version 3.1 Revision 4, September 2012.

d. SecureSwitch® Fiber Optic Switch Revision A, B, C, D Security Target, version 1.2, June 2015.

e. SecureSwitch® Fiber Optic Switch Revision A, B, C, D Evaluation Technical Report version 2.3, July 21, 2015.